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# Supplier selection criteria: comparing influence of close buyer-supplier relationship in China and Brazil

Yen-Tsang Chen*

NEOMA Business School


Ely Laureano Paiva

São Paulo School of Business Administration / Getulio Vargas Foundation


Xiande Zhao

Department of Economics and Decision Sciences
China Europe International Business School (CEIBS)


Xiaoqing Xie

Department of Economics and Decision Sciences
China Europe International Business School (CEIBS)

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* Corresponding author: Yen-Tsang Chen (yen-tsang.chen@neoma-bs.fr). Address: NEOMA Business School 59, Rue Pierre Taittinger, 51100, Reims, France

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## Abstract

In a more and more internationally connected business environment, procurement activities in the organizations could also involves interaction of different social norms,. From this perspective, the task of selecting supplier gains a new contour by involving more than traditional quantitative selection criteria.

To explore this phenomenon, we started by assuming the supplier selection as a rational organizational task, but due to the cognitive limitation of the decision makers, some heuristic processes are adopted to simplify the decision making. We based our investigation on social capital theory, since we hypotheze that social norms could influence the weight attributed to supplier selection criteria.

Methodologically, we employed the discrete choice analysis with a controlled vignette-based experiment and conducted our study in China and Brazil. Our study fosters two main contributions. First, from managerial perspective, we addressed the actual preference of the decision maker and the effect of the social norm on supplier selection criteria. Secondly, from the theoretical aspect, we worked one of the limitations of Rational Choice Theory concerns the formation of the preference by using social norms (collectivist culture).

Our results demonstrated a potential effect of a less tangible criteria (close personal buyer-supplier relationship) on decision makers' perception of the utility of quality. In addition, we observed the preference formation due to the collectivist culture. Finally, our results also suggest evidences of bias while using buyer-supplier relationship as a heuristic.


**Keywords:** Buyer-Supplier relationship, Supplier selection, collectivist culture, controlled experiment, discrete choice analysis, cross-national comparison.

## 1   Introduction

It is well known the importance of a properly chosen supplier for the competitiveness of the firm (Kaufmann et al., 2014). To improve the supplier selection efficiency, existing studies have focused on the topics such as alignment of sourcing and business strategy (Chen 2011), supplier selection criteria (Choi & Hartley, 1996; van der Rhee et al., 2009), process and decision making (Kaufmann et al., 2012; Riedl et al., 2013), sustainability in supplier selection (Ehrgott et al., 2011) and optimization modeling (Ho et al., 2010; Xia & Wu, 2007).

Rationally, supplier selection could be thought as a function whose output should be maximized respecting a set of criteria such as quality, delivery, flexibility, cost, order quantities, discounts rates, among others. Therefore, the challenge starts at the definition of criteria to be used from an extensive list (Dickson, 1966; Ellram, 1990), then attribute a weight to each criterion.

In this criteria and weight definition, Verma and Pullman (1998) had called attention to the intriguing point regarding the discrepancy between declared vs. actual preference of the decision maker. Moreover, Scott et al., (2018) demonstrated that even in a supplier selection process, the weight (preference) attributed to each criterion could be inconsistent across stages.

In addition, as supply management usually is an internationalized process embebbed in national cultures (Hultman et al., 2012; Jia et al., 2014; Sartor et al., 2014), where exchanges between organizations also involve some sort of interactions based on social norms. Hence, we expect that the culture could play a relevant role in this process founded on the assertion of social capital and exchange theory (Nahapiet & Ghoshal, 1998; Warren et al., 2004).

By considering the rationale exposed, this study had three main objectives. First, we included a so called "soft" criteria" (buyer-supplier relationship not related directly to supplier performance) in our supplier selection criteria and we investigated to what extend

the decision makers actually preferer the "soft" criterion. Second, we evaluated the effect of trust and friendship (relational capital) on the actual preferences of the decision maker. Third, we evaluated the moderation effect of the regional culture on relationship between the relational capital and buyer's actual preference.

Methodologically, we employed the discrete choice analysis together with a controlled vignette-based experiment where we manipulated the types of the relational capital between buyer and supplier. We conducted our study in China and Brazil, both emerging economics country, but with different social norms, that implies difference in collectivism (Carter et al., 2010; Hofstede & Bond, 1988; Lee Park et al., 2018; Mummalaneni et al., 1996; Prasad & Babbar, 2000). Through the cross-country comparison, we could capture the moderation effect of the reginal culture on the studied phenomenon. Our study, differently from the traditional approach of "*if culture can affect the supplier selection*", we investigated "*how culture can affect the supplier selection*".

To organize our manuscript, this introductory chapter is followed by the theoretical backgrounds and hypothesis section. Right after, by the Empirical Strategy, followed by Results and Discussion, and at last, Final considerations.

## 2 Theoretical background and hypothesis

### 2.1 Supplier selection process and criteria.

The supplier selection process in the organizations could be summarized in four main stages: problem definition, formulation of criteria, qualification, and final selection (Chen, 2011; de Boer & van der Wegen, 2003; Lemke et al., 2000). Once the company had decided to source what is necessary from the market, the next stage is to define how many, which criteria and their relative weight to be employed in supplier selection process (Chen, 2011). Initially, Dickson (1966) observed 23 main criteria that could be employed when selecting a

supplier, that was later updated by Weber et al., (1991). Similarly, Choi & Hartley (1996) observed 26 criteria which could be classified into eight categories and the automotive industry buyers focused on (1) reliability (quality), (2) dependability, (3) relationship. Lemke et al. (2000) noted 15 most frequent criteria used by the British and German purchasing managers and the top three are (1)price, (2) quality, (3) delivery.

Once defined the criteria list, in a general fashion, to establish the weight of each supplier selection criterion, company should align the sourcing to the business strategy (Chen 2011; Wheelwright, 1984). For that, quality orientation (Anderson et al., 1994; Deming, 1989) advocates that quality should be always the main driver. From the purchasing strategy, the multiple sourcing might prioritize more on cost than the single sourcing strategy, and the latter might emphasize the collaborative buyer-supplier relationship and capabilities such as quality, communication, knowledge transfer, delivery or flexibility (Dyer & Hatch, 2006; Lemke et al., 2000; Swift, 1995).

In the same direction of operations and purchasing strategy, the category strategy of the product to be acquired might also affect the weight attributed to the supplier selection criteria, for example, classifying the products into routine, strategic, leverage or bottleneck category could impact on how the companies emphasized the cost, delivery and buyer-supplier relationship (de Boer, Labro, & Morlacchi, 2001). Additionally, Sucky (2007) observed that the higher the organizational level of the decision maker is, the more the cost criterion was given priority to.

### 2.2 *Supplier selection process and decision making.*

Through the qualification process based on a previously defined supplier selection criteria, the buying company could reduce a great amount of available suppliers to a manageable set of potential suppliers (de Boer et al., 2001). Then, the purchaser could ask them for quotations, analyze them and decide who will be awarded by the purchase order.

