



Assessing the effects of institutions on the ownership structure of MNCs investments in global cities

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ABSTRACT

This study analyzes the relationship between institutions and ownership in cross-border acquisitions. First, this research contributes to the existing literature by considering the relative position of cities of origin and destination in this relationship and examining the asymmetric effects of institutional distance. Furthermore, we contribute by taking the concept of global cities and analyzing the influence of these locations on ownership decisions in cross-border acquisitions. Using a database with multiple home and host-cities and adopting a binary logistic analysis, the results indicate that MNCs hold a higher stake in the equity of an acquiree located in a developed country, and their commitment of resources to acquisitions in global cities is higher than it is in other cities. These findings suggest that analyzing distance direction is essential, and brings new insights when examined at the subnational level.

1. Introduction

When a firm decides to engage in foreign investments by making cross-border acquisitions, ownership is a crucial factor in that decision. The extant literature has shown that ownership is contingent on the quality of the institutions at the target destination, and how that compares to the quality of the investor's country/city of origin. This comparison gave rise to the concept of institutional distance which, together with the magnitude of the institutional distance between origin and destination, brought important advances in the IB literature (Kostova & Zaheer, 1999; Liou et al., 2016).

Recent studies have refined the concept of institutional distance by distinguishing between positive and negative institutional distance (Hernández & Nieto, 2015; Mueller et al., 2017; Trapczynski & Banalieva, 2016). Positive institutional distance indicates that institutions in the destination are more developed than those in the place of origin of the investor. In contrast, negative institutional distance means that institutions in the destination are less developed than institutions in the place of origin.

Cross-border acquisition is a strategy used for accessing international markets. In cross-border acquisitions, the acquirer may not become the owner of the acquired company in some cases, and the target may

remain with a portion of the equity (Contractor, Lahiri, Elango & Kundu, 2014). Partial acquisitions provide partial ownership and minority control of the acquired, since the acquirer does not hold the total equity of the target firm. Compared to partial acquisitions, full acquisitions involve high investment in human resources, fixed and intangible assets, and significant commitment (Chen, 2008). In this line of reasoning, given the implications of the ownership choice on the amount of resource commitment, risks, returns, and control, understanding the determinants of ownership in cross-border acquisitions may contribute to the literature on foreign market entry modes (Chari & Chang, 2009).

Conventional IB literature suggests that FDI is driven by several country-specific factors, such as cultural and institutional contexts and government policies. Some studies have investigated the effects of institutional context on cross-border acquisitions (Dow et al., 2016; Pinto, Ferreira, Falaster, Fleury & Fleury, 2017), and analyzed the impact of institutions at the country level (Dikova & Van Witteloostuijn, 2007; Meyer, 2001). However, some researchers have argued that the country is not necessarily the most appropriate level of analysis and that the FDI phenomenon should be discussed at the subnational level (Cantwell & Iammarino, 2000). These researchers argue that countries are not homogeneous within their borders (Beugelsdijk & Mudambi, 2013). In addition, research on subnational variations and global cities

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(Asmussen, Nielsen, Goerzen & Tegtmeier, 2018; Goerzen et al., 2013) can significantly contribute to the IB literature regarding how institutional environments at the subnational level can influence cross-border acquisitions, specifically on ownership choice.

Global cities are hubs with specific characteristics such as a high degree of connectivity with local and international markets, a cosmopolitan environment, and a high concentration of specialized service providers (Goerzen et al., 2013). Together with economic and institutional development, these characteristics make global cities unique and, therefore, distinct from any other subnational location with economic agglomerations or industrial clusters (Goerzen et al., 2013). The unique attributes of global cities make them attractive locations for the operations of MNCs and their subsidiaries. Therefore, studies on the influence of this institutional environment on the ownership of MNCs can provide essential insights for IB studies.

This study makes three significant contributions to the literature on entry mode and ownership choice. First, it extends the studies of Hernández & Nieto (2015) and Mueller et al. (2017) on how institutional distance and direction influence the level of ownership, distinguishing between partial and total acquisitions. Second, the novelty of this study is that it adopts a neo-institutional perspective to explain the effects distance and direction at the subnational level have on ownership in cross-border acquisitions. Finally, it brings the global city concept to the analysis of institutional distances and their effects on ownership.

This paper is organized as follows: the next section deals with the relevant literature on institutions, specifically legitimacy, institutional distance and direction, and levels of analysis in IB. The literature on ownership choice follows that and, in the subsequent section, we build the hypotheses and then the methodology. The results, discussion, and conclusion follow, together with some comments about the study's limitations and suggestions for future research.

2. Literature review

2.1. Institutions

2.1.1. Legitimacy

Institutional theory has become the most popular theoretical lens used to explain the influence of local context on firm strategy (Meyer & Peng, 2005; Xu & Meyer, 2013). Moreover, the integration of the economic (North, 1990) and sociological (DiMaggio & Powell, 1983; Scott, 2008) variant of institutional theory into IB theory resolved a gap in the literature regarding the link between institutions and the strategic choices of MNCs (Kim & Aguilera, 2016). This gave rise to one of the most robust topics in IB research (Xu & Shenkar, 2002).

Douglas North's (1990) New Institutional Economics (economic variant) argues that the prosperity of a society depends on a set of formal and informal institutions that impose restrictions and dictate "the rules of the game" that guide and shape transactions in society. Formal institutions comprise laws and regulations, while informal institutions are the unspoken rules, as well as norms, values, beliefs, and taboos that are shaped and agreed upon by members of society. This set of codified (formal institutions) and tacit (informal institutions) knowledge sets the parameters for all transactions within society. These parameters can facilitate exchanges between social actors, promote the opening of borders and the entry of new actors, minimize transaction costs, and protect capital and intellectual property.

The sociological variant of institutional theory – neo-institutional theory – accepts the argument of the new institutional economy that institutions are elements in society that guide the interaction of social actors. However, it starts from the premise that social issues override technical aspects when social actors respond to institutional pressures (DiMaggio & Powell, 1983). Organizations respond to these pressures by adapting to and conforming with the institutional environment to achieve legitimacy (Kostova & Zaheer, 1999).

Legitimacy is "a widespread perception that an entity's actions are desired and appropriate to a socially constructed system of norms, definitions, values, and beliefs" (Suchman, 1995:574). Kostova and Zaheer (1999) add two other factors to this definition that affect (or contribute to) the organization's legitimacy – (1) the characteristics of the institutional environment and (2) the characteristics and actions of the organization. Any complexity in this set of factors (institutional environment, organization, and legitimacy process) makes it more difficult for the MNC to establish and maintain legitimacy.

Cross-border acquisitions are susceptible to legitimacy issues in the target country/city, as acquirers are foreign firms that may be perceived as a potential threat to the local business environment. Having legitimacy recognized by the host ensures social approval and guarantees the continuity of activities and the survival of the subsidiary. The recognition of legitimacy reduces uncertainty and predisposes the MNC to a more significant commitment of resources (Yiu, Wan, Chen & Tian, 2021).

2.1.2. Institutional distance and direction

Institutional distance refers to the degree of similarity or difference between the context of home (origin of the MNC) and host (place of destination) to the institutional environment (Salomon & Wu, 2012). Considering that the host's institutional environment influences the choice of entry mode, the MNC must have extensive knowledge of local institutions. The institutional environment comprises the characteristics of the target country/city, specifically its policy rules, legal framework, and social norms (Lahiri et al., 2014). Therefore, the institutional distance between home and host requires the MNC to adapt to the local "rules of the game," which may mean making changes to their entry and ownership strategy (Arslan & Larimo, 2011).

Large institutional distances increase uncertainty regarding the availability of local resources and the transfer of established routines and practices to a new market (Brouthers & Hennart, 2007). The differences in laws, rules, and norms between home and host challenges the MNC regarding the legitimacy of its presence and activities. Knowing the local market and establishing relationships with suppliers, customers, and other stakeholders can be difficult until the MNC learns to operate within an environment different from its usual context. Compliance with local rules will guarantee the MNC the necessary legitimacy to conduct its activities (Peng et al., 2008).

The difference between the institutional environment of home and host country/city gave rise to the concept of direction in institutional distance (Godínez & Liu, 2015; Shenkar, 2001; Zaheer et al., 2012). This difference is positive when host institutions are more developed and of higher quality than those in the home country, and negative if host institutions are less developed (Trapczynski & Banalieva, 2016). Furthermore, recent research indicates that the direction of distance influences a firm's strategic choices by moderating the effects of uncertainty (Chikhouni et al., 2017; De Beule et al., 2014; Hernández & Nieto, 2015).

