

Brazilian Multinationals' Competences: Impacts of a "Tug of War" Between Cultural Legacies and Global Mindedness

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ABSTRACT

This study investigates the simultaneous influences of culture and global mindedness on the foreign subsidiaries of Brazilian multinationals (BrMNs). Because the ability to develop competences abroad is critical for emerging multinationals competitiveness, we proposed hypotheses and tested a model for how the competences of subsidiaries may be affected by the dimensions of global mindedness and culture. To do so, we conducted a multilevel survey involving the headquarters and subsidiaries of major BrMNs. The results suggest that global mindedness, which encompasses global orientation, global knowledge, and global skills, is positively related to the development of subsidiaries' competences. By contrast, cultural factors, including power distance and uncertainty avoidance, are negatively related to competences development. Therefore, these dimensions may exert simultaneous and opposing stimuli and unaligned forces that affect the development of competences abroad, generating a "tug of war" effect.

Keywords: Global mindset. Culture. Subsidiaries. Emerging multinationals. Organizational competences.

1 INTRODUCTION

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For many years, multinationals managed their subsidiaries at arm's length. These companies could not ignore the geographic distances between headquarters and their subsidiaries, but they seemed to overlook cultural differences by imposing their management styles on their subsidiaries. In other words, American, European, and Japanese styles, among others, governed the management models and internationalization strategies of the so-called early mover multinationals. However, globalisation made this model less effective and firms were expected to develop a global mindset so as to understand the world as an interconnected marketplace and to be able to operate in multiple cultures (KEDIA; MUKHERJI, 1999; LEVY et al., 2007; YIN; JOHNSON; BAO, 2008).

Despite the relevance of developing a global mindedness in order for firms to explore global opportunities (GUPTA; GOVINDARAJAN, 2002), extant literature on global mindedness has mostly focused on developed country multinationals, neglecting its relevance for emerging country multinationals (EMs) (RAGHAVAN, 2008; YIN et al., 2008). Actually, the bulk of studies on this issue focuses on developed country multinationals, especially as the "think globally, act locally" perspective became fashionable (e.g., ARORA et al., 2004; GUPTA; GOVINDARAJAN, 2002). Notwithstanding, international business literature has shown that EMs may possess unique features and internationalization patterns (BARTLETT; GHOSHAL, 2000; CUERVO-CAZURRA, 2008; RAMAMURTI; SINGH, 2008) that may challenge traditional internationalization model.

Ideally, EMs should be characterised by open and sensitive global mindedness to allow them to leverage their international experiences to enhance and upgrade their competitiveness. However, it is also known that many of them are late movers which came from closed countries and economies or protected markets. Increasing a global mindedness may still be an issue. On the other hand, if a firm adheres to its country of origin culture, it may be unable to reap the benefits of internationalization and may remain locked into its initial portfolio of competences, creating core rigidities (LEONARD-BARTON, 1992) that jeopardise international expansion. In fact, being strongly attached to their environments of origin, some EMs have to struggle with cultural legacies in order to develop new management approaches and internationalise (CALDAS; WOOD JR., 1997; FLEURY; FLEURY, 2011; RAMAMURTI; SINGH, 2008). Therefore, the simultaneous impact of global mindedness and culture on EMs represent an issue which deserves to be better explored as it may shed additional light on the motivations and constraints for EMs internationalization.

This paper looks at a country with an emerging economy and a strongly rooted culture and considers the effects of an increase in the willingness to explore global businesses and to internationalise. The focus is on the effects of these two dimensions - cultural legacies of the past and the emergence of firms' global mindedness - on the development of competences in Brazilian multinationals (BrMNs) subsidiaries. We adopt the expression "global mindedness" to convey the idea that we are considering the organizational level rather than the individual level (e.g., JAVIDAN et al., 2011).

The focus on competences was chosen because EMs internationalization and competitiveness depend heavily on subsidiaries' resource development (MATHEWS, 2006; GUILLEN; GARCIA-CANAL, 2009). Furthermore, this is a novel approach for the understanding on how global mindedness effectively influences firms operations abroad.

To achieve the proposed objective, we conducted a multilevel survey that involved the headquarters and subsidiaries of major BrMNs. A model was estimated to test the effect of the independent variables (global mindedness and cultural factors) on subsidiaries' competences.

In summary, this paper contributes to the international business (IB) literature by a) exploring the relationships between global mindedness and culture; b) advancing understanding of the influence of the interplay between these two dimensions on competitiveness through the leveraging or inhibition of subsidiaries' competence development; c) discussing factors that influence the development of competences in EMs that are not included in traditional internationalization models; and d) employing a multilevel research design and empirical analysis. This methodological approach is not common in IB publications despite its potential and strengths (SNIDJERS; BOSKER, 1999; HITT et al. 2007; PETERSON, ARREGLE; MARTIN, 2012).

The article is structured as follows. After this introduction, the second section presents an analytical framework that introduces the main concepts targeted by our research. That section also contextualises culture and global mindedness for the studied companies, BrMNs. It provides the main characteristics of the "Brazilian way of management" and suggests that BrMNs have developed their global mindedness since the opening of the country's economy and through firms' internationalization. The third section presents the research hypotheses, and the fourth section describes the sample, methods, and equations that were modelled. The fifth section presents the research outcomes, followed by a discussion and conclusions.