The supplier selection decision making demonstrates a pattern that also appear in several other selection processes such as a consumer selecting a product/service, a traveler selecting a hotel, a couple selecting a restaurant (Verma & Thompson, 1999). This selection process (Figure 1) follows the assumption of Rational Choice Theory (RCT) where the decision maker will select rationally, based on a set of preference, one among the possible alternatives that could maximize his utility (G. S. Becker, 2013; McFadden, 1986; Simon, 1959).

In this decision-making process, the purchaser ($i$) starts by observing the attributes $x_{aj}$ from the set $X_{aj}$ associated to the potential supplier ($j$). Then the purchaser ($i$) generates a psychophysical judgement about the attributes of the potential supplier ($S_{aij}$). These initial impressions are transformed by the purchaser ($i$) to a more objective value judgment ($V_{ij}(S_{aij})$) of the potential supplier ($j$).

*Figure 1 - Decision Making process (Verma & Thompson,(1997))*
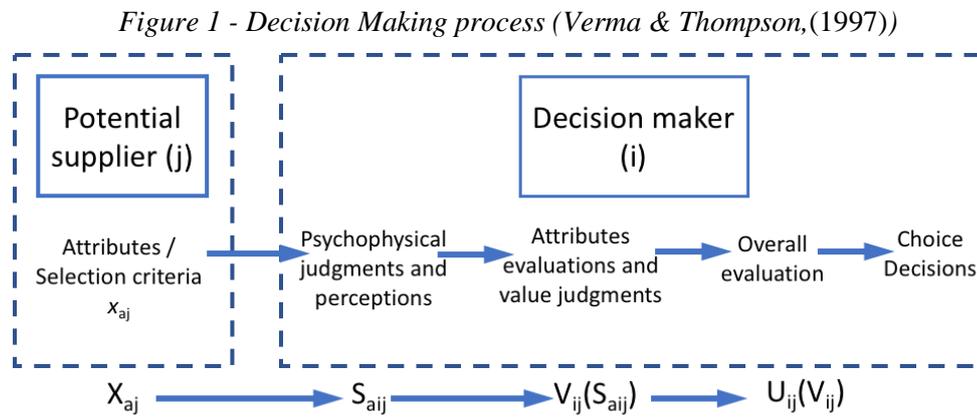


With the value judgment, the purchaser ($i$) forms the overall impression and generates the utility ($U_{ij}$) of the potential supplier ($j$). Hence, the probability ($P_j|C_n$) of selecting a particular supplier in a choice set is related to the utility of respective alternatives, where the higher utility, the more probable is to be chosen. Translating the description above into mathematical equations, we have (Verma & Thompson, 1999):

$S_{aij} = f_1(X_{aj})$          *for* $x_{aij} \in X_{aj}$, $j \in C_n$      *(Equation 1)*

$V_{ij}(S_{aij}) = f_2(S_{aij})$          *for* $x_{aij} \in X_{aj}$, $j \in C_n$      *(Equation 2)*

$U_{ij} = f_3(V_{ij}(S_{aij}))$          *for* $x_{aij} \in X_{aj}$, $j \in C_n$      *(Equation 3)*

$(P_j/C_n) = f_4 (U_{ij})$          *for* $j \in C_n$          *(Equation 4)*

Where:

$X_{aj}$ is set of attributes, $x_{aj}$ is the attribute $x_{aj}$ of the alternative $j$ observed by the individual $i$; $S_{aij}$ is the (i) decision maker's perception of attribute $x_{aj}$ of the alternative $j$; $V_{ij}$ is the value judgment of the individual (i) of the set of attribute $X_{aj}$ of the alternative $j$; $U_{ij}$ is the overall utility of the $j^{th}$ alternative attributed by the individual (i); Therefore, replacing the previous equation one by another, we have that the probability of an alternative to be chose is a function of the set of attributes it presented (see Equation 5).

$(P_j/C_n) = f_4(f_3(f_2(f_1(X_{iaj}))))= F(X_{aj})$     *for* $x_{aij} \in X_{aj}, j \in C_n$     *(Equation 5)*

In addition, the equation 3 could be expanded to the equation 6 where:

$V_{ij}$ is the utility of the alternative $j$ attributed by individual $i$; $x_{aij}$ is the level $a$ of the attribute $x$ of the alternative $j$ evaluated by the individual $i$; $\beta_a$ actual preference to the attribute $x_{aij}$.

$$V_{ij} = \sum_{a=1}^{A} \beta_k . x_{aij}$$

                                                 *(Equation 6)*

### 2.2.1   Supplier selection criteria and actual preference of the decision maker

Based on the RCT, the variations of the weight of the supplier selection criteria could be associated to the manifestation of the actual preference of the decision maker (Karniouchina et al., 2009). To investigate the preferences of the decision makers in procurement, there are some insightful findings from the early 70's where rudimental choice modeling was proposed (Dickson, 1970) and orthogonal choice modeling implemented through vignette experiment . (Lehmann & O 'shaughnessy, 1974). However, researches investigating the actual preference of the organizational buyer have not advanced much until the proper technique and econometric models for probabilistic choice of the products were refined and

consolidated in the decades of 80 and 90's (Louviere & Timmermans, 1990; McFadden, 1980, 1986)

Despite of the consolidated techniques mentioned previously, Weber et al (1991) observed that the most approaches in the 90's to investigate the supplier selection decision-making was based on mathematical modeling and optimization. More recently, several structured literature review studies revealed that studies of supplier selection had little changed in its essence, which was still based on mathematical modeling, linear programming, linear weight model, analytical hierarchical process and data envelop analysis (de Boer et al., 2001; Govindan et al., 2015; Ho et al., 2010; Jain et al., 2009; Wetzstein et al., 2016).

The great amount of study using mathematical modeling and optimizations contribute to make the supplier selection more efficient, however, little attention had paid to how people decide. To contribute to the understanding of decision making in supplier selection, Mummalaneni et al. (1996) employed the discrete choice analysis and confirmed the mainstream of the supplier selection literature where quality and delivery are more important than price in the selection process for Chinese buyers. However, Verma and Pullman (1998), through a more controlled experiment, suggested that cost was actually most important followed by delivery then quality. Later, Tam and Hui (2001) observed that TI managers selected the computer suppliers based on product scope and quality (brand strength). In the similar fashion, Van der Rhee et al (2009) observed that industrial commodities buyers value the production flexibility and supplier's support rather than price. More recently, Scott et al. (2018) observed that the actual weight of the price criterion was highly inconsistency between the stages of definition of supplier criteria and the final selection.

