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Cultural intelligence, cross-cultural adaptation and expatriate performance: a study with expatriates living in Brazil

Inteligência cultural, adaptação transcultural e o desempenho de expatriados: um estudo com expatriados residentes no Brasil

Inteligencia cultural, adaptación transcultural y desempeño de expatriados: un estudio con expatriados residentes en Brasil

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Abstract

Developing a competitive workforce abroad is a relevant challenge to organizations with multinational activities. In view of this, added to the high costs associated with expatriation, it is necessary to identify the factors that facilitate a satisfactory performance of executives in international assignments. Thus, the purpose of this work is to investigate the relationship between cultural intelligence, cross-cultural adaptation and expatriates performance. Based on a sample of 217 expatriates from 26 countries living in Brazil, the research reveals a positive association between cultural intelligence and cross-cultural adaptation, and the latter with expatriates' performance. However, the direct relationship between cultural intelligence and expatriates performance was not significant. The results also revealed an indirect relationship between cultural intelligence and expatriates performance mediated by cross-cultural adaptation. Thus, we suggest that cultural intelligence converts itself into the ability of the expatriate to better adapt to the new culture, which then results in performance. Based on Allport's Contact Theory (Pettigrew, 1998), which has the assumption that increased interactions between members of different ethnic groups can lead to increased mutual understanding, reduce hostilities, prejudices and the formation of friendships between groups in different social contexts (Kim, 2012; Pettigrew & Tropp, 2006), we thus suggest that this transformation process is facilitated and powered by the increase of interactions between expatriates and the host country nationals. Suggestions for future research and for practice are presented.
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Keywords: Cross-cultural adjustment; Cultural intelligence; Expatriate performance

Resumo

Criar uma força de trabalho competitiva no exterior é um desafio relevante para diversas organizações com atividades multinacionais. Diante disto e dos altos custos associados à expatriação, faz-se necessário identificar fatores que facilitam o desempenho satisfatório de executivos em designações internacionais. Assim, o objetivo deste trabalho foi avaliar a relação entre inteligência cultural, adaptação transcultural e desempenho de expatriados. A partir de uma amostra de 217 expatriados, provenientes de 26 países diferentes e residentes no Brasil, o estudo revelou uma

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associação positiva entre inteligência cultural e adaptação transcultural e, desta última, com o desempenho de expatriados. No entanto, a relação direta entre inteligência cultural e desempenho de expatriados não se mostrou significante. Os resultados revelaram, ainda, uma relação indireta entre inteligência cultural e desempenho de expatriados mediada pela adaptação transcultural. Assim, sugere-se que a inteligência cultural se transforma em capacidade de melhor adaptação do expatriado à nova cultura, para então resultar em desempenho. A partir da Teoria do Contato de Allport (Pettigrew, 1998), cujo pressuposto é de que o aumento das interações entre os diferentes membros de grupos étnicos pode levar ao aumento no entendimento mútuo, à redução de hostilidades, de preconceitos e à formação de amizades entre grupos em diversos contextos sociais (Pettigrew & Tropp, 2006; Kim, 2012), sugere-se que este processo de transformação é facilitado e potencializado pelo aumento das interações entre expatriados e habitantes locais. Sugestões para futuras pesquisas e para a prática são apresentadas.

Resumen

Crear una fuerza de trabajo competitiva en el extranjero es un importante reto para muchas organizaciones que desarrollan actividades multinacionales. Por ello y en vista de los altos costos asociados con la expatriación, es necesario identificar los factores que facilitan el buen desempeño de los ejecutivos en asignaciones internacionales. El objetivo en este trabajo es evaluar la relación entre inteligencia cultural, adaptación transcultural y rendimiento de expatriados. A partir del análisis de una muestra de 217 expatriados procedentes de 26 países, que viven en Brasil, puede observarse una relación positiva entre inteligencia cultural y adaptación transcultural, y de ésta con el desempeño de los expatriados. Sin embargo, la relación directa entre inteligencia cultural y desempeño de los expatriados no es significativa. Los resultados también muestran una relación indirecta entre inteligencia cultural y rendimiento de expatriados mediada por la adaptación cultural. Así, se sugiere que la inteligencia cultural se convierte en una capacidad de mejor adaptación del expatriado a la nueva cultura, para entonces dar lugar al rendimiento. Con base en la teoría del contacto de Allport (Pettigrew, 1998) – cuya hipótesis es de que el aumento de las interacciones entre los miembros de diferentes grupos étnicos puede conducir a una mayor comprensión mutua, a la reducción de hostilidades y prejuicios y a la formación de amistades entre grupos en diversos contextos sociales (Pettigrew & Tropp, 2006; Kim, 2012) – se sugiere que este proceso de cambio se ve facilitado y reforzado por el aumento de las interacciones entre los expatriados y los habitantes locales. Se presentan sugerencias para futuros estudios y para la práctica.

Introduction

The search for new markets and better conditions in the production process have encouraged companies to extend their borders beyond their country of origin and to transfer their professionals to overseas subsidiaries. This practice, expatriation, aims to solve problems such as the lack of local professionals with technical or management skills, and/or facilitate the implementation of new projects (Lee & Sukoco, 2010; Rose, Ramalu, Uli, & Kumar, 2010).

Multinational companies that practice expatriation, not rarely, face problems of work stoppage, abandonment of position, early return and poor performance of the expatriate (Wu & Ang, 2011); thus, factors affecting the expatriate's job performance have drawn the attention of researchers (Cheng & Lin, 2009; Ramalu, Rose, Uli, & Kumar, 2012; Shih, Chiang, & Hsu, 2010).

The cross-cultural adaptation is considered as an important antecedent of job performance, determined by the degree of ease and/or difficulty that the expatriate faces in their personal life and at work (Lee & Sukoco, 2010), and (Lee & Vorts, 2010; Shay & Baack, 2006). The ability to adapt has a positive impact on the quality of the expatriate's interaction with the host country nationals and on the degree of comfort of the professional in their work and, consequently, on their performance (Kraimer, Wayne, & Jaworski, 2001).

Understanding the effects of cross-cultural adaptation on performance and factors influencing expatriate adaptation direct the research in this field. For example, Black (1988), Black, Mendenhall, and Oddou (1991) and Black, Gregersen, and Mendenhall (1992) present a categorization of the factors that influence the adaptation of the expatriate, serving as a theoretical support for other studies that explore the impact of specific factors, such as in the case of cultural intelligence (Ang et al., 2007; Lee & Sukoco, 2010; Ramalu, Wei, & Rose, 2011; Ramalu et al., 2012).

Previous research also considers cultural intelligence – which is the individual's ability to interact satisfactorily in cultural settings with distinct ethnic groups and nationalities (Ang et al., 2007), as a manifested variable that has been presenting positive correlation with cross-cultural adaptation and the expatriates performance (Ang et al., 2007; Ramalu et al., 2011).