Negative distance is often associated with the host country's low level of economic development, generating location advantages such as growing markets, access to natural resources, and low labor costs (Hernández & Nieto, 2015). However, locations with developing institutions pose challenges with regard to adaptation (Schwens et al., 2011). Firms from institutional environments with relatively high institutional quality may find it risky to invest in countries with less developed institutions due to a lack of knowledge about how to position themselves in these markets (Berry, 2006).

The host country's low level of institutional development also implies an unpredictable environment characterized by frequent and unexpected regulatory changes (Slangen & van Tulder, 2009). An environment of this nature negatively affects the firm's effort to adapt and, consequently, its legitimacy (Chan & Makino, 2007). Thus, we can argue that when the host country's environment is less developed than the home country's environment, managers find the host environment

challenging and therefore difficult to know how to interpret and act upon (Håkanson & Ambos, 2010). Realizing the challenges this type of environment imposes, managers are likely to prefer the involvement of a local partner with a high level of participation in their subsidiary (Chikhouni et al., 2017; Hernández & Nieto, 2015).

On the other hand, locations with a positive distance from home have more developed formal institutions. Developed formal institutions are stable institutions with real and credible public power and government policies that promote the opening of markets. These institutions have a transparent, impartial legal system that effectively protects individuals and property (Hernández & Nieto, 2015). In these environments, even previously unknown rules and regulations can be observed, interpreted, and understood (Kostova & Zaheer, 1999). Developed institutions have a predictable environment and allow the firm to adapt to current rules and regulations (Phillips et al., 2009). In such contexts with more outstanding institutional quality than the firm's origin, the MNC could assume a majority stake in its subsidiary with a local partner taking a minority share (Chikhouni et al., 2017; Hernández & Nieto, 2015).

The above discussion suggests that the magnitude of the distance between home and host perceived by managers is influenced by the level of development of host country institutions. When they are more developed than those in the home country, they predispose the MNC to increase its participation in the local subsidiary. The positive distance decreases manager's uncertainty level and increases the MNC's commitment to the host country.

2.1.3. Level of Analysis - national, subnational, and global cities

International business research has used the country as the basic unit of analysis of factors influencing MNCs decisions in foreign markets (Goerzen et al., 2013; McCann et al., 2002; Zhou et al., 2002). However, some researchers have argued that country is not necessarily the most appropriate level of analysis and that the FDI phenomenon should be discussed at the subnational level (Cantwell & Iammarino, 2000). In addition, liberalization policies, new technologies, and outsourcing trends in global value chains have made country less significant as a unit of analysis (Brown, Derudder, Parnreiter, Pelulessy, Taylor & Wilcox, 2010).

The international business literature has appropriated concepts from contemporary economic geography – place and space – to explain the subnational spatial dynamics that stimulate the agglomeration of firms in specific locations (Nachum, 2000). While place refers to the geographic unit of analysis that is not restricted to the country level, space refers to any characteristics that cause variation and make places heterogeneous (Beugelsdijk & Mudambi, 2013). The concept of place leaves (or goes beyond) the political-administrative borders of countries to dwell on institutional variations (or distances), both political and economic, between the places where the firm operates and builds its network (Beugelsdijk, 2007). The concepts of place and space give us the theoretical foundation for studies on the influence that factors at the subnational level have on an MNC's decisions regarding the ownership of its subsidiaries.

Two of the most critical dimensions in economic geography studies that focus on cities are demographic and functional. The first examines cities in an urban context, focusing on humans and the ecological consequences of a large population (Gilbert, 1996). The second focuses on the global economic role of cities, their characteristics and interconnectedness (Brown et al., 2010). This latter dimension examines the activities within cities to understand their role in the globalized economy. It was the studies in this functional dimension that made the global city network research proliferate more in the field of economic geography.

We also acknowledge the crucial influence that the thoughts and ideas of several other researchers have had on our understanding of global cities: Saskia Sassen's ideas of world cities as command centers of services (Sassen (2012); Manuel Castells' concept of spaces of flows (Castells, 2010); David Harvey's global cities role in the new

international division of labor (Harvey, 2009); and John Friedman's world city hypotheses (Friedman, 1986). The global city is a hub in an extensive network with global links in the functional dimension. In internationalization, the MNC needs to provide services worldwide to support its operations in foreign markets. Such services use high-speed devices and networks which, as a rule, are in clusters of providers and consumers (Arzaghi & Henderson, 2008). Global cities are the cradle of these providers, and due to their high connectivity and other available resources, such as recourse to specialized workers and appropriate infrastructure, they can meet the requirements and dynamics of the global operation of MNCs (Sassen, 2012).

The literature suggests that the three main elements that characterize a global city are: a high degree of interconnectedness with local and global markets, a cosmopolitan environment, and top-technology service providers (Goerzen et al., 2013). These characteristics are what differentiates a global city from other subnational agglomerations such as industrial districts, clusters, and megacities. For example, industrial districts are specific to the industry, and knowledge circulates among firms in a range restricted to the industrial district or cluster (Porter, 1998). None of the characteristics of a global city are shared by industrial districts, clusters or by Megacities¹, which are defined as having a population greater than 10 million inhabitants (Beaverstock et al., 1999).

Operating in a foreign market means bearing costs arising from the complexity of operations (coordination effort that increases with distance), uncertainty (lack of familiarity with the local environment), and discrimination (lack of legitimacy) (Zaheer, 1995). The coordination and control effort, whose costs increase as a function of distance, can be reduced given the interconnectedness of the global city, which offers speed to the circulation of information and the transfer of capital, human resources, and technology. Specialized services are provided locally by service providers with a global service network, thus avoiding costs associated with importation. The costs associated with uncertainty can also be reduced due to ease of access to information, which lowers procurement and learning costs. The availability of consultancy services and the cosmopolitan environment facilitate the absorption of local culture. While global cities share many communalities across different countries, they may not find as many similar characteristics in another city within their own country (Doel & Hubbard, 2002).

2.2. Ownership choices

Cross border acquisitions are the fastest way to access complementary resources that add value to the portfolio of products and services and allow MNCs access to foreign markets (Lahiri et al., 2014). This entry mode guarantees the ownership, control, and leverage of physical and technological resources resulting from combining the assets of the acquirer with those of the targets. In addition, the combination of tangible and intangible assets can guarantee MNCs the realization of economies of scale and scope, increasing their penetration in the foreign market (Haleblian, Devers, McNamara, Carpenter & Davison, 2009; Lahiri et al., 2014).

After choosing the target firm, the next MNC decision is about the level of ownership in the target firm – partial or total (Brouthers & Hennart, 2007). A partial acquisition involves acquiring a portion of the target equity, while a full acquisition involves purchasing all the equity. The partial or full acquisition involves different goals and strategies (Chen, 2008).

Full acquisition involves a more significant investment in the physical, human, and technological resources and, consequently, a greater commitment of financial resources. In partial acquisition, the commitment of financial resources is smaller. Still, the MNC can have the flexibility to increase its participation in the target's capital as it acquires knowledge of the operations and legitimacy in the national or subnational context in which it operates (Brouthers et al., 2003; Collins, Holcomb, Certo, Hitt & Lester, 2009). In contrast to full acquisition,

partial acquisition involves lower costs and risks. Deciding on a total or partial acquisition involves calculating the tradeoff between costs and benefits. On the one hand there are the possible synergies and gains, and on the other are investments, costs, uncertainties, and risks (Lahiri et al., 2014).

The central argument in IB research is that firms strive to minimize the uncertainty associated with perceived distance. Firms tend to opt for low equity participation in their subsidiaries abroad due to the uncertainty engendered by the distance between their origin and target markets (Dow & Larimo, 2009; Piaskowska & Trojanowski, 2014). A low shareholding gives flexibility and limits losses in the event of failure, allowing ease of exit from this market in an adverse scenario (Delios & Beamish, 1999; López-Duarte & Vidal-Suárez, 2013).

Additionally, the involvement of a local partner is valuable in an institutionally distant country, in that it helps the firm's internationalization process limit the effects of foreignness (Meyer, Estrin, Bhaumik & Peng, 2009). Shared ownership reduces the likelihood of discrimination and opportunistic behavior by local authorities, as well as alterations in trade agreements and foreign capital regulations (Chan & Makino, 2007). The involvement of a local partner reduces the harmful effects of institutional distance.

