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CHEN YEN-TSANG

IS WHAT YOU SAY WHAT YOU DO? ANALYZING AND COMPARING THE EFFECT OF BUYER-SUPPLIER RELATIONSHIP IN THE BRAZILIAN AND CHINESE SUPPLIER SELECTION CRITERIA

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Gestão de Operações e competitividade

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Banca examinadora:

Prof. Ely Laureano Paiva (Orientador)
EAESP – FGV

Prof. Zhao Xiande (Coorientador)
CEIBS

Prof. Luiz Artur Ledur Brito
EAESP – FGV

Prof. Delane Botelho
EAESP – FGV

Prof. Breno Nunes
Aston University

Prof. André Luís de Castro Moura Duarte
INSPER

À Eva

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ABSTRACT

Choosing properly and efficiently a supplier has been challenging practitioners and academics since 1960's. Since then, countless studies had been performed and relevant changes in the business scenario were considered such as global sourcing, quality-orientation, just-in-time practices. It is almost consensus that quality should be the selection driver, however, some polemical findings questioned this general agreement. Therefore, one of the objectives of the study was to identify the supplier selection criteria and bring this discussion back again. Moreover, Dickson (1966) suggested existing business relationship as selection criterion, then it was reviewed the importance of business relationship for the company and noted a set of potential negative effects that could rise from it. By considering these side effects of relationship, this research aimed to investigate how the relationship could influence the supplier selection and how its harmful effects could affect the selection process. The impact of this phenomenon was investigated cross-nationally. The research strategy adopted was a controlled experiment via vignette combined with discrete choice analysis. The data collections were performed in China and Brazil. By examining the results, it could be drawn five major findings. First, when purchasers were asked to declare their supplier selection priorities, quality was stated as the most important independently of country and relationship. This result was consistent with diverse studies since 60's. However, when purchasers were exposed to a multi-criteria trade-off situation, their actual selection priorities deviate from what they had declared. In the actual decision-making without influence of buyer-supplier relationship, Brazilian purchasers focused on price and Chinese buyers prioritized delivery then price. This observation reinforced some controversial prior studies of Verma & Pullman (1998) and Hirakubo & Kublin (1998). Second, through the introduction of the buyer-supplier relationship (operationalized via relational capital) in the supplier selection process, this research extended the existing studies and found that Brazilian buyers still focused on price. The relationship became just another criterion for supplier selection such as quality and delivery. However, from the Chinese sample, the results suggested that quality was totally discarded and the decision was majorly made through price and relationship. The third finding suggested that relational capital could legitimate the quality and sustainability of the supplier and replaces these selection criteria and made the decisional task less complex. Additionally, with the relational capital, the decision-makings were associated to few biases such as availability cognition, commitment, confirmatory and perceived biases. By analyzing the purchasers' behavior, relational capital inducted buyers of both countries to relax in their purchasing requirements (quality, delivery and sustainability) leading to potential negative effects. In the Brazilian sample, the phenomenon of willing to pay a higher price for a lower quality offer demonstrated to be a potential counterproductive and suboptimal decision. Finally, the last finding was associated to the cultural effect on the buyers' decisions. From the outcome, it is possible to observe that if a purchaser's cultural background is more relation-oriented, the more he will tend to use relational capital as a decision heuristic, thus, the purchaser will be more susceptible to the potential relationship's side effects.

Keywords: buyer-supplier relationship, supplier selection criteria, decision-making, relation-orientation, cross-national comparison, potential negative effects, experiment, discrete choice analysis

RESUMO

Escolher adequadamente e eficientemente um fornecedor tem desafiado gestores e acadêmicos desde 1960. Desde então, inúmeros estudos tem sido realizados e mudanças relevantes do cenário econômico tem sido considerados tais como *global sourcing*, orientação à qualidade e práticas de *just-in-time*. É quase consenso que qualidade deveria ser o a diretriz para a seleção, no entanto, alguns resultados polêmicos questionaram esse consenso. Posto isto, um dos objetivos do presente trabalho é identificar os critérios de seleção de fornecedores e trazer de volta esta discussão. Além disso, o presente estudo observou que Dickson (1966) sugeriu a possibilidade de uso da relação comercial como critério de seleção, portanto, uma a importância da relação comercial foi revisada e potenciais efeitos negativos que podem originar da relação debatidos. Ao considerar os efeitos colaterais do relacionamento, este estudo visou investigar como o relacionamento pode influenciar o processo de seleção de fornecedores e como esses potenciais efeitos negativos podem manifestar neste processo. O impacto deste fenômeno foi investigado transnacionalmente. A estratégia de pesquisa adotada é baseada em experimento controlado com analise de escolha discreta. A coleta de dados foi conduzida na China e Brasil. Ao examinar os resultados, foi possível extrair cinco principais achados. Primeiro, quando um comprador é solicitado a declarar suas prioridades de seleção, independentemente do país, a qualidade é declarada como sendo a mais importante e o relacionamento o menos. Este resultado é consistente com diversos estudos desde a década de 60. Entretanto, quando o comprador é submetido a uma situação de multicritério e *trade-off*, as prioridades reais divergem das declaradas. Na seleção real sem a influencia do relacionamento comprador-fornecedor, os compradores brasileiros focaram no preço e os chineses na entrega e preço. Esta observação reforça alguns achados controversos anteriores de Verma & Pullman (1998) e Hirakubo & Kublin (1998). Segundo, ao introduzir o relacionamento comprador-fornecedor no processo de seleção de fornecedores (operacionalizado via capital relacional), esta pesquisa estendeu os estudos anteriores. Os resultados apontaram que os compradores brasileiros ainda focam no preço e a relação é apenas mais um critério de seleção como qualidade e entrega. Entretanto, da amostra chinesa os resultados apontaram que a qualidade foi desconsiderada e a decisão era pautada em preço e relacionamento. O terceiro achado sugere que o capital relacional poderia legitimar a qualidade e práticas de sustentabilidade dos fornecedores e substitui esses critérios, fazendo a decisão menos complexa. Adicionalmente, com o capital relacional, os tomadores de decisão são associados a alguns vieses tais como de disponibilidade cognitiva, de compromisso, de confirmação e de percepção. Analisando o comportamento dos compradores, o capital relacional induziu aos compradores de ambos os países a relaxarem nos requisitos de qualidade, entrega e sustentabilidade, assim, conduzindo a um potencial efeito negativo. Na amostra brasileira foi possível observar também uma predisposição a pagar mais por uma oferta de menor qualidade, o qual demonstra ser contraditório e potencial decisão subotima. Por fim, o ultimo achado está associado ao efeito cultural nas decisões do comprador. Partindo do resultado, pode-se observar que quanto maior é a orientação ao relacionamento do comprador, mais ele tenderá a usar o capital relacional para a heurística de decisão, consequentemente, mais suscetíveis aos potenciais efeitos danosos da relação.

Palavras-chave: relacionamento comprador-fornecedor, critérios de seleção de fornecedor, tomada de decisão, orientação à relação, comparação transnacional, potenciais efeitos negativos, experimento, analise de escolhas discretas.

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1 Introduction

It is well-known the importance of a properly chosen supplier for the competitiveness of the firm, once procurement involves high amount of incurred cost (ranging from 40% to 70% of total spending of the organizations), possible strategic roles of the purchased products, organization capabilities that are associated to the supplier performance such as quality, delivery, flexibility and innovativeness. Moreover, poor supplier selection could impact negatively the company, i.e., organization reputation and value could be eroded by product recalls due to the low quality of raw material (Chao et al., 2009; Zhao et al., 2009).

In order to understand the process of supplier selection, an extensive amount of researches have explored this issue since 1960s and the seminal list of selection criteria compiled by Dickson (1966) was exhaustively studied and proven valid as well as solid (Chen, 2011; van der Rhee, Verma, & Plaschka, 2009; Verma & Pullman, 1998; Weber et al., 1991). Additionally, relevant changes in the business scenario were also considered such as internationalization, quality orientation philosophy, just-in-time managements and, lately, cross-national effects (Huang & Keskar, 2007; Kannan & Tan, 2002; van der Rhee et al. 2009; Verma & Pullman, 1998; Weber et al. 1991). Despite the advances of the studies regarding this topic, choosing effectively the supplier in a dynamic situation and cross-national condition brought more challenges to practitioners and academics, i.e., outsourcing to the low wage country (Carter et al., 2010), supplier selection in turbulent situation condition (Kaufmann et al., 2012; L.-C. Wu, 2009) and cultural perspective for selection criteria (Carter et al., 2010; Mummalaneni et al., 1996).

Past studies had already confirmed that supplier selection occurs under a multi-criteria situation and buyers face trade-offs among attributes, then priorities should be defined for the selection criteria (R. M. Johnson, 1974; Mummalaneni et al., 1996). Despite the almost consensus that quality should be the top priority, few polemical studies demonstrated that choices were done based mainly on price (Hirakubo & Kublin, 1998; Verma & Pullman, 1998). This research suspected that many existing studies were based on the conventional ranking of the buyers' priority, thus, capturing the declared preferences, but not the actual ones (Dickson, 1970; R. M. Johnson, 1974).

In addition, to support the buyers in the arduous multi-criteria selection task, countless analytical methods and decisional techniques had been proposed such as analytic hierarchic process, data envelopment analysis, analytic network process, case reasoning, fuzzy logic, decomposing decision task, devil advocates, etc. (choy et al., 2005; kaufmann et al., 2010; lee, 2009; liu et al., 2000; narasimhan 1983; yang et al., 2010). Although the numerous decisional supporting tools, analytical methods are not enough for an effective decision making. It is well known that people are rationally bounded and their decisions are affected by their perceptions, emotions and affections (Carter et al., 2010; Ethiraj & Levinthal, 2004; Katsikopoulos & Gigerenzer, 2013; Slovic et al., 2007).

