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INSTITUTIONAL DISTANCE AND INTERNATIONAL BUSINESS STRATEGIES IN EMERGING ECONOMIES

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Abstract
The concept of ‘distance’ has been used by international business scholars to explain variations in international business strategies and operations across countries. The more distant a host country is from the organizational centre of a multinational enterprise (MNE), the more it has to manage cultural, regulatory and cognitive differences, and to develop appropriate entry strategies, organizational forms, and internal procedures to accommodate these differences.

Scholarly research has focused on the concept of psychic distance, which has been narrowed down in empirical work to indices based on Hofstede’s work on culture. However, these measures capture only very partially the dimensions of distance of concern to international business. In this paper, we show how the broader theoretical concept of institutional distance, which incorporates normative, regulatory and cognitive aspects, affects entry strategies. Specifically, our theoretical arguments suggest that the impact of distance varies with different aspects of the concept of institutional distance, and that this impact interacts with both the investor’s experience and with the relative importance of the pertinent operation for the investing MNE. Using a unique dataset of foreign direct investment in emerging economies that incorporates multi-host as well as multi-home countries, we find empirical support for our propositions, and provide an explanation for apparently inconsistent results in the previous literature.

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Non-Technical Abstract

The concept of “distance” between the source and host firm or economy has been employed frequently in the international business literature to explain variations in business strategies. The idea is simple; the more “distant” a host country is from the organisational centre or centres of an investing multinational enterprise (MNE), the more it has to bridge differences in culture, laws and regulations as well as in organisational practices and routines. Greater distance will probably reduce foreign direct investment (FDI) flows and alter their character.

In this paper, we consider how distance impacts when the MNE is investing into an emerging economy. This makes the issue of distance more complicated because the business environment will be less developed and more idiosyncratic. For example, regulatory norms may be different, law enforcement less effective and corruption may be more pervasive. The challenges of adaptation may be less serious for MNEs from other emerging markets than for those from developed ones.

This paper makes a number of contributions to the literature about the effects of distance on foreign direct investment. Firstly, it extends the concepts of distance by distinguishing three notions: normative distance, regulatory distance and cognitive distance. Normative distance refers to differences in beliefs, values and norms of the host and source societies. Regulatory distance describes differences in the ground rules for doing business – laws, regulations and rules. Finally cognitive distance refers to differences in social knowledge and cognitive categories. One of the main contributions of the paper is to identify the expected impact of these three measures of distance on a major aspect of international business strategy; the mode of entry. Strikingly, we argue that different types of distance have different effects on entry mode; regulatory distance is predicted to enhance the probability that entry will take the form of a greenfield. Normative and cognitive distance is argued to have the opposite effect, increasing the probability of entry through acquisition or joint venture.

We also consider whether the impact of distance can be moderated by other factors, namely the relative size of the affiliate and the foreign parents’ international experience. We argue that, as the size of the affiliate increases relative to the MNE itself, the probability of entry by greenfield mode will be reduced. We also hypothesise that international experience acts to counter the predicted impact of the three forms of distance. For example, we propose that MNEs with little experience in emerging markets are more likely to choose a greenfield mode
of entry when the regulatory distance is large. The converse is predicted to hold for normative and cognitive distance.

We test our predictions on a unique new dataset of foreign direct investments to Egypt, India, South Africa and Vietnam. Our random sample represents between 10% and 30% of all foreign direct investments to these economies between 1990 and 2002. The sample originates from 48 home countries. Our estimating equations are very robust and contain controls for most of other major factors influencing entry mode e.g. motive for entry, R&D intensity of the host firm and source of the main resource. We find that regulatory distance does indeed increase the propensity for greenfield investment, while cognitive distance has diametrically the opposite effect on entry mode. Though normative distance is found not to have a significant direct effect, it interacts with both investors’ international experience and the relative size of the affiliate in the predicted manner. We find that the overall impact of relative size on the propensity to establish a greenfield investment is negative when normative distance is small but turns positive for high values. Prior experience in emerging markets does indeed act to mitigate the effects of distance, but only if the distance between home and host contexts is high.

Our analysis suggests that distance is indeed an important factor in explaining business strategies, but that it is a multi-faceted concept. The paper also reveals that business strategies have an analytically distinctive character in emerging markets. For example, the process of expansion to foreign markets usually goes from contractual arrangements and joint ventures to wholly owned subsidiaries. In emerging markets, the challenges of a JV may be considerable so MNEs may prefer instead to build a small greenfield operation first and use this as the basis to search for a suitable local partner in a larger project.
INTRODUCTION

The concept of ‘distance’ has been of central interest to international business scholars’ attempts to explain variations in international business strategies and operations across countries. The more distant a host country is from the organizational centre of a multinational enterprise (MNE), the more it has to bridge differences in culture, in laws and regulation, and in organizational practices and routines. The MNE has to adapt its entry strategies, organizational forms, and internal procedures to manage these differences (Johansen and Vahlne, 1977; Kogut and Singh, 1988; Kostova and Roth, 2002).

Institutional distance is of particular concern for Western MNEs operating in emerging economies, where idiosyncratic regulatory environments may inhibit international business (Henisz, 2003). For instance, legal codes governing market transactions may be less extensive, and law enforcement may be less efficient, for instance with respect to intellectual property rights (IPR). The challenges of adaptation may be less serious for MNE from developing countries, e.g. Asia. Organizations must develop managerial and commercial practices and routines for filtering and processing information that suit the variations in institutions. Institutional differences between source and host countries affect investors’ internal transfer of knowledge and practices, and their external quest for legitimacy in the local context, and therefore have to be accommodated when designing business strategies (Xu and Shankar, 2003; Luo, 2001; Meyer, 2001). The more the host economy differs from the context with which the MNE is familiar, the more difficult the adaptation. However, with a few notable exceptions (Xu and Shenkar, 2002; Xu, Pan and Beamish, 2004), researchers have not yet come to grips with these problems.

The international business literature has developed the concept of “psychic distance” to address some of these issues (Johansen and Vahlne, 1977); and this is usually narrowed down in empirical studies by employing an index first developed by Kogut and Singh (1988) on the basis of Hofstede’s (1980) work on national culture. For Hofstede, culture mainly encompasses the norms and beliefs held by individuals in a country. Several studies use the Kogut-Singh index to show that the distance between FDI’s host and home countries influences strategies pursued by MNE, for example entry mode choice (Kogut and Singh, 1988; Anderson and Gatignon, 1986; Agarwal, 1994). However, psychic distance is a broad concept, and aspects other than cultural norms influence business strategies (Ghemawat, 2001; Shenkar, 2001). When entering a foreign market, MNEs interact with a complex local context that also includes regulatory and cognitive institutions (Scott, 1995/2001). MNEs have to adjust to the multifaceted institutional environment of each country where they operate (Meyer, 2001; Henisz, 2003; Peng, 2003), and this adjustment is more challenging, the more the foreign environment differs from the MNE’s home territory.
In this paper, we build on recent theoretical work by Scott (1995/2001) and Kostova (1998) to extend the concept of distance by incorporating normative, regulatory and cognitive elements (Kostova and Roth, 2002; Xu and Shankar, 2003). Theoretical considerations suggest that strategic decisions in international business may be affected in very different ways by the different dimension of distance. We investigate these effects for a key decision in international business, investors’ likelihood of entering by greenfield investment; and we investigate the moderating effects of investor and project characteristics on the distance to mode relationship. We therefore add to the literature on entry mode choice (e.g. Agarwal, 1994; Park and Ungson, 1997; Brouthers and Brouthers, 2001) by studying a broader concept of distance, and their interactions with other variables.

We propose that three indices should be used jointly to capture the relevant aspects of distance to international business; the Kogut-Singh index to capture the normative dimension being complemented with indices of regulatory and cognitive distance based on widely available country-level data. These measures are designed to be employable for a large range of research issues in international business. We empirically test our propositions with these measures, employing a multi-host multi-home country dataset suitable for testing the effects of distance. We thus improve over prior studies that typically employ single-host multi-home, or multi-home single-host country datasets. We generate the dataset with a questionnaire survey of foreign investors in India, Vietnam, Egypt and South Africa, four countries at different stages of economic development and with substantial differences in their normative, regulatory and cognitive environments. The investors in the sample originate from 48 home countries, including both industrialized economies and emerging economies. The special appeal of this dataset is the high variation of institutional contexts between both source and recipient countries, so the results are unlikely to be driven by the idiosyncrasies of a particular source or host country.

In support of our theoretical arguments, we find clear variations in the way that different aspects of distance impact on strategic decisions. Thus, while regulatory distance increases the propensity for greenfield investment, cognitive distance has diametrically the opposite effect. Though normative distance is found not to have a significant direct effect, it interacts with both the investor’s international experience and with the relative importance of the pertinent operation for the investing MNE. Our findings may help to explain ambiguities in previous results that rely on a single proxy for psychic distance.

The remainder of the paper is organized as follows: in the next section, we discuss our theoretical constructs: institutional distance, and the entry modes. Then, we develop hypotheses concerning the impact of institutional distance on MNE’s choice of entry mode, before developing our new measures of institutional distance between countries. We next introduce the methods of empirical analysis, before presenting and interpreting the empirical
results. Conclusions for international business are drawn in the final section.

THEORETICAL PERSPECTIVES

Institutional Distance in International Business

Institutional theory has emerged as a leading theoretical foundation for research on enterprise strategies in emerging economies, along with transaction-cost and resource based views (Hoskisson et al., 2000). An important characteristic of emerging economies is that market-supporting institutions are less developed, and thus constrain firms’ strategic choices (Khanna and Palepu 2000; Peng, 2003, Ramamurti, 2004). Institutional theory provides a framework to analyze the determinants of business strategies in such economies (Peng 2003, Wright et al., 2005).

