Global Mindset, Psychic Distance and the Achievements of Brazilian Multinationals’ Subsidiaries. A Multilevel Analysis.

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Abstract:

Brazilian multinationals (BrMNs) have enhanced their positions among the world’s largest companies. As they grew up in a protected and closed economic environment, focusing mainly on the large Brazilian market, it has been argued that most of those firms lack a truly global mindset (GM). Furthermore, their internationalization trajectories have tended to prioritize less psychically distant markets (Latin countries, for instance). Therefore, GM and psychic distance seem to play a relevant role in their global expansion, imposing challenges to their achievements abroad. In order to examine the influence of GM and psychic distance on the performance of BrMNs’ subsidiaries, we carried out a survey involving a set of 64 parent companies and 76 subsidiaries. Empirical analysis employed hierarchical linear modeling, in order to explore interactions between headquarters’ and subsidiaries’ data. BrMN’s GM scores suggest that: a) although, unexpectedly, most firms have scores above medium, only a few are “fully globally minded”; b) firms are in different stages regarding GM; furthermore, some have higher strategic GM than cross-cultural GM (and the converse); c) some firms, the “domestic market oriented” ones, have fairly low scores; d) regarding strategic GM, some companies lack international commitment, even concerning the development of a network of relationships abroad; e) finally, some BrMNs companies face constraints concerning cross-cultural GM that involve skills in foreign languages, cultural sensitivity, and local adaptation. Not surprisingly, most subsidiaries (59.2%) are located in the three less psychically distant regions: Latin America, Latin Europe, and Portuguese speaking Africa. A noteworthy aspect is the concentration of BrMNs’ subsidiaries in North America (27.6%). This study employed hierarchical linear modeling to examine multilevel effects involving GM, psychic distance, and performance. This approach enabled examining interplay between headquarters and subsidiaries, providing further insights that are not possible through the single level approaches that are frequently employed in GM research (e.g. Arora et al., 2004; Nummela et al., 2004). In this case it was possible to observe that a parent company’s cross-cultural mindset is related to the performance at the subsidiary level. Global mindset dimensions do not seem, however, to diminish the challenges imposed by psychic distance on Brazilian subsidiaries. Although our results show that some of the most internationalized Brazilian companies have a high global mindset, a closer look reveals that the stages of GM development may vary greatly amongst firms. Furthermore, it seems that there is still much to be done, especially regarding cross-cultural competences. In fact, this study has highlighted that such dimension may have a role in the achievements of BrMNs abroad, affecting their subsidiaries’ performance positively. Psychic distance, in turn, impacts it even more, but negatively (Could this be a specific characteristic of late movers?).
1. Introduction

Literature has emphasized the importance for corporations to develop their global mindset (GM), in order to operate in the complex environment of global business. It has been argued, for instance, that “global managers” should develop more global and integrating perspectives (Kedia and Mukherji, 1999). Furthermore, Bartlett and Ghoshal (1992) comment that global managers must also have “a broad, non-parochial view of the company and its operations, yet a deep understanding of their own business, country, or functional tasks” (Bartlett and Ghoshal, 1992, pp-132).

Srinivas (1995), in turn, claims that this is a highly relevant issue for emerging and developing countries: GM must be developed so that new opportunities can be spotted and explored, in a context of global and interconnected business. As a matter of fact, it has been observed that, for instance, the GM level of Chinese corporations influences their international strategies and performance, in their operations worldwide (Yin and Bao, 2007; Yin, Johnson and Bao, 2008). Raghavan (2008), on the other hand, emphasizes the urge for greater development of GM among Indian managers so that it can contribute to the international competitiveness of their corporations. Therefore, it is reasonable to expect that, in Latin America, such development could influence the internationalization process of its corporations as well. Borini et al. (2007), for example, observed the huge challenges faced by ‘Votorantim’, a Brazilian multinational (BrMN), in the northern hemisphere, due to GM-related fragilities.

In fact, the environment in which Brazilian enterprises grew up until the late 1980s was characterized by a large internal market, protected and heavily influenced by the decisions of government policy (Fleury and Fleury, 2008). This context stimulated the development of a “parochial” mindset among entrepreneurs and firms. Instead of focusing on global opportunities, Brazilian managers preferred, for decades, to invest in the well known domestic market, avoiding endeavors to competitive international markets and through different cultures. For this reason, our view is that global mindset (or its lack!) may play an important role in the internationalization of BrMNs and impact their achievements abroad. Due to BrMNs’ parochial background, GM is probably a vector that is worth considering to understand their internationalization processes. For their next stages of expansion abroad, it is likely that many BrMNs still have to develop their global mindsets (Tanure et al. 2009).

Despite the relevance of the subject for companies from countries under a recent internationalization process, it still has not been thoroughly analyzed. In fact, research on global mindset of emerging economies’ companies is scarce (Yin et al. 2008). Furthermore, when it comes to the understanding on how global mindset may influence the performance of these firms abroad, a small body of evidence is available. Previous research has suggested that GM may influence performance (Harveston et al, 1997; Nummela et al., 2004). Yin et al. (2008) studied Chinese firms and found that global mindset level has a positive relationship with outperforming competitors, profitability, and success in international expansion. However, these authors have not focused on what happens at the subsidiaries’ level. This is what this article attempts to do regarding Brazilian subsidiaries as such approach may shed additional light on how GM impacts operations abroad.