To summarize the investigation of the actual preference of purchaser in the supplier selection process, the main papers could be observed in the Table 1

*Table 1 - Discrete choice experiment and supplier selection*

| Paper | Purpose | Selection criteria | Main findings |
|---|---|---|---|
| Dickson (1970) | Suggest a decision-making model based on the concept of discrete choice | Delivery, procedural compliance, quality, technical capability, guarantees, Service, Financial position, Control system, Capacity | Attempt of suggestion of a decision model based on the actual preference and found that price was the best predictor in three out of four purchasing situations. |
| Lehmann et al. (1974) | Explored how actual preference of purchase managers vary according to the procured products | Reputation, Financing, Flexibility, Past experience, Technical service, Confidence in salesman, Convenience in ordering, Reliability data, price, Technical specification, ease of use, preference of user, training offered, training required, reliability of delivery, maintenance, sales service | Used vignette to implement the choice set and found that the actual preference could change according to the purchased product |
| Mummalaneni et al (1996) | Investigate the actual buying preference of Chinese purchasing managers | Ontime delivery, Quality, Price, Professionalism of salesperson, Responsiveness to customer needs, quality of relationship with supplier | Quality and delivery are more important than price. In addition, they found knowledge and language limitations from the local purchasing managers |
| Verma & Pullman (1998) | Exam empirically the difference between stated preference and actual preference in supplier selection | Cost, quality, delivery lead-time, on time-delivery, flexibility | Delivery and price are more important than quality in the actual decision making. |
| Paton III (1996) | Compared different supplier selection decision methods | Product quality, Price and terms, delivery, sales support, facility and | The judgement process changes according to the supplier selection decision situation. |

| | | technology, order routine, financial status | |
|---|---|---|---|
| Verma & Thompson (1999) | Suggested the Operation strategy based on the end customer preference | Cost, delivery, flexibility, product quality, service quality | Demonstrated empirically that a customer-oriented operation should start by understanding the actual preferences of the customer. |
| Tam & Hui (2001) | Exam the actual preferences of IT managers in selecting computer vendors | Size of supplier (Supplier Market Share), product scope (number of models), Price, Technical capability (Installed base of computer), Quality (Name) | The TI managers select their suppliers focused on the product scope and quality |
| Van der Rhee (2009) | Exam empirically the actual preference of commodity organizational purchaser | Flexibility (production, demand, variety), delivery, price, value-added service and support | Demonstrated that production flexibility is most important since the quality requirement is met. The cost is least important depending on the country of origin of the purchaser (German vs. Non-German) |
| Scott et al (2018) | Exam the actual preferences of the buyers in different stages of the supplier selection process | Quality, Delivery, Price, Technical capability, After-Sale support | Demonstrated a high inconsistency of the importance given to price between stage of selection criteria definition and final selection stage. |

## 2.3   Buyer-Supplier relationship and supplier selection

Selecting a supplier from a choice set where potential suppliers perform very similarly in terms of objective and quantitative criteria, such as quality, warranty, technical capabilities delivery, or flexibility etc. (Kannan & Tan, 2002; Shane & Cable, 2002), some less objective

("soft") criteria could be used for the tie-break. These so called "soft" criteria could be business alignment, cultural similarity, relationship between buyer and supplier (purely relational aspect), etc. The employment of this type of buyer-supplier relationship (BSR) is not irrational.

From the cost perspective, in a turbulent business environment, the information of the purchased product could change quickly, therefore, the purchasing manager would tend to rely more on his close related suppliers as a more available, reliable and less distorted source of information than the market. Consequently, the decision making could be less risky, more efficient and less costly (Peng & Luo, 2000; Xie et al., 2013).

From the social perspective (Jansen et al., 2011; Villena et al., 2011; Walker et al., 1997), the relationship between two or more agents could be divided into three main dimensions: a) structural, which is associated to the network configuration, intensity and frequency of the information exchange and social norms of the interacting agents; b) relational, which is associated to the trust, friendship, respect and reciprocity that agents develop in along the relationship; c) cognitive, which is associated to the share vision, believes, languages and interpretation of the environment. Therefore, a close buyer-supplier relationship (BSR) could be proxy to high trust, elevate reciprocity, high respect and even intense friendship between the involved parties. And these factors could encourage buyer and suppliers to share mutual interests, values, believes and commitment (Moran, 2005; Nahapiet & Ghoshal, 1998; Villena et al., 2011).

This increase of willingness to commit is seen as beneficial, since it could improve the collaboration between the involved parties, increase the information sharing and reduce the transaction cost (Burt, 2000; Coleman, 1988; Williamson, 1981). On the other hand, unnoticed commitment and reciprocity that emerged between the buyer and the close related supplier could also unconsciously discourage the buyer to search for other potential vendors

that could replace the current close related supplier, since its replacement might imply in changes of culture, increase of uncertainty and risk. This systematic preference for the current *status quo* behaves as the buyer's heuristic to simplify the decisional process which could lead to persistence bias (Carter et al., 2007; Gino & Pisano, 2008; Hada et al., 2013).

### 2.4 *Cultural effects on close buyer-supplier relationship, supplier selection and commitment*

The effects of the culture on the supplier selection has already been demonstrated by several empirical studies. Van der Rhee et al (2009) observed that German procurement managers attributed price as the least important in their set of attributes when selecting commodity supplier, while their European counterparts treated the price as the third most important, behind production flexibility and value-added support. Carter et al (2010) observed that Western and Eastern procurement managers perceived differently the importance of the attributes to decide the sourcing location. However, Kaufmann et al., (2012) observed that procedural rationality improve the effectiveness of the supplier selection decision-making regardless of the culture and task environments (stable and dynamic). And more recently, Ribbik & Grimm (2014) shown, through experimental results, that differences in the culture of verbal communication (low/high context) between buyer and suppliers during the negotiation process could influence negatively on the joint profit and trust.

In the 80's, it was already demonstrated that national cultures and their differences could manifest in corporate values and culture. Among the several aspect of the national culture, collectivism was described as the degree how individuals are integrated to a group and how they look for social exchanges and loyalties (Hofstede, 1985; Hofstede & Bond, 1988). This collectivist dynamic in social group and organizations has been already well illustrated by

existing studies, such as Chinese *guanxi* (Chen et al., 2011; King, 1991; Warren et al., 2004), and Japanese keiretsu practices (Cao & Zhang, 2011; McCarter & Northcraft, 2007). More recently, Smith and colleagues (2012) compared the difference between relational practices of several countries and its effects, such as *guanxi* in China, *wasta* in Arab culture, *svyazi* in Russia and *jeitinho* in Brazil (Lee Park & Paiva, 2018).

Linking the collectivist culture to the organizational practices, Lee & Humphreys (2007) and Warren et al., (2004) advocated that collectivist national culture tends to make individuals to rely strongly on the relationship to execute activities and solve organizational problems. According to Becker (2004), this cognitive pattern of using consistently the relationship could be seen as a collective routine that behave as an heuristic to simplify the decision process based on an easy-to-process features (Dosi & Marengo, 2007; Liberman et al., 2002).