2 THEORETICAL REFERENCES

Three concepts are the key notions for developing our analytical framework: culture, global mindedness, and organizational competences. Culture and global mindedness influence the views and assumptions of managers, affecting strategic thinking and strategy implementation (NARAYAN, ZANE; KEMMER, 2011). The architecture of organizational competences, in turn, is linked to strategy. Therefore, culture and global mindedness can influence companies differently.

2.1 THE NATURE AND SCOPE OF ORGANIZATIONAL COMPETENCES

The notion of a firm as an architecture of organizational competences was introduced in the classic 1990 paper “The core competence of the organization” by Prahalad and Hamel. Among organizational competences, core competences have strategic relevance. They are developed from intangible assets that cannot be easily imitated by competitors, they are the source of the company’s ability to deliver unique value to its customers, and they allow the company to be flexible in markets and products.

The competence of a multinational company can be developed in both the parent company and its subsidiaries (FOSS; PEDERSEN, 2004). The competitive advantage of a company is not based exclusively in its headquarters (HQ) but may result from the competences developed in its subsidiaries (BIRKINSHAW; HOOD; JONSSON, 1998; FROST, BIRKINSHAW; ENSIGN, 2002). Various competences may be included, such as product and service development, production, marketing and sales, and human resource management (BIRKINSHAW et al., 1998; FROST et al., 2002; RUGMAN; VERBEKE; YUAN, 2011). Fleury and Fleury (2011) add planning, organization, financial management, customer relationships management, and supply chain management competences.

The accumulated competences of a firm constitute the legacies of its trajectories and of the environment in which it germinated and grew. This accumulation process is influenced by “(...) local culture, the socio-political infrastructure and the factors endowment” (SETHI; ELANGO, 1999, p. 285).

Sethi and Elango (1999) apply this approach on a macro level, arguing that nations engender competitive advantage through a combination of factors, including endowment, unique cultural traits and deliberate policy. These three factors are related to economic and physical resources and to industrial competences, cultural values and institutional norms, and the national government’s economic and industrial policies, respectively. By articulating these three factors, country-based competitive advantages can be developed.

The same approach can be used at the micro level or firm level. The three country-of-origin effects affect competence-based competition differently. Endowment affects the resources that local firms can access, whereas cultural traits influence companies' organizational cultures. In addition, the socio-political infrastructure influences management systems and mindsets through institutions and the competition regime.

EMs internationalise rapidly, mainly through acquisitions, and they cannot rely on their parent companies' competences. For international competitiveness, EMs require more resources that have been developed abroad than developed countries' multinationals (MATHEWS, 2006; DUNNING; KIM; PARK, 2008; GUILLEN; GARCIA-CANAL, 2009). Therefore, the ability to develop competences in their subsidiaries may be a critical issue for EMs such as Brazilian firms.

2.2 CULTURE

A company's management style reveals its character and identity and reflects the firm's culture and DNA. In addition, management style is influenced by a country's culture.

The process by which European and American companies expanded their operations to other continents led them to reproduce their management practices in other countries to gain competitive advantages through cheap labour, new markets, and proximity to raw materials, among other factors. Although they sought to reproduce their home practices as closely as possible, the outcomes were rarely compatible. In general, managers faced different problems than those found in the MNE's home country. As a result, the first notions about culture used by management were similar to those employed to define national culture.

Culture is always a collective phenomenon that is shared by people who live or have lived in a specific social environment. Geert Hofstede, one of the main researchers of cultural studies, states that these are the unwritten rules of the social game, the software of the mind that separates the members of one group from the members of another group (HOFSTEDE, 1991; 2001).

In organizations, people with different values may learn similar practices. Hofstede suggests that organizational culture is rooted in the practices learnt and shared within a person's workplace. Hofstede identified four independent dimensions of culture: "Power distance", "Individualism versus Collectivism", "Masculinity versus Femininity" and "Uncertainty Avoidance". In subsequent studies, his team developed a fifth independent dimension, "Confucius Dynamics", which considers the tension between short-term and long-

term orientation and was used to partially explain the success of Asian economies in the last few decades.

Furthermore, national culture exerts influence on a firm's culture, leading to home country "cultural legacies". Therefore, an organization's management style is influenced by cultural factors linked to the firm's home country as well as by its own cultural patterns that are woven into the organization by its members. During the course of a firm's history, its members share common values and visions concerning how best to conduct the firm's business.

2.3 THE CONCEPT OF GLOBAL MINDEDNESS

Global mindedness has been explored by means of different perspectives: strategic, cross-cultural and multidimensional (LEVY et al., 2007). The strategic perspective is based on classic studies on multinationals (BARTLETT; GHOSHAL, 1998). It prioritizes dimensions of strategic and organizational complexity generated by globalization (ARORA et al., 2004; GUPTA; GOVINDARAJAN, 2002; NUMMELA et al., 2004). A premise that influences the global mindedness concept, from a strategic perspective, is that managing multinationals, among other skills, implies having the ability to integrate and coordinate geographically distant operations and, simultaneously, respond to local demands (DOZ; PRAHALAD, 1991). 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.

The cross-cultural perspective, in turn, prioritizes issues related to national and cultural diversity, connected to business globalization (MAZNEVSKI; LANE, 2004; PERLMUTTER, 1969). This line of thought strengthens, above all, the challenges faced by managers, as business expands worldwide. As a consequence, it becomes necessary to review main ethnocentric aspects, so as to adapt to new cultural realities. Therefore, 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.