Carter et al (2010) had demonstrated the influence of cultural factor on the supplier selection while studying global sourcing strategy. They concluded that purchasing managers used their perception about the suppliers' geographic location for decision-making, and this phenomenon should be considered as a new source of decision bias. Carter and colleagues (2010) also claimed that there was not enough selection literature that investigates the cultural

influence on selection, which had already been highlighted almost 20 years ago by Mummalaneni et al., (1996). These authors observed that quality was the first preference of the Chinese procurement managers, but had not explored what aspect of the Chinese culture could influence this specific pattern.

In addition to the cultural bias, due to the possibility of adoption of non-quantifiable criteria in the supplier selection, i.e. the pre-existent buyer-supplier relationship (BSR) (Dickson, 1966), many other biases could emerge in the supplier selection process such as availability cognition, commitment, confirmatory and perceived biasess (Carter et al., 2007; Hada et al., 2013).

Although buyer-supplier relationship has been largely studied since 80's and diverse benefits can rise from the collaboration between firms, such as better information sharing, reducing uncertainty, reducing transactional cost, increasing willingness to collaborate, improving innovations and others (Doney & Cannon, 1997; Jap, 1999; Lawson, Tyler, & Cousins, 2008; Morgan & Hunt, 1994; Nair, Narasimhan, & Bendoly, 2011), the same ingredients that generate benefits to the firms have their side effects like excess of unnecessary commitments due to mutual obligations, expectations and reciprocity (Molina-Moreles et al., 2011; Villena et al., 2011), relaxation of the monitoring and safeguard mechanism due to the excess of trust (Anderson & Jap, 2005), reducing the innovation pace due to overload of redundant information and commitment (Molina-Morales & Martinez-Fernandez, 2009), suboptimal decision-making due to excess of information sharing, cognitive burden and similarity in the way of thinking (Uzzi, 1997; Villena et al., 2011).

By buyer-supplier relationship being a potential selection criterion and its association to diverse decision biases, it is possible to infer that, despite all its proven benefits, buyer-supplier relationship could also induce harmful effects in supplier selection process. Therefore, this study aimed to investigate the potential negative consequences of the collaboration through the supplier selection process.

Finally, contributing with internationalization studies and filling the lack of researches concerning cultural bias in supplier selection, cultural influences was investigated cross-nationally in China and Brazil as suggested by Hofsted (1988), Mummalaneni et al. (1996) and Carter et al. (2010).

1.1 Research question and objectives

By the previous succinct reasoning, this study had adopted three major research questions:

a) *How the preexisting buyer-supplier relationship can influence the supplier selection criteria?*
b) *How the preexisting buyer-supplier relationship can potentially generate negative effects in the supplier selection process?*
c) *How different are the prior two effects in distinct relation-oriented countries?*

By assuming the declared research questions above, this study had as general objective to identify the influence of the preexisting buyer-supplier relationship on the selection criteria, then the potential harmful consequences of buyer-supplier relationship for the purchaser that

can manifest in supplier selection process. Additionally, it was also expected to identified the impact of different levels of relation-orientation culture on the destructive effect.

In order to accomplish the general objectives, present research had divided them into several specific objectives:

a) Identify the relative importance of declared supplier selection criteria of the purchasers;
b) Determine the actual importance of the supplier selection criteria of the purchasers without influence of buyer-supplier relationship;
c) Identify the possible discrepancies between declared and actual importance of the supplier selection criteria for the purchasers under no relationship condition;
d) Identify the actual importance of the supplier selection criteria of the purchasers with influence of buyer-supplier relationship;
e) Determine the possible discrepancies between actual importance of supplier selection criteria with and without relationship;
f) Establish a comparison between results obtained from lower and higher relation-oriented culture and identify the differences between these two situations.

1.2 Justification and Relevance

By examining the assertion of the introduction chapter, the relevancies of this study were founded on three major pillars: managerial, theoretical and methodological. From the managerial perspective, the relevance is justified by the strategical importance of a well-chosen supplier as seen previously. Additionally, considering the global sourcing strategy,

cross-national supply chain management and internationalization activities, if the purchaser relies only on quantifiable criteria to evaluate and select suppliers might not be not enough for a proper decision-making. Due to the cultural differences some other less objective measurements should be considered such as power perception, empathy, language and values (Kannan & Tan, 2002). This study sheds light for practitioners about cultural differences in the supplier selection process and relation-orientation's influence on the supplier selection decision-making. Present research advises practitioners about difficulties faced during multi-criteria decision-making, its complexity, bias and tricky differences between stated and actual supplier selection criteria.

Still dealing with the managerial relevance, due to countless literature advocating benefits of collaboration (Jap, 1999; Nair et al., 2011), it seemed that collaboration was a panacea for all corporate ill, however, side effects of buyer-supplier relationship were also clearly recorded by diverse studies (E. Anderson & Jap, 2005; Molina-Morales & Martinez-Fernandez, 2009). From the present results, this study can make managers conscious about the potential harmful effects of collaboration based on relational aspect, especially, how this potential negative effects could manifest during the supplier selection process and how one's relation-orientation culture could set a trap for a suboptimal decision-making.

From the theoretical point of view, this study brought the relative importance of the selection criteria back to discussion. Many studies had suggested that quality was, no doubt, the first priority for the supplier selection (Y.-J. Chen, 2011; Choi & Hartley, 1996; Dickson, 1966; Lemke, Goffin, Szwejczewski, Pfeiffer, & Lohmüller, 2000; van der Rhee et al., 2009; Weber et al., 1991); however, Verma and Pullman (1998) advocated that although quality was

declared as selection driver, the purchases were decided based on price and delivery. Their heterodox finding was not unique: Hirakubo & Kublin (1998) also observed that price was the most important criteria, followed by delivery then quality in the Japanese printed circuit board sourcing. Later, van der Rhee et al., (2009) observed that despite the quality being the top priority, price could be considered more or less important depending on the countries. Therefore, based on the priorities discrepancy, we have stressed this topic through a relevant research methodology, which will be justified in the upcoming paragraphs.

Still in the theoretical domain, this study is also relevant by trying to fill the gap suggested already 20 years ago by Mummalaneni et al., (1996) and reinforced by Carter et al., (2010) who claimed that there were not enough studies about the influence of the culture on the supplier selection. Through an extensive literature review, we observed that many studies employed countries as proxies of cultural differences, but did not explored the cultural element of each nation and how it could impact the investigated phenomenon (Chen et al., 2011; Kaufmann et al., 2012; van der Rhee et al., 2009). To cover this gap, we examined, first, the influence of buyer-supplier relationship as decision bias (Carter et al., 2007; Hada et al., 2013), then its impact in the perceived importance of selection criteria. At last, we scrutinized the impact of the culture relation-orientation on the selection criteria, for that, we employed a cross-national research.

Beside the theoretical relevance of the supplier selection investigation of this study, this research also contributed with the examination of potential negative effects associated to buyer-supplier relationship. Prior studies had approached this topic by demonstrating its negative impact on firms performances (Molina-Morales & Martinez-Fernandez, 2009;

Villena et al., 2011), however, empirical studies did not explored how buyer-supplier relationship could definitively deteriorate day-by-day operational task, specially those decisional ones.

With this gap in mind, present study was also theoretically relevant by identifying the potential degradation of the operational decisional task caused by buyer-supplier relationship.

Finally, the methodological relevance of this study was based on the employment of controlled experiment with discrete choice analysis to investigate the research question. This research strategy was unusual in Operations Management, but highly recommended to investigate trade-off, decision-making and human behavior (Croson et al., 2013; Rungtusanatham et al., 2011; Ryan et al., 2012; van der Rhee et al., 2009; Zhao et al., 2013). By adopting this research strategy, we could establish the causal effect, which was not possible in existing studies. Despite van der Rhee et al., (2009), Verma & Pullman (1998), Mummalaneni et al (1996) investigated trade-off phenomenon in the supplier selection criteria using discrete choice analysis, they had not observed the causal effect of the culture on the supplier selection criteria. Thus, the present study extended the existing studies by establishing the causal link between relationship and selection criteria under given cultural scenario. We investigated how trade-off happened under multi-criteria situation and controlled the other possible unobserved variables while using survey methods.

Additionally, this study employed a cross-national data collection (China vs. Brazil) that could make possible the investigation concerning cultural bias as suggested by Carter et al., (2007).

To conduct the present research, this study was structured in four major blocks as demonstrated in the Figure 1: a) Theoretical section; b) Methodology section; c) Result analysis and discussion and d) Final considerations.