Studies examining the relationship between cultural intelligence, cross-cultural adaptation and expatriate performance, are mostly limited to a single manifest variable and rarely analyze the relationship between the three latent variables in a single model (e.g., Ang et al., 2007; Ramalu et al., 2011; Rose et al., 2010; Shay & Baack, 2006). When this is done, the surveys have presented divergent results. For example, Lee and Sukoco (2010) and Ramalu et al. (2012) have found results that converge regarding the direct and significant effect of cultural intelligence on cross-cultural adaptation and

diverge as to the effect of cultural intelligence and expatriate performance. Therefore, further research is needed on the complex relationships of expatriate performance.

Another aspect observed in previous studies that analyze this relationship is the existence of a selection bias, as the sample is characterized only by Asian expatriates working in multinational companies in Asia (Lee & Sukoco, 2010; Ramalu et al., 2012). The lack of research in other countries and continents highlights the need to conduct studies containing expatriates from other countries and in various places (Ang et al., 2007; Lee & Sukoco, 2010).

We can also observe a theoretical gap, since there is no thorough investigation in the literature regarding the influence that a high level of cultural intelligence may generate on the performance of expatriates. If those who are more culturally intelligent present a greater capacity to interact in different environments and if executive performance is basically a result of interactions between agents, why is it that in particular studies no relationship between cultural intelligence and performance is found?

In Brazil the literature that investigates Brazilian expatriates and those of other nationalities in assignments in the country is still not largely explored (Araujo, Teixeira, Cruz, & Malini, 2012; Araujo, Broseghini, & Custodio, 2013; Cota, Emmendoerfer, Reis, & Silva, 2015; Kubo & Braga, 2013; Rosal, 2015). Quantitative Brazilian studies that seek to understand the relationship between the personal background of expatriates in their adaptation process are also scarce (Moreira, Bilsky, & Araujo, 2012), indicating that this is a fertile field for further research. Thus, given the relevance of the topic for organizations and the gaps pointed out in the literature, this research seeks to answer the following question: **What is the relationship between cultural intelligence, cross-cultural adaptation and expatriate performance?**

From the above research problem presented, the objective of this study is to evaluate the relationship between cultural intelligence, cross- cross-cultural adaptation and expatriate performance assigned to work in Brazil.

This study contributes to the literature on International Human Resources by assessing the relationship between cultural intelligence and expatriate performance, and by examining the mediating effect of cross-cultural adaptation in this relationship. The discussion of such relationships according to the Contact Theory also adds to existing studies, by broadening the understanding of the cross-cultural adaptation process from the understanding of interpersonal-intergroup relationships, and how these relationships can promote cross-cultural adaptation and enhance cultural intelligence and expatriate performance. As for practical relevance, this work intends to contribute in the process of team formation in multicultural environments, professional selection and training processes, increasing the possibility of mission success.

Theoretical framework

Contact theory

Close interpersonal relationships contribute to the well-being and happiness of individuals (Novak, Feyes, & Christensen,

2011), so when the expatriate develops positive relationships with his co-workers and with the local population, he/she creates an environment conducive to adaptation (Black, 1988; Black et al., 1991).

Quality interpersonal relationships are more easily developed among people who belong to the same group, similar in relation to age, race and gender. However, it is precisely in situations of great diversity, as in the case of expatriates who find themselves on mission in a new country, that contact interventions are most needed (Turner & Crisp, 2009).

The barriers that hinder the development of positive interpersonal relationships are the fruits of feelings and opinions, simplistic in general, if not misguided, which is the outcome of a single experiment or a preconceived image by their social group, which in turn is the result of the perception of dissimilarity related to race, ethnicity and culture (Kim, 2012).

Interactions between groups require people's cognitive abilities such as behavioral control, self-regulation and thought suppression. In cases where intergroup contact is of low quality, permeated by prejudice and stigma, i.e., presenting a high degree of stress, there is a temporary impairment of cognitive abilities, increasing the propensity of an individual to a lower performance in activities that require such skills (Richeson & Shelton, 2003).

Richeson and Shelton (2003) when investigating possible cognitive consequences arising from intergroup contact, identified that negative effects on cognitive abilities resulting from stressful intergroup interactions may cease to exist through repeated positive interactions with the same stigmatized people, since the amount of intergroup contact tends to correlate negatively with prejudice. Other studies reinforce the proposition that interpersonal/intergroup contact can reduce and even overcome the biases of perception (Allport, 1954; Kim, 2012; Pettigrew, 1998; Toit & Quayle, 2011; Turner & Crisp, 2010).

In the studies on the phenomena of intergroup relationships, Allport (1954) and Pettigrew (1998) propose the Contact Theory whose assumption is that the increase of interactions between different members of ethnic groups can lead to increased mutual understanding, the reduction of hostilities and prejudices and the formation of friendships between groups in various social contexts (Kim, 2012; Pettigrew & Tropp, 2006).

The positive effects of intergroup contact are enhanced when the interaction meets the following criteria: opportunities of interaction; individuals with similar social status; common goals and objectives and cooperation within the contact situation; the existence of institutional support, support from the authorities, laws or local customs (Allport, 1954; Pettigrew & Tropp, 2006). In these conditions of ideal contact people are expected to be able to reduce negative stereotypes and prejudices, discover inconspicuous similarities and differences (Kim, 2012).

The essentiality of ideal conditions of contact in the improvement of the intergroup relations is controversial. Pettigrew and Tropp (2006), when performing the Contact Theory meta-analysis test in 515 studies, conclude that even in situations where such conditions are not met, intergroup contact reduces prejudice. Another important conclusion cited by the authors is that the contact theory, originally designed for ethnic and racial

encounters can be extended to other groups, as it is possible to establish other contact settings.

Alternative ways of direct contact (face to face) are being researched, such as the prolonged contact that occurs when an ingroup member has a close relationship with an outgroup member. In this situation, the mere knowledge of the positive relationship of this member positively impacts on other ingroup members.

The form of prolonged contact has been associated with better intergroup attitudes, because it can allow people to indirectly experience the positive effects of contact, avoiding the anxiety or negative feelings that can arise from direct contact (Toit & Quayle, 2011).

Another alternative form of contact is the imagined contact, in this case, it is assumed that mentally simulating a positive encounter in a specific social situation can produce effects similar to those that would be obtained in real experience (Turner & Crisp, 2009, 2010). Thus, this type of contact can reduce anxiety, negative stereotype and improve intergroup attitudes (Turner, Crisp, & Lambert, 2007).

The effect of the imagined contact in the change of attitude is less powerful than in direct and prolonged contact, on the other hand, it is a simple, flexible and effective means of promoting more positive perceptions of external groups (Turner & Crisp, 2010).