Scott’s (1995/2001) three ‘pillars of the institutional framework’ provide a broad basis to differentiate aspects of countries’ institutional profile (Kostova, 1998; Busenitz, 2000) and of institutional distance (Kostova and Roth, 2002). The regulatory pillar of the institutional framework lays out the ground rules for doing business, reflecting the laws and regulations of a region or country and the extent to which these rules are effectively monitored and enforced. The cognitive pillar rests on the cognitive structures embedded in a society; that is, the widely shared social knowledge and cognitive categories (e.g. schemata and stereotypes) (Markus and Zajonc, 1985). The normative pillar consists of beliefs, values, and norms that define expected behavior in a society. These pillars of the institutional framework are based on different types of motivation, respectively coercive, mimetic, and normative, and differ in their degree of formalization and tacitness (Scott, 1995/2001). In consequence, they exert dissimilar pressures and expectations on organizations (Pfeffer, 1982; Oliver, 1991; D’Aunno, Sutton, and Price, 1991).

In international business, the regulatory, cognitive, and normative dimensions all influence strategies and operations of affiliates in foreign countries. They moderate the acceptance of MNE’s norms and practices within the socially constructed system of rules, norms, and cognitive frames in different host environments (Kostova and Zaheer, 1999); and they facilitate or impede the transfer of strategic organizational practices from a parent company to an affiliate (Kostova and Roth, 2002). The “liability of foreignness” (Zaheer 1995) lowers the profitability of foreign investors compared to their local competitors. To compensate for this, MNEs must transfer their organizational practices that constitute an important source of competitive advantage to their affiliates (Kogut, 1991; Grant, 1996). Local firms are adapted to local institutions, and their organizational structures and cultures have to be consistent with the isomorphic pressures in their local environment. Foreign affiliates have to accommodate these same pressures and earn legitimacy in order to ensure their survival and success in the new context (Dowling and Pfeffer, 1975; Hannan and
Freeman, 1977; Meyer and Rowan, 1977). The need to gain legitimacy with both the local environment and with the worldwide organization of the MNE exposes subsidiaries of multinational firms to ‘institutional dualism’ (Kostova and Roth 2002). MNE’s ease of adjustment depends on their familiarity with a country’s institutional profile (Xu and Shenkar, 2002; Xu, Pan and Beamish, 2004).

*** Figure 1 approximately here ***

The obstacles faced by MNEs operating abroad are at least of two types (Figure 1). Firstly, the interaction of the foreign parent and the local affiliate is inhibited by their embeddedness in different national contexts. Institutional distance may thus inhibit internal coordination and integration, notably the transfer of knowledge and practices. Secondly, the MNE affiliate is subject to institutional pressures from both its parent and from the local environment (Kostova and Roth, 2002). Its ways of doing business may thus differ from that of local organizations, which may inhibit the interaction between the foreign affiliate and local organizations and individuals. Thus, MNE affiliates may be constrained in developing the external relations that could allow them to gain legitimacy in the local environment.

The more different the MNEs origins are from the context that they enter, the greater will become obstacles to attaining local legitimacy and to practice transfer. International business research has analyzed the adaptation of business to foreign institutions with reference to “psychic distance”. This concept captures “the sum of factors preventing the flow of information from and to the market” and, among other aspects, encompasses “differences in language, education, business practices, culture and industrial development” (Johanson and Vahlne, 1977, p. 24). Following Kogut and Singh (1988), previous work has primarily been based on Hofstede’s (1980) work on national culture, which measures culture on four scales: masculinity-femininity, individualism-collectivism, uncertainty avoidance, and power-distance. As argued above, organizations act in an even more complex environment formed by regulatory, cognitive and normative pillars of the institutional framework (Scott 1995/2001). The three dimensions – regulatory, normative and cognitive – may have varying effects on investor strategies, and interact in different way with the specific characteristics of the MNE concerned. ¹ We thus use this broader concept of institutional distance to investigate the relationship between distance and business strategies.

¹ The obstacles to business vary across different elements of the institutional framework. Kostova and Roth (2002) show that internalization of organizational practices by MNE affiliates is facilitated by favorable cognitive and normative institutions factors. Yet, in a favorable regulatory environment, a parent’s request to adopt a specific practice may be perceived as an external coercion and impede its internalization. With respect to affiliates’ quest to establish and maintain legitimacy, the normative and cognitive dimensions of institutions pose a greater challenge because regulatory institutions are more formalized and thus easier understood by newcomers (Kostova and Zaheer, 1999).
Institutional distance is a useful tool in analyzing all international business relationships, but is of particular relevance with respect to emerging economies because of the diversity of inward investors. Emerging economies, typically receive most FDI from developed countries, and in Table 1 we illustrate this for our sample of emerging and developed markets. Indeed, emerging and mature economies receive most of their FDI inflow from the same developed countries (see also UNIDO 2003). This implies that emerging markets typically experience a large variation in the distance between their own environments and those of their main foreign investors, which we confirm for our sample of countries below.

*** Table 1 approximately here ***

Entry Mode Choice
The choice of entry mode represents one of the most important strategic decisions by MNEs operating in emerging economies, and has been analyzed extensively in the international business literature using in particular transactions cost or resource based theories. For instance, the level of ownership (e.g. Anderson and Gatignon, 1986; Hill, Hwang and Kim, 1990, Meyer 2001) and the choice between greenfield investment and cooperative modes (Hennart and Park, 1993; Barkema and Vermeulen, 1998; Brouthers and Brouthers, 2000; Anand and Delios, 2002) have been investigated. Transactions cost research focuses on the costs of alternative organizational arrangements, and suggest that firms prefer modes of operation that internalize sensitive interfaces (Anderson and Gatignon, 1986; Hennart and Park, 1993). The resource based view focuses on how alternative modes facilitate or inhibit the processes of organizational learning (Barkema and Vermeulen, 1998) and of developing and exploiting resources (Anand and Delios, 2002). Both have been complemented with institutional variables (Brouthers and Brouthers, 2000; Meyer, 2001, Meyer and Nguyen, 2005), but not as yet with a theoretically grounded set of variables capturing the complexity of institutional distance.

In emerging economies, the main decision faced by foreign investors is probably between a greenfield investment on one side, and partnering with local firms by acquisitions and joint venture (JV) on the other. This is because MNE’s entering a developing market must first choose between accessing local context-specific resources and capabilities in embedded form, or entering alone. Due to high distances in institutions, entrants often need local resources such as institutional or market knowledge that is embedded in existing organizations (Meyer and Estrin, 2001; Anand and Delios 2002) and these can be accessed either by forming a joint venture or by taking over a local firm.
Institutional distance and the entry mode choice

Alternative modes of entry provide foreign investors with different means to manage the dual challenges of institutional distance; gaining legitimacy and transferring practices. Greenfield investors establish a new organization by recruiting and training staff individually, and creating an organizational structure that matches the MNE’s global structures (Brooke and Remmers, 1970; Bartlett and Ghoshal, 1989). Investors can therefore create an organizational culture that is similar to the parent, which reduces the frictions between parent and subsidiaries, and facilitates the transfer of practices. Consequently MNEs are more likely to choose a greenfield investment in situations where transmitting their own practices to their affiliates is of greater concern than earning and maintaining legitimacy.

However, greenfield projects have, at least initially, only very limited legitimacy in the local environment, while cooperation with a local partner in form of a JV or an acquisition enables the foreign investor to benefit from the partner’s local status. Cooperative entry thus allows the MNE to appear less foreign than entry via greenfield projects (Kostova and Zaheer, 1999), even though the process of internal accommodation may not always be smooth (Xu and Shenkar, 2002). Therefore the choice of a JV or a local acquisition is more appropriate in MNE’s for which the attainment of local legitimacy is of greater concern than transferring practices to affiliates. However, such cooperation implies that the local organization is more strongly influenced by local practices, which implies that the interactions with other units of the foreign parent MNE may be less smooth. Thus greenfield projects facilitate transfer of organizational practices, while JVs and acquisitions are more useful to build local legitimacy.

This differential exposure to local institutions makes it natural to apply institutional theory to analyze the link between differences in business environments and MNEs’ entry modes (Davis, Desai and Francis, 2000; Lu 2002, Xu and Shenkar, 2002; Harzing, 2003). We thus extend the prior entry mode literature by using various aspects of institutional distance to separate the effects of regulatory, normative and cognitive distance. In the next section, we develop specific hypotheses about how different aspects of institutional distance might influence entry mode choice. In addition to direct effects, we consider the possible interaction with the investors’ experience and the relative exposure to the local context.

Development of Hypotheses

Direct Effects of Distance on Entry Mode

Different tensions between local and corporate institutional pressures are created in the three institutional pillars by distance. Kostova (1999) argues that high normative, regulatory and cognitive institutional distance between the host and home country impedes the transfer of strategic organizational practices from a parent company to a recipient. If a practice is
inconsistent with existing local regulations, norms or cognitive structures, then employees may be reluctant to implement it, or might face problems in understanding and learning it. Thus, bonus-based payment schemes are an example of a practice that may be difficult to transfer (Pennings, 1993). Regulatory barriers may prohibit certain elements of the scheme in some countries, normative barriers may moderate the appreciation of standing out among a peer group, and cognitive differences may influence the perceived causality between individual effort and remuneration.