3. Hypotheses development

3.1. Ownership, institutional distance, and direction

Prior research suggests that firms prefer forms of entry that require lower resource commitments to minimize the effect of uncertainty prevalent when the regulative distance is more significant (Dow & Larimo, 2009). However, this focus on efficiency criteria has also yielded counter arguments. Gaur and Lu (2007) argue that one way to mitigate costs in countries separated by a vast regulative distance is to use forms of entry that offer greater control over operations. This argument is based on the belief that greater institutional distance produces uncertainty and unfamiliarity, which leads to higher transaction costs and favors forms of entry associated with heavier resource commitment (Kim & Gray, 2008; Tihanyi et al., 2005).

Studies that analyze institutional differences (distances) suggest that when distance grows, firms prefer entry modes requiring lower resource commitments. The reason is that lower resource commitment allows greater flexibility and minimizes the conflicts between external legitimacy and internal consistency (Xu et al., 2004; Xu & Shenkar, 2002). Other studies argue that forms of entry that offer higher levels of control make it possible to manage regulatory differences more easily (Estrin et al., 2009). This approach prioritizes internal consistency over the acquisition of external legitimacy (Davis et al., 2000). However, the empirical evidence for this approach suggests that external legitimacy is vital for the survival of MNCs (Xu et al., 2004).

Both efficiency criteria and institutional perspective seem to apply, as institutions provide the structure for transactions to occur and affect the firm's choice of entry mode and ownership (Delios & Beamish, 1999). The two perspectives are complementary, as firms are required to manage the needs of legitimacy and efficiency in their decisions (Kim & Gray, 2008). The papers mentioned above only analyze the magnitude of the distance, but since the origin and destination of the MNC (direction) also matter (Hernández & Nieto, 2015; Mueller et al., 2017), analyzing both magnitude and direction can shed more light on the relationship between institutional differences and ownership.

Depending on the regulatory and legal infrastructure of cross-border markets, distance has different effects on the propensity to invest in them and, compared to the country/city of origin, such markets may be favorable or unfavorable (to varying degrees). Thus, the institutional distance matters, as does the influence of the institutionalization level in the place of origin and destination (Wu, 2013). Zaheer et al. (2012) argue that we need to know how institutions differ and how much they differ.

When firms located in more institutionally developed environments move to less advanced environments (negative direction), they may perceive great risks and uncertainties. Less developed institutional environments are subject to unexpected changes in government policies, government intervention in the market, and the absence of laws and rules to enforce contracts between the economic agents (Slangen & van Tulder, 2009). In addition, the degree of dissimilarity between the two institutional systems can increase the perception of risk and the uncertainty caused by not knowing how to deal with the new environment (Berry, 2006). As a result, the firm may have difficulty achieving legitimacy in these less-developed environments (Xu & Shenkar, 2002).

Legitimacy may not be an issue in countries/cities with good governance, i.e., stable institutions, efficient public services, and government policies that promote free markets. Institutions with this level of development produce predictable rules that support efficient transactions (Gelbuda et al., 2008). In destinations where the level of institutional development is high (positive direction), environments present less uncertainty, and thus, firms can adapt more easily even as the distance grows. Given the institutional quality, firms can prioritize the efficiency criteria in decisions involving entry mode and ownership since the legitimacy criteria are easier to achieve (Hernandez & Nieto, 2015).

The level of uncertainty increases as the magnitude of distance increases. However, if we consider the positive direction (the destination country/city is more developed), the perceived environment may seem less uncertain. Firms that enter more regulated markets realize that they can benefit from the advantages of such markets (Chan et al., 2008).

3.1.1. Based on these arguments, we hypothesize

Hypothesis 1. *An MNC is likely to make full acquisitions in targets located in more developed countries (positive distance). This likelihood decreases when the target is in a less developed country (negative distance).*

3.2. Ownership and global cities

The IB literature has traditionally analyzed investment location decisions in international markets at the national level (host country) (Jiang, Holburn, & Beamish, 2016; Magnani, Zucchella, & Floriani, 2018; Rasciute & Downward, 2017). However, recent studies have drawn attention to the importance of subnational regions (Meyer, Mudambi, & Narula, 2011), the formation of regional clusters and geographically concentrated firm networks (Lahiri, 2010), to understand the location and entry decisions of MNCs (Goerzen, Asmussen, & Nielsen, 2013). Goerzen et al. (2013) argues that within regional clusters, factors such as global cities due to their unique characteristics can affect the MNC entry mode. The reason is that global cities have three attributes that differentiate them from other cities. These are: a cosmopolitan environment; a high concentration of qualified professional service providers; and a high level of connectivity with other locations (Blevins, Moschieri, Pinkham & Ragozzino, 2016; Goerzen, Asmussen, & Nielsen, 2013).

Global cities have institutions that historically facilitate exchange, are highly open to the outside world, and are recognized as centers of institutional stability because they are accessible and attractive to foreign investment (Goerzen et al., 2013; Sassen, 1991).

The cosmopolitan environment of global cities facilitates knowledge of the local context because the cultural diversity of professionals residing in these cities makes them more open to foreign firms (Riefler et al., 2012), and thus they are more likely to share information with these firms. Likewise, the strong presence of qualified service producers in global cities facilitates access to information on the local context, specifically regarding consumer preferences, regulations, and local management practices (Blevins et al., 2016). The great connectivity of the global city with other locations provides the means to connect and migrate information available in other parts of the company's network to its local operations (Belderbos et al., 2017). Access to information

accelerates learning about the local “modus operandi”, which consequently can lead to a reduction in the level of uncertainty concerning the host environment.

Cross-border acquisitions in a global city will have lower costs and risks because the symmetry of information considerably reduces the uncertainty of operating in these markets. Investors’ perception of external uncertainty is much lower in global cities as their institutions seem more developed, and legitimacy is not a big concern due to the cultural diversity in those cities. Considering the attributes of the global city, we argue that as an MNC recognizes that environment as conducive to the expansion of its activities, it would consequently be more likely to make a greater commitment of resources there than in a non-global city. So, we hypothesize:

Hypothesis 2. *Acquisition in a global city moderates the relationship between institutional distance and ownership, thus increasing the likelihood of full acquisition. The likelihood of full acquisition in any other city is lower than in a global city.*

3.3. Ownership and related acquisitions

Industrial relatedness occurs when a firm acquires another firm that operates in the same field in terms of resources or product similarity. Many acquisitions are carried out to increase the cooperation and interaction of both firms (Weber et al., 2009) and to produce a combined effect that is more significant than the sum of their separate effects. In addition, industry relatedness helps acquirers keep the requirements in the target organization (Prahalad & Bettis, 1986). As a result, the past learning of the acquirer may be more easily transferred to new situations (Malhotra, 2012).

Acquisitions in the same industry are less risky than acquisitions in a different sector, as the acquirer can evaluate and assess both the value of the assets and the growth prospects of the target firm (Capron & Shen, 2007). In addition, familiarity with the target industry mitigates the risk of any opportunistic behavior and eliminates the cost of screening the target firm to evaluate its actual value. Considering the lower risk and the familiarity with the target industry, we argue that acquirers will more likely prefer a full acquisition of the target. Previous studies have found a positive relationship between industry-relatedness and higher ownership by the investing firm. For example, Pehrsson’s (2008) study on a sample of Swedish manufacturing companies doing business in Germany found a positive relationship between Swedish core business and the target business unit and a full control entry mode. Malhotra et al.’s (2011) study on cross border acquisitions (CBAs) with multiple acquirers and targets worldwide also finds that relatedness of acquisitions leads to higher equity participation and moderates the relationship between cultural distance and equity participation.

Additionally, studies that examined the ownership of Japanese firms acquiring US firms (Chen & Hennart, 2004) and the cross border acquisitions of US firms (Chari & Chang, 2009) have concluded that non-related industries are associated with lower shares of equity ownership in host firms. Acquisitions of firms in related sectors reduce uncertainty and make it easier for acquirers to absorb knowledge and manage the post-merger integration process (Contractor et al., 2014).

Based on this discussion, we expect that, everything being equal, firms making related acquisitions will prefer to buy the total capital of the target, hence:

Hypothesis 3. *Related acquisitions moderate the relationship between institutional distance and ownership, increasing the probability of full acquisition of target firms.*

3.4. Ownership and R&D intensity industry

Partial acquisition is preferred because the acquirer can learn how to do business and ensure acceptance and legitimacy in a new market through the local partner. While the institutional development of the target country can significantly facilitate this learning, the MNC cannot disregard the local partner. Depending on the firm’s position in the global value chain, the activities performed may require highly skilled workers if the activities are technology-intensive (Belderbos et al., 2020). Collaboration between the firm’s personnel (expatriates) and local personnel accelerates the acquisition of knowledge, which means that to be effective, expatriates need to know the local practices, safety standards, technological standards and requirements necessary to conduct R&D activities and deal with negotiation practices, union agreements, and local competition (Slangen et al., 2011). Knowledge of context is also crucial for non-technology-intensive activities such as assembly manufacturing, distribution, retailing, and marketing.