Although the Contact Theory has been a theoretical support for numerous research on positive interpersonal relationships, established between individuals of different ethnic and racial groups, it can also serve as a theoretical framework for studies involving other groups (Pettigrew & Tropp, 2006), as in the case of professionals who are assigned to positions and functions in other countries.

The interpersonal relationships of the expatriate developed with the local inhabitants can influence the degree of adaptation and enhance the capacity of the expatriate to deal satisfactorily with the demands presented in this new culture. Thus, this research proposes to investigate the type of relationship between Cross-cultural Adaptation, Cultural Intelligence and Expatriate Performance in the light of Contact Theory.

Cultural intelligence

Regarding the individual's ability to successfully adapt to new and unfamiliar cultural settings, along with their ability to easily and effectively function in situations characterized by cultural diversity, the term cultural intelligence is applied (Ang et al., 2007; Earley & Ang, 2003). It is a multidimensional construct composed by the following dimensions: cognitive, metacognitive, motivational and behavioral (Ang et al., 2007; Ramalu et al., 2011).

The cognitive dimension is related to the general knowledge of different cultures, such as knowledge on the economic, legal and social system, and on the basic structures of the cultural values of different cultures and subcultures (Triandis, 2006). Such knowledge can be acquired through formal and informal education, resulting from previous experiences.

The mental processes used in capturing the new cultural knowledge are given through the metacognitive dimension (Kumar,Rose, & Ramalu, 2008), which allows the individual to control and process the information of the new culture (Ang, Dyne, Koh, &Ng, 2004), and to generate coping strategies (Earley, Ang, & Tan, 2006). This cultural awareness is reflected in planning and monitoring actions and in the ability to perform a review of mental models of cultural norms enabling the individual to question cultural assumptions and their mental adjustment model during and after the interactions (Triandis, 2006).

The motivational dimension reflects the desire to interact with local people and to adapt to the new culture. In this dimension, the ability to channel attention and energy toward learning and the functioning in situations characterized by cultural difference is highlighted (Ang et al., 2007).

Finally, the behavioral dimension is the ability to engage in adaptive behaviors according to cognition and motivation, i.e., it represents a set of important behaviors to be used in the different situations of interaction (Kumar et al., 2008; Lee & Sukoco, 2010).

These four dimensions synthesize skills that enable the individual to better adapt to life in a cultural context other than that of origin, since it enables the individual to predict the attitudes and behaviors expected and desired for a given culture (Earley & Peterson, 2004; Lee & Sukoco, 2010). This paper outlines the interest in discussing such a concept in the expatriate context, who is an employee sent by their company on mission to other countries for the purpose of carrying out professional activities (Wu & Ang, 2011). It is expected for the individual, with high level of cultural intelligence, to have greater ability to identify, recognize and reconcile cultural differences, by properly adjusting their thinking, behavior and motivation in their daily operations (Earley et al., 2006). Based on this idea, the association between the concepts of cultural intelligence and cross-cultural adaptation is recurrent in the literature.

Cross-cultural adaptation of expatriates

Cross-cultural adaptation is the degree of psychological comfort of the expatriate before the facilities and difficulties faced in the host country (Black, 1988; Lee & Vorst, 2010). Considered as one of the main factors explaining success in international assignments, it is conceived as a construct composed of three dimensions (Black, 1988; Black et al., 1991).

The **work-related adaptation** dimension refers to the psychological comfort of the expatriate in relation to the demands of their new post, e.g.: tasks, responsibility, leadership, and relationship with colleagues. The **general adaptation** dimension concerns the general conditions of life and culture of the foreign country, such as food, transport system, shopping, entertainment and climate. And, the dimension of **interaction adaptation** with the local inhabitants of the country deals with relationships with local people outside the work environment (Black, 1988; Black et al., 1991).

We need to make a distinction between the behavioral dimension of Cultural Intelligence and the dimension of Adaptation to the Interaction of Cross-cultural Adaptation. Although they

address similar phenomena, these two theoretical constructs differ in their nature. Whereas Behavioral Cultural Intelligence refers to the ability to adapt and emulate behaviors typical of a distinct culture (like speaking in a halting way when expressing oneself in Japanese or being more gestural when speaking the Italian language for example), the Adaptation to Interaction with locals addresses the sense of psychological adjustment that the individual gets when interacting with locals. It is possible that concepts are not present simultaneously, which can happen for example when an expatriate adjusts the volume of their voice when speaking with Italians, but is uncomfortable with the degree of informality with which they communicate.

Recent research indicates that cross-cultural adaptation has cultural intelligence as its manifest variable, with it being considered as an intercultural competence that facilitates the process of adaptation of the expatriate (Ramalu et al., 2011). Results found in the study by Ramalu et al. (2011) show that a high level of cross-cultural adaptation is related to the high level of metacognitive cultural intelligence and motivational cultural intelligence; as well as the higher level of interaction adaptation is related to the higher level of metacognitive, cognitive and motivational cultural intelligence; and finally, a greater adaptation of the work is related to the higher level of motivational cultural intelligence.

The effective adaptation of the expatriate in their new country necessarily involves the ability to deal adequately with the stressful situations arising from the different cultural context (Ang et al., 2007; Earley & Ang, 2003). In order to overcome the initial stages of the adaptation process it is necessary for the expatriate to learn about the new culture in order to achieve a degree of psychological comfort.

From the Contact Theory one can suppose, in the case of this study, that developing positive interpersonal relationships with local people, inside and outside of work, will facilitate the adaptation of the expatriate in the new environment, just as an increase of interactions, in frequency and in the number of different people can enhance the learning of the particularities of the new culture. Thus, this new knowledge reflects as an opportunity for the expatriate to revise assumptions and generalizations about the local inhabitants, becoming more aware of possible distortions of judgment arising from prejudice and the pejorative stereotype (Erasmus, 2010; Novak et al., 2011; Shay & Baack, 2006; Toit & Quayle, 2011).

In building a network of contacts with close interpersonal relationships, by developing new friendships, contributes to the well-being of people (Novak et al., 2011). We assume that the interaction and knowledge resulting from contact, whilst it facilitates the adaptation process, it also promotes psychological comfort and enhances the process of transforming the ability of cultural intelligence into better adaptation, as these will allow the expatriate to control and process the information of the new culture.

Thus, considering the proposition that individuals with a high level of cultural intelligence have a better ability to understand and navigate unknown environments, conceptually speaking, we suggest that cultural intelligence can contribute to the level of adjustment in its different dimensions (Earley et al., 2006). From the above, the following hypothesis is raised:

H1. There is a significant and positive relationship between cultural intelligence and cross-cultural adaptation.