Normative and cognitive distance between an acquired business unit and the parent organization especially inhibits its ability to attain legitimacy in the local context (Kostova and Zaheer, 1999). In contrast, regulatory aspects are more formalized and thus are easier understood by MNEs, and more accepted as a cause for local adaptation. Therefore, a high normative and cognitive distance impedes the adoption of an MNE’s practice and restrains the affiliate’s capacity to establish legitimacy, while a high regulatory distance is likely to have a negative effect primarily on the adoption of an MNE’s practices.

By establishing a greenfield investment, an MNE can partially alleviate these difficulties in adopting desired practices caused by regulatory distance because it can create a new organization after its own image, e.g. by recruiting suitable individuals and by training them in the parent firm’s organizational practices. Moreover, as we have seen, regulatory distance does not create equally important obstacles to gaining local legitimacy. As regulatory rules are mostly codified, foreigners may find it relatively easy to adapt to local regulatory pressures without a local partner, even if regulatory distance is high. Thus, we hypothesize that overcoming obstacles to practice adoption outweighs the need to obtain local legitimacy as regulatory distance increases. Hence, the balance of advantage suggests that an increase in regulatory distance will have a positive impact on MNEs’ propensity to establish a greenfield project:

*Hypothesis 1a: MNE’s are more likely to choose greenfield investment than acquisition or joint venture when the regulatory distance between the home and the host countries is large.*

On the other hand, both normative and cognitive distance have a negative impact on the adoption of practices and the affiliates’ ability to earn legitimacy. However, the impact on entry mode choice is complex. Obstacles to practice adaptation in existing local organizations would encourage greenfield investment in the same way as for regulatory distance. However, obstacles to gaining legitimacy would encourage entry by joint venture or acquisition. Adaptation to local institutional pressures is more challenging if facing normative and cognitive differences than with regulatory differences. While regulatory institutions are relatively transparent, norms and cognition require intensive cross-cultural communication.
because they are hard to comprehend, and knowledge about other cultures is often tacit (Boyacigiller, Goodman and Phillips, 2004). Such communication is easier if an MNE affiliate obtains the knowledge of a local organization through a joint venture or an acquired firm. Greenfield investors have less cultural knowledge to draw on when communicating with local peers, which inhibits efforts to gain legitimacy. The impact of normative and cognitive on entry mode choice therefore depends on the relative importance of practice mode adoption and attaining local legitimacy.

We would argue that MNE’s can more easily adopt behaviors and practices within businesses where they have some understanding of the underlying technologies and markets than they can with respect to, for example, supply chains, purchases of inputs, ability to market outputs and dealing with local rules and regulations which entail attaining local legitimacy. Thus, when normative and cognitive distance is high, interaction with the local environment will be particularly important, which increases the importance of creating links with local peers. This leads us to hypothesize that, in these circumstances, the need to gain local legitimacy and to access local business networks will outweigh other considerations. Hence normative and cognitive distance will encourage JV entry or acquisitions rather than greenfield entry.2

Hypothesis 1b: MNEs are less likely to choose greenfield investment than acquisition or joint venture when the normative distance between the home and the host countries is large.

Hypothesis 1c: MNEs are less likely to choose greenfield investment than acquisition or joint venture when the cognitive distance between the home and the host countries is large.

Institutional distance and the size of the local operation

The relative strength of isomorphic pressures on an affiliate from the local environment and from foreign parent depends on specific internal (Zaheer, 1995) and contextual variables (Rosenzweig and Nohria, 1994). Thus different types of FDI projects vary in their sensitivity to institutional distance. In particular, we expect the scale and scope of the local operation and of the MNE’s global resources to moderate the impact of institutional distance on entry mode decisions. We analyze two such characteristics: the relative size of the affiliate and the foreign parent’s international experience.

2 This is supported for instance by Meyer and Lieb-Dóczy (2003) who show that, when acquired subsidiaries in Hungary and East Germany have some degree of managerial autonomy, they can generate innovative solutions adapted to the local context and new capabilities that can be used in the MNE’s worldwide operations. This suggests that, at least for these acquisitions, accommodating the legitimacy pressure has been more important than adopting corporate practices.
Overseas affiliates vary in their relative importance for the investing MNE. When MNEs build greenfield operations that are large relative to their own size, internal resource constraints may inhibit the establishment of the new affiliate. For example, assuming that there is a maximum rate at which the firm can recruit and train managers, firms seeking to expand rapidly may be constrained by internal shortages of human capital (Penrose, 1959). Similarly, a large greenfield affiliate may be more difficult to finance because capital markets have difficulties in accessing and verifying information, which the firm may possess, on the merits of the project. In contrast, outside investors can more easily assess acquisitions based on the track record of the acquired organization (Chatterjee 1990). Therefore, the additional resources that MNE’s aiming to establish large affiliates, relative to their size, requires can be accessed more easily by acquiring a local firm or by establishing a JV. Several empirical studies find that larger affiliates are less likely in form of greenfield projects (Caves and Mehra, 1986; Kogut and Singh 1988; Hennart and Park 1993; Padmanabhan and Cho 1995; Brouthers and Brouthers, 2000). This leads us to:

Hypothesis 2a: MNE’s establishing a large affiliate (relative to their own size) are less likely to enter by greenfield investment than by acquisition or joint venture.

A relatively large subsidiary commands more attention from top management than a smaller operation because it has a stronger impact on corporate performance. Moreover, the transfer of practices becomes relatively more important and more difficult because the parent has relatively fewer resources and experiences. Large acquisitions therefore take on more of the character of mergers, in that both organizations have to adjust to each other, rather than a small acquired unit having to adapt to the established practices of the new parent. Such a process requires more intensive interaction between individuals, and thus cross-cultural communication (Haspeslagh and Jemison, 1991). Similarly, when setting up a JV agreement the MNE exposes itself to problems regarding intercultural negotiations that are likely to result in a decreased performance of the affiliate (Brett and Okumura, 1998). Cross-cultural communication is more likely to fail, the higher the normative and cognitive distance between the organizations. This is because differences in scripts, schemas, norms or values impede information sharing between individuals from different cultures and might inhibit their ability to search for better alternatives. Hence, in a distant market, obstacles to establishing and managing a large acquisition or joint venture rise disproportionately and firms wishing to establish a large operation would be more likely to choose entry by greenfield then they would be in nearby locations.
Hypothesis 2b: MNE’s establishing a large affiliate (relative to their own size) are less likely to enter by greenfield investment, yet this effect is weaker in countries with high normative and cognitive distances.

Institutional distance and experience in emerging economies

We have argued that entry mode choice implies a trade-off between the challenges of transfer of practices and of gaining local legitimacy. Both challenges increase, the less familiar is a foreign investor with the local environment. However, familiarity can also be developed through commercial experience in the country (Johansen and Vahlne, 1977; Davis, Desai, and Francis, 2000). Through a process of acculturation (Berry, 1980), MNEs develop familiarity with local environment in which they operate. This is generally assumed to reduce the effects of distance (Shenkar, 2001). MNEs can draw their knowledge of foreign markets from a broad range of contexts in which they operate. Their internal processes thus reflect a variety of different institutional frameworks, which facilitates cross-cultural transfer of practices, and reduces associated costs. MNEs with experience in similar environments may even have developed practices specifically to serve such contexts. Moreover, having gone through the process of local adaptation and attaining legitimacy in similar emerging economies, they can be expected to build capabilities that facilitate this process (Henisz, 2003).

Regional experience may be more important for MNEs’ in emerging economies than the more general concepts of international experience used in the analysis of international business strategies in developed countries (Delios and Henisz, 2003, Henisz, 2003, Uhlenbruck, 2004). In emerging economies, problems of law enforcement can be ubiquitous, bringing into question the ability of new entrants to enforce contracts. Moreover, compared with their counterparts from industrialized nations, local firms in developing countries may have a smaller resource endowment (Hitt et al. 2000), in particular fewer marketing capabilities (Fahy et al., 2000), and less experience in forming and managing strategic alliances (Lewin, Long and Carroll, 1999). Skills and practices developed through prior experience in developed countries are also often inappropriate or impossible to apply in an emerging markets context (Tallman, 1992). The MNE may instead develop specific business concepts and methods to serve the needs and abilities of customers in an emerging market, and subsequently transfer them to other similar emerging economies (Prahalad, 2004).

Local experience in emerging markets is however less crucial when operating in similar environments, such that we would expect a direct effect of experience on mode choice only when analyzing FDI between distant countries. Hence, experience diminishes the impact of distance predicted in hypotheses H1a to H1c, such that the interaction effects should have the opposite effect than the direct effects:
Hypothesis 3a: MNE’s that have little experience in emerging economies are more likely to choose greenfield investment than acquisition or joint venture when the regulatory distance between the home and the host countries is large.

Hypothesis 3b: MNE’s that have little experience in emerging economies are less likely to choose greenfield investment than acquisition or joint venture when the normative distance between the home and the host countries is large.

Hypothesis 3c: MNE’s that have little experience in emerging economies are less likely to choose greenfield investment than acquisition or joint venture when the cognitive distance between the home and the host countries is large.

INDICES OF INSTITUTIONAL DISTANCE

Empirical studies on the impact of distance on entry mode choice have mostly employed the Kogut-Singh index\(^3\) and generated inconclusive results (Shenkar, 2001; Brouthers and Brouthers, 2001). For example, Kogut and Singh (1988) find a negative correlation between control over the affiliates and cultural distance while Pan (1996) reports the opposite. This inconsistency is, in our view, due to the imprecision of the measures used.