The multidimensional perspective mainly integrates both cultural and strategic perspectives; it may also contemplate other dimensions, such as knowledge, competences and psychological profile (RHINESMITH, 1992; LEVY et al., 2007). 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. Global orientation refers to having a drive and attitude toward systematic and continuous international expansion (commitment to internationalization) and is adherent to elements of the strategic perspective formerly discussed (ARORA et al., 2004; GUPTA; GOVINDARAJAN, 2002; NUMMELA et al., 2004). Global skills, in their turn, involve having competencies to build and manage multicultural relationships; therefore, they are aligned to the cultural perspective (MAZNEVSKI; LANE, 2004; PERLMUTTER, 1969). Finally, global knowledge refers to having knowledge on industries and foreign countries; it also involves the capacity to detect global opportunities, being related to both perspectives (strategic and cultural). Hence, these three dimensions encompass elements of the aforementioned perspectives (strategic and cross-cultural); for this reason, Yin et al. (2008) global mindedness model was chosen for our research.

2.4 CULTURAL LEGACIES: THE "BRAZILIAN WAY OF MANAGEMENT"

This research focuses on BrMNs. Therefore, it is important to observe the local culture influence on the formation of the so-called "Brazilian way of management". It is rooted in the early history of the country and emerged from the Portuguese colonisation process, which employed rigid hierarchical controls (CALDAS, 2006). The influence of the social elements introduced in the formation of the Brazilian rural and agricultural society and the formation of urban and industrial societies (as well as the impact of this process on organizations) since the 1950s has been very important. Some authors have argued that a "traditional Brazilian style of management" is rooted in this heritage. Although the country is heterogeneous and contains numerous states and many exceptions, the following are some common cultural traits (AMADO; BRASIL, 1991; HICKSON; PUGH, 1995; HOFSTEDE, 2001; CALDAS 2006; CALDAS; WOOD JR., 1997; VIZEU, 2011):

- A lack of strategic planning and short-term solutions.
- A search for reactive and adaptive (short-term) solutions that prioritise "creative improvisation", or "jeitinho" in Portuguese.
- The subordination of professional relationships and technical skills to personal ties and loyalty (VIZEU, 2011).
- Uncertainty avoidance, unfolding risk aversion and excessive control over subsidiaries.

- Power distance, unfolding centralisation of decisions at superior hierarchical levels, with a clear incompatibility between responsibility and authority. Consequently, HQ centralises strategic decisions, and subsidiaries lack autonomy.

Regarding culture, two specific dimensions will be focused on this article: power distance and uncertainty avoidance. These dimensions have been emphasised in previous research and empirical studies on Brazilian management style and local culture (HICKSON; PUGH, 1995; CHU; WOOD JR., 2008; VIZEU, 2011) because of their importance for understanding companies' actions and strategies. Of Hofstede's cultural dimensions, these factors achieved the highest indexes in Brazil (HOFSTEDE, 2001).

2.5 LOOKING AT THE WORLD: BRMNS GLOBAL MINDEDNESS

Until the 1980s, the environment in which Brazilian enterprises developed was characterised by a large internal market that was protected and heavily influenced by government policy (FLEURY; FLEURY, 2011). In the case of local companies, this environment shaped a "parochial" and "ethnocentric" mindset in which entrepreneurs depended on local institutions, avoided risk-taking and were overly focused on the internal market and detached from the international landscape. In fact, it has been argued that Brazilian managers have yet to develop a global mindset (TANURE; BARCELLOS; FLEURY, 2009) and that Brazilian companies continue to see the world from a "Brazilian perspective". Moreover, many executives, owners, entrepreneurs, and boards lack international experience.

Recent studies suggest that the global mindedness of Brazilian firms has changed. Some evidence indicates that these companies have begun to see the world as interconnected, and they wish to explore it because of their exposure to international experiences and their growing interest in global opportunities (CYRINO, PENIDO; TANURE, 2010).

3 HYPOTHESES

In our view, culture and global mindedness (and its associated managerial "heritage") may both affect EMs' competence development. While culture may push for the maintenance of well-known managerial systems and established competences, global mindedness may stimulate new ways of understanding the environment and new forms of competence development. In fact, global mindedness influences global priorities and strategies (BOUQUET; MORRISSON; BIRKINSHAW, 2003) and the commitment of resources abroad (LEVY, 2005).

Perlmutter (1969) argues that in globally minded organizations subsidiaries tend to participate more in decision making, and knowledge flows are enhanced throughout the multinational network (among subsidiaries, from subsidiaries to HQ, and so on). Bouquet et al. (2003) add that global mindedness involves greater attention to subsidiaries and more frequent participatory discussions related to global strategies.

According to Kedia and Mukherji (1999), globally minded multinationals tend to share and integrate competences globally. Conversely, if a company has a lower global mindset, it tends to prioritise the transfer of competences from HQ to subsidiaries instead of developing them abroad (RUGMAN; VERBEKE, 2001). Therefore, we propose the following hypothesis.

Hypothesis 1: Global mindedness is positively related to the development of competences in BrMNs' subsidiaries. The higher the level of global mindedness of a firm, the more active its subsidiaries are in developing competences.