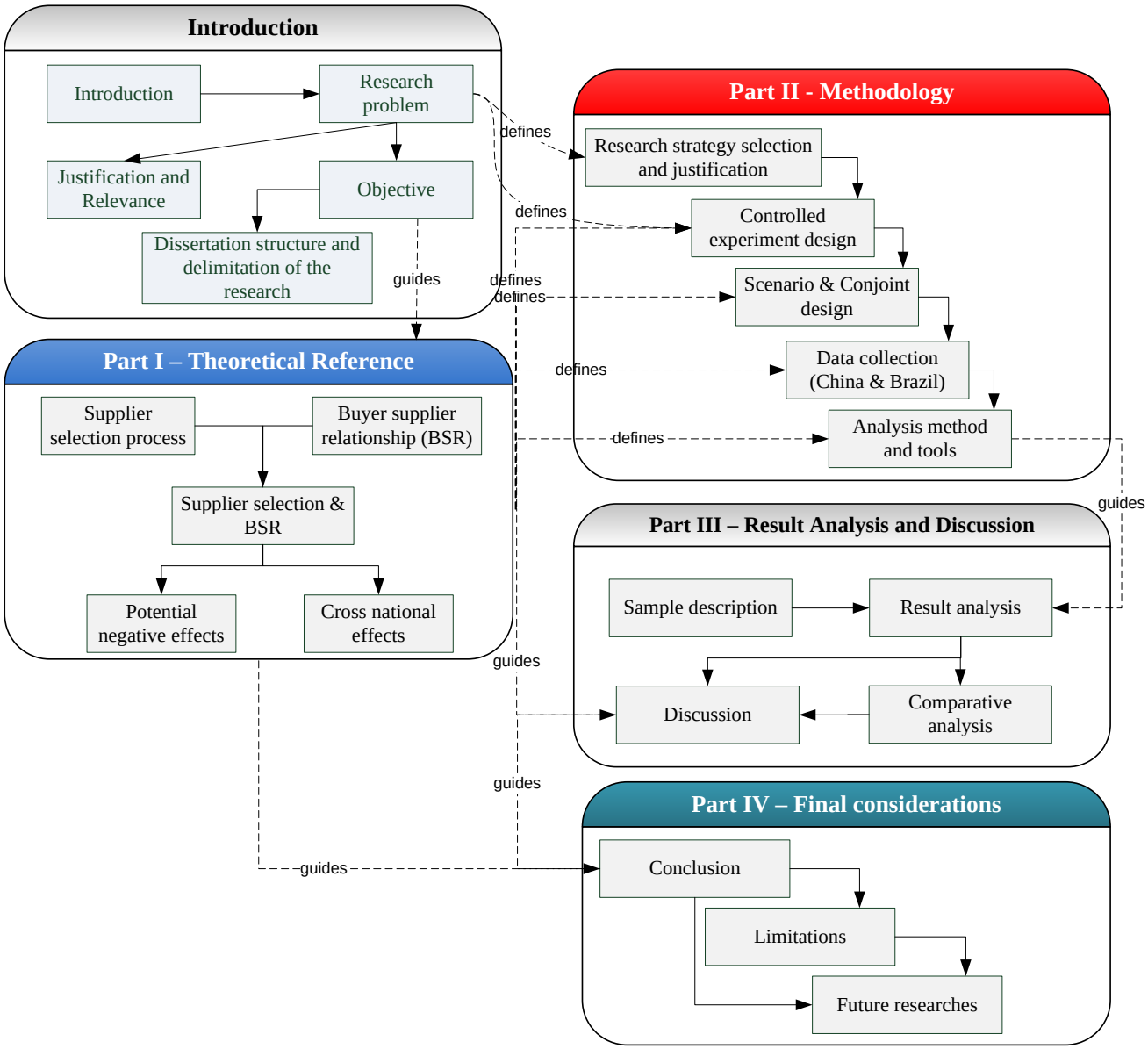

Figure 1 - Dissertation structure

Part I – Literature Review

This section will present theories, concepts and relevant constructs regarding the investigated phenomenon. It will present a historical and conceptual positioning in order to sustain the rationales developed as well as hypothesis of the investigation.

To organize the revision, this section is structured in four chapters. The first one will discuss the supplier selection as a process, the criteria and the decision-making. From this section, a set of supplier selection criteria to be used in this research will be defined and the heuristic decision-making process will be presented. In the second section, relevance of the buyer-supplier relationships and theoretical positioning will be discussed, then a conceptual model to analyze this phenomenon will be defined. Afterwards, the third section will connect buyer-supplier relationship and the supplier selection decision-making. Furthermore, cross-national environment will be approached and hypotheses will be elaborated. And to complete, the last section will assert the potential negative effects of collaboration and how it can manifest in the selection process.

2 Supplier selection as a process

It is a fact that the expenses, since cost associated to elementary raw material acquisition or daily services, to operation of an entire outsourced department or purchase of high complexity components for the functioning of the company, can count from 45% up to 70% of the whole spending of an organization. This amount of financial resource allocated in procurement is one of the evidences of the importance of choosing correctly the supplier (Sucky, 2007; Wadhwa & Ravindran, 2007; Weber et al., 1991; L.-C. Wu, 2009). Additionally to the volume

of money involved, there are also strategical and operational factors that should be considered, such as quality, delivery or share of sensitive information (new product, new manufacturing process or new market development), since it is consensus that the competitiveness of the firm depends on the competitiveness of his supply chain.

By examining the supplier selection with the processual perspective, it can be considered as an organization process composed by several stages, despite the denomination of each stage not being the same across the studies, it basically involves four main steps (de Boer, Labro, & Morlacchi, 2001; X. Huang, Gattiker, & Schwarz, 2008; Lemke et al, 2000):

a) Problem formulation: through this initial stage, the company defines what production factor is required, its specifications and decides whether to buy or to make this factor. Also in this step is decided, once opted for purchasing, how many suppliers will be adopted, if the current supplier will be replaced or not and how to deal with the supplier (de Boer et al., 2001).
b) Formulation of criteria: At this step, the company defines what the criteria are and how many of them should be used to qualify the supplier and support the decision process. This stage should be aligned with the previous one in term of product/services requirements such as quality, functionality, cost, performance and so on. However, the criteria to be used do not limit to product requirements, it should also include supplier capacity and capability, such as technological, problem solving, innovation, and production, delivery flexibility capacity as well as after sale services.
c) Qualification: Once the selection criteria are established, the company employs them to sort the potential suppliers. To perform the tasks of this stage, historical database

can be used, as well as categorical evaluations and cluster analysis. The ultimate outcome of this stage is the group of acceptable or non-acceptable suppliers (de Boer et al., 2001).

d) Final selection: At this stage, the company ranks the acceptable potential suppliers in a manner that can make the electing possible. To perform the ranking, several techniques can be adopted such as Analytic Hierarchic Process (AHP), operational research, total cost ownership, statistic models and artificial intelligence (Narasimhan, 1983; Nydick & Hill, 1992).

The process of supplier selection, in general, is a team effort, where different functions of the company are involved and, the most involved are purchasing, quality management, R&D and Engineering. However, it is not rare to see functions like risk management, maintenance and legal department in the selection process. Participation of risk management and legal department is especially important when the selection process involves complex or international transactions (Lemke et al., 2000).

To investigate supplier selection process, some other studies have explored the micro stages of each phase, for example, Crow et al. (1980) focused on the quotation process, Vyas and Woodside (1984), by exploring the decision process, proposed an integrated supplier selection process since quotation to final supplier selection; Kaufmann et al (2009, 2012) explored the debiasing process in the final selection step and Chen (2011) proposed a supplier selection process integrated with supplier evaluation.

There is no doubt among researchers that supplier selection is an organizational process (Carter et al. 2010; de Boer et al., 2001; X. Huang et al., 2008) and to select a supplier

effectively, practitioners should focus on two major categories of tasks (Carter et al. 2010; Ellram, 1990): a) establish the selection criteria, their relative importance due to the multi-criteria decision making and possible trade-offs (Dickson, 1966), and b) establish analytical methods to support decision-making and perform the selection (Narasimhan, 1983).

2.1 Selection criteria

"If you don't know where are you going, any road will get you there" – Lewis Carroll

More than 40 years ago, Dickson (1970) and Johnson (1974) had already demonstrated that buyers face trade-off in the multi-criteria decision situation, thus, it is essential to establish the set of selection criteria and priority of each attribute. Nowadays, there are several approaches to support these tasks, such as requirement analysis of the product to be purchased, interviews with specialists, historical data analysis, risk analysis, type of purchase evaluation, alignment between business and operational strategies. This process normally involves a cross-functional team that could be composed by two or more of the following roles: engineering, purchasing, R&D, quality assurance, end users, medium and top managers, risk management and legal assessments (Lemke et al., 2000).

These supplier selection tasks seem to be obvious; however, it was not organized neither structured until late 60's. As Dickson (1966) observed that there was an urge to understand what are the drivers and criteria that organizations employed to select their suppliers. He mapped, through mail survey, 23 major criteria and their relative importance. The most important was quality, followed by delivery on time, historical performance, warrantee and compensation, equipment and capability and price (

Table 1).

Since the seminal work of Dickson (1966), more studies have investigated this issue. Cardozo and Cagley (1971), through experiment, found that supplier, price and delivery information are criteria that purchaser employed to define the provider under risky situations. They also demonstrated that personal cognition might also impact on the supplier selection; Gaballa (1974), by operational modeling of an actual case, demonstrated that price, discount, production facility and capacity should be considered for the supplier selection; Crow et al. (1980), by modeling the quotation request process, observed that supplier selection should consider product to be purchased, quality, delivery, technical assistant, price and promised delivery; Monzack et al. (1981) did an extensive empirical case research and noticed a pattern of selection based on quality, delivery, performance history, production facility and capacity, price, supplier reputation, employee's relationship and geographic location.

Along the 80s, many more studies have explored supplier selection and stimulated by some impacting managerial phenomenon of that decade, such as focus on quality guideline; increase of computational support, and the introduction of just-in-time (JIT) philosophy, Weber et al., (1991) revisited the list of criteria proposed by Dickson (1966) and analyzed how JIT management style could impact the selection criteria.

Based on their analysis, Weber et al., (1991) suggested that quality remained as the most relevant selection criterion; however, there were some inversions of preference for some criteria. The first that caught attention was the geographic location. While this criterion was one of the least important (20^{th}) in Dickson´s 1966 list, in Weber´s research it was classified as average importance. Similarly, other criteria that were also at the last tiers of importance

were perceived as more relevant under JIT management such as packing, operational control; attitude and labor relations record (

Table 1). From these findings, Weber et al., (1991) inferred that the supplier selection criteria and relative importance of each criterion could be influenced by the operational/strategical orientation.

Following Weber´s 1991 study, an extensive number of studies have emerged, such as Choi & Hartley (1996), Verma & Pullman (1998), Swift (1995), Donaldson (1994) (for more see Appendix IV). All these studies agreed that selection criteria do not differ much from what Dickson (1966) suggested, however, their relative importance change according to the contingency. For example, Choi & Hartley (1996) concluded that the position of a company inside of his supply chain could impact the importance given to technological capability and financial issues. However, the company´s position does not affect the priorities attributed to quality, reliability, relationship, flexibility, price and service (

Table 1); Swift (1995) demonstrated that purchasing strategy, such as strategy of single or multiple sourcing can influence the values attributed to dependability (technical support availability and reliability of product) and price (low price and total cost of product). According to Swift (1995), single sourcing is less interested in low initial price and more interested in total cost of product once this type of sourcing is based on long term relationship. Additionally, single sourcing is also more interested in technical support availability and product reliability than multiple sourcing.