Another vector that may influence the internationalization of Brazilian companies is psychic distance (Johanson and Vahlne, 1977). Since the early 1990s, the exposition of these companies to global competitiveness has increased (Fleury and Fleury, 2008), and their outward FDI started mainly through closer countries. In fact, previous research has shown that countries in Latin America have been most frequently chosen by Brazilian companies for their first expansions into international markets (Cyrino et al., 2010). They first enter similar
markets – in terms of languages, development level, educational level, geographical distance, etc. - to reduce perceived risks, to acquire international experience, and to develop regional competitive advantages. Only after learning how to operate within closer markets BrMNs approach more psychically distant countries.

Hence, global mindset and psychic distance are both important dimensions as regards the understanding of Brazilian companies’ internationalization process. In our view, they may impose challenges to BrMNs’ achievements abroad, impacting their performance. Therefore, the main question addressed by this article is: to what extent do global mindset and psychic distance influence the performance of BrMN’s subsidiaries? To answer it a survey was conducted, involving 64 parent companies and 76 subsidiaries. Methodological approaches in GM research have relied mostly on a single level analysis (an exception is, for instance, the work of Story (2010)), not exploring interactions between parent companies’ and subsidiaries’ views. For this reason, we adopted a multilevel empirical analysis, intending to observe relationships between the overall GM of BrMNs (headquarters = level 2), and performance and psychic distance at the level of their units abroad (subsidiaries = level 1). Thus, we employed a hierarchical linear model, in order to explore interactions between headquarters’ and subsidiaries’ data.

This article has the following sections: (1) introduction; (2) literature review and integrative framework; (3) research, findings and discussion; and (4) final comments.

2. Literature review and integrative theoretical framework

The following sections show the main concepts related to global mindset and psychic distance, which have been the basis for the constructs employed in our research.

2.2. Global Mindset

The issues of characterizing and defining what “global mindset” is, and how it is developed, have been emphasized by literature (Gupta and Govindarajan, 2002; Levy et al., 2007; Bowen and Inkpen, 2009), although pioneering studies along the same lines have taken place for a longer period (e.g. Perlmutter, 1969). This results from the fact that, in a highly competitive and globally connected scenario, it is required that managers be able to deal with strategic and cross-cultural complexity and high-strategic, to “think globally and act locally” (Arora et al. 2004), operating in countries with various levels of psychic distance, involving differences regarding: culture, institutions, industries, level of development, religion, and education (Dow and Karunaratna, 2006), among others. Gupta and Govindarajan (2002) argue that GM is one of the elements of organizational intelligence required to identify and explore opportunities, even in diverse and distant regions; they state that, in globalized business, managers are expected to be able to deal with highly heterogeneous cultures and markets, understanding and interpreting them. Levy et al. (2007) support this view, and stress that this element can become a source of competitive advantage in international markets. After all, it refers to a situation in which global managers need to ensure, simultaneously, aspects as: global efficiency and competitiveness, local/national flexibility and response, and leverage of learning through different markets and countries (Bartlett and Ghoshal, 1992). These propositions are grounded on the notion that multinationals (MNs) should simultaneously coordinate the needs for global integration and local response (Doz and Prahalad, 1986; Gupta and Govindarajan, 2002). Some state that managing such complexity is more dependent on a managing “mind” than on the strategy and structure itself (Bartlett and Ghoshal, 1990). In this perspective, GM refers to specific lenses to interpret and decode reality, providing it with meaning. It also affects the strategic actions prioritized by companies (Levy, 2005). In general, GM has been explored from three perspectives: cultural, strategic and multidimensional (Levy et al., 2007):
2.2.1  Cultural perspective
The cultural perspective prioritizes issues related to national and cultural diversity, connected to business globalization (Perlmutter, 1969; Adler and Bartholomew, 1992; Kobrin, 1994; Maznevski and Lane, 2004; Story, 2010). This line of thought strengthens, above all, the challenges faced by managers, as business expands worldwide. As a consequence, it becomes necessary to review mainly ethnocentric issues, so as to adapt to new cultural realities. As a matter of fact, geocentric-oriented managers act “in a universalist and super-national manner, thus reducing the meaning of nationality and cultural differences, when determining who is competent or reliable” (Levy et al., 200, pp-233). Adler and Bartholomew (1992) very well synthesize this perspective when they suggest that managers with “transnational” competences should understand the business environment from a global perspective, work in a culturally diverse environment, learn about various cultures, adapt to living in different cultures, enable a multi-cultural organizational environment, and have peer interaction with foreign colleagues. By doing so, the “cultural perspective” on global mindset strengthens cross-cultural and relational dimensions as well as corporations’ and managers’ skills required to understand other cultures and to communicate and interact with them, thus establishing and nourishing global relations.

2.2.2  Strategic Perspective
The strategic perspective is initially based on classic studies about multinationals (Prahalad and Doz, 1987; Bartlett and Ghoshal, 1998). It prioritizes dimensions of strategic and organizational complexity generated by globalization (Kefalas, 1998; Harveston et al., 2000; Gupta and Govindarajan, 2002; Arora et al., 2004; Nummela et al., 2004). Along those lines, Kefalas (1998) stresses that those who are able to think globally and act locally have the most adequate mindset to expand the organization globally.

A premise that influences the concept of GM, from a strategic perspective, is that managing multinationals comprehends the ability to integrate and coordinate geographically distant operations and, simultaneously, to respond to local demands (Prahalad and Doz, 1987; Prahalad, 1990); it involves tensions and balances between these polarities. In this scenario, the transnational manager should be able to: enable efficiency and competitiveness globally; carry out flexibility and response at a specific regional level. The papers of Kefalas (1998) and Arora et al. (2004) address this polarity, the need for balance between global integration and local adaptive response. Arora et al. (2004) define GM in view of conceptualization (think globally) and contextualization (act locally) skills. Along the same lines, Gupta and Govindarajan (2002) define GM as the opening for diversity that is present in different cultures and markets; it means being aware of these diversities. Simultaneously, it is also the ability to integrate and synthesize this diversity. According to them, GM is the basis to identify and capture emerging opportunities.