Firms entering high-technology industries prefer partial acquisitions due to the tacit knowledge intrinsic to this technology. However, as these firms gain experience in international acquisitions and knowledge management, they are likely to choose full acquisition (Elango et al., 2013). Good knowledge management will make the transaction more effective and not only foster cooperation between the two groups of employees (acquirers and target), but also promote more efficient knowledge transfer, and learning across groups and organizations.

An MNC with technological capability is more likely to make a full acquisition. Likewise, marketing capacity also predisposes MNCs to go for full acquisition. According to Chen and Hennart (2004), the commitment between seller and buyer in a partial acquisition is not verified when the MNC has high technology and marketing capacity. These capabilities allow the MNC to assess the quality of the business and foresee any opportunistic behavior of the target regarding their proprietary technology. Knowledge of the technology and the market increases the probability of a total acquisition as it facilitates integration of the target’s activities. The tacit knowledge that the seller might have is already in the domain of the MNC, and can help avoid the monitoring and coordination costs inherent in a partial acquisition.

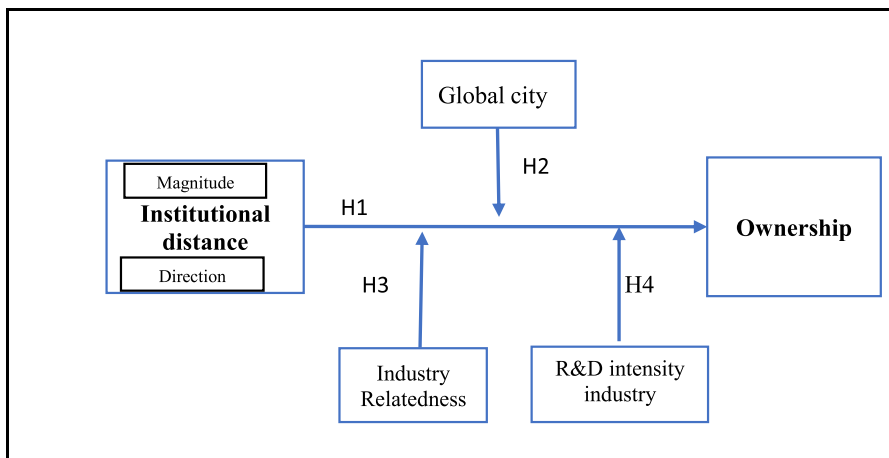
In transactions with high-tech industry targets, institutional distance and direction play an essential role in the level of ownership adopted by the acquirer (Elango et al., 2013). Large negative distances bring an additional risk inherent to the capacity of these institutions to protect intellectual property effectively and the effectiveness of the transaction. Uncertainty regarding the future behavior of this market will lead the firm to attempt a too rapid transition and integration of the firm’s processes. Swift mastery of the target’s technology will make the firm willing to exert greater control over the target’s operations. According to Hennart (2009), the ownership position held in acquisitions would be influenced by how effectively the target and the acquiring firms integrate.

Hypothesis 4. *The R&D intensity of the target firm moderates the relationship between institutional distance and ownership, increasing the probability of full acquisition in high-tech industries more than in low-tech industries.*

4. Methodology

4.1. Conceptual model

Conceptual model.



4.2. Sample

We tested all hypotheses about the ownership structure of multinationals in foreign markets with merger and acquisitions deals carried out over the period 2015–2019 and stored in the SDC Platinum Worldwide Mergers and Acquisitions Database published by Refinitiv. This database is widely used in empirical research to obtain financial data on mergers and acquisitions (Blevins et al., 2016; Cuyper et al., 2015; Ellis et al., 2018; Pinto et al., 2017; Ragozzino, 2009).

Since the focus of this study is on international deals, we removed all domestic acquisitions from the sample. In addition, we removed all acquisitions made by the financial macro industry. We understand that these acquisitions are short-term, where the idea is to incorporate the target firm in an investment portfolio or to restructure it to sell on later. They do not have a long-term goal of staying in the market.

The sample covers 10,262 acquisitions in 33 developed countries (65%) and 133 developing countries (35%), 132 global cities, and 3462 non-global cities. Table 1 summarizes the characteristics of the sample.

4.3. Measurement of variables

4.3.1. Dependent variable

Ownership indicates the acquirer's level of equity participation in the target firm.

The equity acquired was not available in the SDC Platinum database for many deals. Therefore, we resorted to deal synopsis, which in many cases informed the acquisition of minority, majority, or total equity, while other deals were silent. We decided to remove the sample's acquired ownership from the acquisitions that had no information. Acquisitions with up to 95% of equity acquired were named partial acquisitions, as were those that indicated minority or majority participation. Acquisitions over 95% of equity or deals that reported total acquisition of the target were classified as full acquisitions (Chen, 2008; Lahiri, 2017). Thus, ownership is a binary variable coded 1 when the deal is a full acquisition, and 0 when it is a partial acquisition.

4.3.2. Independent variables

The explanatory variable is the *institutional distance* between home and host country based on the six WGI dimensions of governance infrastructure quality compiled by Kaufmann et al. (2009). The six dimensions are: voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption. These dimensions are used to measure institutional quality at the country level (e.g., Slangen & Van Tulder, 2009), and also institutional distance (e.g., Lahiri et al., 2014; Rienda et al., 2021). The estimate of

governance ranges from approximately -2.5 (weak) to 2.5 (strong) governance performance. The institutional distance is measured using the Mahalanobis distance index (between home and host country) (Berry et al., 2010). Mahalanobis methodology is used as it considers the variance-covariance matrix, which improves consistency in the calculation of distances using multiple indicators.

Additionally, we measured four moderating variables. The first is the *institutional direction*, a binary variable that takes 1 when the target country is a developed country and equals zero when it is a developing country or is a country undergoing political and institutional transition. To classify countries, we used the United Nations report entitled "World Economic Situation and Prospects" (United Nations, 2020), which is a global economic analysis jointly produced by the Department of Economic and Social Affairs (UN DESA), and the United Nations Conference on Trade and Development (UNCTAD). We also used the five United Nations regional commissions: for Africa (UNECA), for Europe (UNECE), for Latin America and the Caribbean (UNECLAC), for Asia and the Pacific (UNESCAP), and for Western Asia (UNESWA). The classification of countries as developed, developing and in transition takes into account a series of indicators in terms of trade (imports and exports) and the gross national income per capita (GNI) whose thresholds are compatible with those of the World Bank.

The second variable *Global city* is a binary variable that takes 1 when the city is global and zero otherwise. To distinguish global cities from non-global cities, we adopt the categorization (alpha, beta and gamma) established by the Globalization and World Cities (GaWC) research network created in the Department of Geography at Loughborough University. This research network focuses its studies on the internal structures of each city, making comparative analyses and evaluating the existing relationships between them. A global city was initially defined as the location of the global and regional headquarters of the transnational companies (Beaverstock, Smith and Taylor, 2000). Recently, a more refined definition focused on a single category of MNC - those that are service providers. Global cities have become centers of production and consumption of services specializing in innovative financial instruments and multi-jurisdictional legislation. Global cities concentrate the necessary information and knowledge that give rise to new producers of specialized services. In this way, global cities are categorized and ranked according to the producers of specialized services and their interconnected networks, which establish the level of connectivity with other global networks. The level of connectivity informs the classification of the city in terms of global integration capacity. So, alpha cities have a high level of global integration, beta cities are important cities and link economic regions and states with the global economy, and gamma cities link small regions or states in the global economy. The list of global cities compiled by the GaWC Research Network is available for periods of several years at a time and thus provides a dynamic

Table 1
- Sample characteristics.

Description	Number	Percentage
Ownership	10262	
Full acquisition	5270	51.4
Partial acquisition	4992	48.6
Acquisitions in		
developed countries (33)	6686	65.2
developing and transition (133)	3576	34.8
Acquisitions in		
global cities (132)	3121	30.4
other cities (3462)	7141	69.6
Year of investment		
2015	2164	21.1
2016	1939	18.9
2017	2026	19.7
2018	2168	21.1
2019	1965	19.1
Industry of target		
Consumer Products and Services	1182	11.5
Consumer Staples	795	7.7
Energy and Power	740	7.2
Financials	525	5.1
Government and Agencies	10	0.1
Healthcare	866	8.4
High Technology	1641	16.0
Industrials	1732	16.9
Materials	1068	10.4
Media and Entertainment	739	7.2
Real Estate	329	3.2
Retail	462	4.5
Telecommunications	173	1.7
Industry technology level		
High and medium high	3310	32.3
Low and medium-low	6952	67.7
Industry relatedness		
related	6350	61.9
non-related	3912	38.1

Source: Prepared by the authors

classification of global cities. We used the 2012 list for investments made in 2015, the 2016 list for investments in 2016 and 2017, and the 2018 list for investments in 2018 and 2019. Following Belderbos et al.(2020), we designate only those classified as alpha and beta as global cities. The number of global cities classified as alpha and beta in our sample is 132.