In addition to heuristic associated to the collectivist culture, the preference formation is another effect related to it. According to Becker (1996), the social norms establish the behaviors and actions that are acceptable in a certain environment. By respecting these social norms, the individual internalizes them which will be incorporated into his preferences that will considered to maximize the utility of his future decisions in this environment. For instance, $S_1 = \{A,B,C,D\}$ is the set of preference of an individual before beginning to work in a company where the majority of the employees like blue and dislike white shirt. Once in the company, before internalizing the social norm, this individual makes a decision in a situation *X*, based on the $S_1$ and he obtained the utility $U_1$. However, by adopting the social norm of using blue, the new set of preference became $S_2 = \{A,B,C,D, BLUE\}$ and in the same decisional situation *X*, he obtained the utility $U_2$. According to Becker (1996), if $U_2 > U_1$, then this social norm will be internalized definitively in this set of preference with a certain weight, where the higher, the more important for the decision maker.

*2.5 Hypotheses*

In this study, we consider close buyer-supplier relationship at the level of individual relationships and not as an organizational policy or characteristic. Close buyer-supplier relationship means a personal, acquainted and sociable relationship, distinct of a mere professional relationship between the manager in charge for the company's purchase and the supplier's manager. Hence it is proxy of high trust, intense mutual respect and friendship.

Based on the social capital concept, a close related supplier could be more familiar to the buyer, since they might share similar values, beliefs, languages and cultures (Nahapiet & Ghoshal, 1998; Villena et al., 2011). This familiarity could make the close related supplier to be more easily recalled than the distant suppliers, consequently, the "soft" supplier selection criteria such as buyer-supplier relationship and business alignment could help buyers to select a supplier from a choice set where potential suppliers perform very similarly in quantitative and objective criteria (Kannan & Tan, 2002; Shane & Cable, 2002). Furthermore, in some situation, close buyer-supplier relationship could even replace these quantitative criteria through effect of legitimation (Batjargal & Liu, 2004; Hada et al., 2013; Packalen, 2007). This decision making where a criterion could replace some others is in accordance to the replacement heuristic judgment proposed by Kahneman (2003). In this heuristic process, the decision maker assesses a specific attribute of the analyzed object by substituting it by another characteristic of the same object. The latter attribute is called heuristic attribute that is also more easily recalled or more available to the decision maker.

According to Liberman et al (2002), the heuristic is an effortless rational decision making based on a ease-to-process feature. It is normally associated to the bounded rationality of the decision maker. This process is negatively related to performance and counterproductive when it leads systematically the decisional outcome to a suboptimal result (Carter et al., 2007). For example, despite of the close related supplier constantly delays the delivery, a

purchasing manager insists on buying with this supplier, because they have been doing business for a long time.

Summarizing the previous rationales, the personal buyer-supplier relationship could be used as a heuristic in the supplier selection through the mechanism of attribute substitution, legitimation and unnoticed commitment. Consequently, if this heuristic is causing a decisional bias, the effect could be observed by the actual weight in the selection criteria that would lead to a suboptimal result when compare to the situation where there is absence of heuristic. Hence, we propose:

*In a choice set of potential suppliers that will provide a certain product. If the buyer keeps a close relationship with only one of the potential suppliers ….*

***Hypothesis 1****:… the commitment of the buyer to this close supplier will be higher than to other suppliers of this choice set.*

***Hypothesis 2****: … the actual utility attributed to supplier selection criteria will divert from the situation of absence of close buyer-supplier relationship (potential suppliers equally distant to the buyer).*

By following the rationale of Becker (1996), we could deduce that if a purchaser is in a culture where the collectivism is the social norm, then it is reasonable to expect that the personal relationship with the supplier might be in the purchaser's set of preference with a certain weight. And, we could also expect that the more collectivist is the culture, the higher might be the weight of this relationship in this set of preference.

We assert that supplier selection employing close personal relationship is not irrational process (Kaufman et al., 2012), but the rationality interplays with the social, culture and values of the purchaser. Given that there are two mechanism of rational decisional process: a) effortful and systematic processing of the available information. In this process, the

decision making will be based on a set of previously weighted preference depending on social norms where the individual is inserted, and b) an easy-to-process features – heuristics (Liberman et al., 2002), where close personal relationship will be the heuristic attribute of the heuristic judgment. The second process is possible to be identified if it leads to lead to consistent biases in the results (Carter et al, 2007; Kahneman, 2003). Hence we propose:

*In a set of potential suppliers that will provide a certain product…*

**Hypothesis 3**: *… Given that the buyer keeps a close personal relationship with one of the suppliers, the more collectivist culture is the buyer, the higher will be the commitment of the buyer to this close related supplier.*

**Hypothesis 4**: *…. The more collectivist culture is the buyer, the more will be the utility of the close buyer-supplier relationship as a selection criterion (Collectivist culture as preference formation).*

## 3   Methodology

We employed discrete choice modeling combined with vignette-controlled experiment as the research strategy. The purposes of the vignettes were: a) to provide a purchasing situation and make sense to the discrete choice tasks that the respondents should perform; b) control the decisional conditions, and c) manipulate the nature of the buyer-supplier relationship (close/distant). The employed scenarios were adapted from existing study (Hui et al., 2004).

We conducted a between-subject design. The two vignettes differ in the buyer-supplier relationship (distant/close). Each scenario asking to the respondent to assume the role of a purchasing agent and described the purchasing condition where he/she had to buy modified computers with specific requirements to support a new project that would start within 5 weeks. Afterwards, each scenario described the nature and intensity of the relationship between the buyer and the three suppliers. The operationalization of the buyer-supplier relationship was based on Nahapiet & Goshal (1998), Moran (2005) and Villena et al (2011).

We opted for the relational capital because it is more similar to the collectivist culture suggested by existing studies (Hofstede & Bond, 1988; Lee Park & Paiva, 2018; Smith et al., 2012; Warren et al., 2004).

We allocated randomly the respondents to the "control" and "treatment" sample. In the control sample's vignette, the buyer was described as having the same distant buyer-supplier relationship with the three potential suppliers. In the latter sample, buyer was described as having a close personal buyer-supplier relationship with the Supplier 2 and distant relationship with Supplier 1 and 3. After reading the allocated scenario, respondents were asked to perform the discrete choice task. In this task, we asked respondents to select one supplier in a reality-similar choice set based on the defined attributes. Afterwards, we compare these utilities between control and treatment sample (see Figure 2).

We conducted the study in two countries with different level of collectivism. China was selected because it is a widely recognized collective society (Hofstede & Bond, 1988; Ketkar et al., 2012; Park & Luo, 2001). Literature suggests that in the Chinese collectivist culture (*guanxi*), individuals would tend to rely on the social relationship to solve problems and this practice incentives the individuals, since early stage of their lives, to create and master the management of these relational ties through gift, banquets and favor exchanges (Chen et al., 2011). In addition, *guanxi* is more than friendship or pure personal relationship, it involves reciprocity and obligations. The individual that receives the favor are in debt to payback through some other kind of favor. This ties could be transferred from the individual to an organizational level to improve the exchanges between the companies (Gu et al., 2008).