Hence, the “strategic perspective” emphasizes a global business orientation, the view of an interconnected world, the perception that there are opportunities in several places and, at the same time, the ability to understand and adjust local specific issues, in the markets where the organizations operate.

2.2.3: Integrative Framework: The multidimensional perspective
The multidimensional perspective mainly integrates both cultural and strategic perspectives; it may also comprehend other dimensions, such as knowledge, competences and psychological profile (Rhinesmith, 1992, 1995; Levy et al., 2007; Bowen and Inkpen, 2009). Paul (2000), for example, explains that GM allows, concurrently, a company to value cultural diversity and to promote strategic cohesion. On the other hand, Yin, Johnson and Bao (2008) propose a multidimensional approach based on the following dimensions: global orientation, global
knowledge and global skills. These dimensions are consistent with the different approaches mentioned in the literature and have been employed in a study on GM in Chinese firms. So, the “multidimensional perspective” can be understood as the integration of the previous perspectives – cultural and strategic – and their main characteristics. This can be observed in the works of Yin et al. (2008) and Story and Barbuto Jr. (2010). In fact, Story and Barbuto Jr.’s GM construct involves two dimensions: cultural intelligence and strategic orientation. However they focus on individuals, while Yin et al. (2008) focus on the firm level.

In fact, the levels of analysis adopted within GM literature have ranged from (Levy et al., 2007): the individual (the person’s GM and how it influences his/her actions and choices regarding international issues) to the organization level (the firm’s GM and how it influences strategies and actions in international contexts/markets). Despite their possible interconnections, these levels encompass different components. The individual level generally involves attributes related to psychological traits, cognitive profile, attitudes, cross-cultural competences, and so forth (e.g. Bowen and Inkpen (2009)). The organizational level encompasses a collective view that allows to “see the world as one interconnected marketplace and prompts the willingness to actively explores” (Yin et al., 2008:5). It drives top management attention patterns and global strategies (e.g. Levy (2005) and motivates commitment and allocation of (tangible and intangible) resources abroad. Therefore, we propose the following integrative framework for global mindset at the firm level; it involves elements of both, cultural and strategic perspectives. In this view, global mindset is two-fold, involving cross-cultural and strategic dimensions (Figure 1). This integrative framework oriented the development of the prepositions and constructs employed in this article. Nevertheless, what is the relevance of global mindset for Brazilian enterprises?

Figure 1 – Global mindset: integrative framework.

![Figure 1 – Global mindset: integrative framework.](image)

Source: the authors

### 2.2.4. Global mindset and Brazilian multinationals

As mentioned, the environment in which Brazilian enterprises grew up and operated until the late 1980s was characterized by a large internal market, protected and heavily influenced by the decisions of government policy (Fleury and Fleury, 2008). In the case of the local companies, that shaped a "parochial" and “ethnocentric” mindset, entrepreneurs dependent on local institutions, avoiding risk taking and overly directed into the country, totally detached from the international landscape. In fact, it has been argued that Brazilian managers still have to develop their global mindset (Tanure et al. 2009) and that Brazilian companies still see the world from a “Brazilian perspective” (Cyrino and Barcellos, 2006). Besides, many executives, owners, entrepreneurs, and boards lack international experience. In fact, the historical and institutional environment of emerging economies seems to mold the GM of their enterprises. Yin, Johnson e Bao (2008), for instance, identified that the current level of global mindset of Chinese firms is currently quite low. They highlight that much of China’s economic growth depends on its domestic market and that many Chinese firms have operated under the communist planning regime. Consequently, a large number of firms lack international experience and the basic skills to operate abroad successfully.
However, Latin enterprises experienced a different path after the opening of the domestic market advocated by Washington Consensus (Cuervo-Cazurra, 2008). Since the 1990s, they have increasingly been exposed to global competition and some have even been considered “global challengers” (Boston Consulting Group, 2009). As progressive exposition to international experience and to globalized markets tend to develop GM (Nummela et al., 2004) it is possible that at least the most internationalized ones have improved it. In fact, recent research has shown that BrMNs have developed international business competences through their exposition to global competition (Cyrino et al. 2010; Fleury et al., 2010b). Hence, at least for the most internationalized Brazilian companies, it seems reasonable to expect that they have increased their global mindset levels. Therefore:

**PROPOSITION 1:** the levels of cross-cultural and strategic global mindset of BrMNs range from low to medium.

What happens at the level of the Brazilian subsidiaries? How can this dimension influence their performance?

First, it is worth considering that Brazilian headquarters tend to centralize decisions and that subsidiaries present low autonomy (Borini et al., 2009). So, in the case of BrMNs, the mindset of parent companies strongly influence the actions of their units abroad.

Second, previous research suggests that GM influences companies’ performance abroad (Harveston et al., 1997; Nummela et al., 2004; Yin et al., 2008). GM involves focusing attention on global strategic issues (Levy, 2005). As global mindset drives companies’ strategies and resource allocation abroad, it tends to impact subsidiaries operations and, in consequence, performance. On the other hand, cross-cultural GM allows companies to understand cultural complexities, to adapt their operations abroad, and to build up strategic relationships; these relationships require, in turn, trust-building. The failure of companies and managers to adapt to foreign environments is an important reason for unsuccessful internationalization (Johanson et al., 2006). Global mindset allows companies to respond accurately and quickly to markets changes and to diversity across cultures and markets (Gupta and Govindarajan, 2002). Therefore:

**PROPOSITION 2:** Cross-cultural and strategic global mindset of Brazilian parent companies have a positive relationship with the performance of their subsidiaries.