In this section, we refine institutional measures that are relevant for the entry mode choice, complementing the Kogut-Singh index with indicators of regulatory and cognitive distance.

The normative pillar of a country’s institutional profiles consists of values and norms. Values define what is preferred or desirable, while norms specify how things should be done and therefore delineate what a society perceives as accepted behavior. The issues are captured by Hofstede’s indices of culture, and thus by Kogut-Singh index. Three out of the four cultural dimensions defined by Hofstede (1980) capture aspects of expected social behavior: Power Distance describes the expected behavior toward higher and lower rank people, Individualism/Collectivism depicts peoples attitude toward the group, and Masculinity/Femininity captures the status of values traditionally associated with male and female role models. In addition, the normative dimension encompasses beliefs and assumptions about the human nature, which are reflected in an individual’s attitude and quest for truth. More precisely, on the religious or philosophical level, individuals from some societies believe in an ultimate truth and adhere to strict laws and rules that lead them to it. Unusual situations make them feel uncomfortable and so they rather avoid them. However, in other societies people are relativist, have as few rules as possible, and feel at much more ease in unstructured situations. These aspects are captured by the fourth dimension of Hofstede’s

\(^3\) An indication of the popularity of the measure is frequency of citations to Kogut and Singh (1988). According to the SSCI database, the paper was cited 260 times from 1988 to 2003, 28 times in 2003.
An extensive literature establishes the relevance of distance in Hofstede’s cultural construct for the entry mode decision (Kogut and Singh, 1988; Barkema and Vermeulen, 1998; Chang and Rosenzweig, 2001 among many others). Therefore we use as a proxy for the normative distance an index based on Hofstede’s cultural construct that we compute in the following way:

$$D = \sqrt{\sum_i \left( \frac{(I_{\text{host}} - I_{\text{origin}})^2}{V_i} \right)},$$

where $I_{\text{host}}$ ($I_{\text{origin}}$) is the $i$th dimension of the index for the host country (country of origin) and $V_i$ is the variance of the $i$th dimension.

The regulatory dimension of distance concerns laws and other rules that influence business strategies and operations. According to Scott (1995/2001), the regulatory pillar of institutions consists of rules and regulations and the extent to which these rules are monitored and enforced. Thus, Scott's definition incorporates all possible aspects of regulation. In order to implement this comprehensive notion empirically, we employ an index that covers as broad a range of regulatory aspects as possible, the ‘Regulatory Factor’ of the Economic Freedom Index published by The Heritage Foundation. This index includes six sub-indices (Beach and Miles 2003):

- Licensing requirements to operate a business
- Ease of obtaining a business license
- Corruption within the bureaucracy
- Labor regulations, such as established workweeks, paid vacations, and parental leave, as well as selected labor regulations
- Environmental, consumer safety, and worker health regulations
- Regulations that impose a burden on business

We use data for the year 2000, and compute the regulatory distance as the absolute value of the difference between the regulatory measures of the home and host country (for detailed definitions and sources of the variables, see Appendix 1).

The cognitive pillar comprises frames, routines and scripts used by individuals in one society to judge and to assign meaning to a phenomenon and to solve problems. The existing cognitive frames held by employees in organizations determine what information is retained and how it is processed, organized and interpreted. They also shape the preset routines

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4 In more recent work, Hofstede introduced a fifth dimension ‘Confucian dynamism’ to capture the specific features of Asian societies, but these data are not available for the same large set of countries; and scholars using Kogut-Singh indices do not normally incorporate it.
developed by organizations to provide guidance and reduce the discretion of the individuals when attempting to solve problems. The future operation and performance of foreign affiliates are affected by the way that managers and other employees process new information and the relevance of developed and adopted routines. These aspects are difficult to measure, especially by readily available data. However, individuals with higher education are more likely to spot and adequately process essential information and are more receptive to innovation (Becker, 1970; Rogers and Shoemaker, 1971; Kimberly and Evanisko, 1981; Wiersema and Bantel, 1992). In addition, in comparison with individuals who are mainly interested in their own community, individuals oriented towards a society beyond their own community are also more committed to attain professional goals and therefore more likely to adopt innovations in their workplace (Merton, 1957). Therefore, more highly educated or more cosmopolitan employees are more inclined to contribute to valuable routines developed in the organization. Moreover, people that are more exposed to new information and technology have a broader scope to add to the sphere of organizational knowledge and routines. We thus measure cognitive distance by combining two items of educational achievements and two items of exposure to new technologies that also indicate the society’s level of cosmopolitanism. The education measures are the percentage of economically active population with tertiary education, and the average schooling years in the total population. We measure technology exposure and cosmopolitanism by the number of computers and Internet hosts per 1000 persons. The data derive from a variety of sources. We consulted the ILO Yearbook of Labor Statistics, OECD Statistics, and country Statistical Offices to collect information on the percentage of the economically active population that has attained tertiary education. The average schooling years in the total population comes from Barro and Lee’s (2000) dataset on educational attainment. For the number of computers and Internet hosts per 1000 persons we used the World Development Indicators. Whenever possible, we used data for the year 2000. Otherwise, we used data for the closest preceding year for which the data was available. Crombach’s alpha analysis showed a 0.60 inter-item correlation. Finally, to compute the cognitive distance we use the same formula as above.

The measures are both based on readily available data for almost all developing and developed economies. In addition, with the exception of Hofstede’s (1980) cultural dimension, these indices are reported each year, starting at least from 1995, making them suitable to be used with recent sets of data. In Table 2, we report the three measures of distance for the countries of Table 1, including the four emerging markets of our study. The three measures give a different ranking for the four emerging markets. Interestingly, South Africa has the lowest average for all three measures of distance but the highest is for Vietnam for regulatory distance and for Egypt with respect to both cognitive and normative distance.
METHODOLOGY AND RESULTS

Data

Our study is based on an interesting new data set from a recent FDI survey in the four emerging economies (Estrin and Meyer, 2004). The base population for the survey study was all registered foreign direct investment projects established between 1990 and 2000, with a minimum employment of 10 persons, and minimum foreign equity stake of 10%. The time limit was designed to ensure that information concerning the establishment was part of the organization memory and therefore available at the time of the survey. The base population has been constructed on the basis of local databases. In India and Vietnam, comprehensive databases were obtained from the authorities licensing or registering FDI. In Egypt and South Africa, we used commercial databases that were complemented with the research institutes’ own databases.

The questionnaire was administered to foreign investment companies in the four countries between November 2001 and April 2002 by local research institutions. They sent the questionnaire to a stratified random sample drawn from the base population. In most cases, they followed up by sending specifically trained assistants to interview the CEO or an appropriate senior manager, though some questionnaires were received by mail. Response rates from between 10% of the population in Egypt to 31% in South Africa. The sample was stratified by two digit industrial sectors to ensure that the sectoral distribution of firms closely resembled the distribution for the population. Within each sector, firms were chosen randomly.

This study is based on the manufacturing subset of the sample, because different factors can influence entry mode for service sector firms (Brouthers and Brouthers 2003), and because some of the measures of distance, e.g., regulatory, are found to be of particular relevance to industrial firms. The sub-sample contained 245 foreign affiliates, but our researchers encountered some resistance in responses to commercially sensitive material. Hence, as is common in emerging markets, we lost some observations due to missing values and we obtained 208 usable observations for the regression analysis. This is quite a large sample for research of this sort in emerging economies. The missing values affect in particular small parent firms for whom information on parent-specific data is less available.5 This seems unlikely to bias the estimates, albeit we shall be careful to make inferences about

5 T-tests on the main variables of interest (mode, experience, time of entry, R&D intensity, etc) comparing firms with and without missing values to test for sample selection biases do not reveal statistically significant differences. However, the tests suggest that relatively small parent firms that undertake resource-seeking FDI in Vietnam account for a significantly higher share of the observations with missing values.
small parent firms.

The regional patterns show clear geographic proximity-effects in Egypt and Vietnam, and strong European presence in South Africa and India. In Egypt and Vietnam, investors from other emerging markets with low institutional distance play an important role, notably Arab investors in Egypt and Chinese investors (especially from Taiwan) in Vietnam. In contrast, neither South Africa nor India benefit from regional FDI, as both countries are geographically distant from major multinational business centers.

**Empirical model and dependent variable**

We perform the econometric analysis using a Logit model in which the dependent variable is *mode of entry*. This procedure estimates the probability that a foreign investor establishes a greenfield investment, given by

\[ P(\text{mode of entry} = \text{greenfield}) = \frac{e^Y}{1+e^Y}, \]  

where \( Y \) is defined as

\[ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_n X_n. \]  

\( X_1, X_2, \ldots, X_n \) are the independent variables. *Mode of entry* is a dummy variable that takes a value of 1 if the foreign operation was set up as a greenfield investment and a value of 0 otherwise. We classified a newly established operation as greenfield investment if it was fully owned by foreign parents and did not involve takeover of a local firm. The proportion of greenfield projects in the sample is 24% in India, 26% in South Africa, 38% in Egypt and 66% in Vietnam.

**Independent Variables**

The most important independent variables of this research, the measures of institutional distance, have been introduced above. The hypothesized interaction effects between institutional distance and *relative size* and *experience* are tested on the basis of the survey data. *Relative size* is based on a question concerning the turnover of the affiliate relative to the parent, using six point Likert scale from “0.0-0.1%” to “over 20%”. *Experience* is captured with a dummy variable that takes the value 1 if the foreign investor had prior experience in the host economy or any other emerging economy. In line with the literature, we also introduce a number of control variables that we expect to influence mode choice, listed below. The measurements of these variables and data sources are described in Appendix 1.