The third moderating variable is *industry relatedness*. The nature of the industry matters, and whether the deal takes place in the same industry or a different sector likely influences the acquirer's decision

Table 2
- Variable definitions and data source.

Variable	Definition	Source
Dependent		
Ownership	An acquisition is classified as full and coded 1 when acquiring firm obtain more than 95% of target equity. Below 95% of equity the acquisition is considered partial acquisition and is coded 0.	SDC Platinum
Independent		
Institutional distance	We use the six dimensions of the WGI index to compute the distance between the host and home country. This distance was calculated using the mahalanobis method (Berry et al., 2010)	WGI indicators
Moderators		
Institutional direction	It is a binary variable coded 1 when the target is developed economy, and equals 0 when the target is a developing or transition economy.	UN DESA. 2020. World Economic Situation and Prospects(WESP)
Global city	It is a binary variable coded 1 when the target city is classified as "Alpha" or "Beta", and zero otherwise.	Beaverstock et al.(1999) and Globalisation and World Cities (GaWC)
Industry relatedness	Binary variable that assumes 1 when the macro industry of acquiror is the same as the target; and 0 otherwise.	SDC Platinum
Target R&D intensity	Categorical variable that measure the R&D intensity of target industry: 1 = high intensity; 2 = low intensity; 3 = medium-high; 4 = medium-low.	OECD
Control		
Type of industry	Categorical variable that informs the type of target industry and comprises 13 different industries(see Table 1 for a description)	SDC Platinum
Year of acquisition	Acquisition deals from 2015 to 2019	SDC Platinum

Source: Prepared by the authors

regarding target ownership, as the amount of equity participation may affect the acquirer risk-return tradeoff (Malhotra et al., 2011). We concluded industry relatedness existed if the acquirer and the target macro industry matched. We rely on the industry classification adopted by SDC Platinum in the acquisitions database. Our sample includes 13 different macro industries, which are listed in Table 1. Deals with industry relatedness were assigned a score of 1, and those where the acquirer and target macro industry did not fit, were coded as 0.

The fourth moderating variable is the technology intensity of the target. In line with previous literature, we used the OECD classification of technology intensity in four groups. (high, low, medium-high and medium-low) (Claver & Quer, 2005; Dow & Larimo, 2009; Rienda et al., 2021). In this way, the Target R&D intensity is a categorical variable coded as "1" when the target industry is high technology, "2" for low technology, "3" for medium-high technology, and "4" for medium-low technology. An example of high intensity is the biotechnology industry in the healthcare macro industry, and professional services in the consumer products and services macro industry is an example of low intensity. In medium-high intensity, we have the chemicals industry in the macro industry of materials, and in medium-low intensity a good example is the publishing industry belonging to the macro industry of media and entertainment.

4.3.3. Control variables

Consistent with current research, in our analysis we included control variables that can influence the ownership choice of MNCs.

The Type of industry is a categorical variable that controls for the type of target industry. There are 13 different macro industries in our sample. Data are extracted from the SDC Platinum database. Finally, the completion of the deals is controlled with a variable year of acquisition, which ranges from 2015 to 2019.

4.3.4. Statistical method

As the dependent variable (ownership) is a dummy we used the logistic model to test the hypothesis and estimate the impact of institutional distance on the binary decision outcome (with 1 for full acquisitions and 0 for partial acquisitions). Probit and Logit models belong to the family of generalized linear models widely used in the case of binary dependent variables. The extant literature argues that the choice between probit and logit is a matter of taste since in most applications it does not seem to make much difference (Greene, 1997), and both provide identical substantive conclusions (Gill, 2001; Long, 1997). Logistic regression has been frequently used in empirical tests and has

Table 3
- Descriptive statistics and correlation coefficients (Global cities database).

Variables	Mean	S.D.	Min	Max	1	2	3	4	5	6	7
1 ownership	0.483	0.500	0	1	1.000						
2 institutional distance	5.812	4.559	0.24	33	-0.074 (0.000)	1.000					
3 institutional direction	0.652	0.477	0	1	0.125 (0.000)	-0.455 (0.000)	1.000				
4 industry relatedness	0.614	0.487	0	1	0.076 (0.000)	-0.025 (0.169)	0.033 (0.068)	1.000			
5 target RDIntensity	2.271	1.052	1	4	-0.034 (0.061)	0.029 (0.105)	-0.025 (0.164)	0.123 (0.000)	1.000		
6 type of industry	6.520	3.433	1	13	-0.029 (0.104)	-0.018 (0.307)	-0.037 (0.037)	0.087 (0.000)	0.152 (0.000)	1.000	
7 year	2017.017	1.424	2015	2019	0.047 (0.009)	-0.081 (0.000)	0.038 (0.034)	0.001 (0.968)	-0.026 (0.151)	-0.029 (0.104)	1.000

Note: pvalue between parenthesis

Table 3a
- Descriptive statistics and correlation coefficients (Other cities database).

Variables	Mean	S.D.	Min	Max	1	2	3	4	5	6	7
1 ownership	0.527	0.499	0	1	1.000						
2 institutional distance	6.082	5.039	0.13	99	-0.109 (0.000)	1.000					
3 institutional direction	0.651	0.477	0	1	0.131 (0.000)	-0.451 (0.000)	1.000				
4 industry relatedness	0.621	0.485	0	1	0.017 (0.143)	0.001 (0.931)	0.012 (0.328)	1.000			
5 target RDIntensity	2.385	1.032	1	4	-0.033 (0.005)	0.077 (0.000)	-0.096 (0.000)	0.097 (0.000)	1.000		
6 type of industry	6.406	3.254	1	13	-0.004 (0.742)	-0.003 (0.795)	-0.020 (0.089)	0.050 (0.000)	0.127 (0.000)	1.000	
7 year	2016.969	1.414	2015	2019	0.064 (0.000)	-0.036 (0.003)	0.046 (0.000)	-0.022 (0.067)	-0.050 (0.000)	-0.015 (0.195)	1.000

Note: pvalue between parenthesis

Table 4
- Logistic regression estimates of the likelihood of partial versus full acquisitions.

Variables	Global cities		Other cities		Full database	
	Model 1	Model 1a	Model 2	Model 2a	Model 3	Model 3a
Independent variables						
institutional distance	-0.008 (0.009)	0.003 (0.025)	-0.028 *** (0.006)	-0.026 (0.017)	0.022 *** (0.005)	-0.023 (0.014)
direction	0.529 *** (0.088)	0.820 *** (0.149)	0.440 *** (0.058)	0.701 *** (0.092)	0.458 *** (0.048)	0.726 *** (0.078)
global city		-		-	-0.159 *** (0.045)	-0.276 *** (0.072)
industry relatedness	0.379 *** (0.083)	0.400 * (0.128)	0.105 * (0.053)	0.069 (0.082)	0.187 *** (0.044)	0.171 * (0.069)
target RD intensity						
low	0.198 (0.301)	0.107 (0.326)	-0.256 (0.165)	-0.323† (0.186)	-0.128 (0.143)	-0.199 (0.160)
medium-high	0.140 (0.270)	0.419 (0.355)	-0.317 * (0.150)	-0.415 * (0.181)	-0.195 (0.130)	-0.261 (0.159)
medium-low	-0.166 (0.286)	-0.458 (0.321)	-0.370 * (0.158)	-0.446 * (0.186)	-0.319 * (0.138)	-0.435 * (0.159)
Interactions						
direction x institutional distance		-0.045 * (0.019)		-0.041 *** (0.011)		-0.042 *** (0.010)
global city x institutional dist.		-		-		0.020 * (0.010)
ind. relatedness x institutional dist.		-0.001 (0.017)		0.006 (0.011)		0.003 (0.009)
target RDintensity x institutional dist.						
low intensity		0.011 (0.023)		0.012 (0.015)		0.011 (0.013)
medium-high intensity		-0.046 (0.041)		0.019 (0.019)		0.013 (0.017)
medium-low intensity		0.044† (0.027)		0.012 (0.017)		0.019 (0.014)
Constant	-0.808 * (0.343)	-0.925 * (0.375)	0.017 (0.200)	-0.053 (0.221)	-0.162 (0.171)	-0.220 (0.190)
LR chi 2	173.85	186.45	263.78	280.09	398.48	424.05
df	22	27	22	27	23	29
Pseudo R2	0.0402	0.0431	0.0267	0.0284	0.028	0.0298
Correctly classified (%)	60.33	59.98	58.84	58.89	58.07	58.08
AIC	4195.105	4192.506	9660.981	9654.667	13868.137	13854.574
BIC	4334.161	4361.791	9819.074	9847.128	14041.805	14071.66
N	3.121	3.121	7.141	7.141	10.262	10.262

Notes: All modes were run with year (2015–2019) and type of industry dummies (13), not shown above. Standard error between parenthesis.