### 2.2.5. Psychic distance and Brazilian multinationals

Psychic distance is a well known concept in IB, although its definition may vary considerably and discussions on its impacts on organizations are far from conclusive. The original Uppsala psychic distance concept draws on the idea that enterprises start their internationalization through closer markets, with lower psychic distance levels, and gradually advance to markets with higher psychic distances (Johanson and Vahlne, 1977). According to this view, markets with higher psychic distance bring challenges to companies, in terms of how to access, gather, and interpret information. Thus, increasing commitment and learning have to take place, in order to internationalize to such markets. Nordstrom and Vahlne (1994) argue that psychic distance involves dimensions that challenge firms’ learning processes regarding foreign markets. Some authors have stressed the costs and threats related to such distance; that is the case of O’Grady and Lane (1996) defined psychic distance as “(...) the degree of a company’s uncertainty in regard to an international market, which results from differences and other business-related difficulties that create barriers for learning about the market and for the establishment of international operations”. Incapacity
to adapt to such differences may lead to unsuccessful endeavors abroad (Johanson et al., 2006).

These differences may involve not only cultural issues, but also aspects such as administrative distance, geographic distance, and economic distance (Ghemawat, 2001). Dow and Karunaratna (2006) developed and tested indicators of psychic distance which includes dimensions such as differences in culture, language, religion, education, political systems, industrial development, and geographical distance. Their study revealed that these factors are significant for predicting trade flow among countries. The authors also found that Hofstede’s cultural dimensions, which are largely employed in studies regarding cultural distance, are insufficient for the understanding of these flows. Sometimes, countries seem to be culturally close (and geographically close, such as US and Canada), but assumptions of similarity may hide critical differences that can impact international performance (O’Grady and Lane, 1996).

Regarding BrMNs, they tend to avoid psychically distant markets (Cyrino et al., 2010). They frequently internationalize through Latin America and gradually advance to Latin Europe (e.g. Portugal and Spain) or to Portuguese speaking Africa (e.g. Angola and Mozambique); only after learning how to operate within closer markets BrMNs approach more distant markets.

Some companies, however, does not show this pattern and start internationalizing through psychically and geographically distant markets. These alternative trajectories are more frequent in specific businesses – such as commodities or global sectors - in which the importance of psychic distance is smaller in the face of economic transactions (Cyrino et al, 2010). Brazilian companies are, in general, sensitive to psychic distance-related uncertainty and risk. In fact, BrMNs come from an environment in which prevailed the emphasis on the domestic market and local environment, hindering the comprehension (and interpretation) of cultural differences and characteristics of other regions and, also, the access to relevant international networks (Johanson and Vahlne, 2009). Furthermore, it has been argued that their managers lack international business experience (Tanure et al., 2009).

On the other hand, regarding organizational performance, Evans and Mavondo (2002) identified that psychic distance is positively related to financial performance and strategic effectiveness. Arenius (2005), in turn, argues that a higher psychic distance decreases the speed of market penetration and delays the generation of sales income from that market. Furthermore, Evans, Mavondo and Bridson (2008) found that international experience, psychic distance, entry strategy and retail strategy adaptation are important drivers for performance. Retail strategies are driven mainly by psychic distance and, when entering psychically distant markets, more adaptation efforts are required. Although previous research identified a positive relationship between psychic distance and performance (Evans and Mavondo, 2002; Evans et al., 2008), our view is that this mainly applies for developed countries’ firms. For those companies, highly psychically distant markets may represent profitable alternatives to the highly competitive and mature markets where they already operate. For emerging economies’ firms, in turn, the challenge imposed by a higher psychic distance may be a relevant one. More developed countries (e.g. European Union), may cause entry avoidance and even disinvestment of Latin enterprises (Fleury et al., 2010a). On the other hand, Khanna and Palepu (2006) stress that emerging economies usually lack the “institutions and infrastructure that make markets work well”. When they internationalize, their companies have to compete with “their advanced market counterparts”.

**PROPOSITION 3**: Psychic distances of Brazilian subsidiaries’ locations have a negative relationship with their performance.
Nevertheless, it is likely that companies with higher GM levels have better conditions to manage their businesses in psychically distant environments. Therefore, 

**PROPOSITION 4:** Cross-cultural and strategic global mindset moderate the psychic distance-performance relationship.

3. Research
3.1. Data collection
The research question proposed in this paper is: to what extent do GM and psychic distance influence the performance of BrMNs’ subsidiaries? To answer it, a survey was carried out. In our survey, the research universe consisted of Brazilian multinationals (BrMNEs) with manufacturing activities or that supplied technological services, with operations abroad. Respondents were from both, headquarters and subsidiaries of these companies, in order to allow the analysis of interactions between the variables investigated.

In early 2010, 97 firms were identified as the universe of Brazilian multinationals, firms with at least one actively managed production operation abroad. That included companies with foreign manufacturing plants, as well as technology-based professional services enterprises (construction and IT) with project offices abroad. Out of the 97 firms contacted, 64 (65.9%) agreed to answer a questionnaire. Of these, 45 were from the industrial sector (70.3%) and 19 were from the technical and professional services sector (29.7%). The senior managers in charge of international operations at the headquarters of these companies were the respondents. The questionnaire had the adopted global mindset scale described below. As GM has been linked to the strategic spheres of the companies – where general internationalization strategies and decisions usually take place, especially in BrMNs, that assure less autonomy to their subsidiaries (Borini et al., 2009) – headquarters’ answers were treated as overall measures of the global mindset of each Brazilian firm. This approach was inspired by previous works on GM that focused on strategic management levels of companies (Levy, 2005; Bouquet et al. 2003).