*Market seeking:* Foreign investors seeking new markets need to set up local distribution networks, which require a continuous interaction with the domestic environment, and, especially in developing markets, good connections with local and central governments.
Local firms are likely to have a good understanding of the local environment, established relationships with local businesses and authorities, and an adequate distribution network. Thus, we expect entry for market seeking reasons to be negatively related to the propensity to establish greenfield investments.

**Source of main resources:** An affiliate that receives most of its key resources from its foreign parent is less dependent on local inputs and distribution channels. Moreover, the main resources for success may be organizationally embedded, in which case they are more easily transferable between companies with similar organizational structures. Consequently, when the MNE provides the most important resources itself, it is more likely that the affiliate will be established as a greenfield investment.

**R&D intensity:** Capabilities based on recent R&D are easier transferred to greenfield projects, as MNE’s can create a compatible organizational culture and technological infrastructure, and recruit new employees to fit their organization (Hennart and Park, 1993; Meyer and Estrin 2001). Therefore we conjecture that the propensity to enter through greenfield investment increases with the level of R&D intensity of the parent.

**Related:** When a foreign investor sets up a horizontal investment in the same or a related industry, it already possesses industry-specific capabilities and is less likely to seek such resources from a local partner. Therefore, affiliates producing the same or related products as the parent firm are more likely to be set up as a greenfield project (Caves and Mehra, 1986; Hennart and Park, 1993).

**Diversified:** Diversified foreign investors often rely on managerial control systems that accommodate diverse operations. In addition, they are more likely to have been created through a series of acquisitions and/or JVs. Therefore, we expect that more diversified firms to have more experience with this form of expansion, and thus have a higher propensity to acquire or to form a JV.

**Time trends and country dummies:** All countries in our dataset have gone through liberalization and economic reforms during the period when the sample firms first entered. Yet these reforms progressed at different times and different paces. We control for these country specific effects by including both country dummies and separate time trends for each of the four countries.

Appendix 2 presents the correlation matrix and descriptive statistics of the dependent and independent variables. Apart for the interaction terms, the correlations do not reach ranges for which multicollinearity would be a concern.
Results

Our main purpose is to assess the explanatory power of the indices of institutional distance. As reference, we estimate a base model that includes relative size, experience and the control variables. The analysis is then conducted in three stages. First, we test hypotheses 1a to 1c by adding the three dimensions of the institutional distance to the base model. We estimate three restricted models (Model 1 to 3, Table 3) with one institutional aspect each, and their joint effect (Model 4, Table 3). We proceed by constructing four further models by adding to Models 1 to 4 the corresponding interaction terms (Model 5 to 8, Table 4). Finally, we use Wald tests for linear hypotheses to identify the variables and the interaction terms that provide the best fit for the entry mode regression and use the results to construct a more parsimonious model (Model 9, Table 4).

*** Table 3 ***

The base model shows that relative size, experience and all control variables have signs consistent with our predictions. These variables are highly relevant for MNEs’ entry mode choice decision, explaining around 28% of the variation (as approximated by the pseudo R²). Thus, the base model is fundamentally sound and largely consistent with prior empirical studies on entry modes. Among the control variables, foreign parent’s degree of diversification, market seeking, and the source of main resources are highly significant with the expected sign. On the other hand, an expansion into a related business is associated with a greenfield investment, but not significantly so. Prior experience in the emerging markets has a negative effect on MNEs’ propensity to establish greenfield subsidiaries. For the relative size affiliate/parent however, the effect is not significant. We discuss these last two results together with the interaction effects below.

Step I

Models 1 to 3 in Table 3 show the impact of each aspect of institutional distance on the entry mode choice. The regulatory distance is highly significant and its sign is as predicted in Hypothesis 1a. This confirms our hypothesis that regulatory distance inhibits the adoption of corporate practices by a local partner firm, while not substantially affecting the ability of an affiliate to earn legitimacy. To facilitate the transfer of practices, MNEs set up greenfield investments.

We predicted an opposite effect with respect to normative and cognitive distance. We find strong support for Hypothesis 1c, with increasing cognitive distance lowering the propensity for greenfield investment. This implies that with increasing cognitive distance,
foreign affiliates become more concerned with legitimacy than with adopting practices from their parent. Apparently, training of the affiliate’s employees can overcome the negative impact of cognitive distance on the transfer of MNEs’ practices, yet it does not enhance its legitimacy with different cognitive institutions. On the other hand, Hypothesis 1b is not supported; the impact of normative distance is not significantly different from zero. Comparing the individual models with the base model, both models 1 and 3 increase the explanatory power significantly – the chi-square statistic increases respectively 6.88 and 9.81 for one degree of freedom. However, for model 2 the increase is very small and statistically not significant.

When all three dimensions of institutional distance are included in the equation simultaneously in model 4, the chi-square statistic increases by more than 10 (and 2 degrees of freedom) compared to any of the previous models, which is highly significant. One might wonder whether the variation in entry mode choice can be fully captured by only one or two of institutional distance measures. Tests on the individual coefficients show that all three measures of institutional distance should be retain in the analysis; Wald tests that two (all possible combinations) or three institutional distances simultaneously have null coefficients are all rejected at 5% significance level. The increase in the chi-square and pseudo $R^2$ statistics in Model 4 also suggests that all three institutional distance measures should be retained in the equation. Thus, we conclude that regulatory, normative and cognitive distances between the home and the host countries are all essential to explain foreign investors’ entry mode choice, and should be used simultaneously.

*** Table 4 ***

**Step II**

In Table 4, we report regressions that combine the direct effects of distance on entry mode with the hypothesized interaction effects. Since our preferred model includes the three distance variables, we would like to use this to explore the impact of particular interaction effects. Unfortunately, though this equation (Model 8) is highly significant, many of the individual coefficients are not which may be caused by multicollinearity between interaction terms and the corresponding direct effects, on one side, and the multicollinearity among interaction terms on the other. Therefore, we assess the impact of interaction terms on the

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6 Since we are primarily interested to know the impact of institutional distances on the entry mode strategies for MNEs with no prior experience in emerging markets and vice-versa, the impact of experience on these strategies when when countries have similar institutions, we did not center the interaction terms. Moreover, centering does not reduce multicollinearity in our sample because of the characteristics of our data: most of the parent firms had had some experience in emerging markets when establishing the affiliates and experience is a dummy variable.
entry mode choice based on models with only one aspect of institutional distance and its interaction terms (Models 5 to 7). As before, we start by analyzing the aspects of distance and their interaction effects individually in Models 5 to 7. Comparing Models 5 to 7 with their counterparts, Models 1 to 3, the chi-square is higher by respectively 5.38, 9.42 and 0.57, of which the first two are significant. Thus, we confirm the statistical relevance of interaction effects for regulatory and normative, but not for cognitive distance.

The results from Models 5 to 7 moreover show that the coefficient on the interaction effect between experience and distance are in all cases opposite to the direct effect, as predicted in hypotheses 3a to 3c. For regulatory and normative distance, the direct effect is positive and the interaction effect is negative, while the reverse holds for cognitive distance.

This result suggests that the significant effect of prior commercial experience in emerging economies on foreign investors’ propensity to establish greenfield operations only applies for investors entering distant countries. When controlling for the interaction with distance, the direct effect of experience remains small and insignificant in models 5 and 6. Thus, when distance is low, say for British investors in South Africa or Taiwanese in Vietnam, experience does not influence entry mode choice. In model 7, the direct effect of experience remains significant, which may indicate that the cognitive distance measure alone captures only part of the relevant institutional distance.

For cognitive distance, we observe the same effect, but it remains insignificant in Model 7. The direct effects on cognitive distance and experience are larger then in Model 3, but subject to higher variance (lower Wald statistics), suggesting multicollinearity. The lack of significance of the interaction effect may be because investors can overcome differences in cognitive institutions by providing training to affiliate employees. This would lower the constraints on the adoption of parent’s practice.

The size of an FDI project relative to its parent MNE’s size is found in Table 3 to be negatively associated with the propensity for greenfield investment but the coefficients are insignificant when no interaction effects are considered. However distance might still moderate the impact of relative size on the entry mode choice. This is confirmed for normative distance, but not for regulatory or cognitive distance (Table 4). In Model 7, the joint impact of relative size and institutional distance is highly significant, and the direct effect of relative size also becomes significant. It would seem that the effect of relative size

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7 The negative direct effect of experience may be explained by the fact that MNE’s with prior experience in emerging markets may have developed routines that are adapted to the particular context, which helps them to overcome the restructuring challenges facing acquisitions and the coordination problems with local partners (Hitt et al. 2000). MNE’s without such experience would find it more costly and time-consuming to find a partner, and to build a relationship – let alone engage in post-acquisition restructuring. Meanwhile, they are more likely to identify local partners with converging objectives. For these reasons, in Central and East European countries, local firms acquired by MNEs with prior experience in the region exhibit higher growth rates (Uhlenbruck, 2004).
varies under different conditions, which leads to insignificant coefficients when not controlling for the interaction with distance. Thus, Hypotheses 2a and 2b are supported with respect to normative distance.