Table 1 - Supplier selection criteria and relative importance (Source: the author);

	Relative importance

	1	2	3	4	5	6
Dickson (1966)	Quality	Delivery	Past performance	Warranty	Equipment & Capacity	Price
Monzak et al (1981)	Quality	Delivery	Past performance	Equipment & Capacity	Price	
Weber et al (1991)	Quality	Delivery	Price	Equipment & Capacity	Technical capability	Geographic location
Donaldson (1994)	Quality (supplier)	Adaptability & Responsiveness	Delivery	Price		
Swift (1995)	Dependability	Price	Product	Experience	Availability	
Mummalaneni et al (1996)	Quality	Delivery	Responsiveness	Price	Relationship	
Choi & Hartley (1996)	Consistency	Reliability	Relationship	Technological capability	Flexibility	Price
Verma & Pullman (1998)	Price	Delivery	Quality			
Hirakubo & Kublin (1998)	Price	Delivery	Quality	Cost reduction capability	Technical	
Lemke et al., (2000)	Price	Quality	Delivery	Service	Relationship	Certificates
Wadhwa & Ravindran (2007)	Quality	Lead-time	Price	Risk		
Demirtas & Ustun (2008)	Quality	Service (delivery)	Cost	Consistency	Risk	
Van der Rhee et al (2009)*	Product flexibility	Value added support	Variety flexibility	Delivery	Demand flexibility	Value added service
Van der Rhee (2009)**	Product flexibility	Value added support	Cost	Delivery	Demand flexibility	Value added service
Chen (2011)	Quality	Differentiation	Delivery	Cost		

*** German; ** non-German**

By examining the organizational level of the decision maker, it was observed that this variable could also influence the selection criteria. Differently from the operational level when decision maker could focus on quality, delivery or cost, when this agent is at the business strategy level, he might take into consideration the total cost of the supplier, risk, technology capability, switching cost, buyer-supplier commitment, profitability of the transaction and single or multiple sourcing (Sucky, 2007; Swift, 1995). However, Chen (2011) suggested that it is not enough focusing just on business strategy factors neither only on the operational ones;

instead, it should combine both into an integrated model. According to him, the selection criteria suggested by Dickson (1966) and Weber (1991) should be, first, aligned with business strategy and then translated into a list of supplier performance criteria (quality, cost, delivery, services, technical and production capability, relation combination and organizational management), afterwards, assessing the selection activities.

Extending Dickson's (1966) selection criteria, recent studies had also advocated sustainability as one of the criterion. This recommendation was supported by concepts of ethic positioning, when sustainability aspect started to receive more and more attention from the purchasing agents due to its benefits, such as reputation improvement and better acceptance of the society (Freestone & McGoldrick, 2007; S. H. Huang & Keskar, 2007; Sagar et al. 2011). According to this rational, Ehrgott et al (2011) introduced some other criteria based on sustainability perspective, such as human right, organizational diversity, philanthropy, natural environment and safety to complement the original selection criteria list.

By following the internationalization trend of Operations' field where influence of national context on management was explored (Chen & Francesco 2000; Tjosvold et al. 2001; Zhao et al. 2006), supplier selection researches had also incorporated this phenomenon. For instance, Van der Rhee et al. (2009) demonstrated that, in a sample composed by non-German companies (English, French and Italian), the cost was the third most important criterion among production, variety and demand flexibilities, value-added support and services and delivery performance. Per contra, in the German companies, the cost was the least important among those criteria mentioned previously (

Table 1). Carter et al (2010) demonstrated that Eastern and Western purchasing agents focus on different priorities when sourcing in low wage countries.

As far as can be perceived in this literature review and the mapped criteria (see Appendix IV and

Table 1), quality, price and delivery are consistently considered the top priorities in the selection process, yet insufficient. Many more criteria were suggested to complement them such as warranty, existing buyer-supplier relationship, after-sale services, technical and production capabilities and also sustainability.

Diverse empirical studies and bibliometric reviews had inspected the seminal criteria suggested by Dickson (1966) and demonstrated that they were solid as well as valid (Ellram, 1990; Weber et al., 1991); however, the priority of each criterion might be contingency dependent such as position of the company in the supply chain, single or multiple supplier purchasing strategy, organizational level of the decision maker, operational strategy, type of the product to be purchased, national context and dynamism of the business environment (J. R. Carter et al., 2010; Y.-J. Chen, 2011; Choi & Hartley, 1996; Ho, Xu, & Dey, 2010; Kannan & Tan, 2002; Sucky, 2007; Swift, 1995; van der Rhee et al., 2009; Weber et al., 1991).

In addition, the fact of considering consistently quality, delivery and price as the top priorities for supplier selection seems to match with the recommendations of cumulative capability and order qualifier of Operational Strategy literature (Amoako-Gyampah & Meredith, 2007; Ferdows & De Meyer, 1990; Flynn & Flynn, 2004). This similarity is beyond mere coincidence, once existing studies agreed that priorities of cumulative capabilities and order qualifier were somehow incorporated by the practitioners and followed in the selection

process (Choi & Hartley, 1996; Kannan & Tan, 2002; van der Rhee et al., 2009; Verma & Pullman, 1998). Therefore, this research adopted **quality, delivery, price,** as the three quantifiable attributes. Regarding flexibility, this criterion was not considered as important as the prior three ones according to the existing studies. Verma & Pullman (1998) demonstrated that flexibility was statistically insignificant in the selection process while compared to quality, delivery and price. Among the studies, except Van der Rhee et al., (2009) who had explored exclusively the flexibility in the selection process, great number of studies such as Hirakubo & Kublin (1998), Lemke et al., (2000), Wadhwa & Ravindran (2007), Demirtas & Ustun (2008), Chen (2011), they agreed that quality, delivery and price should come before flexibility. In addition, this research mapped the quotation process through call of tender of divers companies and none of them had mentioned flexibility as selection criteria (see Appendix IX). To complete the selection criteria, Kannan and Tan (2002) suggested that when quantifiable attributes cannot differentiate one supplier from the others, some other less quantifiable criteria should be used such as **buyer-supplier relationship,** then, it was also adopted the fourth criterion and, finally, to be updated with ethical positioning perspective and the trend of increasing attention on this theme (Pereira et al., 2011; Vachon & Klassen, 2006, 2008), **sustainability** was also included in the present study. By considering the cumulative capabilities perspective and prior supplier selection literature, present study considered **quality, delivery, price, buyer-supplier relationship** and **sustainability** as selection criteria to be investigated.

Among the selection criteria, quality was referred by most of the studies as the most important criterion (Y.-J. Chen, 2011; Choi & Hartley, 1996; Dickson, 1966; Wadhwa & Ravindran, 2007). However, in some studies, price appeared to be the most important criterion for

supplier selection. This apparent contradiction is not surprising, since Swift (1995) demonstrated that in the single sourcing strategy, buyers tend to focus on the construction of the long-term relationship; therefore, the initial price of the product will be less important for the purchaser. On the other hand, in the multiple sourcing strategies, buyers might focus on the arm length relationship, thus, focusing more on the price than quality of the product or supplier, since the quality requirement is accomplished.

Basing on the literature of buyer-supplier relationship, while fostering in long-term collaborative relationship, buyers and suppliers must focus on the potential benefits and competitiveness that can be generated by the collaboration. Therefore, buyers should prioritize some other supplier's capabilities such as quality, communication, knowledge transfer, delivery and flexibility instead of price (Dyer & Hatch, 2006b).

Additionally, from the order winner/qualifier perspective (Hill, 1993), the purchasers regularly classify the supplier selection criteria into order qualifier and winner, where qualifiers are criteria that must be accomplished by the supplier to be able to be considered as a potential vendor. However, what is qualifier and what is winner could be contingency dependent and this classification could be influenced by operations and organization strategy, market requirements, industry and products (Spring & Boaden, 1997). In spite of the circumstance dependency, studies suggested that quality should be considered as qualifier, since the supplier without quality is unacceptable from the satisfaction point of view neither from the competitive point of view (Da Silveira & Slack, 2001; Harvey, 1998; Rosenzweig & Roth, 2004; Spring & Boaden, 1997)

By combining the already disseminated knowledge concerning the importance of quality in all the operational aspect of the organization such as supply chain management (Flynn & Flynn, 2005), continuous improvement (Bessant, Caffyn, & Gallagher, 2001), innovation (Sethi & Sethi, 2009) cumulative capability (Amoako-Gyampah & Meredith, 2007; Anand et al., 2009) and order qualifying criteria (Harvey, 1998; Rosenzweig & Roth, 2004; Spring & Boaden, 1997), it is expected that buyers will tend to state consciously that quality will be the most important supplier selection criterion, independent of the intensity of the buyer-supplier relationship. This expectation is also supported by diverse prior supplier selection studies such as Dickson (1966), Weber et al., (1991), Choi & Hartley (1996), Wadhwa & Ravindran (2007), Demirtas & Ustun (2008), Van der Rhee (2009) and Chen (2011). Thus, this study propose the following hypothesis to be tested:

Hypothesis 1a: *Among quality, delivery, price, buyer-supplier relationship and sustainability as buying criteria, buyers will declare quality as the most important in the supplier selection process, independently of the intensity of the buyer-supplier relationship.*

Concerning the five criteria that were adopted for this study, despite the importance of the collaborative buyer-supplier relationship for company's performance (Dyer & Hatch, 2006b; Nyaga et al., 2010), there are few ethical questions being associated to it when used for supplier selection, such as corruption, bribery and injustice (Gu et al. 2008; Liu et al. 2012; Wang et al. 2014; Warren et al. 2004). Moreover, Chen et al (2011) observed that managers had associated personal relationship to negative connotation for earlier stage of supply relationship. Therefore, it is reasonable to expect that managers will state their perceived

importance of buyer-supplier relationship as the least relevant among the five presented; consequently, this study suggests that:

Hypothesis 1b: *Among quality, delivery, price, buyer-supplier relationship and sustainability as buying criteria, buyers will declare the existing buyer-supplier relationship as the least important in the supplier selection process, independently of the intensity of the buyer-supplier relationship.*

2.2 Selecting the supplier

As mentioned previously, defining supplier selection criteria and their relative importance are objective and structured tasks; they involve business and operational strategies alignments, historical database analysis, interviews with specialists, requirement analysis and cross-functional team effort (de Boer et al., 2001; Ho et al., 2010; Lemke et al., 2000). The outcome of these tasks is a set of criteria to guide the purchasing agents and support the qualification activities of the potential suppliers.

However, the set of criteria is a two-edge sword. From one side, there is no doubt that selection criteria are crucial to guide the decision makers in the selection process and qualify efficiently and objectively the potential suppliers, on the other side; given the bounded rationality of the decision maker, multiple selection criteria makes the ranking task difficult and complex when increase the amount of criteria.

To assess the decision makers in this arduous task, countless techniques exist for this purpose and one consolidated and highly employed method is the Analytic Hierarchy Process – AHP (Ho et al., 2010; Narasimhan, 1983; Nydick & Hill, 1992). This method organizes the

decision process into a hierarchical structure where the highest level is the goal, the second one is the decision criteria and the lowest level is the alternatives (See Figure 2). AHP attributes weights to the selection criteria (base on the their importance) and then the decision makers perform the pairwise evaluation and attribute to each alternative a score (Nydick & Hill, 1992).

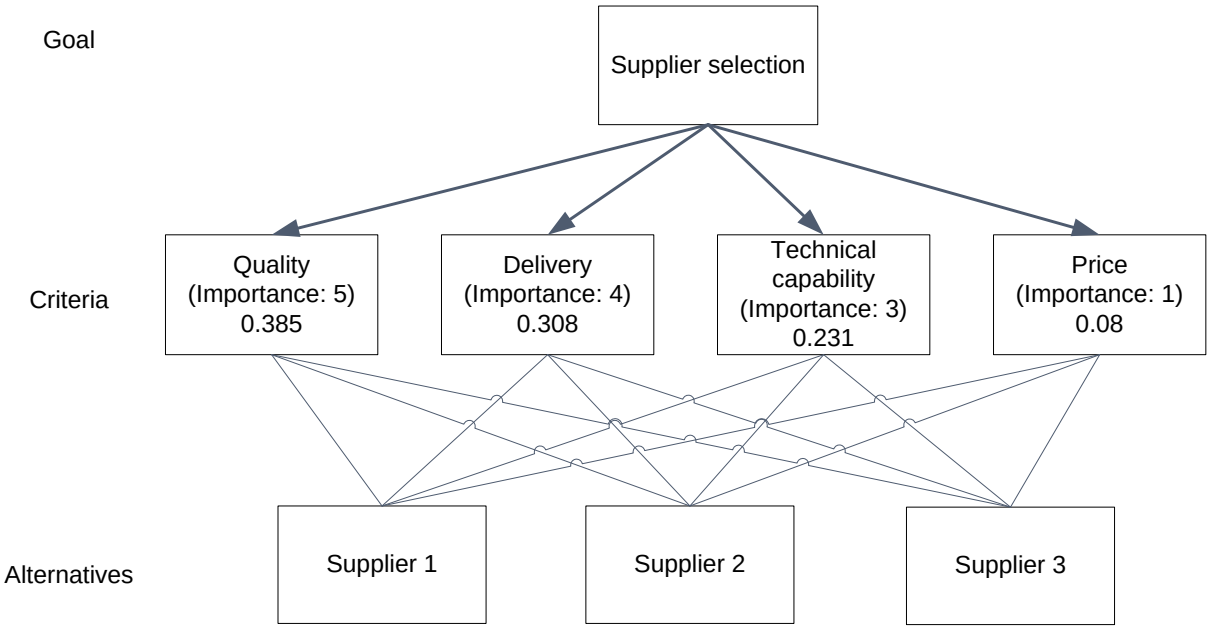

Figure 2 - Analytic Hierarchy Process applied to supplier selection

Another equally important technique and also well adopted in the supplier selection is the Data Envelopment Analysis – DEA (de Boer, van der Wegen, & Telgen, 1998; J. Liu et al., 2000; Saen, 2007). This linear programming based method aims to evaluate the efficiency of each choice given a set of weighted input and output (see Equation 1). In this technique, it is assumed a set of virtual "best" suppliers based on each dimension of the output and given input, then with this given set of suppliers, the decision makers compare each one's efficiency against the virtual "best" suppliers.

$$Efficiency\ (j) = \frac{Sum\ weighted\ output}{Sum\ weighted\ input} = \frac{W_1 \cdot O_{1j} + W_2 \cdot O_{2j} + \cdots}{X_1 \cdot I_{1j} + X_2 \cdot I_{2j} + \cdots}$$

Equation 1 – Data Envelopment Analysis general concept

Where:

j = alternative j, where 1<j<n; n = number total of alternatives

W_i = Weight of output i; O_{ij} = Amount of output i from the alternative j;

X_i = Weight of input i; I_{ij} = Amount of input i from the alternative j;

The set of "best" virtual efficiency is composed by the most efficient supplier when combining the (n-1) suppliers for the given input and this operation is repeated n times (see Equation 2). As outcome, it is possible to define an efficiency frontier based on these set of virtual "best" suppliers. Closer the distance of the supplier from this efficiency frontier, better is the performance or the choice (Farrell & Fieldhouse, 1962; Farrell, 1957; J. Liu et al., 2000; Talluri, Narasimhan, & Nair, 2006)

$$For\ j = 1\ to\ n;\ Max(Efficiency) = \lambda_1 \cdot Choice_1 + \lambda_2 \cdot Choice_2 + \cdots + \lambda_n \cdot Choice_n$$

$$\sum_{j=1}^{n} \lambda_j$$

Equation 2 - Definition of the best supplier

Concomitantly to the prior two approaches, another broadly employed methods is the case-based reasoning where the decision makers employ similar past selection manners in the actual selection process (K L Choy & Lee, 2002; Ho et al., 2010). According to Choy & Lee (2002), this process is similar to the human cognitive decision model where the decision maker retrieves, from the historical database, cases that are relevant to solve the present

situation. Once these relevant cases are retrieved, the decision maker reuses them to solve the actual problem; afterwards, the decision maker evaluates how different is the actual solution from the retrieved cases and, if there is not much differences, the suggested solution is adopted and it is retained as knowledge for future decision making.

Still regarding selection techniques, there are innumerous others based on mathematical programming, statistical analysis, analytic network process, and fuzzy logics (Choy et al., 2005; Kaufmann et al., 2010; Lee, 2009; Liu et al., 2000; Narasimhan 1983; Yang et al., 2010)**,** not mentioning that these cited methods can be used conjointly such as AHP-DEA, Fuzzy-AHP, AHP-Linear programming, fuzzy-AHP-cluster analysis, and so on.

Despite these amount of decision supporting techniques and their proven efficiency, analytical reasoning was not enough for an effective decision making (J. R. Carter et al., 2010; Y.-J. Chen, 2011; Talluri et al., 2006; L.-C. Wu, 2009; Xia & Wu, 2007). Some studies have noted that company's' actual decision not always follow the stated decision criteria. Verma & Pullman (1998) observed that although managers had declared that the quality is the top priority in the decision making, their choices were largely based on cost and delivery. This observed discrepancy is also mentioned by Hirakubo & Kublin (1998) and Van der Rhee et al (2009) as well as Slovic et al (2007) who asserted that emotional and affective stimulus complement the analytical reasoning.

The systematic deviation of the expected rational result conducts to a "satisficing" or "reasonable" choice instead of "best" or "most efficient" one. Much of this decision detour is attributed to the phenomenon of bounded rationality which is assumed as limits of the cognitive capacity for information collecting, calculation ability and memory, therefore, under

a complex judgment situation, decision makers, intrinsically, will adopt some level of simplifications or shortcuts to aid their task. This simplification is known as heuristic and is associated to the decisional biases (Carter et al. 2007; Hart, 1992; Kaufmann et al. 2009; Liberman et al. 2002; Simon, 1959).

There is an extensive list of biases exhaustively studied and consolidated by diverse fields such as economics, psychology and organization studies (Carter et al. 2007; Gino & Pisano, 2008; Katsikopoulos & Gigerenzer, 2013; Kaufmann et al. 2010; Zhao et al. 2013). Carter et al (2007), through an extensive structured literature review and q-sort method, grouped 76 biases of decision-making into 9 categories as described in the Table 2.

Gino & Pisano (2007) also demonstrated how these shortcuts of the Table 2 could impact the decision-making. For example, through the availability cognition, decision makers tend to emphasize those more frequent events or easily recalled. This bias, while selecting supplier, could manifest through the phenomenon of country of origin, since closer is the country of origin of the supplier to the buyer's, more similar is the culture, therefore, easier to be recalled by the purchaser.

Table 2 - Decision bias category (source: Carter et al. (2007))

Decision bias category	Description
Availability cognition	Decision makers judge information that is easier to be remembered as being more probable
Base rate	Decision maker decides basing on few or even a single vivid data point(s) than on more reliable but perceptually less lucid data.
Presentation	The mode, scale, order or mixture of presentation of the data leading to systematic error
Control illusion	Random or non-representative data that mislead decision maker to an unrealistic confidence in judgment
Output evaluation	The outcome of an event is overestimated. Failure is associated to bad luck and success to ability of the decision maker.
Commitment	Inappropriate tendency to continue investing resources in an option that had already been proven unsatisfactory

Confirmatory	Decision makers seeks for information to confirm the desire outcome and ignore other disconfirming information
Persistence	An option is chosen because it was chosen in the past.
Reference point	The reference point or a relevant comparison value influences decision maker's judgments.

Another impacting bias in supplier selection is the commitment. This bias is a tendency to continue investing time, money, efforts, keeping a partnership despite the unsatisfactory return of these investments (Carter et al., 2007; Gino & Pisano, 2008). The commitment bias is attributed most of the time to sunk cost fallacy, where the decision maker is making his decision based on the past investments instead of evaluating possibility of future gains, (Bazerman, Giuliano, & Appelman, 1984; Carter et al., 2007; Keil et al., 2000). However, there is another explanation rooted in relationship that can justify commitment bias, which will be discussed in chapter 4.

In addition, supplier selection may also be influenced by the confirmatory bias, which is a phenomenon where buyer tends to search for or interpret the events and information to confirm his prejudgments, then ignoring all other relevant information. This might happen if a buyer see some promising reviews about the supplier A during the decision process, then started to prefer this provider instead of B, even the supplier B is a better choice through objective evaluation. To support the decision in this case, the purchase will begin to search for information to confirm his tendency. Moreover, in this situation, decision maker might also have illusion of correlations among completely random information to confirm his choice, hence, conducting to suboptimum decision (Kremer et al. 2011).

At last, there are some other emotional, affective and cultural biases that are not covered by Carter et al (2007). As mentioned by Slovic et al (2007), stimulus such as "hope", "good", "bad", "happiness" and "excitement" might affect the decision makers unconsciously and the

judgment are made in an extremely fast and automatically fashion. Despite the relevance of the emotional and affective stimulus on decision making, in a business environment, it is required to be objective and personal attachment free as possible (Lemke et al. 2000), therefore, this study does not intend to explore emotional neither affective stimuli, but will dissert about the cultural bias.

Cultural differences are not recent observed facts. Internationalization studies had already approach this issue as psychic distance, which is the difference in languages, education, business practices, cultures and industrial development (Johanson & Vahlne, 1977). Later, influential work of Hofested (1985) had also demonstrated that cultural differences could manifest in organizational system through a set of characteristics such as power distance, uncertainty avoidance, individualism, and masculinity. Evaristo et al., (2005) suggested that there are several levels of cultures ranging from supranational (religion, linguistic and ethnics), national, professional, organizational and group level. Each of these levels will influence the organizational behavior in a certain way, while more abstract are the tasks, more they involve social and moral values that are influenced by supranational and national cultures. On the other hand, while more practical are the tasks, more they will rely on the organizational or group culture.

Carter et al (2010) demonstrated that supplier selection, in addition to the analytical reasoning, it depended also on the culture of the buyer, since it influences on how the decision makers perceived the attractiveness of the geographic location of their potential suppliers. Despite the outstanding research of Carter et al (2010), they used countries as proxies of all the cultural differences, hence, losing the opportunities to investigate some relevant cultural

variables that might have caused differences among the nations, for example, influences of linguistic construction or believes in popular saying (Cui et al. 2013; Feng et al. 2011) or different type of relationship-orientation and stages on supplier selection process (Batjargal & Liu, 2004; Xie, Peng, & Zhao, 2013).

All these heuristics and biases might manifest more evidently when buyers are making multi-criteria decisions under trade-off situation. In an ideal purchasing situation, the buyer will choose the supplier that could provide best performance in all the criteria, however, it is quite not possible to accomplish that condition due to limited resource (Johnson, 1974; Skinner, 1969). In this multi-criteria trade-off decision situation, buyer might begin the decision process with a stated importance for the selection criteria; however, when the buyer faces the real selecting process, these same purchasers might, employ some analytical techniques and complement it with heuristic to effectuate the decision. Therefore, based on the effect of heuristic discussed previously, this study expected that the stated importance of each criterion should be different from those actually adopted by the buyers.

This phenomenon was observed by Verma & Pullman (1998) where buyer stated the quality as the most important decision drivers, but the actual selection was based on price and delivery. Such discrepancy was also taken into consideration by Van der Rhee et al. (2009) to investigate cross national influence on the priority of the selection criteria. Mummalaneni et al. (1996) also had noticed that conventional raking of the purchasing priorities had little contributed to understand the Chinese selection criteria phenomenon, since there were not enough discriminant power in conventional methods. Moreover, Mummalaneni et al. (1996)

had noted that little studies have been conducted, up to that moment, about Chinese purchasing motivations.

By assuming the existence of the bounded rationality, heuristic effect and trade-offs among the selection criteria as discussed previously, this study, inspired on study of Verma & Pullman (1998), suggests the following hypothesis to be tested:

Hypothesis 1c: *The importance for each supplier selection criterion declared by the buyer will be different from the actual importance attributed to the selection criterion.*

By suggesting the hypotheses 1a, 1b and 1c, this study aimed to demonstrate that a multi-criteria supplier selection could be considered a complex task; the employment of analytical tools and methods is not enough, once decision-making is also complemented by affective, emotional and heuristic process. This study expected that availability cognition, commitment, and confirmatory biases associated to heuristic could influence the supplier selection. In addition, these three categories of biases could manifest in the cultural aspect through phenomenon of relationship, and more specifically, in China, *guanxi*.

Before establishing the connection between buyer-supplier relationships with supplier selection, let's discuss why buyer-supplier relationship is important to the company and how operationalize this phenomenon for our further research.

3 Buyer-Supplier Relationship

According to Morgan & Hunt (1994), in order to be a efficient competitor in the market, the firm needs to be a trustful cooperator in some point of its value chain. This value chain is consisted, externally, by customer, suppliers, government, society and other firms of the same industry; internally, by employees, business units and functional departments compose it.

The importance of the relationship between the focal firm and several agents of his network was evidenced by several studies. The collaboration between two companies can create values and generate benefits for both sides such as satisfaction (Cannon & Perreault Jr., 1999; Jap, 1999). Novicevic et al. (2011) reinforced that companies that focus on relationship with customers and have the organizational processes center on them, ended up by creating values. Complementing, Peng and Luo (2000) described that companies that invest on good relationship with governmental agencies can improve their market share and return on assets.

As well as the external relationships, those that link internal agents of a company can also bring advantages to the firm. According com Cameli et al. (2009), by encouraging collaboration between managers and employees can improve employee´s performances. Wang and Wu (2012) reinforced that commitment among team members can influence on team´s competitiveness.

Taking into consideration of several agents and types of the relation that interact with the focal firm (Morgan & Hunt, 1994; Williamson, 2010b), this literature review will limit to those that involve buyer and supplier and more specifically, those collaborative ones.

3.1 Buyer-Supplier Relationship and theoretical backgrounds

The research on this subject is not recent neither restricted to Operations Management. The present study identified, through a citation and co-citation (detail see Appendix I), that the central authors regarding this theme could be traced back to Industrial Marketing (J. C. Anderson & Narus, 1984, 1990; Cannon & Perreault Jr., 1999; Doney & Cannon, 1997; Dwyer, Schurr, & Oh, 1987; Moorman, Zaltman, & Deshpande, 1992; Morgan & Hunt, 1994). The structured literature review also demonstrated that the main theoretical lenses adopted to investigate this phenomena were basically Transaction Cost Theory (TCT) (Williamson, 1981, 2010b) and Social Exchange Theory (SET) (Cook & Rice, 2006; Cropanzano & Mitchell, 2005; Emerson, 1976).

According to Transaction Cost Theory (Williamson, 1981, 2010a, 2010b), people/companies have tendency to behave opportunistically. This behavior can be motivated by information asymmetry, asset specificity, uncertainty and/or bounded rationality of the agents. To mitigate and reduce the transactional cost, companies must create safeguard mechanisms such as contracts and collaborative relationships.

The reduction of the opportunistic behavior through collaboration was confirmed by several studies. Ganesan (1994) and Grayson & Ambler (1999) had stated that collaboration based on trust is more than a safeguard mechanism, it also can improve the performance of the companies by diverse mechanism such as information exchange, perception of vendor’s benevolence, . These earlier empirical findings were reinforced by later studies such as Koka and Prescott (2008) , Dyer and Hatch (2006b) and Wu (2008).

By the brief description above, TCT contributed, mainly, for research on Buyer-Supplier Relationship (BSR) with following rationales: a) Opportunistic behaviors are harmful on a long term basis for the transactions between firms; b) safeguard mechanism are necessaries to ensure the recurrence of the transactions.

Similarly to the assumptions of TCT, Social Exchange Theory (SET) supports the research in BSR by explaining its dynamics. According to SET, social exchanges are motivated on rewards – positives as well as negatives – originated by the involved agents (Homans, 1958). In case the rewards are positive for the involved agents, the exchanges tend to last and it will generate recurrent transactions and mutual benefit relationships.

These exchanges suggested by SET focus, mainly, on the social aspects of the involved agents. According to SET, the social aspect of exchange is based on the interdependency ruled by reciprocity, rationality, altruism, collective gain, consistent state and competition (Cropanzano & Mitchell, 2005). Based on these rules, SET explained the motivation for the exchanges and their dynamics. Moreover, it suggests that trust is the main mediator for the positive outcomes. (Cropanzano & Mitchell, 2005; Emerson, 1976; Homans, 1958).

The Social Exchange and Transaction Cost Theory could be considered the conceptual foundations for the studies in buyer supplier relationships. These two perspectives were united in a structural way and adopted by earlier studies in Industrial Marketing, such as Anderson and Narus (1984, 1990), Doney and Cannon (1997), Dwyer et al. (1987) and Morgan & Hunt (1994). These studies tested and demonstrated the validity of the assumptions of TCT and SET for the buyer-supplier collaborations.

With the advances of the researches regarding buyer-supplier relationship, the conceptual foundations were extended and more theories were incorporated such as social network (Burt, 2000; Granovetter, 1973, 1985), game theory (von Neumann & Morgenstern, 1944) and Social Capital Theory (Coleman, 1988; Nahapiet & Ghoshal, 1998; Villena et al., 2011). In the next chapters the buyer-supplier relationships will be discussed under perspective of Transaction Cost Theory, Social Exchange Theory and Social Capital Theory.

3.1.1 Buyer-Supplier relationship under perspective of Transaction Cost Theory

As mentioned previously, the transaction cost theory (TCT), whose origin and application have been exhaustively debated by several studies (Grover & Malhotra, 2003; Holcomb & Hitt, 2007; McIvor, 2009; Williamson, 2010b), aims to explain the strategical decisions of a company regarding make (verticalization/hierarchization) or buy of a production factor through the cost associated to its economic transaction. This theory assumed that bounded rationality, assets specificity and opportunistic behavior of the agents could influence positively the cost of the business and each transaction could be unique depending on its characteristics such as frequency of the exchange, uncertainty involved and governance structure (Williamson, 1991a)

According to the transaction cost analysis, the company will purchase a factor from the market when the production cost associated to this factor (tangible or intangible) is higher than the cost of acquisition (Rumelt et al. , 1991; Williamson, 1991b). The act of acquisition configures a transaction and its recurrence can induce the appearance of a relationship (Cropanzano & Mitchell, 2005; Dwyer et al., 1987).

From the economic perspective, the transaction recur since the cost of internal production is superior to the acquisition value (Williamson, 1991b). This value is composed by cost of coordination and risk of transaction (Grover & Malhotra, 2003). It can be understood as coordination action all those costs associated to search of a supplier, information exchanges between agents, incorporation of the information for decision processes, viability of a governance structure and its maintenance. Meanwhile, the risk of transaction involves the possibility of any of the agent disrespects the deals, the uncertainty, opportunistic behavior of the parties and assets specificity.

The existence of these risks are inherent in a transaction between companies (Williamson, 1998, 2010b); thus, safeguard mechanisms such as contracts and governance structure mitigation action are recommended as a precedent for cost reduction and increase the possibility of transaction recurrence (Williamson, 1991b; Young-Ybarra & Wiersema, 1999).

The safeguard mechanisms could be employed individually or conjointly, which will depend on the characteristics of transactions (Shelanski & Klein, 1995; Williamson, 1979). One of the most adopted mechanism to govern the transaction between the parties involved is the contract because of its relative low cost of implementation (Jean-François, 2010).

In spite of being imperfect due to the bounded rationality of agents, contracts can be effective when no specific investments were involved in a transaction, i.e., purchase of standardized equipment or commoditized raw materials. In this type of transaction, the contract will govern mainly the market equilibrium price, the rights and duties of both parties and the penalties for noncompliance. In addition, the contract will perform primarily as protection against possible

opportunistic actions of partner. In arm-length transaction, efforts to develop a relationship are almost nil, since the focus of the transaction is strictly economic.

Unlike the previous situation where the transaction is purely economic driven and investments are not specific, when two agents engage in a commercial transaction that involves a personalized assets or requires a specific investment by one or both parties, a simple contract as mentioned in the prior paragraph might not be enough. In this situation, it would be recommended to include a third party as arbitration to enforce the contract terms, to assess the performance and to mediate trade disputes, for example, international arbitration courts (Williamson, 1979). These contracts generally suggest long-term commitment between the parties, reciprocal, bilateral agreements, to provide specific investment or some connection between assets of both agents. This type of transaction occurs when a company seeks to increase the commitment of the transaction partner, discourage the opportunistic behavior, or when there is some legislation that does not allow the internal production of the factor by the company concerned (Shelanski & Klein, 1995).

Besides the contract, another form of safeguards recommended is done by the governance structure adjustment. According to transaction cost theory, the firm can be seen as a set of governance structure, which assures the internal order and avoid potential conflicts that threaten generating opportunities for mutual gain (Williamson, 1998). Given this logic, creation of joint venture between two companies can be considered as a governance structure that protects involved organizations.

The bond between two transaction agents can be seen as a lock-in mechanism, and these mechanism could be a contract, a mutual investment in a specific asset, shareholding or

additional conjoint governance structure (Shelanski & Klein, 1995; Williamson, 1979, 1998; Young-Ybarra & Wiersema, 1999). The bonding between the transaction parties creates a "hybrid" structure that is protected by a safeguard mechanism. According to Williamson (1998) , this structure should be considered before adopting the vertical integration.

In spite of adopting as its starting point two of the main elements of human behavior previously overlooked: bounded rationality and opportunistic behavior (Williamson, 2010b), TCT analyze the relationship between the transaction agents in the economic and organizational sphere. This focus was so clear that Williamson himself (1991b, 2010b) suggested the economic efficiency as the best business strategy, which can be obtained through cost reduction associated to the operations as well as the transactions.

In summary, from the perspective of transaction cost theory, the buyer-supplier relationship is outcome of recurrent transaction that is conducted by a specific governance structure. This governance structure has as purpose to create a safeguard mechanism to protect the involved organizations or agents against the opportunistic behavior transaction partner. The mechanisms adopted to create this “hybrid” governance structure as well as to ensure its effectiveness could be the standard, neoclassical or arbitrated contracts. Additionally any other lock-in methods could be employed, such as requirement of specific investments, shareholding or additional conjoint organizational structure and assets exchanges.

As outcome, this hybrid governance structure that governs the transaction between two parties, supported by the safeguard mechanism, tend to encourage recurrent transactions in a long-term basis, reciprocal relationship or even creation of strategical alliance.

3.1.2 Buyer-Supplier relationship under perspective of Social Exchange Theory

As well as the transaction cost theory, another theory which underpinned the researches about the buyer-supplier relationship was the *Social Exchange Theory* (SET) (Cropanzano & Mitchell, 2005; Emerson, 1976; Homans, 1958). While TCT emphasizes the economical aspect, opportunistic behavior of agents and their bounded rationality, the SET focuses on socio-psychological reasons that lead agents to an exchange and its recurrence.

According to Homans (1958), the exchange of materials between individuals is considered a social behavior. Thus, extending this assumption to the organizational level, the exchange of materials between companies could also be considered as such because the organization is a governance structure that manifests human behavior. Basing on this point of view, SET defines relationship as interpersonal links resulted from successive interdependent transactions.

In line with Homans (1958), Cropanzano & Mitchell (2005) asserted that an exchange has several dimensions such as the good involved, mean and ways of the exchange. Additionally, the exchanging agents should be interdependent and social-psychologically involved. This point of view does not contradict the position of TCT, but it complements the previous one by adding human behavior dimension.

Once considered the relationship as interpersonal connection resulting from the successive transactions, trust (Arrow, 1972), commitment and reciprocity emerge from the recurrent exchanges and they accumulate over time and encourage future relationship (Cropanzano & Mitchell, 2005; Emerson, 1976; Gundlach, Achrol, & Mentzer, 1995; Morgan & Hunt, 1994).

The action to perform transactions between companies can be governed by four assumptions suggested by Homans (1958) and reinforced by Emerson (1976):

i. Proposition of success: Within all actions performed by a company, those that are rewarded positively are more likely to be repeated by the company;
ii. Proposition of stimulus: If a particular stimulus or set of stimuli had generated positive rewards for a given action of a company, the more similar is the current stimulus to those in the past that had generated positive reward, the more likely will the company to repeat the same action;
iii. Proposition of privation and satiety: The more recent, frequent and common is the reward, the smaller is the value assigned to the payback;
iv. Proposition of value: The higher is the value of a result of a given action for the company; the more likely is that company to repeat the action that had generated that valuable result.

According to Emerson (1976), these propositions are valid, and somehow similar to economic concepts, for example, proposition (i) and (ii) refer to the concept of Profit = Reward – Cost or Cost/Benefit relationship. On the other hand, the proposition (iii) is similar to the marginal gain suggested by the economic theory.

Complementing the previous four propositions, SET suggests that rules and social norms also sustain the recurrence of the action of exchanges (Cropanzano & Mitchell, 2005; Elster, 1989). It is understood by social norms a set of instruments and rules that are established, understood and accepted collectively to drive individual and, especially, group benefit. These norms are motivational mechanisms that do not violate individualism nor rationality (Cialdini,

2007; Elster, 1989; Ostrom, 2000). Moreover, they might not be explicit or formal. Examples of such norms are reciprocity, cooperation, retribution, respect, altruism, not killing, not stealing, group gain, and competitiveness.

Among these social rules, the norm of reciprocity is highlighted as one of most influent and applicable and, in many cases, intrinsically motivated, creating mutual commitment, trust and interdependency (Cropanzano & Mitchell, 2005; Laran & Janiszewski, 2011). Reciprocity, more than a mechanism of auto-reinforcement and expectation of retribution, also plays the role of the exchange policy, because implicitly, it guides the agents to their duties and punishments. Once the retribution expectation is accomplished, new exchange tends to occur successively. Prior studies have demonstrated that this mechanism behaves as a psychological contract and generates lock in conditions mentioned in the transaction cost theory, through which can reduce opportunistic actions of the agents (Gundlach et al., 1995; Kingshott, 2006; Young-Ybarra & Wiersema, 1999).

In parallel with mutual commitment, reciprocity and transaction repetition, trust tends to be developed between agents after recurrent exchanges. Trust will depend on communication, shared values between agents and it is a social, emotional, cognitive and ideological phenomenon (Arrow, 1972; Cropanzano & Mitchell, 2005; Kingshott, 2006; Lewis & Weigert, 1985; Morgan & Hunt, 1994; Young-Ybarra & Wiersema, 1999). Trust can be treated as outcome of the earlier exchange process and, at the same time that it is built and cumulated, trust promotes integration, coordination; reduce uncertainty, conflicts and opportunism. Trust also facilitates information exchange between agents, potentialize mutual gain and increase willingness to collaborate and, as consequence of these actions, benefits of

trust can manifest in better firm performance (Cao & Zhang, 2011; Jap, 1999; Lawson et al., 2008; Narasimhan et al, 2009).