Those headquarters that agreed to take part authorized us to contact their foreign subsidiaries. 76 subsidiaries’ general managers answered to questions concerning the performance of their subsidiaries (described below). Eventually, only the 37 headquarters with at least one subsidiary in the sample were considered for the multi-level analysis, in order to allow the examination of interactions between headquarters and subsidiaries. Each headquarters involved an average of 2.1 subsidiaries, though some involved as many as seven subsidiaries whereas others involved only one. All the scales were previously tested, in a sample of 34 Latin companies.

3.2. Constructs and scales
**Global mindset**
We adopted a multidimensional GM approach, at the organization level. The scale adapted the instrument employed by Yin, Johnson and Bao (2008) that considers three dimensions: global orientation, global knowledge, and global skills. Two items from the original scale were suppressed - as the pre-test conducted showed that these items were not clear and could generate doubts among respondents - and the following item was included, in order to capture the adaptability of managers abroad: “our managers adapt easily to the social and market contexts of our subsidiaries abroad”.

From the factor analysis conducted with the items of the final questionnaire, two factors were extracted for global mindset: cross-cultural global mindset (4 items) an strategic global mindset (3 items). Although the original scale (Yin, Johnson and Bao, 2008) contains three
factors (global orientation, global knowledge, global skills), in this work only these two were extracted. It is interesting to notice that these two factors are consistent with the cultural and strategic perspectives identified in literature. Cronbach’s Alpha for the cross-cultural dimension was 0.844. For the strategic dimension, it was 0.827. For general global mindset (including both factors) it was 0.884. These results indicate good internal consistency of the GM constructs used in the survey. In addition, Kolmogorov-Smirnov test indicated normality in the distribution of these dimensions. Therefore, for global mindset, the constructs employed in the survey were:

-Cross-cultural global mindset: we as a firm have a very good understanding of major foreign cultures; we as a firm have sufficient cultural sensitivity and are able to work with people from different cultures efficiently; we have sufficient member of staff who are proficient in English and in the languages spoken in our key foreign markets; our managers can easily adapt to the social and market context of our subsidiaries abroad.

-Strategic global mindset: we are making enormous efforts to understand foreign markets, such as customers, competitors and general market situations; we are planning or making a large investment commitment internationally; we are planning to create or creating a worldwide web of relationships with suppliers, distributors, peer firms and customers.

The respondents were asked to answer to what extent each statement effectively applies to their companies, through a 5-point Likert-type scale, ranging from 1=totally disagree to 5=totally agree.

Psychic distance
Psychic distance considered the locations of the subsidiaries in relation to Brazil. It was measured through a multidimensional approach, which consisted of seven dimensions (following Tanure et al., 2009 and Cyrino et al., 2010): culture, language, religion, education, administration, economic/industrial development, and geographical distance. To measure some of these dimensions – cultural distance, language and religions difference, and democracy indicators - Dow and Karunaratna’s (2006) methodology was employed. While cultural distance consisted of a composite index (Kogut and Singh, 1988), the other dimensions were an average of the other indicators. The education, administrative and economic/industrial distances employed indicators of the World Economic Forum’s Global Competitiveness Index, which is an assessment of countries' competitiveness. The education dimension included differences in primary education, higher education and training, while the administrative dimension included differences regarding institutions and democracy. Finally, the economic/industrial difference included the following components: infrastructure, macro economy, goods market efficiency, labor market efficiency, financial market sophistication, technological readiness, business sophistication, and innovation. The following regions were considered, due to their relevance for Brazilian and Latin MNs internationalization patterns (Cyrino et al., 2010; Fleury et al., 2010a): Latin America, Latin Africa, Africa, Latin Europe, North America, Oceania, Europe, Middle East, and Asia.”Latin Europe” consists of Belgium, Spain, Italy, Portugal, and France (Ronen and Shenkar, 1985). “Portuguese speaking Africa” represents a set of Portuguese speaking countries that includes: Angola, Cape Verde, Guinea-Bissau, Mozambique, and Sao Tome and Principe. These two clusters have Latin or/and Portuguese roots and some proximity in relation to Brazil (regarding culture, language, religion, for instance) and represent markets frequently chosen by BrMNs, in their internationalization processes (Cyrino et al., 2010). As Hofstede’s culture indicators are not available for all African countries, cultural distance for “Portuguese speaking Africa” employed an average of the culture indicators of the other African countries. The final
psychic distance indexes were an average of the seven dimensions defined above. They are indicated as a percentage of the highest distance in relation to Brazil (see Table 1, that is arranged in order of increasing psychic distance).

Table 1 – Psychic distance of Brazilian subsidiaries’ locations.