To further illuminate the impact of relative size, we analyze the marginal effects. First we insert in equation (2) the actual values of coefficients (Model 7, Table 4) and then take the first derivative of equation (1) with respect to relative size, holding all other explanatory variables constant:

$$\frac{\partial Y}{\partial \text{Relative size}} = -0.732 + 0.259 \text{Normative}_d .$$

Thus, ceteris paribus, the overall impact of the relative size on the propensity to establish a greenfield investment is negative when the normative distance between FDI’s home and host country is small but turns positive for high values of this distance (Normative_d > 2.825). To understand these relations, for “low” and “high” values of relative size and normative distance, we compute the probability that an investment is set up as greenfield (equation (1)) keeping all other effects constant at their mean value. We define as “low” and “high” values that are, respectively, one standard deviation above and below the mean (Aiken and West, 1991; Erramilli and Rao, 1993). The resulting graphs are presented in Figure 2 and illustrate the direction of change in probabilities as the relative size increases.

*** Figure 2 ***

When the normative distance between the host and the home country is small, the impact of relative size on the entry mode choice is as predicted in Hypothesis 2a, and a high relative size is associated with acquisition or JV. However, when the normative distance is large, institutional constraints become more important than the Penrose constraint, and so foreign investors are likely to choose greenfield investments, even when the relative size of the project with respect to the MNE is high.

Step III

The multicollinearity problems present in Model 8 led us to construct a more parsimonious regression by dropping insignificant variables on the basis of Wald tests. Interactive variables were dropped singly in inverse order to their significance until only significant terms remained. As a result of this procedure, all the interaction terms that were

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8 Note that this value is above the average of normative distance for all host countries as reported in Table 2.

9 Note that the lines in this graph unite discrete points and do not represent the actual relationships between relative size and the probability to set up a greenfield investment; however, their slopes correctly show the direction of change (Erramilli and Rao, 1993).
not significant in Models 5 to 7 need to be excluded, as is the interaction between the institutional distances and the parent firms’ experience. The final model, Model 9 in Table 4, includes just two interaction terms and explains an additional 3.1% of the variation in MNE’s’ entry strategies compared to Model 1.

Models 8 and 9 allow us to reassess hypotheses 2a and 3a. An increase in the relative size of the foreign operation with respect to its parent reduces the probability that the operation is a greenfield project, which supports hypothesis 2a. In the models of Table 3, this effect was disguised by the missing interaction between the normative distance and relative size. In Model 4, the negative effect of an increase in relative size is partly offset by the positive effect of the associated increase in the interaction term caused by the correlation between relative size and this interaction term. A reverse situation happens with the MNEs’ prior experience in emerging markets. Model 4 suggests that an increase in experience tilts MNE’s’ preference towards acquisitions or JV agreements. As we expected, once experience is interacted with institutional aspects in Models 8 and 9, this direct effect becomes insignificant. Thus, prior experience in emerging markets matters only if the institutional distance between home and host contexts is high.

These results support our conjecture that distance in all three dimensions is important to explain the entry mode choice. Moreover, their interaction with firm characteristics is also important and the interpretation is complex. Failure to account for the interaction can lead to misjudgments on the impact of other variables on entry mode choice.

**DISCUSSION**

The concept of institutional distance helps to explain how differences between countries affect international business decisions. We have argued that this concept is broader than the measures of cultural distance used in prior research; and that cognitive and regulatory aspects of distance may have quite different effects on international business strategies. Our results confirm the opposite effects of different aspects of distance on entry mode choice, and the interaction of distance with firm and project specific variables.

More specifically, we show that while an increase in the regulatory distance results in a higher propensity to set up a greenfield investment, the opposite is true for high differences in cognitive aspects. Achieving internal consistency is impeded in highly distant normative, regulatory or cognitive institutional contexts. By setting up greenfield investments, MNEs can ease the transfer of strategic organizational practices. Meanwhile, legitimacy of the foreign operations is more difficult to attain when the normative and cognitive distances are high, but this may be overcome by entering with a local partner. The relative importance of external legitimacy and internal consistency often depends on contextual variables.
Moreover, we hypothesized that the probability of a greenfield investment is positively related to regulatory distance, but negatively related to normative and cognitive distance. Our empirical analysis confirms that regulatory and cognitive distance have opposite effects but the impact of normative distance is insignificant unless interaction effects are taken into account.

We find that the relative size of the foreign affiliate and the MNE’s level of international experience act to moderate the impact of institutional distance. As larger affiliates command more attention from their foreign parent, MNEs that aim to establish large foreign operations are more inclined to avoid the managerial challenges of intercultural JVs or acquisitions by setting up greenfield investments. Cross-cultural communication problems arise in particular with normative distance, which thus deters JV or acquisition entry if the project is large. With respect to international experience, theoretical considerations suggest that experience and low distance both increase the familiarity of the foreign investor with the local context. In distant countries, experience can compensate for the obstacles of distance and facilitate the otherwise difficult transfer of practices and attaining legitimacy. We found that an MNE’s level of international experience does indeed moderate the impact of regulatory and normative institutional distance on entry mode choice. Moreover, we find that experience influences mode choice only if institutional distance is high.

Our analysis supports the view that business strategies have some distinctive characteristics in emerging markets (Wright et al., 2005). For example, the process of expansion into foreign markets normally follows the pattern of starting with a low capital commitment, which can later be increased once the MNE has gained sufficient international experience. The traditional internationalization process thus describes a gradual increase of involvement through changing level of commitments from contractual arrangement to joint ventures, and finally to wholly-owned affiliates (Johansen and Vahlne, 1977). However, in an emerging market, the financial and managerial challenges of engaging in a joint venture may be considerable, given the organizational legacy from the venture partner and the often weak technology. Thus, we find MNE’s may prefer to build a small local operation first, and on the basis of this local operation search for a suitable local partner for a larger project. Therefore, while in developed markets international experience has a positive effect on the propensity to set up a greenfield investment, our results show the opposite effect for emerging economies.

LIMITATIONS AND FUTURE RESEARCH
In this paper, we propose new indicators of the institutional environment that taken together provide a richer proxy for institutional distance than has been employed in the literature hitherto. We have argued that this approach has particular relevance for emerging markets, where the concept of institutional distance is particularly complex and multi-faceted, and a
less coarse set of measures may greatly improve our understanding of business strategies in these environments. We have also sought to ensure that the indices that we propose are easily computable and are based on publicly accessible data because the availability of suitable data is a major constraint on research about emerging markets.

Our approach has some weaknesses however. Our measures may not capture certain aspects of normative and cognitive distance, e.g. the entrepreneurship orientation of individuals, managerial abilities, or the appreciation of work quality. Moreover, our use of culture as a proxy of the normative dimension of distance is open to criticism because culture is a carrier, not a component, of the institutional environment (Scott, 2001/1995). Further research may wish to develop an alternative construct for the normative environment.

A more general concern is the assumption of corporate and spatial homogeneity in the use of indices such as ours (Shenkar 2001). The use of indices reflecting the host or home economy, or the distance between them, assumes that the average of the respective country is an appropriate measure of the environment of the specific FDI project. However host economies may vary internally, while MNE’s are exposed to different environments and develop their own unique corporate culture. Hence, unsurprisingly, we find that distance affects primarily firms with little international experience. Thus, indices of the environment must always be approximations rather than precise measures.

Our analysis of entry mode choice also has limitations. Chang and Rosenzweig (2001) have shown that the entry mode choice for first and subsequent entries into a foreign country might be influenced by different factors. We control for this effect with our experience variable. However, further research may clarify how the impact of institutional distance on entry mode choice and its interaction with MNE and project characteristics varies for subsequent entries. Given the multidimensionality of institutions, such research could show which institutional aspects are more challenging to overcome for foreign investors.

In our empirical analysis we have studied the relation between entry mode choice and the institutional distance using a dataset that consists from FDI in manufacturing industry. However, scholars have shown that because of their peculiarities (e.g. low capital intensity), service firms’ might choose their entry modes based on different criteria than manufacturing firms (Brouthers and Brouthers, 2003). In further research scholars might want to investigate the relevance of the institutional distance for the entry mode choice in services.

**CONCLUSIONS**

Previous research has shown that similarities between the home and host countries may influence entry mode choice, using the concept of psychic distance, mostly measured by Hofstede’s (1980) dimensions of culture. In this study, we show that, in addition to normative aspects of culture, cognitive and regulatory dimensions indicate distance between countries...
that are highly relevant for international business strategies. Different institutional aspects impact the entry mode decision in different ways and therefore, in order to capture the range of pressures that distance exerts on MNE’s, researchers should consider all these aspects together. In addition, institutional distance may interact with firm and project characteristics in determining the entry strategy.

Our empirical study of entry mode in four very different emerging markets confirms that different aspects of institutional distance impact on the mode of entry in different and often contradictory ways. Moreover, the interactions with firm and project specific characteristics are significant and complex. The estimated equations reveal that firm and project specific characteristics influence the choice of entry mode differently depending on whether institutional distance is large or small. This suggests that particular characteristics may have a different influence on choices for investments between developed countries, and between developed and developing countries. For example, between developed market economies where institutional distance is small, international experience has a positive effect on the propensity to enter through a greenfield investment. However, between developed economies and emerging markets, where institutional distance is large, the opposite effect holds; international experience increases the probability of entry through Joint venture or acquisition. The fact that scholars have ignored these interactions might explain the conflicting results obtained in previous research regarding the impact of country differences on the entry decision (Shenkar, 2001).
Figure 1: Managing across Institutional Distance

Figure 2: Interaction Effects

![Graph showing the interaction effects of normative distance and relative size on the probability of greenfield entry. The graph includes lines for low and high normative distance at different relative sizes. The x-axis represents relative size (low to high), and the y-axis represents the probability of greenfield. The graph illustrates that the probability decreases as normative distance increases.](image-url)
Table 1: Source countries of FDI accounting for 90% of inward FDI stock.