For the second country, we selected Brazil, because it is also an emerging economy with a considerable market, it presents a culture that also values personal/informal relationship with different emphasis and less collectivist oriented. From the local literature (De Holanda & de Araújo, 1995) and existing studies (Smith et al., 2002; Smith et al., 2012), Brazilians

are described as an informal "cordial man", who prefers conciliation rather conflict. They tend to avoid "NO" as an answer and will like to engage into an informal and general conversation to known each other before engaging into a business. The way how Brazilian relates with each other in the business environment is also based on the informal relationship, but Brazilians do not expect that people with whom they have a close relationship would have the obligation to maintain the information or material exchange between them.

### 3.1 Variables descriptions

Our discrete choice design adopted five attributes. Quality, Delivery and Cost attributes are traditional and consolidated by the practitioners –(Chen 2011; Kannan & Tan, 2002; van der Rhee et al., 2009; Weber et al., 1991). The forth was the sustainability practices of the supplier, since we would like to observe how buyers positioned themselves regarding this issue, therefore, updated with ethical positioning (Freestone & McGoldrick, 2007; Sagar et al., 2011), socially responsible sourcing literature (Zorzini et al., 2015) and the trend of increasing attention on sustainability (Quarshie et al., 2016; Vachon & Klassen, 2006, 2008). The fifth was the "soft" criterion (buyer-supplier relationship), which was operationalized by the name of the suppliers described in the vignettes. Despite the names of the suppliers being fictional, their descriptions and backgrounds were reality similar.

### 3.1.1 Supplier selection criteria (Supplier's attribute)

#### 3.1.1.1 Quality

Quality is a multidimensional construct: performance, conformity, reliability, durability (Flynn & Flynn, 2004, 2005; Garvin, 1987; Prajogo, 2007; Zhao et al., 2006). We adopted the conformity which is operationalized as the product's defect in three different levels, (Amoako-Gyampah & Meredith, 2007; Gupta & Boyd, 2008) – See table 2.

### 3.1.1.2 Delivery

Delivery is also a multidimensional construct: on-time delivery rate, speed and lead time (Amoako-Gyampah & Meredith, 2007; Flynn & Flynn, 2005; van der Rhee et al., 2009; Zhao et al., 2006). Since in our purchasing scenario, the product should be available within 5 weeks, hence we adopted dependability which is operationalized as probability of late delivery.

### 3.1.1.3 Cost

Despite the concept of total cost ownership or total present value (Carter et al., 2010; Kaufmann, Kreft, et al., 2012). Due to the time constraints of the respondents to perform the discrete choice task, we operationalized the cost based exclusively on the material-purchasing cost.

### 3.1.1.4 Sustainability

Sustainability is associated to environmental and social concerns of the organization (Srivastava, 2007), therefore, we adopted the quantity of practices and certifications as proxy of how intense is the sustainability awareness of the supplier – Environmental Management System certification – ISO 14000 (Kitazawa & Sarkis, 2000) and reverse logistic (Srivastava, 2007).

### 3.1.1.5 Buyer-Supplier relationship (BSR)

We operationalized the buyer-supplier relationship through relational social capital (Moran, 2005; Nahapiet & Ghoshal, 1998; Villena et al., 2011). This variable presented two levels: the close relational capital was defined as intense friendship, mutual respect, commitment, reciprocity and trust. Meanwhile, distant relational capital was defined as the opposite situation (Villena et al., 2011).

To introduce the BSR in the choice set as selection attribute, we used the names of the suppliers as proxy for the levels of the attribute. To operationalize it, we described in the vignette the relationship between the buyer and supplier 1, 2 and 3 as previously mentioned.

To measure if respondents perceived different level of buyer-supplier relationship associated to each name of the supplier, we used four items (Table 4) adapted from the questionnaire of Villena et al (2011), Rowley et al (2000) and Carey et al (2011)

### 3.1.2 <u>Culture differences</u>

As described previously, we investigated the collectivism behavior. Then we used the country as proxy of culture. To observe the cultural particularity associated to collectivism, we measured how much the respondents of each country relied on the relationship to solve each of the three situations adjusted the from the study of Warren et al., (2004) (see Table 4).

From the five supplier attributes described above, we created our alternatives and in the selection tasks, each respondent was asked to choose an alternative among the choice set = {Alternative 1, 2 and 3}.

*Table 2 - Attributes and levels for the discrete choice analysis*

| Attributes | Levels |
|---|---|
| Buyer supplier relationship | Close*, Distant[R] |
| Quality | Defect rates: 0.001%; 0.01%; 0,015%[R] |
| Delivery | Probability of delay: 0, 5%; 10%[R] |
| Cost | $1000, $1200, $1500[R] |
| Sustainability | Practices: ISO 14000; ISO 14000 + Recovery of used electronic devices; None [R] |

*In the treatment scenario, the Supplier 2 was manipulated to have close relational buyer-supplier relationship. In the control scenario, all the three suppliers have distant relationship with the buyer. The name of the suppliers was used to produce the cards for the choice set; [R] (used as reference level of the Multinomial logistic regression)

We used XLSTAT to create the profiles and choice sets.. This software's discrete choice design module used the D-optimal algorithm to extract 16 supplier's profiles for the study from 243 possible alternatives (3x3x3x3x3).

We adopted an unlabeled discrete choice design and prepared 16 choice sets that were divided in two blocks of 8. Each choice set is composed by three supply alternatives (supplier's profile) from the 16 supplier's profiles available. The respondents were assigned randomly to one of the two blocks to avoid cognitive burden during the study and degradation of the answer qualities (Johnson et al., 2013; van der Rhee et al., 2009; Verma & Pullman, 1998). In the present study, there was minimum overlapping where each level appeared in average 16 times and each level of each attribute had 33.36% of the total appearance.

### 3.2   *Hypothesis testing*

To assess the hypothesis 1 and 3, we employed one-way ANOVA with the commitment between buyer and Supplier 2 as dependent variable. In the hypothesis 1, we used close/distant relationship as independent variable. To assess the hypothesis 3, we employed only the treatment sample from each country, and the collective orientation (China/Brazil) as independent variable. To assess our hypothesis 2 and 4, we performed the Multinomial Logit regression (MNL) on our control and treatment samples for the both countries. In the MNL model, the dependent variable was the alternative selected by the respondent in each choice set and the independent variables were the supplier attributes. These independent variables were dummy coded and we adopted the lowest performing level of each attribute as reference level (see Table 2).