In contrast, "power distance" implies a high degree of hierarchy and centralised decision making (HOFSTEDE, 1991; 2001). Among Brazilian companies, this dimension entails a more authoritarian management profile (VIZEU, 2011) in which strategic decisions are made at HQ and the autonomy of subsidiaries is reduced (BORINI; FLEURY, 2011). Furthermore, Brazilian companies have a tendency to favour the transfer of competences from HQ to subsidiaries, which may be related to this cultural dimension (BHAGAT; ENGLIS; KEDIA, 2007). Regarding "uncertainty avoidance", this dimension leads to the development of pre-established rules and procedures, especially when facing uncertain situations (HOFSTEDE, 2001) such as internationalization and the management of units in culturally distant countries. Nevertheless, the development of competences in subsidiaries abroad involves constant learning, adaptation, and the systematic redefinition of routines in subsidiaries (ZOLLO; WINTER, 2002; GIBSON; BIRKINSHAW, 2004). In our view, a high degree of uncertainty avoidance might compromise these activities and, consequently, the development of competences. Therefore, we propose the following hypothesis.

Hypothesis 2: Cultural factors (power distance and uncertainty avoidance) are negatively related to the development of competences in BrMNs' subsidiaries. In other words, when the presence of these cultural factors is greater, the BrMNs' subsidiaries are less active in developing competences.

4 DATA AND METHODS

Due to the multilevel nature of the data, with subsidiaries nested in Brazilian companies, we adopted a multilevel regression through hierarchical linear modelling (SNIDJERS; BOSKER, 1999; RAUDENBUSH; BRYK, 2002; HITT et al., 2007). Such an approach prevents the limitations imposed by options that involve data aggregation or disaggregation (PETERSON et al., 2012). Therefore, data collection was conducted in subsidiaries (level 1, subsidiary) and at their HQ (level 2, company). HQs' responses were collected as overall measures of the global mindedness and cultural characteristics of each Brazilian company. The development of competences was measured at the subsidiary level.

4.1 RESEARCH UNIVERSE AND SAMPLE

Data collection encompassed all BrMN companies according to the GINEBRA project database. This project was funded by the São Paulo Research Foundation (FAPESP); it started in 2006 at the University of Sao Paulo, aiming to research the internationalization of Brazilian firms. In the construction of that database, companies were taken as multinationals only if there were clear evidence that they actively managed one or more productive operations abroad. This approach differs from other research approaches that depart from information related to foreign direct investments. The database began to be constructed in 2006 and is constantly updated and compared to other lists, such as BCG Global Challengers, UNCTAD and America Economia, for cross-checking.

Therefore, in early 2010, 97 firms were identified as the universe of BrMNs; all of them had at least one operation abroad. This universe included companies with foreign manufacturing plants as well as technology-based professional services (construction, information technology, and other specialised services) with offices abroad. Data collection was carried out between June 2010 and June 2011.

Out of 97 firms contacted, 64 (65.9%) agreed to answer the questionnaire. However, only 37 (38.1%) companies with at least one subsidiary in the sample were considered for the multilevel analysis to allow for the examination of interactions between HQs' and subsidiaries' variables. Respondents were senior managers in charge of the international operations at the HQ of these companies. Table 1 presents the distribution of HQs and subsidiaries in the sample in terms of the activities they perform.

Table 1 - General Profile of the Companies

Sector	Examples	Headquarters		Subsidiaries	
		N	%	N	%

Natural resources-based industries	Petrobras, Vale	3	8.1	11	13.6
Basic products	Braskem, Oxiteno	8	21.6	19	23.5
Systems assemblers	Embraer, Marcopolo	5	13.5	12	14.8
Components and subsystems suppliers	WEG, Embraco	7	18.9	8	9.9
Consumer goods	AMBEV, Natura	4	10.8	16	19.8
Engineering, construction and infrastructure	Odebrecht, Camargo Correa	4	10.8	3	3.7
Information technology	CI&T, Bematech	5	13.5	5	6.2
Other specialised and technical services	PromonLogicalis, All-logistica	1	2.7	7	8.6
Total		37	100	81	100

Source: Authors.

The HQ questionnaire contained scales for global mindedness and culture. The HQs that agreed to participate authorised us to contact their foreign subsidiaries. The general managers of 81 subsidiaries answered questions concerning the development of competences in their units, representing 24% of the total number of subsidiaries. Consistent with the fact that Brazilian firms tend to be relatively new to the international arena (CYRINO et al., 2010), the subsidiaries in the sample had operated abroad for 11.7 years on average (even though the standard deviation is 12.4, which reveals a high dispersion). Forty-one (51.9%) subsidiaries were greenfield investments, 29 (36.7%) were acquisitions and 9 (11.4%) were joint ventures.

4.2 MEASURES

The following describes the HQs' variables (independent variables):

Global mindedness. We adapted the scale employed by Yin et al. (2008) to investigate Chinese firms. The scale encompasses three dimensions: global orientation, global knowledge, and global skills. Two items were added: the capacity to recognise new global opportunities and the adaptability of managers abroad.

The capacity to recognise new global opportunities has been related in the literature to global mindedness (JEANNET, 2000; GUPTA; GOVINDARAJAN, 2002). Furthermore, it has been argued that the expansion of successful Brazilian companies often relies on their ability to capture business opportunities, even in complex and turbulent environments (SULL; ESCOBARI, 2004). This ability is related to the ability to scan the business environment and knowledge (including on markets and competitors). The adaptability of managers abroad is intended to better fit the context of BrMNs because adaptation and expatriation issues have been noted among Brazilian managers (TANURE et al., 2009) due to a lack of skills and preparation required to adapt and work in foreign cultures and environments.