<table>
<thead>
<tr>
<th>Country</th>
<th>Main foreign investors</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNITED KINGDOM</td>
<td>United States (34.44%), France (16.65%), Netherlands (14.14%), Germany (8.89%), Japan (3.59%), Australia (3.36%), Canada (3.17%), Switzerland (3.09%), Belgium/Luxembourg (1.38%), and Sweden (1.34%). TOTAL 90.05%.</td>
</tr>
<tr>
<td>CANADA</td>
<td>United States (62.38%), France (9.37%), United Kingdom (7.54%), Netherlands (5.02%), Japan (2.64%), Germany (2.35%), and Switzerland (1.91%). TOTAL 91.21%.</td>
</tr>
<tr>
<td>VIETNAM</td>
<td>Singapore (15.05%), Taiwan (12.49%), Hong Kong (9.29%), Japan (8.80%), South Korea (8.25%), France (5.56%), British Virgin Islands (4.72%), United Kingdom (4.54%), Russia (4.03%), United States (3.43%), Australia (2.99%), Malaysia (2.89%), Thailand (2.79%), Panama (1.72%), Switzerland (1.60%), Netherlands (1.50%), and India (1.39%). TOTAL 91.06%.</td>
</tr>
<tr>
<td>SOUTH AFRICA</td>
<td>United Kingdom (77.85%), Germany (5.37%), United States (5.37%), and Switzerland (2.68%). TOTAL 91.28%.</td>
</tr>
<tr>
<td>INDIA</td>
<td>United States (25.41%), Mauritius (15.15%), United Kingdom (10.23%), Japan (5.05%), Korea(South) (4.34%), Germany (4.08%), Netherlands (3.96%), Australia (2.98%), France (2.89%), Malaysia (2.68%), Singapore (2.36%), Italy (2.11%), Belgium (2.01%), Israel (1.87%), Cayman Island (1.71%), Switzerland (1.38%), Canada (1.27%), and Thailand (1.09%). TOTAL 90.55%.</td>
</tr>
<tr>
<td>EGYPT</td>
<td>United States (54.36%), United Kingdom (33.21%), Germany (4.94%). TOTAL 92.51%.</td>
</tr>
</tbody>
</table>

Sources: OECD database; The Statistical Yearbook of Vietnam (2000); The Ministry of Industry, India; South African Reserve Bank; Central Bank of Egypt.

Table 2: Distance from main foreign investors that account for 90% of the FDI stock.

<table>
<thead>
<tr>
<th>Country</th>
<th>Normative distance</th>
<th>Regulatory distance</th>
<th>Cognitive distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Egypt</td>
<td>min 0.63</td>
<td>max 0.87</td>
<td>weighted avg 0.82</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.85</td>
<td>1.18</td>
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<td></td>
<td></td>
<td>1.48</td>
<td>2.35</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.22</td>
<td>2.29</td>
</tr>
<tr>
<td>India</td>
<td>min 0.38</td>
<td>max 0.85</td>
<td>weighted avg 0.62</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.18</td>
<td>0.21</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.53</td>
<td>1.52</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.86</td>
<td>0.96</td>
</tr>
<tr>
<td>South Africa</td>
<td>min 0.22</td>
<td>max 0.35</td>
<td>weighted avg 0.34</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>0.68</td>
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<tr>
<td></td>
<td></td>
<td>1.18</td>
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<td></td>
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<td>0.10</td>
<td>0.72</td>
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<tr>
<td>Vietnam</td>
<td>min 0.26</td>
<td>max 1.11</td>
<td>weighted avg 0.60</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.18</td>
<td>0.09</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4.70</td>
<td>1.58</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.40</td>
<td>0.97</td>
</tr>
<tr>
<td>UK</td>
<td>min 0.15</td>
<td>max 0.93</td>
<td>weighted avg 0.45</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.18</td>
<td>0.70</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.64</td>
<td>0.40</td>
</tr>
<tr>
<td>Canada</td>
<td>min 0.20</td>
<td>max 0.90</td>
<td>weighted avg 0.28</td>
</tr>
<tr>
<td></td>
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<td>0</td>
<td>0.31</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.18</td>
<td>0.78</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.24</td>
<td>0.41</td>
</tr>
</tbody>
</table>

Definitions and Sources: See Appendix 1.
Table 3: Entry Mode Choice – Institutions

Logistic Regression Results (Greenfield = 1)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Base Model</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Wald</td>
<td>B</td>
<td>Wald</td>
<td>B</td>
</tr>
<tr>
<td>Regulatory_d</td>
<td>0.765**</td>
<td>6.49</td>
<td>0.140</td>
<td>0.52</td>
<td>-0.406***</td>
</tr>
<tr>
<td>Normative_d</td>
<td>0.140</td>
<td>0.52</td>
<td>0.350</td>
<td>2.41</td>
<td>-0.012**</td>
</tr>
<tr>
<td>Cognitive_d</td>
<td>-0.406***</td>
<td>8.91</td>
<td>-0.519***</td>
<td>11.27</td>
<td></td>
</tr>
<tr>
<td>Relative size</td>
<td>-0.131</td>
<td>1.4</td>
<td>-0.126</td>
<td>1.23</td>
<td>-0.122</td>
</tr>
<tr>
<td>Market seeking</td>
<td>-0.010**</td>
<td>4.33</td>
<td>0.010**</td>
<td>4.88</td>
<td>0.010**</td>
</tr>
<tr>
<td>Source of main resource</td>
<td>0.010**</td>
<td>5.28</td>
<td>0.010**</td>
<td>4.88</td>
<td>0.010**</td>
</tr>
<tr>
<td>R&amp;D intensity</td>
<td>0.173*</td>
<td>2.87</td>
<td>0.197†</td>
<td>3.6</td>
<td>0.165</td>
</tr>
<tr>
<td>Related</td>
<td>0.477</td>
<td>0.71</td>
<td>0.531</td>
<td>0.84</td>
<td>0.443</td>
</tr>
<tr>
<td>Diversification</td>
<td>-1.282**</td>
<td>4.86</td>
<td>-1.616***</td>
<td>6.96</td>
<td>-1.308**</td>
</tr>
<tr>
<td>Constant</td>
<td>2.405</td>
<td>2.48</td>
<td>1.208</td>
<td>0.54</td>
<td>2.199</td>
</tr>
</tbody>
</table>

N: 208
Chi-square (df): 77.56(14) 84.44(15) 78.08(15) 87.37(15) 97.52(17)
Pseudo R²: 0.280 0.304 0.281 0.314 0.351

Increase in Chi-square (df), relative to benchmark model:
- 6.88 (1)*** over base
- 0.52 (1) over base
- 9.81 (1)*** over base
- 10.15 (2)*** over model 3

Notes: * = 10%, ** = 5%, *** = 1%.

All regression included country dummies and time trends for each country. The initial regression also included industry dummies, but since none of them was significant and since our sample is small we decided to drop them.
### Table 4: Entry Mode Choice – Institutions and Interaction Effects