† p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001. AIC means Akaike's information criteria, which generally tries to find unknown model that has high dimensional reality. BIC means Bayesian information criteria, which comes across only true models. BIC is good for consistent estimation.

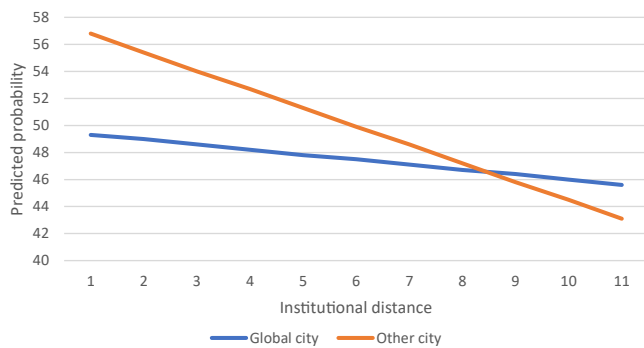


Fig. 1. - Predict probability of full acquisition over the institutional distance.

produced reliable statistical analyzes in studies on the entry mode choices (Arslan & Dikova, 2015; Dikova & van Witteloostuijn, 2007). To analyze the influence of independent variables on ownership in subnational acquisitions, we split our database into acquisitions in global cities (3121 observations) and in other cities (7141 observations).

5. Results

Tables 3 and 3a display the descriptive statistics and correlation coefficients of all the variables of the global cities and other cities' databases respectively. The correlation between pairs of variables is low for both, indicating that multicollinearity is not a concern in the regression models. We confirmed this by checking the variance inflation factor of all variables, and found they were lower than the commonly accepted threshold of 10 (Hair, Black, Babin, Anderson & Tatham, 2009), with the highest value being below three. Additionally, we tested the independent variables to check whether their coefficients equal zero. The chi2 of the likelihood-ratio test was lower than 0.05, indicating that the null hypothesis may be rejected.

Table 4 reports the results of the logit analyses including the regression coefficients and standard errors of the independent variables, as well as all the interactions and their influence on ownership (dependent variable).

Models 1 and 2 show the regression coefficients and the direct influence of independent variables on the likelihood of partial versus full acquisitions in global cities and other cities respectively. Models 1a and 2a add the effects of interactions to the previous models. Models 3 and 3a shows the results of logit analysis when we compute only the coefficients of independent variables (model 3) and add the coefficients of interactions (model 3a), while we consider all acquisitions (the full database).

Model 1 shows that institutional distance has a negative sign but is not significant ($\beta = -0.008$, $p = 0.394$), which indicates that

institutional distance does not seem to influence the ownership decision regarding acquisitions in global cities. However, in other cities (model 2), the institutional distance coefficient is negative and significant ($\beta = -0.028$, $p < 0.001$) indicating a decrease in the probability of full acquisition as institutional distance increases. Empirical evidence demonstrates that the institutional distance between home and host negatively affects the entry mode, with the MNC decreasing the commitment of resources when large institutional distances are involved. However, this study demonstrates that global cities escape this rule. It seems that the perception of uncertainty arising from institutional distance does not affect MNC decisions when the target is in a global city.

The direction variable has a positive coefficient and is statistically significant in global cities (model 1) ($\beta = 0.529$, $p < 0.001$) and in other cities (model 2) ($\beta = 0.440$, $p < 0.001$). This means that global cities and other cities are sensitive to host country institutional development and there is a greater likelihood of full acquisition when it takes place in a county that is more developed than the MNC's home country. This confirms hypothesis one which argues that the MNC is likely to opt for full acquisition in more developed countries.

The industry relatedness variable is statistically significant both for global cities ($\beta = 0.379$, $p < 0.001$) and for other cities ($\beta = 0.105$, $p < 0.05$). Both in global cities (model 1) and other cities (model 2), there is a higher probability of full acquisition in a related industry than there is in an unrelated industry.

The direct effect of the target RD intensity variable is not significant at all technology intensity levels when the target is in a global city (model 1). This result indicates that the target R&D intensity does not affect ownership in a global city. In other cities, the coefficients of the target RD intensity variable are only significant in medium-high ($\beta = -0.317$, $p < 0.05$) and medium-low ($\beta = -0.370$, $p < 0.05$) intensity (model 2). Negative coefficients indicate that investors are less likely to have full ownership when compared to targets with high RD intensity (base category) located in other cities.

Models 1a and 2a show the coefficients of interaction of institutional distance and direction, industry relatedness and target RD intensity in both global cities and other cities. The negative sign of the interaction ($\beta = -0.045$, $p < 0.05$) indicates that when direction changes to one (target in developed country) the probability of full acquisition decreases in global cities (model 1a). The same effect is observed in other cities (model 2a). The negative sign of the interaction between institutional distance and direction ($\beta = -0.041$, $p < 0.001$) increases the negative effect of the relationship between institutional distance and ownership and indicates a decrease in the probability of full ownership of targets in other cities located in developed countries. This finding does not confirm our Hypothesis 2 in that the negative sign of the interaction between institutional distance and direction indicates a decrease in the probability of full acquisition in global cities, and not to

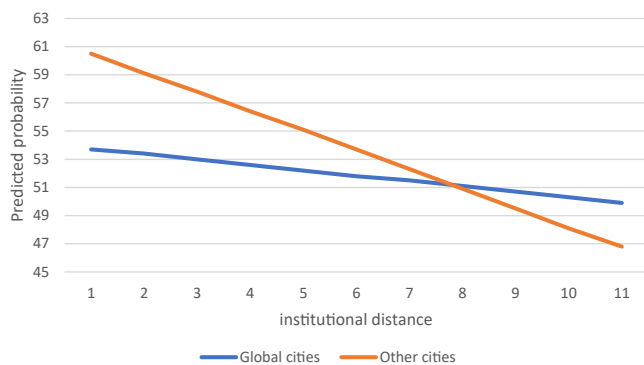


Fig. 2. - Predicted probability of full acquisition - the interaction effect between institutional distance and positive direction (targets in developed countries).

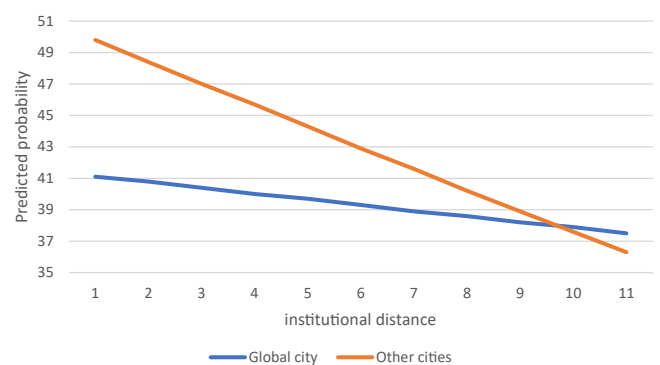


Fig. 3. - Predicted probability of full acquisition - the interaction effect between institutional distance and positive direction (targets in developed countries).

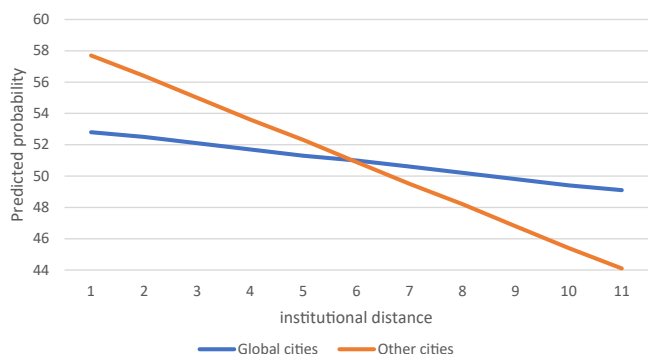


Fig. 4. - Predicted probability of full acquisition - the interaction effect between institutional distance and related industries.

an increase in that likelihood as we had expected.