After performed the MNL, we analyzed the results within each sample, then compared the coefficient of each attribute from the control to the corresponding attribute of the treatment sample. By proceeding this way, we could infer the causal effect, since the only

difference between the control and the treatment was the stimuli, therefore, any difference in the results could be attributed to the manipulation (see Figure 2)

Figure 2 - Experimental / DCE design



*Close related Supplier 2
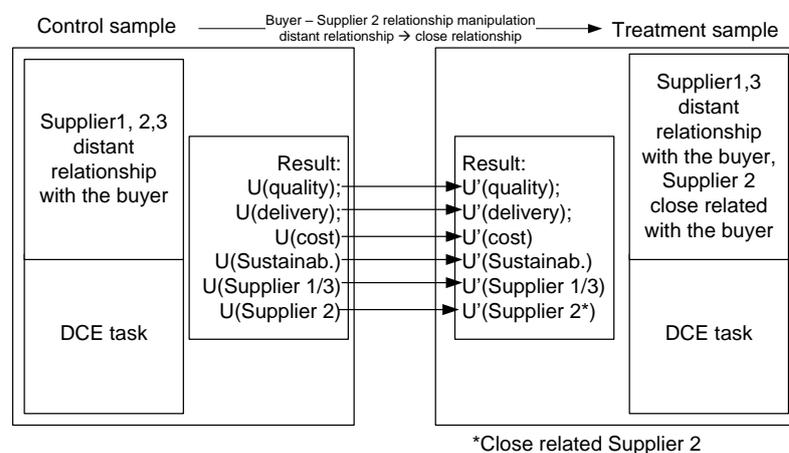
## 3.3 Procedure

Prior to final data collection, several pre-tests were performed in China (China Europe International Business School – Shanghai) and Brazil (EAESP/FGV) both using MBA students and local languages to improve the comprehension of the questions and scenarios.

For our final study, the profile of the participants was defined as graduated professionals with at least three years of professional experiences regardless the industry (supervisors, mid managers, engineers, etc.). The experiment was completely anonymous and confidential. The respondents were informed about the nature of the study and they could leave the study whenever they wanted, regardless the motivation. Therefore, we considered completed questionnaires as consented responses.

The data collection in China was performed by *So Jump* survey service, which is similar to Qualtrics. The data were collected from July to August/2014. The Chinese respondents were invited to participate our study by the survey platform and those that complied with profile requirements and agreed to take part were forwarded to the instructions. For each validated questionnaire, the respondent received a payment of US$ 1.5.

In Brazil, the data were collected using Qualtrics platform and physical paper questionnaires from September to November/2014. The respondents were recruited from: a) professionals from LinkedIn platform with desire profile and b) professionals enrolled in MBA courses in EAESP/FGV and Metrocamp business schools. The Brazilian respondents were motivated to execute the task honestly and correctly by receiving a small gift after the experiment session.

Once the respondents accepted to take part of the study, we assigned them randomly to one of the purchasing scenarios (control or treatment). After they read the purchasing scenario, the respondents were asked to answer few sets of questions to assure the correct understanding of the purchasing situation and the effectiveness of the manipulation. Then, the respondents started to perform one of the blocks of the discrete choice task to which they were randomly assigned. And, to finalize, the respondents answered the demographic questions.

Table 3 showed that 55.15% of the respondents were allocated to scenario of distant relational capital and 45.85% to the close one; these same respondents, 49.86% were assigned to answer the block 1 of the discrete choice scenario and 50.14% the block 2.

*Table 3 - Respondents allocations in the vignette and discrete choice blocks*

| | | Relationship | | Total | Discrete choice | | Total |
|---|---|---|---|---|---|---|---|
| | | Distant | Close | | Block 1 | Block 2 | |
| Country | China | 94 | 74 | 168 | 82 | 86 | 168 |
| | Brazil | 95 | 86 | 181 | 92 | 89 | 181 |
| Total | | 189 | 160 | 349 | 174 | 175 | 349 |

### 3.4 Measurement assessments

We assessed the reliability of our variables using Cronbach's alpha - α. This coefficient for all these constructs ranged between 0.71 and 0.87, which are acceptable. Afterwards, we assessed the composite reliability (CR), which ranged between 0.84 to 0.91 and we computed the average variance extracted (AVE) that ranged between 0.64 to 0.71. The results of the

assessment could be found in the Table 4 and the number in brackets represents the loading

of each item extracted by the Exploratory Factor Analysis (EFA).

*Table 4 – Questions and measurements for the constructs and items*

|  |
|---|
| *Buyer-Supplier relationship (CR=0.91; α=0.87; AVE = 0.71) - Compared to other two suppliers:* |
| 1. We keep a closer and more frequent personal contact with High Tech Computer (loading = 0.857); |
| 2. We feel more mutual respect with High Tech Computers than with other two suppliers (loading = 0.790); |
| 3. We feel that High Tech Computers is more our friend than other two suppliers (loading = 0.857); |
| 4. We trust more in High Tech Computers than other two suppliers (loading = 0.824); |
| *Collectivist culture (CR=0.84; α=0.72; AVE=0.64) - Relationship is useful to:* |
| 1. Obtain a better job opportunity and promotion (loading = 0.700); |
| 2. Expand customer network and increase sales (loading = 0.895); |
| 3. Obtain better commercial conditions (i.e.: discounts and better qualities, etc.) (loading = 0.822); |
| *Commitment between buyer and supplier 2 compared to the others (CR=0.89; α=0.83; AVE=0.67)* |
| 1. We would like to keep High Tech Computers as a partner (loading = 0.760); |
| 2. Our company believes that High Tech Computers is a partner (loading = 0.797); |
| 3. Our company expects that relationship with High Tech Computer could last far into the future (loading = 0.834); |
| 4. Our firm expects to keep working with High Tech Computer on a long-term basis (loading = 0.841); |
| *Perception of importance of the sustainability (CR=0.84; α=0.74; AVE=0.64)* |
| 1. It can increase the efficiency of the buyer company (loading = 0.752); |
| 2. It can improve the reputation of the buyer company (loading = 0.862); |
| 3. It can make buying companies be better accepted by the society (loading = 0.787); |

## 4   Results and discussions

### 4.1   Sample

48.1% of the sample are Chinese (168) and 51.9% Brazilian (181). The respondents were

distributed in three major business TI/Telecom/Electronic (Brazil=33.5%; China=30.7%),

followed by Services (Brazil=29%; China=21%) and Manufacturing (Brazil=21.3%;

China=25.9%) and, demographically, the sample was composed by 44.7% of females and

55.3% males, most of them were between 26 – 40 years old (81% of total sample) and

professional experience between 6 to 20 years (79%).

*4.2    Manipulation check and cultural difference*

The manipulation of the experiment in China had demonstrated effective. The closeness of the buyer-supplier relationship for treatment group was statistically higher than control group ($M_{close\_relational}$=5.047 vs. $M_{distant\_relational}$=3.073; p<0.001). The manipulation of the experiment had also been confirmed effective in Brazil with similar pattern ($M_{close\_relational}$=4.930 vs $M_{distant\_relatational}$=2.605; p<0.001).

To observe the cultural difference, we noted that the Chinese sample ($M_{collectivist\_China}$=5.460) is statistically (p<0.001) more collectivist than the Brazilians ($M_{collectivist\_Brasil}$=4.937). And we also observed that Chinese sample ($M_{China}$=4.89) was statistically (p<0.001) more inclined to use close personal relationship as proxy of eventual good performance of the supplier than the Brazilian ($M_{Brasil}$=3.947).

Regarding the sustainability, Chinese respondents perceived the sustainability as more an ethical issues than regulatory ($M_{China\_ethical\_sustain}$=5.445 vs $M_{China\_regulatory\_sustain}$=4.402; p<0.001), which is also shared by the Brazilian respondents ($M_{Brazil\_ethical\_sustain}$=5.450 vs $M_{Brazil\_regulatory\_sustain}$=3.529; p<0.001).

Finally, the Chinese respondents perceived sustainability as more regulatory than the Brazilians ($M_{China\_regulatory\_sustain}$=4.402 vs $M_{Brazil\_regulatory\_sustain}$=3.529; p<0.001), meanwhile, both countries' respondents perceived sustainability equally as ethical issue ($M_{Brazil\_ethical\_sustain}$=5.450 vs $M_{China\_ethical\_sustain}$=5.445; p=0.966).

*4.3    Supplier selection criteria and buyer supplier relationship*

From the one-way ANOVA results in Table 5, we noted that the close personal relationship from the Brazilian treatment sample did not manifest in higher commitment between the buyer and the supplier 2 when compared to the Brazilian control sample. On the other hand, from the Chinese samples, the results demonstrated a positive significant (p-

value<0.001) effect on the commitment, which support the hypothesis 1 for the Chinese sample, but not for the Brazilian.

Since we asked the respondents to answer their commitment to the supplier 2 before presenting them the choice task. Consequently, a high commitment could be understood as possible evidence of persistence bias for their decision making.

*Table 5 - One-way ANOVA*

| | | Dependent variable (commitment between buyer and supplier 2) | | |
|---|---|---|---|---|
| | | Measurement | Close/distant relationship comparison | Brazil/China close relationship comparison |
| Brazil | Distant relationship | $4.518 \pm 1.517$ | p-value = 0.221 | |
| | Close relationship | $4.794 \pm 1.427$ | | p-value = 0.013 |
| China | Close relationship | $5.293 \pm 0.898$ | p-value < 0.001 | |
| | Distant relationship | $4.745 \pm 0.982$ | | |

By analyzing the cultural effect on the commitment, we focus on the treatment sample of both countries. From Table 5, we noted that the more collectivist is the culture (China), the more is the commitment between the close related supplier to the buyer ($M_{commitment\_China}$=5.293 vs. $M_{commitment\_Brazil}$=4.794; p-value = 0.013). Therefore, supporting our hypothesis 3.

To assess the hypothesis 2 and 4, the results of MNL are illustrated in Table 6, where the higher coefficient, the more useful is the level for the decision maker compared to the reference which is normalized to 0.

From the Brazilian control sample (Table 6 – Column 1), we noted that Supplier 2 was not more useful than the others. This result is expected, since the thee suppliers were equally distant related with the buyer. In addition, this sample seemed to behave accordingly to what RCT had predicted, where the more performing is the level, the more it is useful. However, the highest quality level product is not more useful than the intermediate quality, since both levels satisfied the requirement, and it is not completely against the rational choice

prediction. Since these both quality levels (Q1 and Q2) were still more preferred than the lowest quality level. This results only demonstrated the actual manifested preference of our control sample that will be used as baseline to compare to the treatment sample.

*Table 6 - Results of MNL regression*

| | Brazil | | China | |
|---|---|---|---|---|
| | control | treatment | control | treatment |
| | β | β | β | β |
| Q1 (High quality) | 0.396*** | 0.456*** | 0.669*** | 0.449*** |
| Q2 (Interm. quality) | 0.502*** | -0.018 | -0.058 | -0.402** |
| D1 (No delay) | 1.539*** | 1.560*** | 0.780*** | 0.684*** |
| D2 (5% delay) | 0.820*** | 0.774*** | 0.535*** | 0.534*** |
| C1 ($1000) | 1.602*** | 2.129*** | 1.624*** | 1.513*** |
| C2 ($1200) | 1.344*** | 1.371*** | 0.953*** | 1.254*** |
| S1 (ISO) | 1.948*** | 1.033*** | 1.563*** | 1.232*** |
| S2 (ISO+Recov) | 2.258*** | 2.004*** | 2.286*** | 1.681*** |
| Supplier† | 0.096 | 0.258 | -0.354** | 0.438*** |
| Obs: † Supplier 1 and 3 assumed 0, Supplier 2 assumed 1; *** p-value < 0.001; ** p-value < 0.05 | | | | |

Moving on to the Brazilian treatment sample (Table 6 – column 2). There are clear changes in the magnitude of the coefficients compared to the control sample. It could be noted that the utility of the lowest cost level ($1000) increased from 1.60 to 2.13, and the intermediate level ($1200) remained almost similar for the both samples. Based on this change, we inferred that treatment sample might be more cost oriented than the control sample given the influence of the close relationship between the buyer and supplier 2.

When comparing the quality attribute between two Brazilian samples, we noted that the coefficient of the intermediate quality level is non-significant for the treatment sample. We interpreted this result as, under effect of close relationship, the decision makers might not perceive different utilities of low and intermediate quality levels, hence did not find this level more useful than lowest quality. Moreover, conjointly to a more cost orientation behavior as observed, it seemed that the decision makers in the treatment sample, due to the effect of the

close personal relationship, might had relaxed on certain quality levels while deciding basing on cost.

Regarding the buyer-supplier relationship criterion, the non-significant coefficient associated to this attribute for the Brazilian treatment sample suggests that the close relationship between buyer and supplier 2 did not make the Brazilian respondents to find the close related supplier more useful than the distant supplier. This result is in line with the absence of effect of close relationship on the commitment between the buyer and supplier 2 as previously observed.

Since we observed changes in the magnitude of the coefficients between control and treatment sample and, specially, the absence of different utility between intermediate and low level of the quality attribute, which seems to be an evidence of suboptimal result because of the relax in quality requirement (Carter et al., 2007), hence, supporting the hypothesis 2. We believe that Brazilians might appreciate the close relationship between buyer and supplier at the individual level using it as a heuristic, but not expecting reciprocity commitment.

Going forward to the Chinese samples (Column 3 and 4 Table 6), from baseline provided by the control sample, we noted that, in majority, the results are in accordance to the rational perspective, but there is no higher preference for the intermediate over the lowest quality level. In addition, the coefficient of attribute related to supplier (-0.345) is statistically negative, which means that this sample perceived the supplier 2 as less useful than the group formed by the supplier 1 and 3 despite the three are equally distant related. One possible explanation for this result could be attributed to the name adopted in the experiment (Erwin, 1999; Mehrabian, 1997).

From the Chinese treatment sample, the statistically negative coefficient (-0.402) of intermediate level of quality indicates that this quality level is less useful than the reference

level (lowest quality level). This result is contrary to the quality orientation and rational perspective, therefore, an evidence of potential harmful effect in supplier selection and a possible non-rational outcome of the decision makers.

Concerning the preference of the supplier, through the effect of close personal relationship, the supplier 2 had also demonstrated significantly more useful (0.438) than the group of supplier 1 and 3. This result demonstrated that the close relationship could transformed the least preferred level supplier to the most preferred, reinforcing the great value that the Chinese see in the close relationship. With the changes of these coefficients between control and treatment sample, we also supported the hypothesis 2.

### 4.3.1 Cultural effect on supplier selection

From the comparison in Table 5, Chinese treatment sample had statistically higher commitment (5.293) to the close related supplier than Brazilian treatment sample (4.794), hence suggesting a positive effect of collectivism on commitment, supporting the hypothesis 3.

Finally, by comparing the coefficients of the MNL between the treatment samples of both countries. In the Brazilian sample, the respondents did not perceive the close related supplier as more useful for the decision making, since the coefficient was not significant. On the other hand, the Chinese treatment sample perceived the close related supplier as more useful than those distant related in the supplier selection situation. This difference supported our hypothesis 4. Therefore, we may state that influence of collectivist culture was identified in our results and it could form the preference in the supplier selection.

Summarizing the hypothesis assessments, we have:

*Table 7 - Summary of the hypothesis assessment*

| Hypothesis | Brazil | China |
|---|---|---|
| **1:** Close relationship → + Commitment | Not supported | Supported |

| | | |
|---|---|---|
| **2:** Close relationship → impact the utility attributed to the supplier selection criteria | Supported | Supported |
| **3:** + Collectivist → + Commitment | Supported | |
| **4:** + Collectivist → + the close relationship will be useful | Supported | |

## 5  Final considerations

The aim of this study was to investigate the effect of close personal buyer-supplier relationship on the actual weight of the supplier selection criteria. Theoretically, we based our study on Rational choice and social capital theories. Methodologically, we employed controlled experiment conjointly with the discrete choice analysis.

Through the controlled experiment, we found that close buyer-supplier relationship could lead to increase of buyer-supplier commitment and potentially to the persistence bias in the supplier selection process. In addition, through the discrete choice analysis, we estimated and compared the actual preferences of the "*control sample*" (distant buyer-supplier relationship) and "*treatment sample*" (close buyer-supplier relationship). As results, we noted that the effect of close buyer-supplier relationship was associated to the relaxing of the quality requirement.

Moreover, through a cross-national study (China vs. Brazil), we demonstrated that collectivist culture could have a positive effect on the buyer-supplier commitment, and we provided evidence that the more collectivist culture was the buyer, the more utility will be attributed to the relationship in the selection. Hence, the preference formation due to the social norms before the decision making.

Prior studies had demonstrated the negative effect of close relationship on the organizational performance (E. Anderson & Jap, 2005; Jap, Robertson, Rindfleisch, & Hamilton, 2013; Molina-Morales & Martinez-Fernandez, 2009; Villena et al., 2011), our study, extended the existing body of knowledge by demonstrating its effect in the supplier selection situation. Moreover, we also provide insight regarding the preference formation of

the decision maker as well as eventual effect of using close buyer-supplier relationship as a heuristic.

### *5.1    Theoretical and methodological implication*

By assuming the supplier selection as a highly rational and analytical task (Kaufmann, Kreft, et al., 2012), we asserted that there are two rational decision process (Liberman et al., 2002): a) an effortful rational and analytical process and b) an effortless that is focused on ease-to-process feature (heuristic). In both process, we assumed the decision maker as a rational individual that will make their decision focusing on utility maximization based on a set of predefined preference (Morrell, 2004), however, the rational choice theory (RCT) does not discuss the formation of this preference. We worked on this limitation of RCT using social capital theory as suggested by Becker (1996) and we demonstrated that social norm could form the preference of the decision maker, more specifically, the utility of relationship in the procurement situation.

From the second decision process, we investigated the heuristic as a pattern of rational decision making (M. C. Becker, 2004). Our results suggested that collectivist culture was associated to how individuals would adopt relationship as problem solving process routine (Warren et al., 2004). As consequence of using heuristic, existing studies suggested that it could lead to eventual biases or suboptimal outcomes (Carter et al., 2007), which we demonstrated by the relaxation in the quality requirements.

Finally, in terms of methodology, we contributed by bringing new insights to the supplier selection field using the discrete choice modeling combined with a controlled experiment that are still little employed. We conducted a cross-national study to assess the effect of culture on the supplier selection and answer the question of "*how culture affects the supplier selection*" instead of the traditional and well explored question of "*if the culture affects*".

*5.2    Managerial implication*

From the managerial point of view, this study provides insights to managers regarding tricky aspects of the selection process and how their decision making could be affected by heuristics and close buyer-supplier relationship.

From the cultural aspect, this study calls managers' attention to two aspects related to collectivist culture. (a) The more collectivist is the individual, the more will be the utility of the close buyer-supplier relationship. (b) the more collectivist is the individual, the more he/she will rely close buyer-supplier relationship to solve problems, then, more susceptible to eventual bias in the decision results.

It is important for the reader to have in mind that we do not disapprove the employment of close buyer-supplier relationship as selection criteria. What we want is to demonstrate that social norm and rationality are not mutually exclusive, but complementary. We signal to the managers that their preference could be defined beforehand by the social norm, and they should be aware of side effect of employment of heuristic, such as requirements relaxation leading to possibility of opportunism. In this case, companies should develop clear criteria to evaluate their suppliers. Especially, in more collectivist cultures, a formalization of expected levels of each performance criterion may minimize the potential negative influence of those social norms.

Finally, we want to call attention to some relational practices such as gift exchanges, banquets and socialization rituals, might be considered for some culture as harmless or a necessary evil, but for others could be considered as bribery and corruption once some of these practices are ethically ambiguous (Argandoña, 2003; Arrow, 1972; Wang, 2014; Wedeman, 2013).

### 5.3 Limitation and future studies

The results and finding of the present study should be generalized with parsimony due to the experimental design. In the present research, the purchase scenario explored a modified purchase of an essential support product, then, extending the finding to the purchasing of more critical resources or services should be limited. Additionally, the supplier selection criteria were focused on quality, cost, delivery, relationship and sustainability. However, the buying criteria are extensive, therefore, it was not possible to explore all the trade-offs. In addition, to design the discrete choice modeling, we employed limited dimensions of the attributes, then new studies could focus on other dimensions and also operationalize the discrete choice modeling using labeled approach.

The findings of the present research was based on the manipulation of the relational capital among the three possible dimensions of social capital (Nahapiet & Ghoshal, 1998; Villena et al., 2011), since it was the most similar to the phenomenon guanxi (C. C. Chen & Chen, 2009). Therefore, the conclusion should be used with discretion when extended to high level of structure or cognitive capital between buyer and supplier.

For future study, it is recommended to test other supply selection conditions, such as different purchasing strategy or sourcing locations. We also suggest the manipulation of the other dimensions of the social capital, comparison of results from countries with polar positions regarding collectivism and individualism and extend it to other situations like private-to-private corruption (Argandoña, 2003).

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