*Logistic Regression Results (Greenfield = 1)*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 5 B</th>
<th>Wald</th>
<th>Model 6 B</th>
<th>Wald</th>
<th>Model 7 B</th>
<th>Wald</th>
<th>Model 8 B</th>
<th>Wald</th>
<th>Model 9 B</th>
<th>Wald</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulatory_d</td>
<td>2.831**</td>
<td>4.55</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.388</td>
<td>1.24</td>
<td>0.882***</td>
<td>7.08</td>
</tr>
<tr>
<td>Regulatory_d*relative size</td>
<td>0.024</td>
<td>0.04</td>
<td></td>
<td></td>
<td>-0.012</td>
<td>0.01</td>
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<tr>
<td>Regulatory_d*experience</td>
<td>-2.311*</td>
<td>3.5</td>
<td></td>
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<td>-0.560</td>
<td>0.26</td>
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<tr>
<td>Normative_d</td>
<td>0.480</td>
<td>0.41</td>
<td>1.211</td>
<td>0.88</td>
<td>0.693</td>
<td>0.81</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Normative_d*relative size</td>
<td>0.259**</td>
<td>4.92</td>
<td>0.230*</td>
<td>2.88</td>
<td>0.255**</td>
<td>4.32</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Normative_d*experience</td>
<td>-1.244*</td>
<td>3.13</td>
<td>-1.721</td>
<td>2.05</td>
<td>-1.262*</td>
<td>3.21</td>
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</tr>
<tr>
<td>Cognitive_d</td>
<td>-0.720</td>
<td>2.4</td>
<td>-1.164</td>
<td>1.49</td>
<td>0.515***</td>
<td>10.06</td>
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<tr>
<td>Cognitive_d*relative size</td>
<td>0.038</td>
<td>0.33</td>
<td>0.012</td>
<td>0.02</td>
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</tr>
<tr>
<td>Cognitive_d*experience</td>
<td>0.229</td>
<td>0.3</td>
<td>0.657</td>
<td>0.53</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Relative size</td>
<td>-0.157</td>
<td>0.48</td>
<td>-0.732**</td>
<td>6.08</td>
<td>-0.317</td>
<td>1.44</td>
<td>-0.721*</td>
<td>3.42</td>
<td>-0.765**</td>
<td>5.96</td>
</tr>
<tr>
<td>Experience</td>
<td>-0.261</td>
<td>0.03</td>
<td>-0.332</td>
<td>0.06</td>
<td>-3.287*</td>
<td>3.79</td>
<td>-1.388</td>
<td>0.34</td>
<td>-0.776</td>
<td>0.27</td>
</tr>
<tr>
<td>Market seeking</td>
<td>-0.010*</td>
<td>3.68</td>
<td>-0.009*</td>
<td>3.24</td>
<td>-0.011**</td>
<td>4.18</td>
<td>-0.010*</td>
<td>3.64</td>
<td>-0.010*</td>
<td>3.64</td>
</tr>
<tr>
<td>Source of main resource</td>
<td>0.011**</td>
<td>5.65</td>
<td>0.011**</td>
<td>5.8</td>
<td>0.010**</td>
<td>4.83</td>
<td>0.012**</td>
<td>5.75</td>
<td>0.011**</td>
<td>5.36</td>
</tr>
<tr>
<td>Related</td>
<td>0.206</td>
<td>3.75</td>
<td>0.149</td>
<td>1.99</td>
<td>0.242**</td>
<td>4.82</td>
<td>0.262**</td>
<td>4.97</td>
<td>0.254**</td>
<td>4.72</td>
</tr>
<tr>
<td>R&amp;D intensity</td>
<td>0.359</td>
<td>0.37</td>
<td>0.320</td>
<td>0.3</td>
<td>0.350</td>
<td>0.36</td>
<td>0.125</td>
<td>0.04</td>
<td>0.141</td>
<td>0.05</td>
</tr>
<tr>
<td>Diversification</td>
<td>-1.715***</td>
<td>7.12</td>
<td>-1.592**</td>
<td>6.15</td>
<td>-1.552***</td>
<td>6.64</td>
<td>2.440***</td>
<td>10.22</td>
<td>2.481***</td>
<td>11.3</td>
</tr>
<tr>
<td>Constant</td>
<td>-0.675</td>
<td>0.09</td>
<td>2.231</td>
<td>1.05</td>
<td>5.327**</td>
<td>5.22</td>
<td>3.542</td>
<td>1.32</td>
<td>3.090</td>
<td>1.76</td>
</tr>
<tr>
<td>N</td>
<td>208</td>
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<td>208</td>
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<td>208</td>
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<td>208</td>
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<tr>
<td>Chi-square (df)</td>
<td>89.82(17)</td>
<td></td>
<td>87.51(17)</td>
<td></td>
<td>87.94(17)</td>
<td></td>
<td>107.52(23)</td>
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<td>106.26 (19)</td>
<td></td>
</tr>
<tr>
<td>Pseudo R²</td>
<td>0.323</td>
<td></td>
<td>0.315</td>
<td></td>
<td>0.316</td>
<td></td>
<td>0.387</td>
<td></td>
<td>0.382</td>
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</tr>
<tr>
<td>Increase in Chi-square (df), relative to benchmark model</td>
<td>5.38 (2)* over model 1</td>
<td>9.42 (2)*** over model 2</td>
<td>0.57 (2) over model 3</td>
<td>10.00 (6) over model 4</td>
<td>8.74 (2)*** over model 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: * = 10%, ** = 5%, *** = 1%.

The regression included country dummies and time trends for each country. The initial regression also included industry dummies, but since none of them was significant and since our sample is small we decided to drop them.
## Appendix 1: Variables – Definitions and Sources

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive_d</td>
<td>Distance on four cognitive dimensions:¹ 1. Percentage of economically active population that has attained at least tertiary education. Year: 2000; Age: 25+ 2. Average schooling years in the total population. Year: 2000; Age: 25+ 3. Number of computers per 1000 persons 4. Number of internet hosts per 1000 persons</td>
<td>World Development Indicators (WDI), 2000 WDI (2000)</td>
</tr>
<tr>
<td>Relative size affiliate / parent</td>
<td>Takes into account the relative turnover in the affiliate and in the parent company for the year 2001 and was assessed based on a Likert-type scale from one (0.0-0.1%) to six (over 20%).</td>
<td>FDI Survey</td>
</tr>
<tr>
<td>Experience</td>
<td>Prior experience in emerging markets. Dummy: = 1 if the investor had prior commercial experience in the host country, its region or other emerging markets; = 0 otherwise</td>
<td>FDI Survey</td>
</tr>
<tr>
<td>Market seeking</td>
<td>Percentage of output sold in the domestic market during the first year of business operation.</td>
<td>FDI Survey</td>
</tr>
<tr>
<td>Source of main resource</td>
<td>Percentage of the main resource that was obtained from the foreign parent firm during the first two years of operation (We asked respondents to select the most important type of resources for their affiliate’s competitiveness. In a second question we then asked to estimate what percentage of this resource would be contributed by respectively the foreign partner, the local partner, or other sources.)</td>
<td>FDI Survey</td>
</tr>
<tr>
<td>R&amp;D intensity</td>
<td>Worldwide expenditure of the foreign parent firm on R&amp;D as a percentage of its global sales</td>
<td>FDI Survey</td>
</tr>
<tr>
<td>Related</td>
<td>Diversification parent/affiliate. Dummy = 1 if one of affiliate’s products is also produced by its foreign parent; = 0 otherwise.</td>
<td>FDI Survey</td>
</tr>
<tr>
<td>Diversification</td>
<td>Parent’s degree of diversification. Dummy = 1 if the parent is a conglomerate diversified into unrelated business sectors; = 0 otherwise.</td>
<td>FDI Survey</td>
</tr>
<tr>
<td>Time trends for each country</td>
<td>Year of legal establishment in a specific country – 1989 (= 0 if the host country is one of the remaining three countries)</td>
<td>FDI Survey</td>
</tr>
<tr>
<td>Country dummies</td>
<td>Four country dummies</td>
<td>FDI survey</td>
</tr>
</tbody>
</table>

¹ Distance is computed as $D = \sqrt{\sum_{i} \left(\frac{(I_{host} - I_{origin})^2}{V_i}\right)}$, where $I_{host}$ ($I_{origin}$) is the $i$th dimension of the standardized index for the host country (country of origin). We used standardized values for each dimension since scales are not the same across dimensions.
### Appendix 2: Descriptive Statistics and Correlation Matrix

| Variable                        | Mean | SD   | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  |
|---------------------------------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 Greenfield                    | ***  | ***  | 1   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 2 Normative_d                   | 2.38 | 0.99 | 0.09| 1   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 3 Normative_d*Relative size     | 7.21 | 5.06 | 0.18| 0.47| 1   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 4 Normative_d*Experience        | 2.20 | 1.16 | -0.06| 0.82| 0.33| 1   |     |     |     |     |     |     |     |     |     |     |     |     |     |
| 5 Regulatory_d                  | 1.62 | 0.96 | 0.34| 0.27| 0.28| 0.20| 1   |     |     |     |     |     |     |     |     |     |     |     |     |
| 6 Regulatory_d*Relative size    | 5.36 | 5.18 | 0.31| 0.05| 0.64| -0.02| 0.72| 1   |     |     |     |     |     |     |     |     |     |     |     |
| 7 Regulatory_d*Experience       | 1.47 | 1.02 | 0.16| 0.28| 0.21| 0.47| 0.84| 0.54| 1   |     |     |     |     |     |     |     |     |     |     |
| 8 Cognitive_d                   | 3.88 | 1.58 | -0.07| 0.35| 0.12| 0.30| 0.19| 0.08| 0.21| 1   |     |     |     |     |     |     |     |     |     |
| 9 Cognitive_d*Relative size     | 12.04| 8.62 | 0.08| 0.04| 0.69| -0.02| 0.24| 0.66| 0.16| 0.48| 1   |     |     |     |     |     |     |     |     |
| 10 Cognitive_d*Experience       | 3.56 | 1.88 | -0.17| 0.33| 0.06| 0.58| 0.16| 0.00| 0.42| 0.80| 0.29| 1   |     |     |     |     |     |     |     |
| 11 Experience                   | 0.91 | 0.29 | -0.23| 0.13| -0.06| 0.60| 0.00| -0.11| 0.46| 0.07| -0.11| 0.60| 1   |     |     |     |     |     |     |
| 12 Market seeking               | 70.99| 41.17| -0.28| -0.03| -0.28| -0.02| -0.37| -0.45| -0.29| -0.16| -0.36| -0.11| 0.02| 1   |     |     |     |     |     |
| 13 Source of main resource      | 59.07| 42.75| 0.24| 0.08| 0.03| 0.09| 0.21| 0.13| 0.22| 0.01| -0.02| 0.02| 0.04| -0.08| 1   |     |     |     |     |
| 14 Relative size                | 3.16 | 1.84 | 0.11| -0.17| 0.72| -0.22| 0.14| 0.70| 0.04| -0.08| 0.77| -0.17| -0.19| -0.27| 0.00| 1   |     |     |     |
| 15 Related                      | 0.86 | 0.35 | 0.16| 0.12| 0.17| 0.05| 0.08| 0.17| 0.02| 0.01| 0.08| -0.02| -0.08| -0.05| 0.04| 0.11| 1   |     |     |
| 16 R&D intensity                | 3.48 | 2.01 | 0.08| 0.04| 0.05| 0.12| -0.10| -0.07| 0.01| 0.07| 0.05| 0.13| 0.17| 0.02| 0.16| 0.00| 0.01| 1   |     |
| 17 Diversification              | 0.15 | 0.36 | -0.20| -0.05| -0.15| -0.05| 0.09| -0.07| 0.11| -0.16| -0.21| -0.12| 0.04| 0.08| -0.04| -0.15| -0.17| -0.05|
REFERENCES


The Heritage Foundation: *The Index of Economic Freedom*.