Expatriate performance

Expatriate performance is a multidimensional construct comprised by the dimensions: cross-cultural adaptation, compliance with the international assignment and performance during the assignment (Cheng & Lin, 2009; Forster & Johnson, 1996; Schuler, Fulkerson, & Downling, 1991).

The performance evaluation of expatriates took place through the performance dimension during the assignment, as the participants of this survey were still committed in their missions, and cross-cultural adaptation is already one of the researched constructs. It is worth mentioning that cross-cultural adaptation and the fulfillment of the assignment, are discriminant constructs that present a theoretical relationship with performance, but do not constitute it.

The dimension of performance during assignment consists of the facets: production (goals achievements and the management's efficiency); management of local employees (suitable leadership to achieve goals); and the reading of the environment (the ability to relate appropriately with people of influence, with the local government and with the sectors of society of the host country) (Cheng & Lin, 2009).

The newly arrived expatriate faces different political, legal and social environments. This situation generates stress, fatigue and may be aggravated by the expatriate's maladjustment, further increasing the pressure being experienced, which will result in negative attitudes toward the assignment abroad and the feeling of dissatisfaction, negatively impacting the expatriate's relationship with work and undermining their performance (Kraimer et al., 2001; Shih et al., 2010).

Thus, understanding the performance from the adaptation process allows us to identify the existence of relationships between cross-cultural adaptation and expatriate performance. In this direction, Caligiuri and Tung (1999), when investigating the gender differences in relation to cross-cultural adaptation, expatriate performance and the desire to complete tasks, found a positive relationship between the general adaptation dimension and the self-assessment of performance adaptation at work. Kraimer et al. (2001) and Shay and Baack (2006), also found a positive relationship between the dimensions of cross-cultural adaptation and expatriates performance.

Cultural intelligence is another factor that, according to the literature, has an impact on the expatriates' performance. Rose et al. (2010) suggest based on these results, that cultural intelligence is a dynamic intercultural competence important for improving the expatriate's job performance. According to the authors, people with a high level of cultural intelligence, in the behavioral dimension, tend to be more flexible in their verbal and non-verbal behaviors, better corresponding to the expectations of others, reducing the distance between the observed behavior and the expected behavior of the function

and therefore, minimizing misunderstandings that may reflect on performance.

Studies investigating the relationship between the three constructs, cross-cultural adaptation, cultural intelligence and expatriate performance show some divergent results. Ramalu et al. (2011) and Rose et al. (2010) identified a positive relationship between cultural intelligence and expatriate performance, suggesting that individuals with a high level of cultural intelligence tend to perform better at work.

Ramalu et al. (2012), similar to previous authors, identified in their results that the variation in the performance of expatriates that is attributable to cultural intelligence, occurs through a direct relationship; i.e., cultural intelligence (independent variable) predicts the cross-cultural adaptation (mediating variable) which in turn, predicts expatriates performance at work (dependent variable), suggesting that individuals with high level of cultural intelligence tend to adapt better to the new cultural environment and are more likely to achieve better performance at work.

On the other hand, results by Lee and Sukoco (2010), when investigating the mediating effect of adaptation, diverge from previous studies, by showing that there is no direct effect of cultural intelligence on expatriates performance; with it being necessary for cultural intelligence to turn into adaptation and cultural effectiveness before they result in better performance. Another relevant finding, raised by the authors, is that the level of the expatriate's cross-cultural adaptation does not directly influence the level of performance either, implying that psychological comfort must first turn into a set of operational capabilities. The divergent results on the type of relationship between cultural intelligence, cross-cultural adaptation and expatriate performance show the relevance of new studies in this field.

Compliance with the specific requirements of the task and the ability to develop and maintain relationships with people from the host country are essential aspects of the expatriate's performance (Lee & Vorst, 2010). This is the case with skills related to cultural intelligence and cross-cultural adaptation such as: rich cultural schemes that will allow a more precise understanding of the expectations inherent to their new role; the competence to know when and how to apply their cultural knowledge, using their multiple structures of knowledge according to the context; persistence in the practice of new behaviors; and a flexible set of behavior that will positively reflect the performance of the expatriate (Ang et al., 2004; Ang et al., 2007; Kraimer et al., 2001; Lee & Vorst, 2010). Therefore, we suggest that:

H2. Cultural intelligence is positively and significantly correlated with expatriate performance.

H3. Cross-cultural adaptation is positively and significantly correlated with expatriate performance.

Methodology

Based on the hypotheses presented and the purpose of the research, which is to evaluate the relationship between Cultural Intelligence, Cross-cultural Adaptation and Expatriate Performance in a diversified sample, the following topics include the

Table 1
Distribution of expatriates.

Continent	Country	No.	%
Europe	Belgium	1	0.5
	Denmark	2	0.9
	Finland	3	1.4
	Netherlands	3	1.4
	France	7	3.2
	Italy	7	3.2
	Portugal	17	7.8
	Spain	12	5.5
	England	10	4.6
	Ireland	8	1.8
	Sweden	8	1.8
	Germany	6	2.8
	Norway	6	2.8
North America	Canada	8	1.8
	Mexico	14	6.5
	United States	43	19.8
Latin America	Ecuador	1	0.5
	Uruguay	5	2.3
	Venezuela	7	3.2
	Argentina	19	8.8
	Colombia	8	3.7
	Peru	8	3.7
Asia	China	14	6.5
	Japan	10	4.6
Oceania	Australia	1	0.5
	New Zealand	1	0.5

description of the sample, the instruments for collecting and analyzing the data.

Sample

This research consists of a sample of 217 expatriates of different nationalities residing in Brazil and we used data collection instruments that add up to 41 items and therefore, by taking into account the minimum criteria, that is, the number of respondents is more than five times the number of assertions (Junior, Anderson, Tatham, & Black, 2005).

Sample profile

The research was developed with a diversified sample, consisting of expatriates from 26 different countries, distributed on five continents, with a predominance of US expatriates (19.8%), followed by Argentines (8.8%) and Portuguese (7.8%). The distribution of expatriates in relation to the continents and countries of origin is shown in Table 1.

In the face of diversity, the sample reasonably reflected the overall demographic profile of expatriates identified by the BGRS (2012). The characterization of the sample in terms of gender, age, number of children, time in Brazil, hierarchical level and international experience is described in Table 2.

In the sample, we can observe a predominance of male expatriates (89%) occupying a managerial position (94%), without previous experience of expatriation (70%) and with 1 or 2 children (65%). It is worth mentioning that 66% of participants are married and 34% live together with their partner(s).

Table 2
Profile of participants.