<table>
<thead>
<tr>
<th>Region</th>
<th>Psychic distance (in relation to Brazil)</th>
<th>Number of subsidiaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latin America</td>
<td>25%</td>
<td>37 (48.7%)</td>
</tr>
<tr>
<td>Latin Europe</td>
<td>35%</td>
<td>6 (7.9%)</td>
</tr>
<tr>
<td>Portuguese speaking Africa</td>
<td>36%</td>
<td>2 (2.6%)</td>
</tr>
<tr>
<td>Africa</td>
<td>50%</td>
<td>1 (1.3%)</td>
</tr>
<tr>
<td>North America</td>
<td>52%</td>
<td>21 (27.6%)</td>
</tr>
<tr>
<td>Oceania</td>
<td>53%</td>
<td>1 (1.3%)</td>
</tr>
<tr>
<td>Europe</td>
<td>55%</td>
<td>2 (2.6%)</td>
</tr>
<tr>
<td>Middle East</td>
<td>57%</td>
<td>2 (2.6%)</td>
</tr>
<tr>
<td>Asia</td>
<td>62%</td>
<td>3 (4%)</td>
</tr>
<tr>
<td>Total</td>
<td>-</td>
<td>75 (100%) (*)</td>
</tr>
</tbody>
</table>

Note: (*) One respondent did not indicate the subsidiary’s location.

Table 1 shows that, not surprisingly, most subsidiaries (59.2%) are located in the three less psychically distant regions: Latin America, Latin Europe, and Portuguese speaking Africa. A noteworthy aspect is the concentration of BrMNs’ subsidiaries in North America (27.6%).

Performance
The performance of the subsidiary was obtained through a composite index that consisted of the following components: return on investments, profitability, sales growth and market share (Zhou and Li, 2009). Respondents were asked to evaluate the performance of their subsidiaries in relation to the expectation of the parent companies in the last three year period, on a 5-point Likert scale, ranging from: 1=much worse, to 5=much better. It is worth mention that respondents were senior managers, deeply involved with the performance targets of their companies and subsidiaries. The items had a high loading on a single factor, accounting for 78% of the variance. Cronbach’s Alpha for performance was 0.92. Kolmogorov-Smirnov test indicated normality.

3.1.4. Empirical analysis
First we analyzed the descriptive statistics of the 64 parent companies to examine the distribution of global mindset scores among BrMNs, focusing on Proposition 1. One-way ANOVA procedures were also carried out, in order to compare cross-cultural and strategic GM average scores. Then, in order to examine relationships between headquarters and subsidiaries (Propositions 2 to 4), a multi-level approach was conducted, involving 37 parent companies and their 76 subsidiaries. As hierarchical linear modeling allows to test how variables measured at one level affect relations occurring at another (Raudenbush and Bryk, 2002), it was employed to analyze a data structure where subsidiaries (level 1) were nested within Brazilian parent companies (level 2). HML6 software was employed (Raudenbush et al., 2004). The multilevel analysis focused on the relations between the performance of 76 subsidiaries (level 1) and: a) psychic distance of the regions/countries where they are located (level 1 predictor variable, employing the indexes shown in Table 2); and b) cross-cultural
and strategic global mindset of parent companies (both level 2 variables, employing scores of the 37 headquarters). As for the hierarchical linear model a number of conditions have to be met (Hoffmann, 1997), we conducted a sequence of models as described below.

### 3.3. Results

#### 3.3.1. Descriptive analysis

Through the analysis of the scores of strategic and cross-cultural global mindset (scores were obtained through an average of the items that composed each dimension), it was observed that most BrMNs have scores that are superior to 3.0 (Figure 3). Following Arora et al. (2004), this value (3.0) was considered “medium”; firms with scores above 3.0 were considered “globally minded”. Most BrMNs (62.5%) have scores above 3.0 (‘medium’), in both GM dimensions – these are the “globally minded companies”. Although this result partially supports Proposition 1, it does not offer a view of the complete picture. In fact, the most globally minded companies, with both scores above 4.0, were only 18 (28.12%). The higher GM scores appeared among companies that are already very internationalized and have presence in multiple continents (this is the case of well-known Brazilian companies, such as Embraer and Vale). On the other hand, 14% of them have only the strategic dimension above 3.0 (these are the “international markets oriented firms”), while other 15.6% have only the cross-cultural dimension above that score (“cross-culturally competent firms”). Finally, 7.8% of the companies showed lower scores. This final group (“domestic market oriented firms”) comprises mainly organizations that have just started their internationalization and operate mostly in less psychically distant markets.

Summing up, BrMN’s GM scores suggest that: a) although, unexpectedly, most firms have scores above medium, only a few are “fully globally minded”; b) firms are in different stages regarding GM; furthermore, some have higher strategic GM than cross-cultural GM (and the converse); c) some firms, the “domestic market oriented” ones, have fairly low scores; d) regarding strategic GM, some companies lack international commitment, even concerning the development of a network of relationships abroad; e) finally, some BrMNs companies face constraints concerning cross-cultural GM that involve skills in foreign languages, cultural sensitivity, and local adaptation.

#### 3.3.2. Multilevel analysis

Regarding the multi-level analysis, the hierarchical linear modeling outputs were (Roesch, 2010; Raudenbush and Bryk, 2002):

**Unconditional model:** The intercept-only model included only the level 1 dependent variable (performance) and revealed an inter-firms correlation coefficient of 0.28. This means that 28% of the variance in performance (overall performance composite index) is between firms and 72% of the variance in performance is between subsidiaries. The condition of within and between group variance was satisfied.

**Mean-as outcomes model:** In this phase of the analysis, cross-cultural and strategic GM were added as level 2 predictors of performance. When cross-cultural global mindset of the firm was added, the regression coefficient was positive and statistically significant (b = 0.24, p = 0.03). This means that firms with higher cross-cultural global mindset scores tended to present better performance indexes at the subsidiaries level, if compared to those with lower cross-cultural global mindset scores (and the converse as well). The within units "R²n" variance explained (Hoffmann, 1997) was 0.015. So, cross-cultural global mindset accounted for 1.5% of subsidiaries’ performance variance. With strategic global mindset of the firm as a level-2 predictor, however, the coefficient was not statistically significant (b = 0.02, p = 0.82).
When cross-cultural and strategic GM were taken together as level 2 predictors, a similar effect was detected, as cross-cultural was positive and statistically significant, having $R^2=0.015$ as well (see Table 5, where: CGM=cross-cultural GM; SGM=strategic GM). As only the influence of cross-cultural GM was significant, these results partially support Proposition 2.