The industry relatedness interaction with institutional distance in models 1a and 2a is negative for both global cities and positive for other cities. Despite the sign of the interaction coefficient, there is no evidence that the related industry exerts any influence on the relationship between institutional distance and ownership, both in global cities and in other cities, due to the non-statistical significance of this variable. Thus, we are not able to confirm Hypothesis 3.

The interaction of the variable target RD intensity with institutional distance is statistically significant (at the 90% confidence level) in global cities (model 1a) only in medium-low intensity industry ($\beta = 0.044$, $p < 0.10$). The positive signal of the coefficient indicates that the interaction increases the likelihood of full acquisition in medium-low intensity industries. Model 2a shows that the interaction of target RD intensity and institutional distance is not significant in all levels of RD intensity for targets in other cities. These findings do not confirm our Hypothesis 4, as we had expected that the likelihood of full acquisition would be greater in high RD intensity industries than in low RD intensity industries.

5.1. Additional tests

We performed marginal tests to assess the discrete change that the probability of full versus partial ownership would have on the relationship between institutional distance and ownership when we consider how direction, industry relatedness and target RD intensity interact with institutional distance. Marginal effects are estimates of the change in an outcome for a change in one independent variable, all other variables being constant. Marginal effects are a partial derivative that informs the discrete change in a result, which is the difference in the prediction when the variable is 1 compared with the prediction when the variable is 0 (Long & Freese, 2014). Fig. 1 shows the discrete change

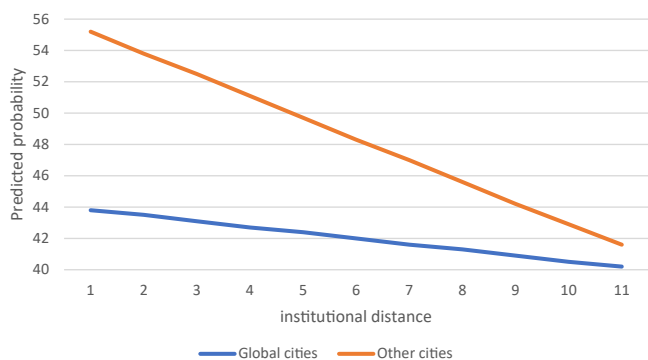


Fig. 5. - Predicted probability of full acquisition - the interaction effect between institutional distance and unrelated industries.

in the probability of full versus partial acquisition over the institutional distance when the acquisition takes place in global cities and in other cities.

The probability of a full acquisition in a global city is lower than in any other city when we consider only the effect of institutional distance on ownership. In fact, the chance of a partial acquisition in a global city is greater than a full acquisition, while the opposite is true in a non-global city.

Fig. 1 makes it clear that institutional distance negatively affects ownership, which is in line with extant literature. It is worth mentioning that the MNC that acquires in a global city is less sensitive to the effects of institutional distance and opts for partial acquisitions regardless of the distance. Acquisitions in other cities, on the other hand, show the preference of MNCs for a total acquisition when institutional distances are small. As the distance increases, the commitment of resources decreases, and they choose a partial acquisition when the distances are great. This result partially contradicts our Hypothesis 2 which states that the probability of total acquisition in a global city is greater than in any other city. Fig. 1 shows that this only happens at large institutional distances where the probability of total acquisition is higher in global cities compared to other cities.

When we compute the discrete change in probability as a function of the interaction effect between institutional distance and direction, we note that the probability of full acquisition is higher in targets located in developed countries (Fig. 2) than in developing countries (Fig. 3). In fact, in positive direction (target is in developed country) MNCs choose full acquisition in global cities regardless of the distance, and in other cities they choose full acquisition in small distances and partial acquisitions in larger distances (Fig. 2). On the other hand, in negative direction (target is in developing country), the probability of full acquisition is lower, with MNCs preferring partial acquisitions in targets both in global cities and in other cities (Fig. 3).

The discrete change in the probability makes it clear that MNCs prefer to invest more in institutionally more developed countries than in developing countries, which is in line with extant literature. This result shows that MNCs are likely to acquire a greater stake in the target company in other cities than in global cities, except when large distances are involved and then the situation is reversed. Figs. 2 and 3 show that over large distances MNCs choose to acquire more equity in global cities than in other cities.

This finding partially confirms Hypothesis 2, which posits that the likelihood of full acquisition is greater in global cities than in other cities. This is true only when large distances are involved.

The positive coefficients of the industry relatedness variable in logistic regression reveal that there is a likelihood of full acquisition in related industries (Table 4, models 1 and 2). The change in the predicted probability provides a fine-grained analysis showing that when investing in global cities and in other cities, MNCs make a full acquisition in related industries involving small distances and a partial acquisition when larger distances are involved (Fig. 4). When we compare acquisitions in unrelated industries (Fig. 5), we detect that the probability of full acquisition in these industries is lower than in related industries. This may indicate that the MNC chooses a lower equity stake when the target belongs to an unrelated industry. Thus, Hypothesis 3 is confirmed.

Computing the probability of the interaction of Target RD intensity with institutional distance, we notice that the probability of full acquisition is higher for acquisitions in industries with high RD intensity compared to industries with low RD intensity (Table 5). However, this is not true in global cities. In these cities, the probability of full acquisition in low RD intensity industries is higher than in high intensity industries. Thus Hypothesis 4 is confirmed for acquisitions in other cities, but not for acquisitions in global cities. In general, MNCs seem to commit more resources when acquiring technology-intensive targets in other cities. However, in acquisitions in global cities, MNCs seem to commit a smaller volume of resources, except in acquisitions of targets with LOW and medium-high RD intensity at medium and large institutional

Table 5

- Predict probability of full acquisition - interaction effect between institutional distance and RD intensity.

RD intensity	Distances - global cities			Distances - other cities		
	small	medium	large	small	medium	large
High RD intensity	47.7	45.8	44	62.4	55.7	48.9
Low RD intensity	52.4	50.5	48.6	56.4	49.5	42.7
Medium high intensity	51	49.1	47.3	54.9	48	41.3
Medium low intensity	43.8	42	40.2	53.6	46.7	40

Note: Computed by the authors

distances. It appears that at medium and large institutional distances, the MNC is more risk-prone in low and medium-high RD intensity acquisitions in global cities compared to acquisitions in other cities.

When computing the predicted ownership probabilities for a variable, the other variables in the model are set at means. To understand the influence of the target industry on ownership, we calculated the predicted probability of full acquisition for each of the 13 industries of our sample. [Hypothesis 2](#) states that in global cities, investors would prefer full acquisition. And although margins show us that partial acquisitions are higher than full acquisitions in global cities, this is not true for all industries, as shown in [Table 6](#). We found that for some industries the probability of full acquisition is likely in both global cities and other cities (Consumer products and services, Financials, Healthcare, Materials and Telecommunications). For other industries, the preference is for partial acquisitions in global cities and in other cities (Energy and Power, Media and Entertainment and Retail). There are 5 industries whose probability of full acquisition is likely only in other cities (Consumer Staples, Government and Agencies, Industrials and Real State), and for the high technology industry the probability of total acquisition is higher in global cities compared to other cities. Thus, [Hypothesis 2](#) is partially confirmed.

6. Discussion

Although the institutional perspective emphasizes that the need to gain legitimacy outweighs the search for efficiency, perhaps this tradeoff is not radical. On the contrary, the results found in this study may signal the search for this balance. However, they may also clarify that with regard to ownership, other factors are added to the legitimacy and efficiency of decision-making. For example, analysis of international acquisitions over the five-year period (2015–2019) reveals that the institutional distance affects the ownership decision and that the MNC is likely to commit fewer resources as the distance increases. As the literature informs, and the empirical tests in our study confirm, direction

Table 6

- The predict probability of full acquisition by industry.

Industries	Global cities	Other cities
Full acquisitions in both cities		
Financials	52.6	60.7
Materials	64.6	61.1
Telecommunications	76.5	67.1
Full acquisitions only in global cities		
High Technology	53.1	48.3
Full acquisitions only in other cities		
Consumer Products and Services	50.7	54
Consumer Staples	40.9	53
Government and Agencies	34.9	70.5
Industrials	41.7	53
Real Estate	33.5	58.6
Partial acquisitions in both cities		
Energy and Power	46.7	49.8
Healthcare	50.9	50.4
Media and Entertainment	40.3	38.1
Retail	38.5	47.9

Note: Computed by the authors

moderates and decreases the negative effect of institutional distance on ownership. Thus, acquisitions in developed economies (positive direction) decrease the perception of risk and the MNC is likely to commit a greater volume of resources. In the negative direction (acquisitions in developing economies) the perception of uncertainty increases and MNCs reduce participation in the acquiree's equity to lower the investment risk. This is not fully confirmed when we analyze acquisitions at the subnational level. Although the decision to commit fewer resources as distance increases is maintained in investments in global cities and in other cities, MNCs have a lower perception of risk in the acquisitions it makes in global cities, mainly involving large institutional distances. However, MNCs prefer to invest less in the acquisitions they make in global cities than in other cities involving small institutional distances.