Profile of participants		No.	%
Gender	Male	193	89
	Female	24	11
Age range	Up to 35 years	33	15
	Between 36 and 40 years	40	18
	Between 41 and 45 years	58	27
	Between 46 and 50 years	51	24
	From 51 onwards	35	16
Marital status	Married	143	66
	Living with their partner	74	34
Number of children	None	53	24
	1 child	82	38
	2 children	58	27
	3 children or more	24	11
Time in Brazil	Between 12 and 24 months	55	25
	Between 25 and 36 months	58	27
	Between 37 and 48 months	91	42
	From 49 months onwards	13	6
Hierarchical level	Management position	203	94
	Non-managerial	14	6
Previous experience in expatriation	Yes	65	30
	No	152	70

Measures

The constructs of cultural intelligence, cross-cultural adaptation and expatriate performance were measured using scales previously developed and validated, used in its original language (English), since respondents had dominion over the same language.

Cultural intelligence was measured from the scale by Ang et al. (2007) termed as Cultural Intelligence Scale (CQS), with 20 items distributed among the metacognitive, cognitive, motivational and behavioral dimensions. Previous studies, such as Kumar et al. (2008), Ramalu et al. (2011) and Ramalu et al. (2012), also adopted the CQS. The scale includes items such as: "I adjust my cultural knowledge as I interact with people from a culture that is unfamiliar to me" (Metacognitive Dimension), "I know the rules for expressing nonverbal behaviors in other cultures" (Cognitive Dimension), "I enjoy interacting with people from different cultures" (Motivational Dimension) and "I change my non-verbal behavior when a cross-cultural situation requires it" (Behavioral Dimension).

Cross-cultural adaptation was measured using the scale by Black (1988) and Black and Stephens (1989), having been used previously in research by Lee and Sukoco (2010), Jenkis and Mockaitis (2010) and Peltokorpi and Froese (2009). This scale consists of three first-order constructs: work, interaction and general adaptation. Examples of items contained in this scale are: "How adjusted are you to your job responsibilities?" (Work Adaptation), "How adjusted are you to working outside your company?" (Interaction Adaptation) and "How adjusted are you to the weather in Brazil?" (General Adaptation).

We evaluated expatriate performance using the scale by Cheng and Lin (2009), previously used by Wu and Ang (2011). This scale reflects the theoretical framework being used, covering the three aspects/facets of the performance dimension during the assignment, which are: production, local employees management and reading the environment. The choice of this measurement instrument is due to the fact that the scales by Black and Porter (1991) and Caligiuri and Tung (1999), used in previous studies (Rose et al., 2010; Ramalu et al., 2011, 2012), were inconsistent in the degree of adequacy of psychometric properties for the measurement of the expatriate's performance in contextual and task-specific dimensions. The scale contains items such as: "I've assisted the stationed subsidiary to achieve the pre-determined production goal in an acceptable level" (Production Dimension), "I've assisted the stationed subsidiary to effectively and usefully supervise local workers in an acceptable level" (Management of Local Employees Dimension) and "I've assisted the stationed subsidiary to facilitate host country business management with the relationship of local influential people in an acceptable level" (Reading of the Environment Dimension).

The three scales used in this research were classified according to the Likert scale of 7 points, in which 1 means totally disagree and 7 totally agree or, not adapted and very well adapted in the case of the cross-cultural adaptation scale. The hypotheses were tested by means of a structural equations analysis, with partial least squares estimation. The structural equations analysis is a statistical technique that has recurrently been used in research in fields such as: Moreira et al. (2012); Lee and Sukoco (2010); Shih et al. (2010) and Kraimer et al. (2001).

Data collection

For the data collection, we used a structured questionnaire, hosted on a website whose link was emailed to a group of expatriates living in Brazil. This group was created from contacts

established with the Human Resources department of 53 companies in Brazil that perform expatriations, blogs, and social networks about expatriates in the country; participants also indicated other organizational expatriates who could participate in the survey. This sampling technique, known as snowball (Heckathorn, 1997), has been used previously in the area of expatriation studies (e.g., Peltokorpi & Froese, 2009).

The first stage of collection occurred by sending the 523 invitations to the obtained emails list. On the 13th day, after the initial communication, an intermediate notice was sent and the collection was closed on the 18th day after the beginning of the data collection. A total of 217 questionnaires were collected, therefore obtaining a 41.5% return. No response was invalidated nor presented any missing values.

The data were obtained from the expatriates' self-assessment when they answered the questionnaires. Regarding the possible occurrence of biased answers, it is worth noting that quantitative evaluation of such a construct is not an easy task, due to the subjective variables involved, and the lack of a standardized instrument that eliminates the bias of the degree of demand of each respondent, whether it is the manager or the actual expatriate.

In the case of this research, the choice for the self-assessment is given by the profile of the diversified sample, preventing from obtaining performance data from the responses of their managers and/or peers. The use of the self-assessment scale for performance, even if it is self-perceived performance, has been adopted in literature as in the case of research developed by Caligiuri and Tung (1999), Ramalu et al. (2011, 2012), Rose et al. (2010) and Lee and Sukoco (2010).

Results and discussion

The hypothesized relations were analyzed through structural equations modeling (SEM), with partial least squares estimation and the SmartPLS 2.0M3 software (Ringle, Wende, & Will, 2005). The decision to use the method is due to the fact that it allows the use of latent variables; estimating simultaneously the relationship between indicators and latent variables (measurement model), and the relationships between latent variables (structural model); and treating data with non-normal distribution (Hair Junior et al., 2005). This statistical technique is adopted repeatedly in research in this field such as by Moreira et al. (2012), Lee and Sukoco (2010), Shih et al. (2010) and Kraimer et al. (2001).

For the identification of data outliers, we adopted the elimination criterion for those respondents who presented 77% of equal answers (ESS EDUNET, 2009). There was no elimination due to outliers or missing values.

The results analysis followed with the model measurement evaluation and the structural model evaluation.

Measurement model evaluation

The evaluation of the measurement model was performed through a confirmatory factor analysis (all latent variables were linked to each other with factor weighting scheme estimation).

In this analysis, we observed that the Adaptation to Interaction and the General Adaptation did not present discriminant validity among themselves. In addition, some items were highly cross-loaded with other constructs, which prevented the achievement of satisfactory model fit indices. Thus, we performed consecutive rounds of exclusion of assertions, until we found a composition that offered a better adaptation to the model. In this process, we excluded from the model the variables GG6, IA1, IA2, MCOG2, PM2, PRE2 and PP2.

The quality of the structural model was performed using the Q^2 test by Stone-Geisser in order to evaluate its predictive relevance (Hair Junior, Hult, Ringle, & Sarstedt, 2014, p. 167). In this analysis, to test the stability of the results, two separate analyzes with 7 and 25 omission distances were performed (blindfolding technique performed on SmartPLS). As the values were stable in both configurations and the Q^2s were positive, we can infer that the model was stable and that the requirements of predictive relevance were satisfied. The option to not include goodness-of-fit as a criterion for evaluating the measure of quality of the model was based on the recommendation of authors such as Hair Junior et al. (2014, p. 185) and Henseler and Sarstedt (2013, p. 577).