**Table 2 – Results for mean-as-outcomes model.**

<table>
<thead>
<tr>
<th>Fixed effects</th>
<th>Coefficient</th>
<th>Standard error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept, G00</td>
<td>2.82**</td>
<td>0.38</td>
</tr>
<tr>
<td>CGM, G01</td>
<td>0.32*</td>
<td>0.14</td>
</tr>
<tr>
<td>SGM, G02</td>
<td>-0.17</td>
<td>0.15</td>
</tr>
</tbody>
</table>

Note: * $p<0.05$, ** $p<0.01$

**Random-coefficient regression model:** Having psychic distance as a level 1 predictor, the regression was negative and significant ($b=-2.01, p=0.014$). Thus, performance tended to be lower among subsidiaries located in psychically distant regions and higher in psychically proximate regions (and the converse as well). This supports Proposition 3. The "$R^2$" for level 1 model was 0.075. So psychic distance explained 7.5% of subsidiaries’ performance variance.

**Intercepts-and slopes-as-outcomes models:** First we added the level 1 and 2 variables, not including cross-level interactions between cross-cultural and strategic GM and psychic distance in this model: Performance = B0 + B1*(psychic distance) + R (level 1 model), where B0 = G00 + G01*(CGM) + G02*(SGM) + U0 and B1 = G10 + U1 (level 2 model). This model doesn’t examine the regression coefficient of GM dimensions-psychic distance. In this case, cross-cultural GM was again significant and positive ($b= 0.31, p=0.04$) and psychic distance was significant and negative ($b=-2.07, p=0.02$).

**Table 3 - Results for intercepts-and-slopes-as outcomes models.**

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>Std.Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercepts-as-outcomes models, B0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept, G00</td>
<td>3.371686**</td>
<td>0.113420</td>
</tr>
<tr>
<td>CGM, G01</td>
<td>0.295677*</td>
<td>0.127162</td>
</tr>
<tr>
<td>SGM, G02</td>
<td>-0.155195</td>
<td>0.134508</td>
</tr>
</tbody>
</table>

| Overall perf. | | |
| Slope-as-outcomes models, B1 | | |
| Intercept (P.DIST), G10 | -1.884581* | 0.793480 |
| CGM, G11 | 0.610658 | 0.617313 |
| SGM, G12 | -0.906859 | 0.724918 |

Note: * $p<0.05$, ** $p<0.01$

Finally, in order to test Proposition 4, all variables were tested simultaneously, adding cross-cultural and strategic GM as level 2 predictors to both equations (BO) and slope (B1). The final equation was: Performance= B0 + B1*(psychic distance) + R (level 1 model); with B0 = G00 + G01*(cross-cultural GM) + G02*(strategic GM) + U0 and B1 = G10 + G11*(cross-cultural GM) + G12*(strategic GM) + U1 (level 2 models). In this last model (see table above, where CGM=cross-cultural GM, SGM= strategic GM, P.DIST.=psychic distance ), the regression coefficient relating cross-cultural GM to overall performance was positive and statistically significant ($b = 0.295, p = 0.027$), while the regression coefficient relating strategic GM to overall performance was not statistically significant ($b= -0.155, p=0.258$). Furthermore, the regression coefficient relating psychic distance to overall performance was negative and statistically significant ($b = -1.884, p=0.024$). The cross-level interactions...
between cross-cultural and strategic GM and psychic distance, however, were not statistically significant. These results do not support the proposition that global mindset dimensions moderate the influence of psychic distance on performance (Proposition 4).

Performance components: When the components of performance (return on investments, profitability, sales growth, and market share) were tested separately - following the same modeling procedures - similar findings emerged for sales growth and market share. For sales growth, having psychic distance as a level 1 predictor, the regression was negative and significant (b=−3.03, p=0.001); consequently, Proposition 3 was supported for this performance component. Furthermore, psychic distance explained 11.5% of subsidiaries’ sales growth variance (\(R^2\) was 0.115). Propositions 2 and 4 (through intercepts-and-slopes-as outcomes modeling), however, weren’t supported. For market share, the means-as-outcome model indicated a positive and significant relationship with cross-cultural global mindset (b=0.37, p=0.03). This dimension accounted for 2.6% of subsidiaries’ market share variance and Proposition 2 was again partially supported. Having psychic distance as a predictor, the relationship was negative and significant (b=−2.19, p=0.01), supporting Proposition 3. Psychic distance accounted for 2.6% of market share variance. Proposition 4 wasn’t supported for market share, when all the variables were tested simultaneously, adding cross-cultural and strategic GM as level-2 predictors to both equations, intercept (BO) and slope (B1).