It would be expected that in global cities, where there are developed institutions with a cosmopolitan environment and high connectivity with the world, the acquirers' perception of risk would be low and, consequently, they would increase their participation in the acquired company. However, the predicted probabilities of full acquisition in global cities is lower than in other cities even in small distances.

It seems that the attributes of global cities do not appeal to the needs of some MNCs or, these attributes are not so important for MNC activities. The search for efficiency can override the search for legitimacy. Thus, transaction cost theory may help explain MNCs' propensity to invest more in other cities. Despite the global city being a great service provider center, the MNC needs material resources that may be in other cities. In addition, and depending on the industry, these resources, such as physical space, for example, are located outside major centers.

The proximity and availability of these resources affect MNCs' efficiency and may justify a higher equity participation if the target is in other cities. This is the case of Industrials and Consumer Staples, two industries where the probability of full acquisition is higher in other cities than in global cities. Automobiles & Components and Machinery are mid industries of the Industrials macro industry whose largest acquisitions were in other cities (85% and 87% respectively) and who admittedly seek targets that are generally located in other rather than global cities due to the nature of their activities. The mid industries of Food & Beverage and Textiles & Apparel belonging to the macro-industry of Consumer Staples also require proximity to suppliers, lower installation and facility costs, resources that are generally not available in global cities².

We found that acquirers prefer partial acquisitions in three industries in both global cities and other cities. The common factor is that these three industries (Energy and Power, Media and Entertainment and Retail) are mature and have low technology intensity. In addition, these industries are market seeking and look for the expertise of the target and their institutional knowledge of the local market to kick start the post integration process. To achieve the cooperation of the acquired firm, the MNC grants a share of the capital and, in some cases, even control of the subsidiary.

However, full acquisitions are likely in five industries in both global cities and other cities (Consumer products and services, Financials, Healthcare, Materials and Telecommunications). The nature of these industries suggests a good knowledge of their business and strong organizational processes. So, it seems that the reason for the full acquisition of target firms in these industries is internal pressure to adopt the managerial practices of the parent company. Under such pressure, the firm acquires full control of the target to accelerate the post-merger integration and to implement the managerial practices that would support the firm's competitive advantages in the new market.

This study can confirm the impact of industry-relatedness on ownership. The results show that equity participation in related industries is more significant than in non-related industries. Furthermore, acquisitions in both global cities and other cities are more likely in related industries than unrelated industries. Finally, these results indicate that in institutional distances with positive direction (acquisitions

in more developed countries) and negative direction (acquisitions in less developed countries), investors are more likely to invest in targets belonging to related industries than in targets in unrelated industries.

The literature shows that acquisitions in related industries are less risky (Capron & Shen, 2007) and positively correlate with higher equity by the investment firm (Malhotra et al., 2011; Pehrsson, 2008). In contrast, acquisitions in unrelated industries are associated with lower equity participation in the acquired firm (Chari & Chang, 2009; Chen & Hennart, 2004). In addition, acquisitions in related industries reduce uncertainty and facilitate technology absorption and the post-merger integration process (Contractor et al., 2014).

The technological level of the target firm influences the probability of full acquisition differently, with acquirers opting for full acquisition when targets are in high RD intensity industries in other cities. As a result, the likelihood of full acquisition is higher than for low technological level. Additionally, we noticed that acquirers prefer partial acquisition when targets are in high RD intensity industries in global cities (Table 5).

The literature posits that firms entering high-technology industries would prefer partial acquisitions, but when firms acquire experience in international acquisitions and knowledge management, they are likely to choose full acquisition (Elango et al., 2013). This study shows that acquirers prefer partial acquisition in high RD intensity industries in global cities and full acquisition in other cities.

The most common reason for acquirers to seek technology acquisition is to access products or technologies that are in-house or under development by the target firm (Birkinshaw et al., 2000; Graebner, 2004; Ranft & Lord, 2000). Acquirers often hope to create value by combining target technology with the acquirer's technical, manufacturing, marketing, and sales capabilities (Graebner, 2004; Schweizer, 2005). The sample collected for this study reveals that acquirers carry out 60% of acquisitions in high-tech industries from the same industry as the target. This could mean that the acquirer already has dominion over, or a good knowledge of the target's technology, and the strategy is to expand its operations to new markets. The knowledge of the technology (of product or process) facilitates integration and does not require the cooperation of target personnel to transfer it. Full acquisition can be justified to implement the HQ's management practices and processes and benefit from its competitive advantage.

Another reason acquirers seek out technology firms is to acquire capabilities included in the knowledge of individuals and teams within the target firm (Graebner et al., 2010). Acquirers are typically concerned with obtaining existing technology and accessing the knowledge needed to develop future generations of products (Mayer & Kenney, 2004; Ranft & Lord, 2000). The absorption of this knowledge requires the cooperation of the target's leaders and personnel. Partial acquisition and incentives to retain the target personnel may ensure the transfer of knowledge and the continuity of the firm's operations.

7. Conclusion

By incorporating the concept of direction in the magnitude of distance, this study contributes to increasing our knowledge about the implications of institutional distance on ownership in cross-border acquisitions. It makes a second contribution by introducing the concept of global cities in studies on what influence institutions at the subnational level have on ownership decisions. Finally, its third contribution is to use neo-institutionalism as a theoretical support for studying the effects of the asymmetry of institutional distances on ownership decisions in cross-border acquisitions.

The scarcity of indicators that measure the quality of institutions at the city level was one of the limitations of this study. The indicators that do exist cover a limited number of cities and consequently limit the sample size. These are: a) Gross development product (GDP) per capita and Population density collected and updated by the Organization for Economic Co-operation and development (OECD); b) Subnational HDI,

which is a subnational version of the Human Development Index of the United Nations Development Program (UNDP); and c) a Subnational doing business collected by the World Bank. Nevertheless, future studies can use these indicators, which should be improved to cover a larger number of cities or use other proxies to measure economic and institutional development at the subnational level.

We were not able to collect the ownership percentage for all acquisitions. The deal synopsis did not provide this information either, and even when it was available, it only mentioned minority or majority ownership. We created, therefore, a binary dependent variable to identify minority and majority. Acquisitions that reported the percentage were converted to one of these classifications. However, as these two levels do not consider the nuances that a continuous variable would capture, we suggest that future studies use ownership percentages to obtain a better distribution of data and results. This would allow for a better understanding of the variations in ownership caused by variations in the subnational institutional development.

Our study used a control variable at the firm level and another at the industry level. Due to the many targets, it was impossible to access all other databases to collect firm-level data. We suggest that future studies employ more control variables, such as the acquirer's international experience, firm age, and size. These variables will improve the model and lead to results that could bring other insights.

Declaration of Competing Interest

The authors declare not having any financial and personal relationships with other people or organizations that could inappropriately influence (bias) this work.

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Notes

1 - Industrial districts and clusters represent the sector as the unit of economic analysis having been overtaken. However, while the fact that the district has been overtaken leads to the proposal of the 'local community' as the unit of analysis, with the industry becoming its economic component, the cluster is a 'set of interrelated industries' (Porter, 1990) or, in the latest version, it is a geographically based 'group of interconnected companies' (Porter, 1998). The industrial district should be understood from the territorial perspective (the local community and the industry related to it), while the cluster should be understood from the sectoral perspective (the firm and the related industry) (Sforzi, 2009). The industrial district originates from the local community, which owns or builds a production specialty, and the way in which this community organizes production. Production is organized by small firms that specialize in one or a few stages of the same production process (Sforzi, 2009).

Clusters may be seen as 'a concentration of "inter-dependent" firms within the same or adjacent industrial sectors in a small geographic area' (Asheim & Coenen, 2005, p. 1174).

A global city can be a megacity (it usually is). While one is defined in quantitative terms (megacity), the other is defined in qualitative terms (global city). Despite both exerting regional and global influence, the global city is generally considered a focal point in the global economic system.

2 - A complete list of macro and mid industries is available upon request.

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