Subsequently, we also performed an evaluation of the measurement model based on the following criteria: convergent validity, discriminant validity, and reliability. The convergent validity evaluates the relationship between the measurements of the same construct and is estimated, in this research, from the Average Variance Extracted (AVE), which identifies the general amount of variance in the indicators explained by the construct. The high degree of convergent validity indicates that the measures are correlated and the conceptualization adopted is adequate (Hair Junior et al., 2005). We observed in the results, that all first-order latent variables presented average variance extracted with value exceeding 50%, reaching the criteria proposed by Chin (1998) and Hair Junior et al. (2005), as shown in Table 3. In relation to second-order latent variables, the same criteria were also achieved, as shown in Table 4.

In studies developed by structural equations, the reliability evaluation of the construct must be performed by **composite reliability**, with this being a measure of internal consistency between the indicators. The results presented in Tables 3 and 4 meet the criterion of value higher than 0.7 suggested by Chin (1998), Henseler, Ringle, and Sinkovics (2009) and Tenenhaus, Vinzi, Chatelin, and Lauro (2005).

As the last measure of evaluation of the measurement model we analyzed the discriminant validity, that verifies to what extent the scales measure what it has proposed to measure, examining the correlation between the constructs and the factor loading of the indicators in relation to their respective construct (Hair Junior et al., 2005). Thus, we verified that the assertions presented higher factor loadings in their respective constructs than in any other, which constitutes the occurrence of discriminant validity. All indicators presented this characteristic, as shown in Table 5.

We evaluated, following the recommendation by Chin (1998), whether the correlations presented between the latent variables

Table 3
Pearson's correlation and descriptive statistics of 1st order latent variables.

	1	2	3	4	5	6	7	8	9
1. General adaptation	**0.78**								
2. Work adaptation	0.33	**0.77**							
3. Cognitive CI	0.24	0.66	**0.86**						
4. Behavioral CI	−0.04	0.05	0.05	**0.93**					
5. Metacognitive CI	0.33	0.51	0.70	0.05	**0.87**				
6. Motivational CI	0.09	0.12	0.14	0.46	0.09	**0.88**			
7. Performance: management	0.63	0.39	0.29	0.00	0.31	0.2	**0.80**		
8. Performance: reading the environment	0.70	0.50	0.34	0.01	0.31	0.09	0.63	**0.75**	
9. Performance: production	0.72	0.51	0.33	−0.02	0.35	0.03	0.62	0.70	**0.83**
Mean	2.69	2.75	2.79	3.33	3.05	3.73	3.61	3.18	2.71
Median	3.00	3.00	3.00	3.00	3.00	4.00	4.00	3.00	3.00
Standard deviation	0.96	0.82	1.18	1.24	1.22	1.05	0.83	0.78	0.77
Average variance extracted	0.61	0.59	0.73	0.86	0.76	0.78	0.64	0.56	0.68
Compound reliability	0.88	0.81	0.94	0.97	0.91	0.95	0.78	0.79	0.81

Note a: The square root values of the average variance extracted are in bold (diagonal).
Note b: Standardized factor scores obtained in the estimation of the model with the SmartPLS 2.0M3 software (Ringle et al., 2005).

were lower than the square root of the AVE (which indicates that the assertions relate more strongly to their factors than to the others). As shown in Tables 3 and 4, these criteria were also met.

Evaluation of the structural MODEL

The Structural Model Assessment is presented in two stages: evaluation of the effect of control variables and the hypotheses test. Table 6 presents the results of two structural models, estimated to verify the effects of control variables (previous experience in expatriation, gender and time in Brazil). The justifications for the choices of these variables are due to the following facts:

Previous experience in expatriation: since learning in different contexts of expatriation can help executives develop better performance strategies and a greater global business vision (Moon et al., 2012), it is possible that this variable affects the performance in expatriation

Table 4
Pearson's correlation and descriptive statistics of 2nd order latent variables.

Second order latent variables	1	2	3
1. Adaptation	**0.81**		
2. Cultural intelligence	0.39	**0.67**	
3. Performance	0.73	0.37	**0.88**
Mean	2.69	3.17	3.21
Median	3.00	3.00	3.00
Standard deviation	0.93	0.86	1.22
Average variance extracted	0.65	0.54	0.77
Composite reliability	0.78	0.75	0.88

Note a: The square root values of the average variance extracted are in bold (diagonal).
Note b: Standardized factor scores obtained in the estimation of the model with the SmartPLS 2.0M3 software (Ringle et al., 2005).

Gender: there is earlier evidence that women, as they have a greater ability to build relationships, would have greater ease adjusting to life abroad (Cole & McNulty, 2011; Haslberger, 2010) and, as a result of this, it is possible that such difference translates into a better female performance in international assignments.

Time in Brazil: the time in the host country may be associated with a performance improvement, given that as time passes, the individual tends to deal less with issues of discomfort due to the initial strangeness in the country of origin and thus, one can devote themselves more intensely to the assignment itself (Cole & McNulty, 2011). In addition, there is evidence that time in the host country can improve performance due to the possibility of better adapting to the challenges of the local context of the international assignment (Haslberger, 2010).

In Model 1, in which only the relationship between the control variables and the dependent variable "Performance" was evaluated, we observed a non-significant effect in the dependent variable (in all three cases, $p > 0.05$), with an R^2 of only 0.6%. In Model 2, in which the other variables contained in the model were included (Cross-cultural Adaptation and Cultural Intelligence), the control variables remained without significant relationships with the Performance (in all three cases, $p > 0.05$). Thus, by isolating the effects of control variables, greater robustness and credibility are assured to the hypothesis test performed in the sequence. We did not notice problems of multicollinearity in any of the models, since the VIF (Variance Inflated Factor) presented as lower than 5 (Hair Junior et al., 2005).

The structural model represented in the path diagram (Fig. 1) illustrates the three hypotheses defined for this study. It is characterized as a reflexive model and constituted by the independent variable cultural intelligence, by the dependent variable expatriate performance and by the variable cross-cultural adaptation, which is independent in relation to the expatriate performance and dependent on its relation to cultural intelligence.

Table 5
Matrix of cross loads.