3.4. Discussion
Results indicated a positive and significant relationship between cross-cultural GM and performance. Therefore, if GM dimensions are considered separately, these results for cross-cultural GM are consistent with previous research (Harveston et al., 1997; Nummela et al., 2004). Regarding emerging economies, similar results were found among Chinese firms (Yin et al., 2008). Furthermore, the multilevel analysis added some further insights into this issue, showing the influence of parent companies’ mindsets on subsidiaries’ achievements. As cross-cultural GM is largely related to international human resources practices – involving selection and development of people with appropriate competences for performing in cross-cultural environments – it is possible that headquarters’ GM influences the way these aspects have been managed at the subsidiary’s level. According to Johanson et al. (2006: 526), the lack of such competences may have overwhelming consequences as failures in international endeavors may be due to “the inability of managers to understand the local culture of a subsidiary and to interact effectively with their counterparts overseas, rather than a lack of ability in the technical aspects of their job”. Hence, weaknesses regarding cross-cultural GM may lead to: mistakes in choosing local partners and employees, difficulties in managing acquisitions and joint ventures, lack of comprehension of local features (such as social, economic, political, and cultural aspects), and so on. These aspects may be specially challenging for companies with lower cross-cultural GM levels, such as the “domestic market oriented” ones (Figure 3).
Perhaps the implications of a lower cross-cultural GM may also be extended to: product adaptation, development of distribution channels, brand positioning, and to the understanding of consumer markets abroad. Furthermore, Andersen (2003) calls attention to the importance of the cross-cultural dimension to the development of international business relationships and to relationship marketing. It is likely that these elements may play a role in Brazilian subsidiaries’ market share and sales growth, explaining the observed impact of GM on these
two performance components. Further research is needed, however, to give support to this explanation.

On the other hand, the influence of strategic GM on performance was not observed. This unexpected result raised a new question that has theoretical implications: what are the scopes of influence (on performance) of cross-cultural and strategic GM? Although cross-cultural GM clearly has relevant impacts at the subsidiary level – translating itself into adaptive and relational capacities and impacting on local performance – this did not seem to be the case for strategic GM. Actually, these two dimensions are very different in nature and may probably affect performance differently. While cross-cultural GM is related to “acting locally” (Kefalas, 1998; Arora et al, 2004) strategic GM refers to “thinking globally”. Strategic GM involves identifying international opportunities, understanding global markets and industries, and investing abroad. So, it is likely that, regarding performance, cross-cultural GM may influence the achievements at the subsidiary level, while strategic GM may influence the performance of the company as a whole. This proposition is worth to be addressed by future research.

Regarding psychic distance, we found a negative relationship between psychic distance: the higher the psychic distance, the lower the performance of the Brazilian subsidiary. These results contradict previous research that identified a positive relationship between psychic distance and performance (Evans and Mavondo, 2002; Evans, Mavondo et al. 2008), that clearly reflect the experiences of ‘early movers’, of multinationals from developed countries. BrMNs, however, come from a very different context; for them, a higher psychic distance may be challenging.

Nevertheless, negative relationships between psychic distance and market share and sales growth were also identified. This is consistent with the findings of Arenius (2005), that argues that higher psychic distance decreases the speed of market penetration and delays incomes due to difficulties and to the time and efforts required to develop adequate external relationships. Knight and Cavusgil (2004) also stress the relevance of this dimension stating that relationships are required to advance to new market segments and Johanson and Vahlne (2009) reinforce the importance of having access to relevant international networks.

On the other hand, it was observed that strategic and cross-cultural GM do not moderate the effects of psychic distance on performance. Even a high cross-cultural GM level may be insufficient when it comes to overcoming the challenges imposed by a highly psychically distant country. This reinforces the importance of understanding psychic distance as a broader concept than cultural distance (Dow and Karunaratna, 2006 Tanure et al. 2009). Therefore, aspects such as political systems, industrial development, and geographical distance, etc. – dimensions that a broader definition of psychic distance encompasses – should be taken into account to understand the challenges faced by Brazilian subsidiaries in regions such as Asia, Middle East, and Europe (excluding Latin Europe). Future research could investigate the moderating effects of GM on each of those psychic distance components. As identified by Evans and Mavondo (2002), each psychic distance component may have a different relationship with performance.

4. Final comments:
This study employed hierarchical linear modeling to examine multilevel effects involving GM, psychic distance, and performance. This approach enabled examining interplay between headquarters and subsidiaries, providing further insights that are not possible through the single level approaches that are frequently employed in GM research (e.g. Arora et al., 2004; Nummela et al., 2004). In this case it was possible to observe that a parent company’s cross-cultural mindset is related to the performance at the subsidiary level. Global mindset
dimensions do not seem, however, to diminish the challenges imposed by psychic distance on Brazilian subsidiaries. Although our results show that some of the most internationalized Brazilian companies have a high global mindset, a closer look reveals that the stages of GM development may vary greatly amongst firms. Furthermore, it seems that there is still much to be done, especially regarding cross-cultural competences. In fact, this study has highlighted that such dimension may have a role in the achievements of BrMNs abroad, affecting their subsidiaries’ performance positively. Psychic distance, in turn, impacts it even more, but negatively (Could this be a specific characteristic of late movers?).

Based on these findings, we believe that two issues that should be more carefully addressed by managers and policy makers, in order to leverage and sustain the current level of Brazilian internationalization, are: how to improve cross-cultural global mindset and how to cope with psychic distance. They should also be considered by firms that intend to internationalize in the near future.

This study has a set of limitations that should be managed in future research. First, the size and composition (not random) of the sample restricted generalization and, also, comparisons between different industries. The number of subsidiaries in each group should be increased as well. Second, the cross-sectional approach did not allow an understanding of how GM and psychic distance impact performance over time; thus, longitudinal studies would provide further insights. Finally, this article did not examine environmental factors (internal and external) that may affect the performance of BrMNs’ subsidiaries. Future research could consider these factors, in order to provide deeper understanding of the relative influence of GM and psychic distance on performance.

References:


