

Culture and Performance of Global-Project Teams: A Study In Brazilian Multinational Companies

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Abstract--The internationalization of Brazilian companies brings a new reality: the need for implementation of global projects. These, in turn, carry in their essence the challenge of managing multicultural teams. Being a recent phenomenon, with little theoretical development, this study aim to understand the relationships between cultural features and performance of project teams in global projects of Brazilian multinationals, in contexts of high and low cultural distance. Once these relations were identified, we tried to understand them in light of the teams management process. To carry out this discussion, we undertook a field study, with both quantitative and qualitative focus, of 34 global projects of 15 Brazilian multinationals, in which people from 22 countries took part. The results provided empirical evidence that there is an association between cultural characteristics and team performance, with femininity and hierarchical proximity being the standout. The first one would be more associated with low performance and culturally homogeneous teams. Hierarchical proximity is associated with high performance and culturally heterogeneous teams. These results show that individual and organizational intercultural competence gain importance. Final recommendations are made in order to help Brazilian multinational companies to manage their global teams and thereby achieve better results in their global projects.

I. INTRODUCTION

In an increasingly competitive global economy, multinationals are adopting new forms of work organization in order to better utilize their resources, by integrating knowledge with assets scattered across their various units. Consequently, it has increased the number of global projects involving professionals from several countries, either to build new manufacturing units, or to develop new technologies, products and services, or even to implement new models of management. Moreover, global-project teams have been seen as a source for the generation of knowledge about the needs of customers geographically dispersed, from different cultural backgrounds, speaking different languages, and with different sets of preferences [33; 35; 39]. This new reality introduces new management challenges due to the fact that individuals from different organizations, from different countries and from different value systems must share authority, responsibility and decision-making [47].

In this context, the cultural issue becomes one of the most important aspects to be taken into consideration by multinational companies. The differences in the way leaders and their followers think, feel and act must be considered when we want to find viable solutions to be applied worldwide. Many solutions do not work or cannot be

implemented when the differences in the way partners think are ignored [23].

Along with the cultural issue, growing importance has been attached to the concept of cultural distance, as a result of the psychic distance term disseminated by the Nordic school of company internationalization. Besides the cultural differences, there are other circumstances that hamper the international flow of goods and services, such as differences in economic situation, level of education, languages, religions and legal and trade systems between the countries. The greater these differences, the greater the psychic distance. The same occurs with the cultural distance: the greater the cultural differences between countries, the greater the cultural distance. The problems faced by global projects often result from conflicts caused by the cultural distance between team members, and from the fact that leaders do not understand individual and institutional behavioral patterns very well [25].

If dealing with this situation is not a trivial problem for traditional multinationals, for Brazilian multinationals it is challenging, considering that most of them are still young. Due to the risks of global markets and the competitive disadvantages of firms that are less experienced than those of developed countries, the internationalization process of Brazilian companies has been rather complex [16; 51; 54].

Despite the importance of the issue, a study conducted by Henrie & Sousa-Poza [18] demonstrated that cultural factors are poorly studied by authors in the field of project management. By analyzing publications that specialize in the subject, in the period from 1993 to 2003, the authors concluded that the publications focused mainly on project management processes, techniques and tools. Even though in the 90s studies on project management focused more intensely on human aspects, such as team building, leadership and motivation, the cultural issue did not have a relevant role. A similar result was achieved by Leybourne [29], who pointed to the need to expand the studies on project management, leaving from a focus based primarily on management processes, to a greater focus on the interaction between people. This gap in the literature poses challenges to researchers that need to incorporate theories and concepts developed in other disciplines, in order to build knowledge and methods applicable to the management of global projects. That provides an opportunity for further research into the topic.

In light of this background, the objective of this study is to identify and analyze what cultural characteristics affect the performance of global project teams in Brazilian multinationals, in the context of high and low levels of

cultural distance. Therefore, this study contributes to the integration of two complex disciplines: culture and project management. In an attempt to gain a better understanding of the performance of global-project teams from a cultural perspective, this study contributes towards the area of project management, by providing useful information from other areas, mainly from studies on organizational behavior. Thus, it is assumed that the theoretical contribution is substantial, due to the gaps in the literature on the theme. Furthermore, there have been many studies on multinational companies that start operating in the Brazilian market, but few studies on the opposite movement have been conducted. In this sense, this study also contributes to the development of incipient knowledge about the different dimensions that involve the internationalization of Brazilian companies, more specifically about the management of global teams. This study also seeks to make contributions to the professionals' practice, by suggesting improvements to the management of multicultural teams, which are peculiar to global projects, with the purpose of increasing the chances of success of such projects.

The paper is organized in six sessions. The next section summarizes the main issues related to the management of global project teams and culture, without trying to cover every aspect of such vast subjects. Session three presents the research model, while session four addresses the methodological procedures adopted. Session five presents and discusses the results of the study. Session six offers some conclusions, highlighting the theoretical and managerial implications and recommendations for future studies.

II. LITERATURE REVIEW

This session introduces, in a concise way, the basic concepts covered in the study, focusing on two main dimensions and their interrelations: global projects and culture.

A. National cultures

According to Hofstede [23], culture works as mental programs consisting of the patterns of thinking, feeling and potential acting that every person carries within himself or herself. It is the result of continuous learning and it predetermines, in part, the human behavior. Despite the wide diversity of minds, there is a structure that serves as a starting point for mutual understanding and which is composed of dimensions of the cultural differences. In addition to Hofstede [23], several authors, including Trompenaars [55] and, more recently, House et al [24] have striven to study the various dimensions of national cultures. Among them, it is possible to say that there is more complementarity than contradictions. For the purposes of this study, we have adopted the dimensions proposed by Hofstede [23], since there are more data available on these dimensions, allowing us to make comparisons between cultures of different countries.

The cultural dimensions proposed by Hofstede [23] are called: a) power distance index (PDI); b) individualism versus collectivism (IDV); c) masculinity versus femininity (IMAS); d) uncertainty avoidance index (UAI). This set forms a four-dimension model of the differences between national cultures. According to this model, each country has different results for each dimension. There is a fifth dimension - long-term orientation versus short-term orientation. This dimension was not part of the previous model and was later incorporated by Hofstede, in order to capture values from the perspective of the Oriental society.

Power distance can be defined as "the extent to which the less powerful members of a country's organizations and institutions accept and expect the unequal distribution of power". The "institutions" are the key elements of a society, such as family, school and community and the "organizations" are the places where people work. The measurement of power distance is based on value systems of less powerful people and the division of power is usually explained by the more powerful individuals, the so-called leaders. Here, it is essential to emphasize that the authority can only survive when it is matched by subordination. The power distance indices show the dependency relationships in a given country. In countries where the power distance index is low, the subordinates' dependence on their bosses is limited. In countries where the index is high, subordinates are considerably dependent on their bosses [23].

The individualism is typical of societies in which the ties between individuals are loose. Everyone is expected to look after him/herself and his/her immediate family. Collectivism is typical of societies in which people from birth onwards are integrated into strong, cohesive groups, which protect them in exchange for unquestioning loyalty. Naturally, the degree of individualism varies within countries and between countries [23].

For the author, masculinity and femininity are the differences related to the self-assertion behavior and modest demeanor, respectively. According to the information about the differences between the societies related to this dimension, it is possible to define it as follows: masculine societies are the ones in which the roles are clearly differentiated (the man must be strong, assert himself and be interested in material success, while women must be more modest, tender and concerned about quality of life); feminine societies are those in which the social roles of the genders overlap (both men and women are expected to be modest, tender and concerned about quality of life). Both the masculine culture and the feminine culture create different models of bosses. The male boss shows self-assertion, decision and is aggressive (in masculine cultures, this adjective has a positive connotation). He makes decisions by himself, based on facts, rather than based on the group decision. It does not matter if he is slightly sexist. In a feminine society, the boss is less visible, acts more by instinct than by decision and is accustomed to seeking consensus [23].

The standards and laws are part of the means used by societies to avoid the uncertainties in the behavior of their members. This is quite visible in the workplace. In countries with a high uncertainty avoidance index (UAI), there are numerous formal and informal laws that govern the rights and obligations of employers and employees. When an individual moves from a country where there is not much avoidance of uncertainties to another one where there is a lot of avoidance, it becomes difficult to understand that although the regulations are ineffective, they satisfy the emotional need for a formal structure. The reality is less important than the satisfaction of such need. In countries with poor avoidance of uncertainty, there seems to be emotional aversion to formal rules. Standards are set only when this is absolutely necessary. Members of these societies pride themselves on being able to solve many problems without the need for formal standards [23].

The fifth dimension perceived is directly connected with western and eastern mentalities. In the first one, a short-term orientation was identified and, in the second one, a long-term orientation was identified. In the short-term orientation, it is possible to observe the respect for tradition, which ultimately reflects the respect for social obligations and the appeal of the status. In this sense, there is social pressure for one not to be less than a neighbor, which implies low saving rates and a concern about immediate results. In the long-term orientation, traditions are adapted to the modern context, which results in respect for social obligations within certain limits. It is possible to observe a posture of austerity and economy of resources associated with the willingness to subordinate oneself for a greater purpose [23].

The Brazilian national culture is seen as of increased power distance. Both leaders and subordinates believe that ignoring power levels is a sign of insubordination, even though it makes the job easier. Brazil may be a country that is more collectivist than individualistic, albeit not in a way that is as pronounced as in the case of power distance and uncertainty avoidance. With respect to femininity and masculinity, Brazil's position is dubious, but with a tendency towards femininity. In this case, professionals are less oriented towards results. Care for others, equality, welfare and quality of life prevail. Finally, Brazil is considered a country of high uncertainty avoidance, where people feel uncomfortable with ambiguity. In the work environment, there is greater career stability and there is an emotional need for rules, even though they are ineffective. People feel motivated due to the sense of security, because they are esteemed and valued by the group [23]. Brazilian authors have confirmed, in large part, the theoretical findings of Hofstede, especially with regard to the power distance and uncertainty avoidance [1; 2; 6; 13];

B. Cultural Distance between countries

The concept of cultural distance arises from "psychic distance" term, coined by Johanson & Vahlne [25]. For these authors, the psychic distance is the sum of factors, such as the

difference in languages, level of education, business and legal practices, culture, etc., that interfere with the flow of information between markets. Initially, companies tend to do international businesses with markets with lower psychic distance, and only after that they start operating in other markets.

Based on the extensive research conducted by Hofstede in 50 subsidiaries of IBM, whose results have already been discussed in the previous section, Kogut & Singh [27; 28] created an index of cultural distance, defined as a firm's degree of uncertainty about the characteristics of an international market. The contribution of the authors was considered innovative since it managed to translate the cultural characteristics into a numerical index, which allows comparing the cultural distance between countries. This index is based on the deviation of each one of Hofstede's dimensions from the classification of the target country. These deviations are then adjusted for the differences in variance of each dimension, with the arithmetic mean also being calculated. It is important to highlight that Kogut & Singh [27; 28] dealt only with cultural distance. The concept of psychic distance is broader, since it includes other dimensions, such as the political, geographical and economic ones [10; 14; 43].

Despite the difficulties created by the cultural differences, there are also opportunities. The project manager must identify potential competitive advantages and disadvantages brought to the team by professionals from different cultural backgrounds. Regardless of the cultural orientation, it can be useful if the manager knows how to take advantage of it.

C. Global Projects

In their generic definition, projects are temporary endeavors made to create products, services or unique results. Their characteristics are temporality, which means that all projects have a defined beginning and end; the uniqueness of their products, services or results and their progressive development, which means their development occurs in steps and continues by increments [41]. Global and domestic projects are no different when it comes to the timing of the effort, the uniqueness and progressiveness, but they differ in the location: the first one occurs globally, while traditional projects occur locally. According to The Collaboratory for Research on Global Projects [9], an entity linked to Stanford University, global projects are those that involve individuals, teams and organizations from diverse cultural contexts. They are a distinct class of projects, with their own characteristics and challenges.

Other authors give similar definitions when they characterize global projects as temporary structures designed to achieve a common goal, and whose results come from horizontal cooperation within or between organizations [5]. They involve multiple locations, entities, organizations and business units [30]. Cleland & Gareis [18] classified projects as domestic and global, according to the stakeholders' location: in a domestic project, they are all located in one

country; in a global project, they are scattered across different countries. A company with global-project management operates in an environment where technology, risks, finance and participation in new markets are shared with shareholders. Global projects are developed through alliances involving from R&D to outsourcing, in projects that vary in size and duration. A project will be more or less international depending on the relationship with stakeholders, which can be suppliers, partners or clients. The systematic analysis of stakeholders that will allow saying whether a project will have to be treated as international.

D. Performance of Global Teams

The success of companies that develop global projects is largely based on the performance of their employees. Global teams demand of their members a differentiated set of skills, attitudes and knowledge. Aspects such as collaboration, leadership, confidence building, conflict resolution, intercultural skills and distance monitoring are part of the skills of these professionals [4; 30; 31; 38].

McDonough III, Kahn & Barczak [33; 34] identified the following factors as critical to the performance of global teams:

- **Critical Behavior Factors:** trust among team members; effective interpersonal relationships; effective communication among team members.
- **Critical Management Factors:** identifying the client's key needs; ensuring the stability of objectives; adherence to schedule; availability and sufficiency of resources; adherence to budget.

Hoegl, Parboteeah & Gemuenden [20; 21] define the performance of teams in terms of variables related to effectiveness and efficiency. Effectiveness refers to the degree to which teams meet expectations of clients regarding the quality of the service or product. Efficiency is related to the adherence to schedules and budgets. Piña, Martínez & Martínez [40] reviewed the literature on team performance in organizations. They argue that performance measures vary depending on the types of teams, which can be classified as work teams, parallel teams, project teams and management teams. With regard to project teams, the measures are related to project performance and attitudinal issues of individuals:

- a) **Performance measures:** Adherence to the project budget; adherence to the project schedule; quality of tasks/products/services provided;
- b) **Attitudinal measures:** Satisfaction of team members; commitment to results; Trust; Creativity.

Similar measures are defended by Prasad & Akhilesh [42]. The authors propose traditional measures (budget, schedule, quality of product or service, productivity), combined with less traditional measures, such as generation of new knowledge and satisfaction of team members. These measures would contribute to the organization's learning process, innovation process and value creation process.

Performance measures related to the project can be more easily measured than attitudinal measures, as they are objective and established at the outset of the project. With respect to attitudinal performance measures, for Tamhain [50], in order for individuals to manifest such attitudes, there must be a facilitative context. In his study, the factors related to personal and professional needs were those that showed a stronger relationship with team performance. Therefore, project managers are expected to stimulate the creation of an environment that is conducive to professional challenge, communication among team members, mutual trust and respect.

Possibly, the performance measures presented are useful both for domestic projects and global projects, with the difference that the performance is more difficult in multicultural teams, since they are particularly more vulnerable. Their members may have different perceptions of the environment, of motives and intentions of behavior, of communication standards, of stereotyping, of ethnocentrism, of prejudice, etc. The consequences of such problems and differences can manifest themselves in the degradation of performance due to lack of social cohesion. Nevertheless, it should also be noted that there are several advantages arising from a multicultural team, such as the variety of perspectives, skills and personal attributes that multicultural members offer to an organization. More creative approaches and from different perspectives lead to better identification of problems and generation of solutions. In short, cultural diversity may lead to an increase in the creation and dissemination of knowledge [31].

E. Global Teams and the impact of cultural differences

In practice, cultural dimensions have significant implications for the management of global teams. When one examines the cultural differences, one can identify management styles, preferences and motivations of team members. Hofstede [22] argues that the individualism and power distance dimensions are very important to understand how organizations operate in different parts of the world, especially with regard to project management, considering the following aspects:

- a) **Individualism:** as project management is essentially designed for the creation of flexible and temporary systems in order to achieve a specific result, it becomes much more oriented towards tasks and less oriented towards people. People are expected to be motivated to perform their part in the project and, once they complete their participation, they are expected to go to another project, which probably means to associate with another group of people. That is, for the author, in the management of projects, the task comes before the relationship. Relationships are peripheral, temporary and fluctuating. In individualistic cultures, this works very well. In cultures that are more collectivist, people will probably feel a certain loss of identity when they are removed from their functional group to work in temporary

project teams. In this type of culture, the project manager must pay more attention to the relationships between people.

- b) Power Distance: projects are generally smaller structures within a larger structure. In the context of the project, the hierarchy is not the main criterion in the decision-making process. In addition, most members of the team have two bosses: the boss of their position and the project manager. Therefore, people need to tolerate ambiguity and need to be able to resolve conflicts of interest, focusing on the interest of the project rather than on power issues. This does not happen naturally in pyramid companies, or companies with a family organization model.

With respect to the expatriation of those involved in global projects, the cultural dimensions of Hofstede are also relevant. For example, an individualistic oriented culture will have some cultural clashes in a country with diminished individual orientation [52]. Another example refers to the uncertainty avoidance dimension. The low uncertainty avoidance is appropriate when one seeks result orientation, and the leader is a facilitator, establishing minimum standards and promoting an open learning process. The high uncertainty avoidance is appropriate when there is need for security. In this case, the leader is an expert that makes the rules clear and promotes a structured learning process.

Firms of low power distance organize their projects in a more informal way, whereas those of high power distance need to define the relations of power clearly. In individualist countries, the communication among members is closed and conducted on a one-to-one basis, while in collectivist countries, the communication is multiple and open. When there is tolerance to risk, the contracting and management of supplies is more based on partnership, and the aversion to risk requires formal relations based on rules to be followed.

Higgs [19] points out that each dimension has its managerial advantages depending on what one is seeking. While high power distance is important when discipline is needed, low power distance requires responsibility and self-management on the part of team members. While individualism promotes greater managerial mobility, collectivism is related to greater commitment of people. When accuracy is required, high uncertainty avoidance is beneficial, but innovation benefits more from environments where the uncertainty avoidance is lower. Masculinity is related to efficiency and mass production environment (operation environment) and femininity is related to customization or non-routine activities.

From the above we can infer that the intercultural competence of companies and organizations is a success factor in the internationalization of companies, and in the management of global projects. The more we know the culture of the host country, the lower cultural distance and the greater the possibility of international success for the company in its international endeavor. Intercultural

competence is defined by Johnson, Lenartowicz & Apud [26] as the effective action of individuals, based on their repertoire of skills, knowledge and personal attributes, which allow them to work successfully with people from different cultural backgrounds, either in these individuals' country or abroad. For Higgs [19], the competences needed for companies that venture into the international arena are: a) awareness of their own culture and the cultural differences; b) construction of knowledge about the impact of cultural differences, as well as about the strengths and weaknesses related to different cultures; c) development of skills to identify the impact of cultural differences on the management and behavioral adaptation, with the purpose of achieving effective results. With respect to people, some necessary attributes include traits such as ambition, courage, curiosity, determination, enthusiasm, integrity, ability to judge, loyalty, perseverance, self-development, tolerance to ambiguity, among others. The personal competence, which covers skills and attitudes, is translated by the individual's ability to adapt to different cultural contexts and norms, to manage stress and to resolve conflicts. It involves the self-examination of one's own mental programming and how it differs from that of other individuals. For this, it is necessary to know how cultural values are learned and learn to compare and contrast the different cultures. It also presupposes comprehensive knowledge of the complex environment in which international businesses take place, where economic, legal, political and technological systems coexist. There is also a need to acquire specific knowledge, focusing on a particular culture. It involves learning a foreign language, as well as obtaining information on the geography, economy, politics, history, habits, hygiene, etc. It is necessary to know what to do and not to do in a given country.

The good news is that the intercultural competence can be learned, especially with regard to explicit knowledge. Intercultural learning does not mean that individuals should change their own culture, but that they need to realize that there are other ways of seeing things that are equally valid. In order for the intercultural interaction to be effective, it is necessary to establish a compromise between one's own culture and the other person's culture [3].

III. RESEARCH MODEL AND HYPOTHESES

The research question of the study is "what are the cultural characteristics that affect the performance of global project teams in contexts of high and low cultural distance?" In order to demonstrate the relationships established by this question, we designed a conceptual model that is shown in Figure 1. It is possible to observe that there are three main variables: cultural characteristics (independent variable), team performance (dependent variable) and cultural distance (moderating variable). The variables and their definitions came from the literature review chapter, where they have been discussed.

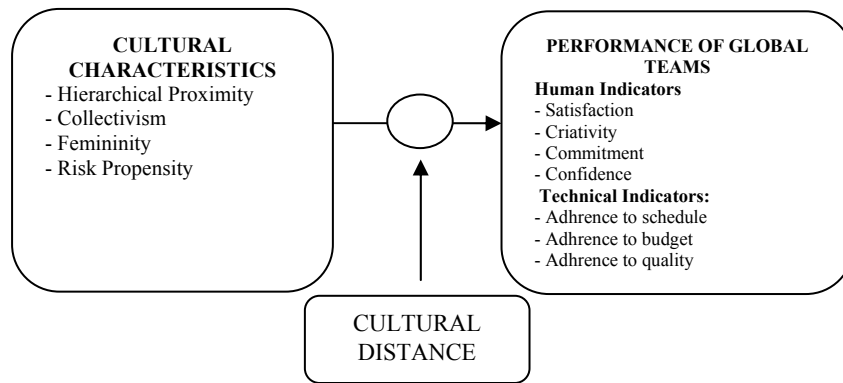


Figure 1 - Research Model of the Study

The dependent variable called “performance of global teams” is represented by human indicators: job satisfaction, creative environment, commitment and trust [32; 36; 37; 40; 45] and technical indicators: achievement of schedule, time and quality objectives [38; 40; 41; 42; 44; 53].

The independent variable refers to the cultural characteristics from the study conducted by Hofstede [23]. For the purposes of this study, these dimensions have been translated into cultural characteristics (hierarchical proximity, collectivism, femininity, and risk propensity). Thus, as the literature review pointed out, there are other cultural dimensions that could influence the performance of project teams. The choice fell into four of these dimensions due to the existence of data that would allow comparing the countries participating in the study.

The moderating variable is the cultural distance, and its concept has been adapted from studies on internationalization of firms, specifically the studies conducted by Kogut & Singh [27; 28]. Here, cultural distance is defined as the extent to which project teams distance themselves from each other due to differences in cultural characteristics. The operational definitions of all variables used in the study as well as the metrics used are shown in Appendix 1.

After presenting the conceptual model defined for this study, we can now define the hypotheses and propositions that will guide the data analysis process. Several authors state that in a project environment, unlike what happens in operational and routine environments, the main focus is on results, rather than on power relationships. The project leader should be a facilitator and adopt an open learning process, to encourage innovation [38; 41; 44]. Thus, apparently, the low power distance may favor the performance of global project teams. However, when the cultural distance is high, this performance can be negatively affected, since there is the possibility of conflicts of authority. Therefore, this study formulates the following hypothesis:

Hypothesis 1: *hierarchical proximity is positively related to team performance.*

Hypothesis 1a: *hierarchical proximity is positively related to the team’s technical performance.*

Hypothesis 1b: *hierarchical proximity is positively related to the team’s human performance.*

Hypothesis 1c: *hierarchical proximity is positively related to the performance of the team in a context of low cultural distance.*

In project environments, teamwork, cooperation and sharing of common objectives are important to teams’ performance. This would not be true in the case of high cultural distance, due to possible conflicts and misunderstandings in the communication process. So, now we define the second set of hypotheses:

Hypothesis 2: *collectivism is positively related to team performance.*

Hypothesis 2a: *collectivism is positively related to the team’s technical performance.*

Hypothesis 2b: *collectivism is positively related to the team’s human performance.*

Hypothesis 2c: *collectivism is positively related to the performance of the team in a context of low cultural distance.*

Considering that femininity is related to concern for others, one would imagine that it would contribute to the satisfaction and commitment of the teams. Likewise, it is related to customization and not to mass production. Thus, this cultural characteristic may also be positively associated with the technical performance of teams [23]. The same would not happen if the team had a high cultural distance, as this would imply possible conflicts over the way to treat people, that is, with more or less rigor. So, now we define the third set of hypotheses:

Hypothesis 3: *femininity is positively related to team performance.*

Hypothesis 3a: *femininity is positively related to the team’s technical performance.*

Hypothesis 3b: *femininity is positively related to the team’s human performance.*

Hypothesis 3c: *femininity is positively related to the performance of the team in a context of low cultural distance.*

Projects represent the means by which business strategies are implemented. Thus, projects and risks are intrinsic. In

other words, the risk is part of the project. In risk-averse cultures, this reality is not easily accepted, and therefore the excess of rules imposed to control risks can halt the project. Thus, it is postulated that the propensity for risk is favorable for the performance of project teams. This performance would also be positively associated in a context of low cultural distance, where the thoughts, values and standards are similar. Therefore, the fourth set of hypotheses would be as follows:

Hypothesis 4: propensity to risk is positively related to team performance.

Hypothesis 4a: *propensity to risk is positively related to the team's technical performance.*

Hypothesis 4b: *propensity to risk is positively related to the team's human performance.*

Hypothesis 4c: *propensity to risk is positively related to the performance of the team in a context of low cultural distance.*

All hypotheses express a positive relationship between the variables and their formulation was based on the review of the literature. It is important to mention here the lessons given by Selltitz [46] regarding hypotheses in field studies. They try to express only associations between variables and never causality. In this context, the hypotheses formulated are only intended to facilitate the reflection on the cultural characteristics that can contribute or not to team performance, in contexts of high and low cultural distance.

IV. METHODOLOGY

A. Sample

First, an effort was made to define the more recently number of Brazilian multinationals companies operating nowadays. In order to do that, we researched into specialized newspapers, journals and websites, and a total of 70 companies were found [11; 12]. This number probably does not represent all Brazilian multinationals, but an attempt was made to exhaust the information available in order to reach the most accurate number possible. We consulted all 70 companies by telephone about the possibility of their participation in the research. During this consultation, we conducted a previous survey, asking companies whether or not they had global projects. Not all companies were willing to participate, either because they had not adhered to the objectives of the research, or for confidentiality reasons. Thus, the final sample was 34 global projects from 15 Brazilian multinational companies. Therefore, the sample was selected according to judgment criteria, which identified representative elements, i.e., the type of sampling was intentional and for convenience. As the sample was not probabilistic, its size was scaled to enable the use of nonparametric techniques.

B. Data Collection

We used a questionnaire developed by the authors based on operational definitions of the variables, which in turn were derived from the theoretical review of the study. We used some reverse questions (in the opposite direction of the other questions) in order to reduce the possibility of complacency among the respondents, with equal answers to most questions. During the processing of data, the scale of these questions was duly corrected in order to maintain the same interpretation base as the others. Such questions indicate that, in general, the answers seem to have been consistent, since their score was lower than the others. Before the effective administration of the questionnaire and the script of interviews, a pretest was carried out on a project selected for this purpose, to correct problems concerning the clarity and accuracy of terms, adequacy of the amount of questions, understanding of the research objectives and enhancing the functionality the questionnaire.

We administered all questionnaires and conducted all interviews in person, in order to obtain more reliable results [15]. That allowed ensuring that the respondent was in fact qualified to answer the questions and, secondly, it increased the likelihood of their answers being more reliable. Moreover, the topic, which has not been very much explored in the literature, required explanations at the beginning and during the interviews that could hardly have been addressed by the questionnaire alone.

To ensure greater reliability of the data, respondents were chosen according to criteria of involvement with the project, organizational knowledge and professional experience. With respect to the respondents' positions, more than 50% of them were division directors, department directors and managers. The majority had managerial responsibilities in the project, as managers or managers of project offices. In general, the respondents had been with the company for over 10 years. So, in addition to knowledge, they also had professional experience. In terms of professional area, the largest share (37%) belonged to the Research & Development (R & D) area. There were also a significant number of professionals dedicated to project management (18%), when this was a department with its own structure within the organization, and to information technology (12%).

C. Treatment of Data

Before applying the statistical tests, we applied the Cronbach's alpha test, which measures the internal consistency of the research instrument. A Cronbach's alpha coefficient of 0.70 or higher is considered appropriate. In some cases, a coefficient of 0.60 may be considered appropriate. The test was applied to the 54 questions of blocks 1 and 2 of the questionnaire, resulting in a value of 0.93, which allowed accepting the reliability of the instrument. With respect to the sample, we decided to check whether there was uniform distribution of the answers to questions about the teams' performance. This decision is based on the fact that the questionnaire was administered to

Brazilian multinationals operating in various sectors of the economy. Therefore, if the distribution of responses was uniform, there would be evidence that neither the cultural characteristics of the professionals nor the cultural distance between the countries participating in the projects would influence the teams' performance. In order to do that, we carried out the Kolmogorov-Smirnov test, which, according to [48], determines whether the values of the sample can reasonably be regarded as originating from a population with a certain theoretical distribution. The result ($D = 0.27$) was greater than the D considered critical ($D = 0.23$). This allowed accepting that the perception of respondents was not evenly distributed with respect to the performance of project teams, showing that the cultural characteristics professionals may be associated with the performance achieved by project teams.

In general, the behavioral sciences rarely have data that satisfy the assumptions for using parametric tests, and that is why non-parametric tests are not prominent in this area. For correlational studies with a small sample, the most used statistical techniques are the nonparametric ones [48]. In order to test the hypotheses, we used two nonparametric techniques, namely:

- *Chi square test*: this test was used in the first stage, in which the data of 34 cases were considered together. For acceptance of the hypotheses, an alpha equal to 0.10 was used. For Hair et al [16], the conventional criterion of significance is alpha equal to 0.05, as some researchers believe that if the function is not significant at the 0.05 level or above, there is little justification to go beyond. However, the author also says that there are several researchers that disagree and decide to continue at a higher level of significance (e.g. 0.10), analyzing the cost versus the value of the information. Considering that the sample used in this study is small, we opted for the 0.10 significance level, which is less conservative, but it was more sensitive compared to the size of the sample, making it possible to obtain more significant information.
- *Fisher's test*: in a second stage of the analysis, the data were divided into high and low performance teams, based on the median, resulting in 17 cases for each segment, a number that made it impossible to continue using the chi-square test. Thus, we adopted Fisher's test, which is particularly suitable for small samples (20 data or less), in which case the chi-square test would be contraindicated. The Fisher test was also used when we considered the moderating variable "cultural distance," for the same reason: its power of explanation for small samples.

The moderating variable is the cultural distance. Possibly, there are a number of other elements that may alter the relationship between cultural characteristics and the performance of teams, such as type of project, team size, project complexity, project duration, among others. We chose to study the cultural distance as a moderating variable, since the study focuses on global projects, in Brazilian companies in process of internationalization. In this case, the cultural

distance seems to be an important variable, as advocated by the Nordic School of company internationalization, as well as by other studies presented in the literature review. For its calculation, we employed the aggregate index of Kogut & Singh [27; 28], whose significance has already been addressed in the conceptual review, making it unnecessary to address it again here. To make it easier for the reader to understand, we reproduce again the degree of cultural distance defined by Kogut & Singh [27; 28]:

$$DC_j = \sum_{i=1}^4 \{(I_{ij} - I_{ik})^2 / V_i\} / 4$$

Where:

I_{ij} = value of the "i cultural dimension" index of country j;

V_i = variance of the "i dimension" variance;

I_{ik} = value of the "i cultural dimension" index of Brazil;

The CD (cultural distance) index is made up of the sum of all indices of Hofstede at the same time. In the cases studied here, there is the presence of more than one foreign country in the composition of the project team (ranging from 1 to 4 countries). Thus, the CD rate is also a summation of indices obtained by the participating projects. To calculate the CD index, 4 cases were considered as missing since they did not submit information about the participating countries. Therefore, we considered 30 cases, which were divided into two groups (high and low cultural distance), with a result of 15 cases for each group. Countries like the Dominican Republic, Mozambique and Angola, participants in the sample, were not studied by Hofstede [23]. Thus, we considered the indices of regions that were geographically closer, namely:

- Dominican Republic = Mexico
- Mozambique and Angola = East Africa

V. RESULTS AND DISCUSSIONS

This item is dedicated to the non-parametric analysis of the associations between the independent variable (cultural characteristics) and the dependent one (team performance). The results of the statistical analysis are summarized in Table 1, considering in terms of team performance, the human and technical indicators and the overall value (technical and human indicators combined). For this analysis, we used the chi-square test at a significance level of 0.10.

Considering the data presented in table 1, it is possible to accept that both hierarchical proximity and femininity are associated with the overall and human performance of global-project teams. However, no cultural characteristic was shown to be associated with the technical performance. These data strengthen the view of authors that advocate further studies on the role of people in projects to the detriment of technical aspects. Apparently, methodological issues related to the management of projects have been mastered, so, there is room for further behavioral studies.

TABLE 1 - RELATIONSHIPS BETWEEN THE CULTURAL CHARACTERISTICS AND THE PERFORMANCE OF GLOBAL TEAMS

CULTURAL CHARACTERISTICS	TEAM PERFORMANCE			CONCLUSION
	OVERALL	TECHNICAL	HUMAN	
	χ^2	χ^2	χ^2	
Hierarchical Proximity	2.95	0.12	2.95	There is a relationship between hierarchical proximity and overall and human performance of teams (Hypotheses 1 and 1b accepted). There is no relationship between hierarchical proximity and technical performance (hypothesis 1a rejected).
Collectivism	0.12	1.06	0.12	There is no relationship between collectivism and overall, technical and human performance of teams (Hypotheses 2, 2a and 2b rejected).
Femininity	3.04	0.12	3.04	There is a relationship between femininity and overall and human performance of teams (Hypotheses 3 and 3b accepted). There is no relationship between femininity and technical performance (hypothesis 3a rejected).
Risk Propensity	1.99	1.99	1.99	There is no relationship between risk propensity and overall, technical and human performance of teams (Hypotheses 4, 4a and 4b rejected).

Notes: Critical $\chi^2 = 2.71$

Level of significance $\alpha = 0.10$ - N = 34

Note: striped cells indicate an association between the variables

TABLE 2 - RELATIONSHIPS BETWEEN CULTURAL CHARACTERISTICS AND HIGH AND LOW PERFORMANCE OF PROJECT TEAMS

CULTURAL CHARACTERISTICS	TEAM PERFORMANCE	
	HIGH (p)	LOW (p)
Hierarchical proximity	0.047	0.63719
Collectivism	0.995	0.33484
Femininity	0.995	0.0015
Risk Propensity	0.632	1.0

Note: Level of significance $\alpha = 0.10$ - N = 17

Note: striped cells indicate an association between the variables

In order to enrich the analysis, we tried to assess the relationships between cultural characteristics and the high and low performance of teams, although this is not covered in the research model. The data found are presented in Table 2 and allow us to infer that the hierarchical proximity is associated with the high performance of teams, while femininity is associated with poor performance.

After the comparative analysis of dependent and independent variables, it is now time to discuss the similarities and differences between the data found in the research and those described in the literature. The hierarchical proximity is related to power relations that are more horizontal, in which the decentralization of authority and of the decision-making process prevail. The data seem to show that it is linked to the performance of teams with respect to overall indicators and human indicators and to projects with high-performance teams. This in line with what was described by the authors studied in the literature review, when they stated that high-performing teams are more comfortable with the sharing of power and information, because, in general, the project's structure is more parallel than hierarchical. There is also consensus that, in this type of team, the status is based on knowledge and competence and not on power. Therefore, if the team feels comfortable with the hierarchical proximity, the fact that it has achieved high performance seems to be natural. These data are also consistent with what was stated by Hofstede [23], whose assessment of the relationship between cultural characteristics and projects reveals that, as projects are small structures

inside a larger one, the hierarchy is not the main criterion in the decision-making process. In addition, the author argues that most members of the team have two bosses: the boss of their position and the project manager. Therefore, people need to tolerate ambiguity and need to be able to solve conflicts of interest, focusing on the interest of the project rather than on power issues. It is interesting to note that Brazil, in addition to other countries participating in the sample, is considered a country of high power distance. However, some authors argue that this characteristic may have changed (or may be in process of change), because Hofstede [23] conducted his survey at a time when the military dictatorship prevailed, at a moment when a lot of importance was placed on the pyramidal hierarchy [1; 16]. The data also seem to confirm this theoretical premise.

The lack of association of the collectivism with technical and human indicators is surprising, especially with regard to human indicators. It is worth remembering that this dimension puts individualism and collectivism on opposite sides, i.e., it refers to the nature of the relationships that the individual has with the group. In the case of individualism, the individual interest prevails over the group's interest, and this would refer, in the project environment, to those professionals that prioritize their own interest. In the collectivism, which is what is being measured in this study, the interests of the group overlap the individual's interest, and this leads to the formation of more cohesive groups. Several authors consider that the activities carried out by the teams have a pre-defined mission, which must be discussed and

analyzed by all its members. Since teams generally involve members from various areas and organizational levels and, in the case of this study, from several countries, everyone should work together towards a common objective, so that growth and learning opportunities can be provided to all its members. Thus, we expected that there would be an association between collectivism and performance, at least in relation to human factors, since the typical characteristics of collectivism are considered critical success factors in projects. It is also possible to observe that this characteristic was associated neither with low nor with high performance. That is, it seems to have a neutral effect on the performance of teams. However, the data related to collectivism seem to be in line with the arguments of Hofstede [23], when he says that projects are temporary and flexible systems to achieve a specific outcome, thus becoming more oriented towards tasks and less towards people. Since in global projects, the bonds between people are temporary, the relationships tend to be more peripheral. For the author, in cultures that are more collectivist, people will probably feel a certain loss of identity when they are removed from their functional group to work in temporary project teams.

With respect to femininity, it is worth remembering that its opposite, masculinity, attaches a high value to assertiveness, competitiveness and achievement of goals, whereas the female role tries to achieve these goals by better managing interpersonal relationships and care for others. Again, it was found that femininity is associated with the team's performance with respect to the overall performance and human performance. Paradoxically, it is associated with low performance. According to the literature, commitment, confidence, creativity and satisfaction are critical success factors for the performance of project teams, and such factors are obtained when interpersonal relationships are well cared for, which seems to justify the association between femininity and human performance indicators [8; 33). However, although there is an increase in satisfaction, in creativity and in other indicators related to the human factor, femininity does not seem to contribute to high performance. Since there is no association with technical indicators, perhaps assertiveness and focus on goals, which are characteristics of

masculinity, would be more conducive to project results in terms of time, quality and costs.

The risk propensity was not associated with the performance of teams in any of the indicators analyzed. Considering that most of the countries participating in the projects have low propensity to risk (or high level of uncertainty avoidance), there seems to be certain logic in this result. Probably, the project type also influenced this result, since the R&D projects, usually those with a higher degree of risk, are only part of the sample. Other types of projects in the sample, such as construction and information technology, which technical difficulties are already more known, may offer less risk.

The associations between the dependent variable and independent variable discussed here can be changed, as other elements that are inherent in the situation under study are considered. Therefore, it is also interesting to know the relationship between the independent variable (cultural characteristics) and the dependent variable (team performance), now in a context of low and high cultural distance (moderating variable). For the analyses of this item, we also used the Fisher's test, since the data were divided in 17 cases, which preclude the application of the chi-square test previously used. The cultural distance was calculated according to the model proposed by Singh & Kogut, already explained in the methodology chapter. Table 3 presents the results found.

When we analyze the data in Table 3, it seems to be possible to affirm that, with respect to hierarchical proximity, there is an association between the dependent variable and the independent variable in the case of projects with high cultural distance. In other words, this cultural characteristic is important when teams are heterogeneous from a cultural standpoint. That is, the result is contrary to the research hypothesis formulated (hypothesis 1c). – What could have led to this result? Considering that Brazil is a country of high hierarchical distance, when leaders were in contact with countries of low cultural distance, such leaders may have had to adapt to this context. In addition, some studies argue that when the professional and intellectual level of the team members is higher, the hierarchy becomes less important than the task.

TABLE 3- RELATIONSHIPS BETWEEN DEPENDENT VARIABLE, INDEPENDENT VARIABLE AND MODERATING VARIABLE

CULTURAL CHARACTERISTICS	TEAM PERFORMANCE		CONCLUSIONS
	LOW CULTURAL DISTANCE (p)	HIGH CULTURAL DISTANCE (p)	
Hierarchical Proximity	0.63719	0.004	Hierarchical proximity is not associated with the performance of the team in a context of low cultural distance (hypothesis 1c rejected).
Collectivism	0.34694	0.574	Collectivism is not associated with team performance in a context of low cultural distance (hypothesis 2c rejected).
Femininity	0.015	0.993	Femininity is associated with team performance only in one context of low cultural distance (hypothesis 3c accepted)
Risk Propensity	0.13122	0.558	Risk propensity is not associated with team performance in projects of low cultural distance (hypothesis 3c rejected).

Note: Level of significance $\alpha = 0.10$ - N = 17

In relation to femininity, the data of Table 3 show that there is a relationship with team performance when the cultural distance is lower. That is, solidarity and care for others, characteristics of femininity, seem to be more related to the performance of culturally homogeneous teams, than success, competition and individual initiative. For example, a project involving Brazil, a country of moderate femininity, and Japan, also known for its femininity, the project leader should have this cultural characteristic. Maybe, this would not be true in projects between Brazil and the United States, of moderate femininity and high masculinity, respectively. The Americans are more assertive, competitive and focused on results rather than on the process. Thus, potential conflicts could affect the performance of teams. As there was no association between the dependent variable and independent variable in cases of collectivism and propensity to risk, there was also no association when the moderating variable was added.

V. CONCLUSIONS

This study aimed to determine which cultural characteristics affect the performance of global teams in high and low cultural distance context. Based on a survey that included managers of 34 global projects in 15 Brazilian multinationals we can conclude, in summary, that:

- a) Human performance seems to be positively affected by hierarchical proximity and femininity. However, while hierarchical proximity is associated with high performance, femininity is associated with poor performance. There is no association between collectivism and risk propensity in both cases.
- b) Team's technical performance seems to be independent of the cultural characteristics.
- c) In contexts of high cultural distance, team performance is positively associated with hierarchical proximity; while in contexts of low cultural distance is associated with femininity. Collectivism and risk propensity do not seem to interfere with team performance in any of the two contexts.

What are the managerial implications of these empirical findings? Although the associations between team performance, cultural characteristics and cultural distance were not as linear as predicted, they exist and affect the project outputs. This implies that intercultural knowledge must be a competence to be developed by project managers. In this study, specifically, some cultural characteristics seem to be better to team performance than others, but we have to recognize that each global team has its own amalgam. It is hard to say whether this will be applicable to any team, without distinction. Therefore, more importance has been attached to the issue of intercultural competence of project leaders that, above all, will need to determine what the expected behaviors of their employees are in view of the culture that they carry. This leads to managerial implications

that involve the proper selection of the project leader and other team members, either for the development of intercultural competences, or for the organizational learning of such competences. Managers who are not sensitive about this situation, probably have lower success rate than those managers who are sensitive to these differences.

Although it is not possible to generalize the results of this study, hierarchical proximity proved to be an important cultural feature for team performance, in both homogeneous and heterogeneous cultural contexts. Brazilian managers, whose national culture is more focused on hierarchical distance, must be prepared to share power with the team and focus on results rather than on hierarchy. Although more support and attention to individual needs can improve satisfaction and other human indicators, it not necessarily leads to high performance. Equal treatment, however, is good in both situations: encourages people and results in higher performance. It is known that femininity and masculinity are national cultural characteristics not necessarily related to gender. However, the fact that almost all respondents are men, have had some influence on the outcome? This is a good question for future research.

Another factor that may have managerial implication is that technical skills do not seem to be much affected by cultural issues. Possibly, there is a common technical language that facilitates the performance of global project professionals in terms of time, costs and quality issues. Thus, the concern of the manager should be more focused on human behavior of people.

As a result of the internationalization of Brazilian multinational companies, people management strategies become necessary, with definitions regarding expatriation policies, training and development of manpower in the country of origin and host countries and international selection of qualified professionals. In light of these strategies, it is up to the project manager to recognize the cultural differences that he or she will face, and consider them during all team management phases, such as planning, mobilization, development, management and even demobilization. Thus, it is necessary to go beyond technical competences, to consider also the intercultural competences that are necessary for their professionals. Certainly, these competences will have a beneficial effect on the projects, as they can reduce conflicts and facilitate the team manager's work.

Based on our findings about the importance of the intercultural skills, practical measures can be suggested that may increase the likelihood of success of international projects. During the phase of team planning and mobilization it is important to do a map of the cultural distance between countries involved in the project. This procedure will facilitate to identify the necessary intercultural competences and make a more careful selection of team members, whether they are Brazilians or foreigners, considering not only technical skills, but also intercultural, social and interpersonal communication skills. To the extent possible, project leaders

should adapt their leadership style to the characteristics of team members, taking into account the cultural dimensions. For example, it is necessary to understand how team members behave with respect to the power distance, femininity, collectivism and uncertainty avoidance in projects. In addition, it is important to create situations in which it will be possible to internalize, effectively, the intercultural knowledge acquired throughout the various global projects. If this knowledge is not internationalized, there is the risk of repeating mistakes of the past in each new project.

Due to the complexity and the delicate interfaces involved in the management of a global team, the implementation of this set of activities does not depend exclusively on the project manager. They require maturity in the project management methodologies, whether they are global or domestic. Besides having adequate staff and best practices in terms of methods and techniques, global projects require, more than ever, collaboration and integration among the various departments in order to handle all the peculiarities of global projects.

With regard to the consequences for organizations, we must recognize that the more deterministic methods and management tools, based on processes with inputs and outputs, have contributed and will continue to contribute to the management of projects and their teams. By the way, they represent in fact an improvement, especially in the case of Brazilian companies, in which project management has generally been treated more informally than systematically. However, it is important to know the other interactions between the different variables involving the management of global teams. The life cycle of a global project is expanded, since it begins with the strategy of internationalization and goes up to the placement and monitoring of the product and/or service in the new organizational environment or market. That is, the management of project teams begins before and goes beyond the project completion, indicating that the participation of the various functional areas, such as strategy, people management, information technology management, among others, will improve the results, because variables such as communication, training, compensation, etc. will be supplementary and not isolated. Therefore, the management of global projects requires a leader that has influence in different departments, so as to promote the interaction among multicultural professionals, to stimulate intercultural learning and to implement training programs that can help develop the global mindset of professionals.

Considering these conclusions, it is possible to observe, in terms of theoretical implications, that isolated studies on project management are not sufficient to address the complexity of managing multicultural teams. In global environments, we must adopt a more holistic approach to problems, since the sum of the parts will not necessarily be equal to the whole. This results from the importance of involving academics, scholars and professionals responsible for project management and their teams in a more

comprehensive discussion, which would include the various disciplines of business administration, such as organizational theories, management theories and even people from other fields, such as psychology and sociology. Namely, it is necessary to advance in the multidisciplinary view of project management. The recommendations presented in this study try to follow this direction.

In the conclusion of this study, it is important to highlight its limitations. They arise especially from methodological restrictions. As in most scientific studies, here we made methodological choices that would allow conducting the research. Certainly, these choices were based on studies on scientific methodology. Nevertheless, when we make choices, other possibilities are left out, and this creates limitations that need to be clarified. It was not possible to obtain data through the triangulation of the respondents. So, the results achieved only take into account the viewpoint of project managers. However, it would be very interesting if three or four respondents from each company could participate in the study. This would significantly increase the reliability.

Another limitation with respect to the respondents is the fact that they are all Brazilians. Therefore, we must consider that the information reflects only the Brazilian point of view. If respondents from other countries had participated in the survey, the results could have been different. Throughout the survey, enough care was taken so as to prevent such situations from being underestimated. Other studies in this field may present new results, if they manage to obtain information from a larger number of qualified respondents in the participating organizations, including foreign participants. Due to the inaccessibility, data were collected in the portion of the population that agreed to participate in the survey. As a result, the sample was non-probabilistic.

Therefore, we cannot say that these findings are representative of the entire population, which is a fact that prevents generalizing the findings to other contexts that do not take into account the peculiarities of the companies and global projects surveyed. It is also necessary to say that the choice of indicators was based on the literature, but nonetheless, it reflects a portion that took into account the feasibility of the study. Certainly, there are other factors, besides the cultural ones, that can affect the performance of global teams, and there are other possible performance indicators, such as the degree of organizational knowledge. The above-mentioned limitations may serve as inspiration for other studies that will allow solving them, making it possible to increase the knowledge about an issue that is so important nowadays.

REFERENCES

- [1] ALCADIPANI, R.; CRUBELLATE, J. M. Cultura organizacional: generalizações improváveis e conceituações imprecisas. *RAE – Revista de Administração de Empresas*. Rio de Janeiro, Ed. Fundação Getúlio Vargas, vol. 43, n. 2, , pp. 64-77, abr/mai/jun 2003.

- [2] ALMEIDA, A. C. **A cabeça do brasileiro**. Rio de Janeiro, Editora Record, 2007.
- [3] BARTEL-RADIC, A. Intercultural Learning in Global Teams. *Management International Review*; ABI/INFORM Global, vol. 46, pp. 647-677, 2006.
- [4] BINDER, J. *Global Project Management*. Burlington, USA, Gower Publishing Limited, 2007.
- [5] CHEVRIER, S.. Cross-cultural management in multinational project groups. *Journal of World Business*, nº 38, p. 141-149, 2003.
- [6] CHU, R.; WOOD JR., T. Cultura organizacional brasileira pós-globalização: global ou local? *RAP – Revista de Administração Pública*, Rio de Janeiro, Vol. 42, nº 5, pp. 969-991, set/out/2008.
- [7] CHUANG, Y., CHURCH, R.; ZIKIC, J. Organizational culture, group diversity and intra-group conflict. *Team performance Management*, Vol 10, pp 26-34, 2004.
- [8] CLELAND, D. L.; GAREIS, R. *Global Project Management Handbook: planning, organizing and controlling international projects*. USA, McGraw-Hill, 2ª edição, 2006.
- [9] CRGP (The Collaboratory for Research on Global Projects). *What is a Global Project?* Disponível em <http://crgp.stanford.edu/research/what.html>. Acessado em 08/09/2007.
- [10] CUERVO-CAZURRA, A. Las distancias en el proceso de internacionalización: el caso del Banco Santander. *Universia Business Review – Actualidad Económica*, 2007.
- [11] FDC – Fundação Dom Cabral. *Ranking FDC 2008 das Transnacionais Brasileiras*. Disponível em <http://www.fdc.org.br>. Acesso em 01/04/2010.
- [12] FLEURY et al. Estratégias e Competências das Multinacionais Brasileiras. IN: PGT/USP. *Relatório do Projeto Ginebra - Gestão Empresarial para a Internacionalização das Empresas Brasileiras*. São Paulo, PGT/USP / FAPESP, 2007.
- [13] FREITAS, A. B. Traços para uma análise organizacional. In: MOTTA, F. C. P.; CALDAS, M. P. (Coords.). *Cultura organizacional e cultura brasileira*. São Paulo: Atlas, 1997.
- [14] GHEMAWAT, P. Distance still matters. *Harvard Business Review*, pp. 137-147, Sep/2001.
- [15] GIL, A.C. *Como elaborar projetos de pesquisa*. São Paulo, Editora Atlas, 4ª edição, 2002.
- [16] GOSHAL, S.; TANURE, B. *Estratégia e Gestão Empresarial – construindo empresas brasileiras de sucesso*. Rio de Janeiro, Elsevier, 2004.
- [17] HAIR et al. *Análise multivariada de dados*. São Paulo, Bookman, 5ª edição, 1998.
- [18] HENRIE, M.; SOUSA-POZA, A. Project Management: a cultural literary review. *Project Management Journal*, vol. 36, nº 2., Jun/2005.
- [19] HIGGS, M. Overcoming the problems of cultural differences to establish success for international management teams. *The Performance Management: an international journal*. Vol. 2, nº 1, 1996.
- [20] HOEGL, M.; GEMUENDEN, H. G. Teamwork quality and the success of innovative projects: a theoretical concept and empirical evidence. *Organization Science*. Vol. 12, nº 4, pp. 435-449, Jul-Aug 2001.
- [21] HOEGL, M.; PARBOTEEAH; K. P.; GEMUENDEN, H. G. When teamwork really matters: task innovativeness as a moderator of the teamwork–performance relationship in software development projects. *Journal of Engineering and Technology Management*. Volume 20, Nº 4, pp. 281-302, 2003.
- [22] HOFSTEDE, G. Cultural dimensions for project management. *Project Management*. Vol. 1, nº 1, Fevereiro, 1983.
- [23] HOFSTEDE, G. *Culturas e Organizações – Compreender a nossa programação mental*. Tradução António Fidalgo. Edições Sílabo. Lisboa, Portugal. 2003.
- [24] HOUSE, Robert; JAVIDAN, Mansour; HANGES, Paul; DORFMAN, Peter. Understanding cultures and implicit leadership theories across the globe: an introduction to project GLOBE. *Journal of World Business*, nº 37, 2002, p. 3-10.
- [25] JOHANSON, J.; VAHLNE, J. E. Building a model of firm internationalization. In: BLOMSTERMO, A.; SHARMA, D. (ed.): *Learning in the internationalization process of firms*. UK, Edward Elgar, 2003.
- [26] JOHNSON, J. P.; LENARTOWICZ, T.; APUD, S. Cross-cultural competence in international business: toward a definition and a model. *Journal of International Business Studies*, nº 37, pp. 525–543, 2006.
- [27] KOGUT, B. Methodological contributions in international business and the direction of academic research activity. In: RUGMAN, A. M. (org.). *Oxford Handbook of International Business*. New York, Oxford University Press, pp. 782-817, 2008.
- [28] KOGUT, B.; SINGH, H. The effect of national culture on the choice of entry modes. *Journal of International Business Studies*, nº 19, pp. 411-432, 1988.
- [29] LEYBOURNE, S. The changing bias of project management research: a consideration of the literatures and an application of extant theory. *Project Management Journal*. Mar, 2007, vol. 38, nº 1.
- [30] LIENTZ, B. P.; REA, K. P. *International Project Management*. Academic Press, USA, 2003.
- [31] MATVEEV, A. V. & NELSON, P. E. Cross cultural communication competence and multicultural team performance: Perceptions of American and Russian managers. *Cross Cultural Management*, Vol 4, pp 253-270, 2004.
- [32] MAYER, R. C.; DAVIS, J.; SCHOORMAN, F. D.. An integration model of organizational trust. *Academy of Management. The Academy of Management Review*. Briarcliff Manor: Jul 1995. Vol. 20, Num. 3; pg. 709, 26 pgs.
- [33] McDONOUGH III, E. F.. Investigation of factors contributing to the success of cross-functional teams. *Journal of Product Innovation Management*, Nº 17, 221-235, 2000.
- [34] McDONOUGH III, E. F.; CEDRONE, D. Meeting the challenge of global team management. *Research Technology Management*, vol. 43, nº 4, pp. 12-17; Jul/Aug, 2000.
- [35] McDONOUGH III, E. F.; KAHN, K. B., BARCZAK, G. Effectively Managing Global, Co-located and Distributed New Product Development Teams. *Journal of Product Innovation Management*, 18(2), 110-120, 2001.
- [36] MEYER, J. P., ALLEN, N. J. A three-component conceptualization of organizational commitment. *Human Resources Management Review*, vol. 1, nº 1, pp. 61-89, 1991.
- [37] MILBOURN, JR., G.; DUNN, J.D. The Job Satisfaction Audit: How to Measure, Interpret, and Use Employee Satisfaction Data. *American Journal of Small Business*, Volume I, Number 1, July, 1976.
- [38] NURICK, A.J.; THAMHAIN, H. J. Developing multinational project teams. In: CLELAND, D.I.; GAREIS, R. *Global Project Management Handbook*. 2ª edição, McGrawHill, USA, 2006.
- [39] PAASIVARA, M. *Communication Practices in Inter-organisational Product Development*. Finlândia, 2005. Doutorado. Department of Computer Science and Engineering, Helsinki University of Technology.
- [40] PIÑA, M. I. D.; MARTÍNEZ, A. M. R.; MARTÍNEZ, L. G. Teams in organizations: a review on team effectiveness. *Team Performance Management*, 2008, vol. 14, nº 1, 2, pp. 7-21.
- [41] PMI (Project Management Institute). *Um guia do Conjunto de Conhecimentos em Gerenciamento de Projetos – Guia PMBOK*. 4ª edição, EUA, 2008.
- [42] PRASAD, K.; AKHILESH, K. B. Global virtual teams: what impacts their design e performance? *Team Performance Management: An International Journal*. Vol. 8, nº 5/6, 2002.
- [43] ROCHA, A. M. C da; SILVA, M. G. F. da; CARNEIRO, F. O. Medindo o construto da distância psíquica. *E&G Economia e Gestão*, Belo Horizonte, v. 7, n. 14, p. 1-178, 2007.
- [44] SBRAGIA, R. Trabalho em equipe e inovação tecnológica. *Revista de Administração*, São Paulo, v. 28, nº 1, jan/mar/1993, pp.36-43.
- [45] SCHOORMAN, F. D.; MAYER, R. C.; DAVIS, J. An integrative model of organizational trust: past, present, and future. *Academy of Management Review*. Vol. 32, No. 2, 344–354, 2007.
- [46] SELTZ, C., JAHODA, M., DEUTSCH, M, COOK, S.W. *Métodos de Pesquisa nas Relações Sociais*. São Paulo, E.P.U. Ltda., 4ª reimpressão, 1974.
- [47] SHORE, B.; CROSS, B. J. Exploring the role of national culture in the management of large-scale international science projects. *International Journal of Project Management*. Elsevier, nº 23, pp. 55-64, 2005.

- [48] SIEGEL, S.; CASTELLAN JR., N. J. *Estatística não paramétrica para as ciências do comportamento*. Porto Alegre, Editoras Artmed, 2006, 2ª edição.
- [49] TAMHAIN, H. J. Leading Technology-Based Project Teams. *Engineering Management Journal*, Vol. 16, No. 2, Junho, 2004.
- [50] TROMPENAARS, Fons. *Nas ondas da cultura: como entender a diversidade cultural nos negócios*. São Paulo: Educator, 1994.
- [51] UNCTAD – United National Conference on Trade and Development. *Unctad Occasional Note. Outward FDI from Brazil: poised take off?* Nova York e Genebra, dez. 2004. Disponível em http://www.unctad.org/en/docs/iteiia200416_en.pdf. Acesso em 15/09/2008.
- [52] VALMER, I. e PALMER, T. Role of cultural self-knowledge in successful expatriation. *Singapore Management Review*, Vol 27, 1, pp 1-25, 2005.
- [53] VERMA, Vijay K. *Managing the project team*. PMI, USA, 1997.
- [54] VIEIRA, C. R. B.; ZILBOVICIUS, M. Empresas brasileiras com plantas industriais no exterior. In: COPPEAD/UFRJ. *Anais do V Workshop em Internacionalização de Empresas*. Rio de Janeiro, 2007. Disponível em <http://www.coppead.ufrj.br/workshop>. Acesso em 25/11/2007.

APPENDIX 1 – OPERATIONAL VARIABLE DEFINITIONS

	INDICATORS	DEFINITION	PERFORMANCE MEASURES	THEORETICAL BASE
HUMAN PERFORMANCE INDICATORS	Satisfaction	Professional satisfaction is the positive feeling that members of a project team have about their work	Compensation Opportunities for professional development Relationship with the project leader Relationship among the team members	Nurick; Thamhain, 2006; Sbragia, 1993; Piña, Martínez & Martínez, 2008; Prasad & Akhilesh (2002); Norton; Di Marco, 1980; Valle (2007)
	Creativity	The team's capacity to generate novelty and useful ideas related to tasks, as well as to generate knowledge that did not exist before the team was formed.	Free expression of ideas Opportunities to use individual competences Incentive to generate new ideas Freedom to make decisions on how to carry out tasks Recognition Encouragement to solve problems Existence of mechanisms to encourage creativity Tolerance to make mistakes	Amabile, 2007; Thamhain, 2006.
	Commitment	Psychological link between the individual and the project, a stabilizing and facilitating force, which also creates the feeling of belonging to the organization.	Dedication of the team to achieve the project results Identification of the team with values and objectives of the project Maximum personal effort of the team members in favor of the projects Desire to stay in the project	Mayer; Davis; Schoorman, 1995; Schoorman; Mayer; Davis, 2007
	Confidence	Psychological link between individuals, which expresses the will of one party (grantor) to be vulnerable to the actions of the other party (grantee), regardless of ability to follow or control the other party, based on the expectation that the grantee will perform a particular action that is important to the grantor.	Confidence in the ability of team members to perform tasks Confidence in the ability of success of team members Confidence in the competences of team members Team capable of understanding individual needs Members of the team will not do anything against each other Capacity for mutual assistance among colleagues Capacity of team members to keep their word Fair Behavior Ethical Behavior	Meyer & Allen, 1991; Salgado, Nascimento; Lopes; Salgueiro, 2008
TECHNICAL PERFORMANCE INDICATORS	Achievement of deadline goals	Capacity to complete project activities for which he or she is responsible, within the stipulated time and respecting the time to market	Deadline for completion of intermediate tasks Deadline for achievement of final results <i>Time to market</i> Deadline management skills Skills to manage risks and uncertainty	Thamhain, 2004; Pmi, 2008; Sbragia, 1993
	Achievement of cost goals	Capacity to complete project activities for which he or she is responsible, without exceeding the stipulated costs	Adherence to the costs estimated during the project Final real costs according to baseline values	
	Achievement of quality goals	Capacity to complete project activities for which he or she is responsible, in accordance with the stipulated quality. In this case, stipulated quality is the complete fulfillment of the client's needs related to the final product; and reduction in the level of rework as a result of noncompliance.	Implementable technical solutions Fulfillment of the client's needs No extra resource allocation Not redoing tasks	

	INDICATORS	DEFINITION	PERFORMANCE MEASURES	THEORETICAL BASE
GLOBAL PROJECT TEAM CULTURAL CHARACTERISTICS	Hierarchical Proximity	Characteristic of societies in which individuals seek a more equal distribution of power.	Way to define roles and duties Decision making (centralized or decentralized) Team participation Equal treatment among team members	Hofstede (2003); House <i>et al</i> (2002), Trompenaars (1994)
	Collectivism	Characteristic of societies in which people are integrated into strong, cohesive groups, for protection in exchange for loyalty.	Bond type between leaders and subordinates Promotion criteria Preferred form of work (group or individual)	
	Femininity	Femininity means a society in which the social roles of genders overlap - either the man or the woman is supposed to be modest, tender and concerned about quality of life.	Existence of Cooperation Recognition of results Search for consensus Prevalence of egalitarianism, solidarity and quality of life Form of conflict resolution	
	Risk Propensity	Characteristic of a society in which individuals feel comfortable with uncertainty, ambiguity and risk.	Incentives for new ideas; Sensitivity to risk; Flexibility with respect to rules and standards of the project	