	1	2	3	4	8	9	5	6	7
1. General adaptation									
GA_1	**0.73**	0.27	0.18	0.04	0.52	0.51	0.26	0.09	0.48
GA_2	**0.81**	0.15	0.07	−0.09	0.57	0.56	0.1808	0.05	0.52
GA_3	**0.85**	0.19	0.12	−0.02	0.61	0.58	0.2255	0.03	0.48
GA_4	**0.76**	0.28	0.20	−0.06	0.53	0.55	0.2647	0.03	0.49
GA_5	**0.72**	0.39	0.35	−0.03	0.51	0.57	0.3502	0.12	0.52
2. Work adaptation									
WA_1	0.27	**0.82**	0.56	0.02	0.39	0.41	0.47	0.11	0.29
WA_2	0.20	**0.85**	0.64	0.06	0.42	0.40	0.45	0.07	0.32
WA_3	0.32	**0.61**	0.27	0.03	0.36	0.38	0.20	0.09	0.28
3. Cognitive cultural intelligence									
COG_1	0.28	0.53	**0.82**	0.04	0.32	0.31	0.62	0.14	0.27
COG_2	0.20	0.64	**0.84**	0.02	0.35	0.31	0.54	0.12	0.25
COG_3	0.21	0.55	**0.90**	0.03	0.29	0.30	0.61	0.08	0.27
COG_4	0.19	0.53	**0.85**	0.01	0.26	0.27	0.58	0.12	0.22
COG_5	0.16	0.59	**0.85**	0.09	0.28	0.25	0.60	0.12	0.21
COG_6	0.19	0.55	**0.87**	0.08	0.24	0.28	0.64	0.12	0.26
4. Behavioral cultural intelligence									
BEHA_1	−0.02	0.09	0.07	**0.94**	0.02	0.01	0.06	0.50	0.02
BEHA_2	−0.03	0.06	0.06	**0.92**	0.02	−0.02	0.05	0.37	0.00
BEHA_3	−0.07	0.06	0.04	**0.93**	0.01	−0.01	0.03	0.42	−0.01
BEHA_4	−0.08	−0.01	0.01	**0.93**	−0.02	−0.10	−0.01	0.42	−0.03
BEHA_5	0.01	0.03	0.05	**0.93**	0.02	0.02	0.08	0.41	0.04
5. Metacognitive cultural intelligence									
MCOG_1	0.31	0.48	0.62	0.04	**0.31**	0.34	0.90	0.07	0.29
MCOG_3	0.33	0.40	0.59	0.08	**0.28**	0.33	0.88	0.12	0.28
MCOG_4	0.24	0.44	0.63	−0.01	**0.22**	0.24	0.84	0.03	0.24
6. Motivational cultural intelligence									
MOT_1	0.07	0.10	0.15	0.39	0.10	**0.02**	0.09	0.91	0.20
MOT_2	0.06	0.11	0.13	0.43	0.04	**0.02**	0.09	0.90	0.14
MOT_3	0.06	0.06	0.07	0.40	0.05	**−0.02**	0.04	0.85	0.14
MOT_4	0.12	0.10	0.10	0.42	0.07	**0.06**	0.06	0.87	0.20
MOT_5	0.06	0.14	0.15	0.37	0.12	**0.05**	0.09	0.88	0.17
7. Performance: management									
PM_1	0.49	0.32	0.23	0.03	0.50	0.42	**0.22**	0.21	0.78
PM_3	0.52	0.30	0.24	−0.02	0.51	0.57	**0.28**	0.11	0.82
8. Performance: reading the environment									
PRE_1	0.50	0.41	0.31	0.12	0.79	0.51	0.24	**0.10**	0.49
PRE_3	0.56	0.34	0.25	−0.05	0.74	0.53	0.22	**0.06**	0.49
PRE_4	0.52	0.39	0.21	−0.04	0.72	0.53	0.24	**0.04**	0.43
9. Performance: production									
PP_1	0.59	0.47	0.28	0.01	0.55	0.82	0.26	0.02	**0.45**
PP_3	0.59	0.37	0.27	−0.05	0.61	0.84	0.32	0.03	**0.57**

Note 1: Table 5 is restricted to presenting the latent variables of first order (LV) and the abbreviations for each assertion.

Evidence leads to non-rejection of Hypothesis 1, which deals with the association between cultural intelligence and cross-cultural adaptation, since the paths coefficient between both factors was 0.45 ($p < 0.001$), and the coefficient of determination (R^2) of 20.1%; this means that 20.1% of the variation in the expatriates cross-cultural adaptation was associated with the degree of cultural intelligence. These results are similar to those by Ang et al. (2007) and Ramalu et al. (2011).

The relationship between cultural intelligence and expatriate performance treated in Hypothesis 2 was rejected, presenting a paths coefficient between the two variables of 0.00 (non-significant). This result is in line with those found by Lee and Sukoco (2010), who in their research obtained a paths coefficient of 0.18 (non-significant).

Hypothesis 3, which deals with the association between cross-cultural adaptation and expatriate performance, was not rejected, with a coefficient of 0.83 ($p < 0.001$) and coefficient of determination of 0.691. Therefore, 69.1% of the expatriate performance was related to cross-cultural adaptation, and these findings are in agreement with previous research as those

Table 6
Structural models predictors of expatriates performance.

	Structural coefficient	Standard error	t-value	p-value	VIF	R^2	R^2 adjusted
Model 1 (controls)							
Previous_experience → performance	0.049	0.065	0.749	0.454	1.1		
Female gender → performance	0.046	0.071	0.646	0.518	1.0	0.6%	0.0%
Time in Brazil → performance	−0.032	0.067	0.469	0.639	1.0		
Model 2 (complete)							
Previous_experience → performance	0.009	0.039	0.235	0.815	1.02		
Female gender → performance	0.060	0.040	1507	0.132	1.01		
Time in Brazil → performance	−0.054	0.039	1370	0.171	1.01	69.8%	69.1%
Inteligência cultural → performance	−0.003	0.044	0.058	0.954	1.27		
Cross-cultural adaptation → performance	0.834	0.033	25,516	0.000	1.26		
Cultural intelligence → cross-cultural adaptation	0.448	0.070	6435	0.000	1.00	20.1%	19.7%

Source: Elaborated by the authors from the research data.
Note 1: The structural models were estimated by the SmartPLS 3.2.0 software.
Note 2: The VIF (variance inflation factor) was estimated using the SPSS software from the factorial scores.

by Ramalu, Rose, Kumar, and Uli (2010) and Wu and Ang (2011). However, unlike previous studies, this adds to the literature by including, in a structural model, cultural intelligence as an antecedent of cross-cultural adaptation from a study with a sample composed of expatriates from different continents.

The indirect effect of cultural intelligence on expatriate performance via cross-cultural adaptation was 0.37 (0.83*0.45), which means that this mediation explained 13.7% of the total expatriate performance; this effect was also identified in the study by Lee and Sukoco (2010) which investigated expatriates from Asian countries (China, Vietnam and other Southeast Asian countries), operating in multinationals in Taiwan.