Two pre-tests with the scale (one with scholars and specialists and another with 21 Brazilian firms) demonstrated that two of the original items were redundant or confusing for the respondents: knowledge of foreign industries and knowledge of the socio-political, economic, financial and legal aspects of foreign countries. Therefore, these items were removed. Hence, the global mindedness variable comprises:

- Global orientation: to make efforts to understand foreign markets (customers, competitors and general market situations), to make large investment commitment internationally, and to create a worldwide web of relationships (suppliers, distributors, peer firms and customers).
- Global knowledge: to have knowledge of foreign cultures; to have knowledge of the industry and markets on a global scale; to have the capability to recognise new global opportunities.
- Global skills: to have cultural sensitivity and the ability to work with people from different cultures; to have staff members who are proficient in English and in the languages spoken in key foreign markets; to be skilful in communicating with people overseas using modern information systems and telecommunications technologies; to have managers who can easily adapt to the environment of the foreign subsidiaries.

This variable was employed as a composite index (following ARORA et al., 2004, NUMMELA et al., 2004; YIN et al., 2008) (Cronbach's alpha: 0.83).

Cultural factors. We adopted national culture measures as a proxy for cultural legacies that led to the development of the “Brazilian way of management”. As mentioned previously, we focused on two dimensions — power distance and uncertainty avoidance — that were adapted from the literature (HOFSTEDE, 1991, 2001). Focusing on specific cultural dimensions is a common approach in international business research (e.g., BOCHNER; HESKETH, 1994; BHAGAT et al., 2002). Furthermore, the chosen dimensions have been systematically regarded as been among the most representative traits of the typical “Brazilian management style” in organizations (e.g., HICKSON; PUGH, 1995; FLEURY; FLEURY, 2011; VIZEU, 2011.). Nevertheless the adapted scale was already employed in a previous study on BrMNs (SILVA, 2010). It encompasses the following items:

- Power distance: all professionals' goals and tasks are set by managers; superiors have full authority in determining the activities of their subordinates; subordinates accept the responsibilities and tasks determined by their superiors.

- Uncertainty avoidance: clear rules must be followed faithfully; people give importance to the stability of the events and tasks; people require data and facts to make decisions.

Similar to global mindedness, this construct was analysed as a composite index (Cronbach's alpha: 0,70).

The following are considered for the dependent variable (development of competences at the subsidiary level):

Competence development. The dependent variable comprised the following components (BRIRKINSHAW et al., 1998; FROSt et al., 2002; RUGMAN et al., 2011): development of products and services, production, marketing and sales, and human resources management competences. Additional competences were added, following the model of firms' organizational competences (FLEURY; FLEURY, 2011). These competences included planning, organization, financial management, customer relationship management (CRM), and supply chain management (SCM) competences. Cronbach's alpha was 0.77.

All of the variables were closed questions on a five-point Likert scale.

Control Variables. Most Latin EMs are new to international competition (CUERVO-CAZURRA, 2008; SILVA; ROCHA; CARNEIRO, 2009). Brazilian firms, in particular, have relatively young subsidiaries (CYRINO et al., 2010; BORINI; FLEURY, 2011). Furthermore, the time in operation and the entry mode may influence the formation of Brazilian foreign units' competences (BORINI et al., 2009). Hence, the following control variables (dummies) were collected:

- Subsidiary's years in operation: "younger" units (0) and "older" units (1). This variable was based on the average time (M=11.7); therefore, the oldest subsidiaries are 12 years old or older.
- Greenfield investment: other modes of investment, namely acquisition and joint venture (0) or greenfield (1).
- Joint venture: other modes of investment, namely acquisition and greenfield (0) or joint venture (1).

4.3 EQUATION MODELLED

The following equation was estimated, where *DV* is competence development; *GM* is global mindedness; *CULTURE* is cultural factors; and *AGE*, *GREENF* and *JOINT_V* are

dummy control variables and refer, respectively, to years in operation, greenfield, and joint venture.

Level 1: $DV_{ij} = \beta_{0j} + \beta_{1j}*(AGE_{ij}) + \beta_{2j}*(GREENF_{.ij}) + \beta_{3j}*(JOINT V_{.ij}) + e_{oij}$.

Level 2: $\beta_{0j} = \gamma_{00} + \gamma_{01}*(GM_j) + \gamma_{02}*(CULTURE_j) + u_{0j}$; $\beta_{1j} = \gamma_{10} + \gamma_{11}*(GM_j) + \gamma_{12}*(CULTURE_j)$; $\beta_{2j} = \gamma_{20} + \gamma_{21}*(GM_j) + \gamma_{22}*(CULTURE_j)$; $\beta_{3j} = \gamma_{30} + \gamma_{31}*(GM_j) + \gamma_{32}*(CULTURA_j)$.

In addition to respecting the nature of variables observed at different levels, hierarchical modelling is appropriate for situations in which the number of observations is unbalanced among groups at the same level (LUKE, 2004). This is the case in the sample, which will be further described. We employed Bayesian techniques to estimate the parameters by means of a Gibbs sampler with a burn-in period of 1,000 interactions out of 50,000 and updates after 100 iterations each to avoid auto-correlation. According to Tang and Liou (2010), Bayesian inference is appropriate for studies of the creation of competitive advantage (in this case, by means of the development of competences) because it deals properly with outliers, which typically manifest abnormal results of interest. We employed Bayesian estimation also because the sample size was not large (there was a limited amount of firms in the research universe and access to CEOs and directors was restricted) and therefore the evaluation of significance in terms of standard errors could lead to erroneous evidence (ROSSI, ALLENBY; MCCULLOCH, 2006).

5 RESULTS

5.1 DESCRIPTIVE OVERVIEW

The mean score for global mindedness was 3.85 (Std. Dev. = 0.92) on a 5.00-point scale. The mean was 3.92 (Std. Dev. = 1.00) for global orientation, 3.84 (Std. Dev. = 1.01) for global knowledge, and 3.80 (Std. Dev. = 1.08) for global skills. Note that the last dimension had the lowest mean score. The mean for the composite index of culture factors was 3.90 (Std. Dev. = 0.69). For power distance, the mean was 3.95 (Std. Dev. = 0.84), and for uncertainty avoidance, the mean was 3.86 (Std. Dev. = 0.75).

Regarding the subsidiaries variable, the mean for competence development is 2.57 (Std. Dev. = 1.10). Furthermore, 65% of the units are less than 12 years old. A higher mean score value is observed among the older units (M = 3.00; Std. Dev. = 1.14) than among the younger ones (M = 2.35; Std. Dev. = 1.02).

The most frequent investment mode is greenfield (52%), followed by acquisition (39%) and joint venture (9%). There is also a higher mean score for acquisitions (M = 2.62; Std. Dev. = 1.05) compared with greenfield (M = 2.61; Std. Dev. = 1.16) and joint ventures (M = 2.12; Std. Dev. = 0.93).

5.2 MULTILEVEL ANALYSIS

The following equation was estimated to test the effect of the independent variables on subsidiaries' competences (complete results are in Table 2):

Level 1: $DV_{ij} = b_0 + b_1*(AGE_{ij}) + b_2*(GREENF_{.ij}) + b_3*(JOINT V_{.ij}) + e_{oij}$.

Level 2: $b_{0j} = 2.956 + 0.889*(GM_j) - 1.061*(CULTURE_j) + u_{0j}$; $b_{1j} = -1.455 - 0.203*(GM_j) + 0.743*(CULTURE_j)$; $b_{2j} = 1.990 - 0.691*(GM_j) + 0.192*(CULTURE_j)$; $b_{3j} = 5.707 - 0.985*(GM_j) - 0.628*(CULTURE_j)$.

Table 2 - Results for the Estimated Model

Fixed factors	Coefficient	Std. Dev.	Standardised Coefficient
Intercept	2.96	1.82	1.62
GM	0.90	0.39	2.26
CULTURE	-1.06	0.53	-2.02
AGE			
Intercept	-1.45	1.81	-0.81
GM	-0.20	0.47	-0.43
CULTURE	0.74	0.57	1.35
GREENF			
Intercept	1.99	1.93	1.03
GM	-0.69	0.45	-1.55
CULTURE	0.19	0.53	0.36
JOINT V			
Intercept	5.71	3.37	1.69
GM	-0.98	1.00	-0.98
CULTURE	-0.63	0.99	-0.64
Variance Components			
	Variance	Std. Error	
Subsidiaries (level 1)	0.99	0.22	
Headquarters (level 2)	0.14	0.17	

Source: Authors.

The mean of the global mindedness coefficient was positive (0.889) with a standard deviation of 0.394, indicating that an increase in global mindedness tends to promote the development of competences. Regarding cultural factors, the coefficient mean was negative (-1.061) with a standard deviation of 0.526. This result suggests that when these factors are higher, the development of subsidiaries' competences tends to be lower. The variance of the

dependent variable attributable to subsidiaries (0.987) is far larger than the variance attributable to the headquarters (0.141, a small effect), which suggests that the influence exerted by headquarters on the development of competences in their subsidiaries is highly related to global mindedness and cultural factors and not to other headquarter variables that were not included in the model.

The table above also presents the standardised coefficients of the regression, which consider the dispersion of each variable and allow for the comparison of the effects. The procedure reveals that the standardised absolute value of the influence of global mindedness (2.26) on the development of competences is slightly larger than the influence of cultural factors (-2.02).

The distributions of the coefficients of the independent variables (GM and CULTURE) and the trajectories of their estimations can be seen in Figures 1 and 2. The estimates do not present any pattern of autocorrelation, and they reveal that the effect of global mindedness on the development of competences is predicted to be predominantly positive (see Figure 1), whereas the vast majority of the estimates of the culture coefficient is negative (see Figure 2).

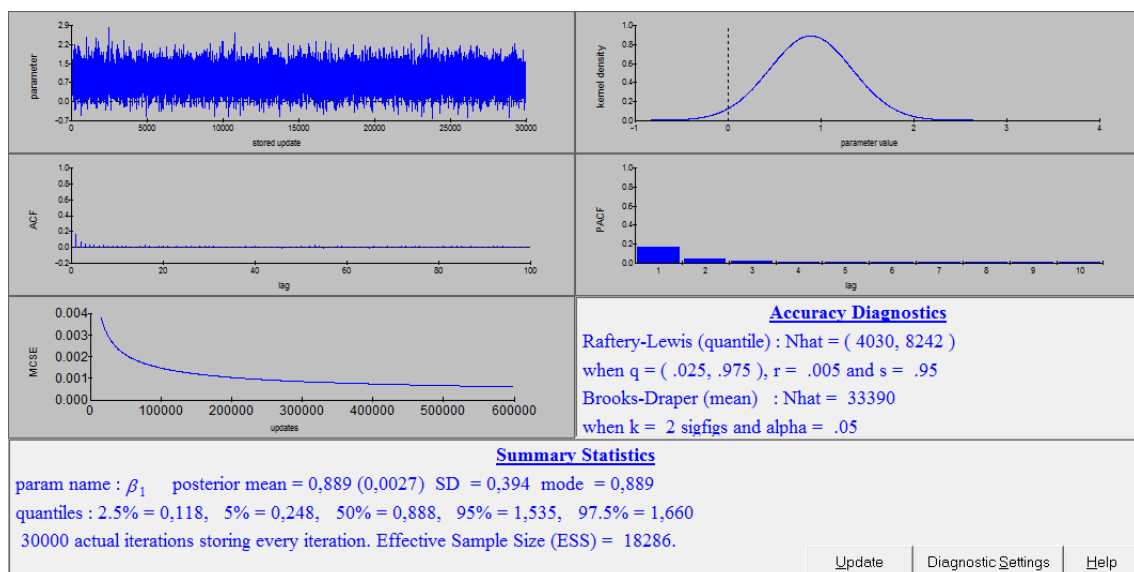


Figure 1 - Trajectory and distribution of the global mindedness estimates
Source: Authors

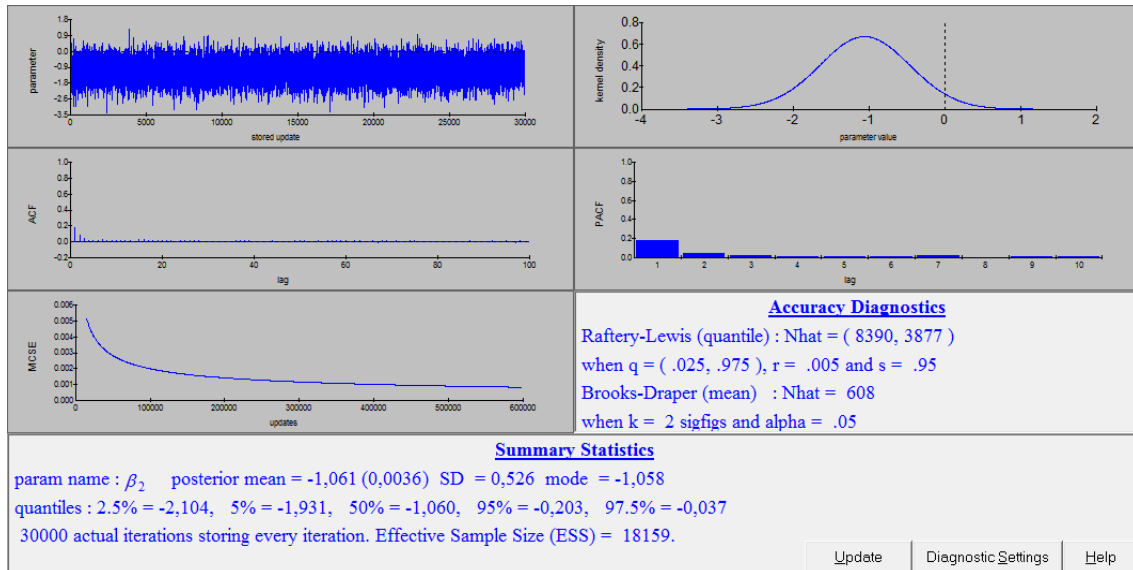


Figure 2 - Trajectory and distribution of the cultural factors estimates
Source: Authors

The effects of the control variables (age, greenfield and joint-venture) and their interactions with the headquarters variables (global mindedness and cultural factors) on the development of competences presented low means and high dispersion (see Table 2), with the exception of the effect estimated for the dummy joint-venture variable. This indicates that joint ventures tend to develop more competence than acquisitions, but there are no significant differences concerning age or greenfield (compared with acquisitions). Furthermore, the influences of global mindedness and cultural factors seem to be independent of the age the subsidiary or the investment mode.

6 DISCUSSION

In the descriptive results, the global mindedness scores resulted to be relatively high. Because the sample contains some of the most internationalised Brazilian companies, this outcome aligns with the profile of the studied companies. For cultural factors, scores were also high. This result is consistent with the literature on Brazilian culture and the "Brazilian way of management" (HICKSON; PUGH, 1995; HOFSTEDE, 1991; 2001; VIZEU, 2011).

The multilevel outcomes indicate that global mindedness is positively related to competences development in BrMNs' subsidiaries. Therefore, greater global mindedness implies the increased development of competences in subsidiaries. This result suggests that global mindedness may stimulate the development of competences in subsidiaries and further supports Hypothesis 1.

However, cultural factors are negatively related to the development of competences in BrMNs' subsidiaries. In other words, the greater presence of these factors implies less

development of competences in subsidiaries. This result supports Hypothesis 2 and indicates that these two dimensions (uncertainty avoidance and power distance), which are well represented in the “Brazilian management” style, affect the formation of competences in the units abroad. These dimensions may involve authoritarianism, centralisation, and hierarchy as well as pre-established rules and procedures. These characteristics are common in Brazilian companies, which tend to centralise their strategic decisions at the HQs (CALDAS; WOOD JR., 1997; CHU; WOOD JR., 2008), reducing the autonomy of the subsidiaries. According to the results, these conditions appear to be unfavourable for the development of new competences or for the improvement of existing competences.

The multilevel outcomes also allow to identify which of the independent variables has a greater influence on the development of competences in the units abroad. Considering the standardised regression coefficients of the model (see Table 2), it is found that an increase of 1.0 standard deviation of global mindedness increases competence development in subsidiaries by 2.25 standard deviations on average, whereas the one-standard-deviation increase in cultural factors reduces competence development by 2.0 standard deviations on average (keeping other variables constant). Therefore, the absolute value of the effect of global mindedness on the development of competences is larger than the effect of cultural factors in the sample. However, the difference between the effects of both variables seems to be quite small. Given the complexity of the independent variables, caution is required with this analysis because many factors are involved in cultural change and global mindedness. Nevertheless, this comparison is an indicator of the different effects of these variables, necessitating further research on their relevance and consequences.

It should also be noted that some of the competences of the subsidiaries may have high transfer potential and greater application beyond the region, possibly contributing to the competences of the multinational network as a whole (RUGMAN; VERBEKE, 2001). Although these characteristics are more easily found in certain competences, such as production, they can also be found in competences that are typically associated with a local application, such as some marketing and sales competences, “such as knowledge on how to perform market research, routines allowing efficient distribution, etc.” (RUGMAN et al., 2011: 259). The same trend could be considered for competences such as human resources management, SCM, and CRM. Hence, the influence of global mindedness and culture is an issue that should be considered in the architecture of EMs' organizational competences.

7 CONCLUSIONS

Brazilian companies such as Vale, Embraer, Gerdau, Petrobras, and Weg developed in a strongly rooted culture and have expanded globally since the late 1990s. Like other EMs, their internationalization requires the ability to acquire and develop competences "on the road", throughout their internationalization process (MATHEWS, 2006). Their subsidiaries may play a central role in this capacity (BORINI; FLEURY, 2011).

This article explored how culture and global mindedness influence competence development in BrMNs' subsidiaries. A multilevel survey was conducted to test the interactions between company-level variables (cultural factors and global mindedness) and subsidiary-level variables (competences development).

This study has limitations that should be addressed in future research. First, the cross-sectional approach does not allow for an understanding of how global mindedness and culture in BrMNs have evolved and have influenced competences over time. Thus, longitudinal studies would provide further insights. Second, a broader set of cultural dimensions could be tested in futures studies (e.g., collectivism, Brazilian *jeitinho*, etc.), to investigate whether they have the same (or different) effects on competence development. Third, the size and composition of the sample (which was not random) limited generalisations and comparisons among different industries.

Nevertheless, the study also presents a methodological contribution to the research on EMs. Because a small fraction of companies from emerging markets have already invested in operations abroad, the sample sizes of studies involving EMs tend to be, in some cases, also small (e.g., CYRINO et al., 2010; BORINI; FLEURY, 2011). In such a context, the employment of Bayesian methods to make inferences represents an advance in terms of model fitness. Considering the hierarchical nature of the data involved (subsidiaries and headquarters), Bayesian inference smoothes the bias of a limited number of cases nested in different levels of analysis while adjusting the distributions of the estimated parameters according to the observed data and their variance at each level. The result is a distribution of plausible parameters that properly fits all observations, including outliers. In such a scenario, cases with abnormal results (such as subsidiaries with a very high degree of competence development) do not need to be excluded, thus avoiding sample reduction or the deletion of cases of interest.

As mentioned in the introduction, the main contribution of this paper is its advancement in the understanding of the interplay between culture and global mindedness. This paper

focused on the case of BrMNs and assumed that, to become competitive, they should build relationships with their subsidiaries as efficiently as possible, aiming to upgrade competences. However, this is not straightforward because it requires the development of a global mindset and a management style that differs from the patterns that arise from embeddedness in the home country culture.

Figure 3 below synthesises our main findings. It illustrates the potential tensions that may emerge in internationalization from the interplay between global mindedness and cultural factors, which affect competences development differently. Metaphorically speaking, the influences of these opposing stimuli and unaligned forces generates a “tug of war” effect on subsidiaries competences development.

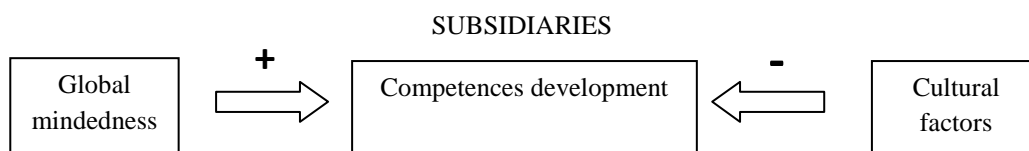


Figure 3: Global mindedness, cultural factors and subsidiaries' competences.
Source: Authors

Although global mindedness stimulates competence development activity, cultural factors may inhibit it, creating “core rigidities” (LEONARD-BARTON, 1992). That is, over time, the firm relies on the same competences to compete in changing and new environments. As mentioned previously, global mindedness and culture (and its associated managerial “heritage”) exert contradictory stimuli and present unaligned forces that affect competences development. These tensions may increase in companies that have high degrees of both variables.

Additional insights emerged that may inspire future research. The average global mindedness of major BrMNs, for instance, was higher than that suggested by the literature on BrMNs (TANURE et al., 2009), probably indicating the effects of an increasing international exposition. Another possible extension of this research would be to investigate the extent to which the interplay between global mindedness and culture impacts firms' performance and competitiveness. Finally, future research could analyse the effects of this interplay in other developing and emerging economies and in developed countries' multinationals to allow comparative insights.

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