However, the authors found a mediation of 44.1%. The difference of this result compared to the one obtained in this research, at the same time that it reinforces the fact that cultural differences mediated the effect of cultural intelligence on cross-cultural adaptation and expatriate performance (Earley & Ang, 2003),

Fig. 1. Structural and Measurement Model.
Note: We used the SmartPLS 2.0.M3 software (Ringle et al., 2005). The coefficients are in the standardized form and are significant ($p < 0.01$), Significance was estimated with $n = 217$ and 1000 repetitions, by using bootstrap. Results of the SMART PLS: ***$p < 0.001$.
CI, Cultural Intelligence; COG, Cognitive Cultural Intelligence; MCOG, Metacognitive Cultural Intelligence; MOT, Motivational Cultural Intelligence; BEHA, Behavioral Cultural Intelligence; AE, Adaptation of the Expatriate; GA, General Adaptation; IA, Interaction Adaptation; WA, Work Adaptation; PER, Performance; PP, Production Performance; PRE, Performance in Reading the Environment; PM, Performance in Local Employee Management.

also confirms the existence of this effect of cultural intelligence on the expatriate performance through cross-cultural adaptation.

The nature of the relationship between cultural intelligence and expatriate performance is indirect, being mediated in the model studied, by cross-cultural adaptation. This result can be interpreted in the sense that the simple fact that an individual possesses a high degree of cultural intelligence does not guarantee, by itself, a high probability that one will perform satisfactorily. For this relationship to occur, it is necessary for this cultural intelligence to become a better cross-cultural adaptation. This, in turn, tends to influence a better performance.

The Contact Theory supports such mediation in view of the fact that, the greater the number of positive interaction of the expatriate with the local inhabitants, in frequency and diversity of people, the lesser will be the psychological stress and cognitive fatigue, generated by the prejudices, the uncertainties and the ambiguity of the new cultural environment; and the greater will be the opportunities for informal learning about the intrinsic characteristics of the new culture and for the development of new friendships (Erasmus, 2010; Novak et al., 2011; Toit & Quayle, 2011). Such a preposition is reinforced by the idea that close interpersonal relationships contribute to the well-being of individuals (Britto & Oliveira, 2016; Novak et al., 2011), and consequently for psychological comfort (adaptation).

Thus, the positive interactions with the local inhabitants allow the expatriate to know the new culture better, contribute to the adaptation and enhance the abilities inherent in cultural intelligence (learning, understanding and knowing how to adapt their knowledge and attitude in the situation of cultural diversity), allowing the individual to deal adequately with stress, achieving better levels of adaptation and, consequently, performing their work with more energy and focus, which can positively impact their performance.

Conclusion

The results that revealed the existence of a positive association between the expatriate performance and cross-cultural
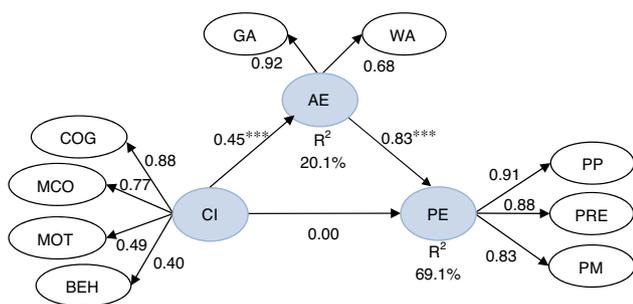
adaptation reinforce the importance of adjusting the expatriate to the culture of the host country for the success in international assignments. The study adds knowledge to the expatriation literature by including, in a structural model, cultural intelligence as an antecedent of cross-cultural adaptation from a study with a sample of expatriates originating from different continents.

The direct relationship between cultural intelligence and expatriate performance was nonsignificant, similar to that found in the study by Lee and Sukoco (2010). However, because this study has obtained such results in a more diversified sample, whose expatriates originate from five different continents, it is understood that this research offers an advance in the degree of robustness referring to the study of the relationship between these constructs.

Another relevant result found in this research refers to the indirect relationship between cultural intelligence and expatriate performance mediated by cross-cultural adaptation, reinforcing the argument that cultural intelligence is an important antecedent to the success of the assignment. This result underscores the need to convert the potential of cultural intelligence into a capacity for better adaptation of the expatriate to the new culture. In this research, we conclude, supported by the Contact Theory, that the process of transforming cultural intelligence into adaptive ability is facilitated and enhanced by the positive interactions established with the local inhabitants.

The main limitations of this study are due to the restriction of research in just three variables, cultural intelligence, cross-cultural adaptation and expatriates performance, since the theme if of great complexity. Another aspect is the option for the self-evaluation of the performance construct, such choice was due to the reality of the sample and, although this procedure has support in the literature, we consider that this process allows the existence of a bias of the respondent, and may impact the results of the research. It is worth mentioning that the fact of this study having a cross-sectional design and evaluating the opinion of expatriates at a given moment in time, makes assessments of proposed relationships represent a limitation of the study.

As it is a study of human behavior, the subjectivity that makes up all the established relationships of the individual raises the complexity of the research in the social field. Thus, research on expatriates, that initially dedicated to investigate two variables, is increasing its complexity including new variables to studies, as in this one. This trend should remain in order to better understand the factors impacting on the individual who is on a mission overseas.

Given the limitations pointed out, we suggest future research to broaden the research on the factors that influence the performance of the expatriate, including a larger number of variables to be studied, such as individual characteristics (e.g., previous international experience, language ability and personality) and at a macro level, cultural distance. Another suggestion is to take other forms of evaluating the expatriate's performance, such as self-assessment, suggested by Shay and Baack (2006), in which the individual compares their performance with that of their peers.

Also, as a recommendation for future research, we suggest the evaluation of what explains the development of cultural intelligence of expatriates. There is in the literature a discussion regarding the innate or acquired nature of cultural intelligence (Ang et al., 2004; Lee & Sukoco, 2010). If it is acquired, the topic becomes of great importance for companies with international mobility programs, since it can be developed. Therefore, we suggest that the relationship between this type of intelligence and some possible antecedents, such as personality, personal values or previous international experience also be tested.

As practical suggestions for managers of International Human Resources, we understand that it is not enough for companies to select individuals more culturally intelligent for international positions, it is necessary to support the adaptation of these expatriates, in order to facilitate the indirect influence of cultural intelligence on performance, via cross-cultural adaptation, for example, by promoting direct, prolonged or imaginative contact experience, in the process of preparing the expatriate.

We also suggest, that organizations use the CQS, since it presented satisfactory psychometric properties to measure, periodically, the cultural intelligence of professionals who are candidates for international mobility, providing companies with additional information about candidates. In this case, we recommend that the evaluation of the members of the organization be performed from the responses of superiors, subordinates and/or clients with whom they interact in a cross-cultural context.

Conflicts of interest

The authors declare no conflicts of interest.

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