Complementing the social perspective, SET also provides economical insights to approach buyer-supplier relationship researches. According to SET, to keep the flow of exchange consistent and recurrent, it is necessary an equilibrium between involved agents (Homans, 1958). This state is obtained when the agents involved in the transaction consider the respective gains (rewards minus cost) are just and fair according to the realized actions (Cropanzano & Mitchell, 2005; Emerson, 1976; Homans, 1958). However, according to Homans (1958), this stage is not permanent and it is continuously challenged.

3.1.3 Buyer-Supplier relationship under perspective of Social Capital Theory

The concept of social capital is not new in social science research, although only in the 90s, this perspective to explain the socio-political and organizational phenomena has begun to attract, in fact, the interest of researchers (Portes, 1998; Woolcock, 1998); including the World Bank itself massively funded researches under this conceptual approach (Woolcock & Narayan, 2000).

The term capital, according to the classical view, can be defined briefly as the tangible good produced by man in order to produce new goods (Autry & Griffis, 2008; Lin, 1999; Storberg, 2002). Succinctly, the evolution of this concept, which, early, referred to a more concrete concept, it had expanded and began also to consider the intangible assets, therefore, enabling new ways to explore social phenomena, i.e., the participation of the population in the

country's political issues (Putman, 1995), entrepreneurship and fundraising (Jones, Macpherson, & Thorpe, 2010; Scillitoe & Chakrabarti, 2010), performance in a buyer-supplier relationship (Carey, Lawson, & Krause, 2011). Among the intangible capitals, it is possible to highlight the human capital, cultural capital, intellectual capital and social capital.

At the end of the nineteenth century, though somewhat unstructured and vague, the concept of social capital was linked to goods and civility in society. According to Putman (1995) and Farr (2004), the first use of the term social capital took place in the late 1910s in an intuitive and unstructured way. At that time, this term was adopted to describe the social cohesion and personal investment in the society, especially schools in rural areas.

At the end of the 50s, the idea of social capital was still vague and it still refers, basically, to public goods and social civility, such as hospitals, roads, potable water system, sewage system, schools, democracy, education, public health, safety and more. Nevertheless, it was clear, at that time, the idea that the social goods were necessary to the proper functioning of the manufacturing activities, for example, education of the population is important to raise the quality of the labors of the factories. (Schuller, Baron, & Field, 2000).

The conceptual transition from a more abstract and limited perspective to a more contemporary and solid vision occurred in the 1970s through the contribution of the researches of Pierre Bourdieu, James Coleman and Robert Putman. Throughout the 60s and 70s, Pierre Bourdieu’s studies started to trace a parallel between social and economic elements. He observed that similarly to a firm when controlling tangible economic capital, controlling some specific social elements could provide power and domination to a person,

for example, culture (Bourdieu, 1986). By controlling this element, the person gains access to knowledge, creativity and dynamism, consequently, this individual owns “culture capital”.

Conjointly with culture capital, Bourdieu (1986) observed that the elite of the society employs contacts of their social network to keep reproducing their privileges and to this phenomenon he baptized “social capital”. In this type of capital, Bourdieu (1986) extracted some essential fundaments: 1) As well as cultural capital, social capital manifests ultimately in economic capital; 2) Social capital is based on relationship; 3) Economic value of social capital depends on quality and quantity of the resources that can be access through the relation; 4) Social capital creates sense of solidarity, obligations and reciprocity (Bourdieu, 1986; Lin, 1999; Portes, 1998; Schuller et al., 2000).

In the 80s, Coleman (1988), when studying the relationship between social elements and scholar dropout rate, realized that the fact of belonging to a religious group or to a family with strong link between members had reduced the dropout phenomenon. This author noted that to be part of a community where members are closely and strongly connected and share some degree of sense of identity could support individuals to achieve respective objectives.

To justify his finding, Coleman (1988) adopted two assumptions as starting point: a) social embeddedness suggested by Granovetter (1985), where organizations and peoples were embedded in relationships involving trust, expectation, norm creation and its application; b) association between social structure and paradigm of rational action. Through these two assumptions, Coleman (1988) suggested that an actor in the social network has control of a limited set of assets and interested in others, then, through the relationship an agent could access to those interested assets that he does not control yet.

In addition, Coleman (1988) suggested that social capital is based on two fundamental aspects: 1) it is consisted necessary by a social structure; 2) it facilitates the action of the agents (individual or corporation) in this network (for good and evil). Unlike other capitals, social capital is not tied to a particular tangible good, but to the relationship between the actors. This capital is not exclusive to any of the related agents, except the hierarchical relationship when there is a power asymmetry. As the social capital remains in the relationship between agents, when the relationship ceases, this capital vanishes (Coleman, 1988).

In the conception of Coleman (1988), there are basically three forms of social capital:

- **Obligation, expectation and credibility of the structure:** This form of social capital is based on the expectation of returning the favor. It occurs when an actor "borrowed" a favor and should pay it back to the one that "lent" it. To make this possible, it is necessary to establish trust and credibility between the parties. The concept is similar to lending and returning a financial capital.
- **Information channels:** This form of social capital is linked to accessibility to information provided by integrants of the network. The capital may be paramount to avoid wastes of time while searching and ensure access to privileged data. The intention is to create a win-win situation.
- **Norms and sanctions:** Group or communities tend to develop rules and punishments to assure the group welfare by discouraging the greed and the pursuit of own interest exclusively.

These three types of social capital also complemented other type of capital such as economic and human capital. For example, initially, the economic capital of a family provides money to pay the tuition of the children, while the human capital of the parents (knowledge, skill, experiences) can support the education of their children when they are doing homework at home. Last but not least, social capital (family cohesion, proximity, parents presence), mediate how the human capital can be transferred from the parents to the children and supporting them to consolidate the learning (Coleman, 1988).

Just as important as the prior two seminal authors, Putman (1995) also made comparison between physical, human and social capital. For him, the means for production and training that improve the productivity and competences of the firm are equivalents to network, norms and trust that improve coordination and mutual cooperation. These three ingredients allow members of the network to act conjointly to achieve an established goal in a more efficient manner.

Another huge conceptual contribution of Putman (1995) for social capital was the integration of two antagonistic ideas of Coleman (1988) and Granovetter (1973). Putman had proposed that the importance of the social capital might depend on the contingency and the both social capital suggested by Coleman (1988) and Granovetter (1973) coexist in the same social network and they are complementary instead of mutually excluding. To allocate these two contradictory perspectives, Putman (1995) baptized them as:

a) Bonding Social capital: This category is associated to cohesion, trust, rules, norms, expectations, reciprocity and obligations created internally to the group. The bonding social capital is based on the three form of social capital suggested by Coleman

(1988): (i) Obligations, expectations, structure credibility; (ii) Information channels; (iii) Norm and sanctions. This type of social capital can legitimate the members of the network, create identity and improve efficiency of the exchanges among the members of this social structure. It can reduce bureaucracy and control mechanism through the trust, reciprocity expectations, implicit norms and sanctions.

b) Bridging Social Capital: This category refers to establishing weak linkages with some agents that does not belong to the organized cohesive group. Through this type of social capital, the cohesive group can access assets that are not originally controlled by the group and can bring new information to the network. The utility of this type of social capital is based on the "structure holes" proposed by Granovetter (1973). This kind of social capital is also important when a social structure operates under a turbulent environment, once cohesive group might not be able to create new knowledge or fresh information to make the social structure to adapt to the environment. Moreover, the weak links ("structure holes") can make new information flow faster, vital for innovation, and avoid the bias of cohesive network.

Summarizing the conceptual thinking of these three seminar researchers, it is possible to define:

Social capital is an intangible resource attached to the relationship between two or more actors. This relationship can mobilize tangible or intangible resources, which are not controlled directly by the agents, to realize an activity or task. These activities or tasks always aim a goal which can be common or not to the agents.

Despite the seminal authors have worked hardly on the conceptual development of social capital, they did little regarding the operationalization of this concept. This task was left to later researches, such as Portes (1998), Nahapiet & Ghoshal (1998), Lin (1999), Paldam (2000) e Adler & Kwon (2002). As can be noted in the Figure 7 (See Appendix II) the central authors cited by the researches between 1996 and 2004 worked with the conceptual definitions, while the central references cited by researches between 2005 to 2013 operationalized the social capital construct, highlighting the work of Nahapiet & Ghoshal (1998).

At the end of the 90s, Portes (1998) advocated that an actor of the network that will lend a resource to another might have a reason for that. This motivation could be consummatory, i.e. solidarity or altruism; or instrumental where the purpose is to create rules in the group, for example, reciprocity and payback expectation.

Given the rational above, Portes (1998) operationalized social capital as the transformation of goods linked to a social network into benefits and duties for the actors. This transformation necessarily goes through a social structures and networks and the motivations are grouped in two categories: a consummatory and instrumental, see Figure 3

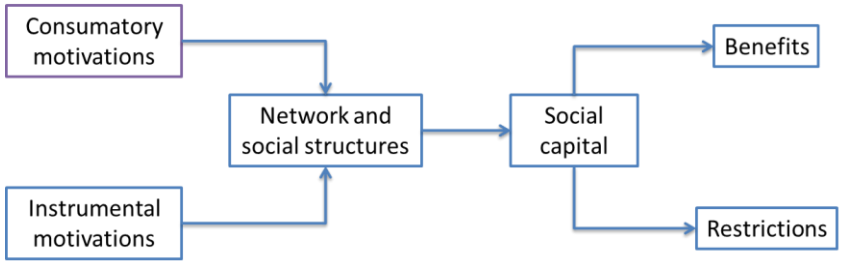

Figure 3 – Social capital model according to Portes (1998)

This way of operationalizing social capital suggested by Portes (1998), despite its substantial theoretical contribution, it was still very attached on its application in sociology. Given that, Portes (1998) suggested that this operationalization was suitable to be applied for researches of: a) source of social control; b) Family support; c) Extra familiar benefits. This focus on sociology makes this concept suggested by Portes (1998) difficult to be employed in studies in applied social sciences.

Unlike Portes (1998), Lin (1999) made it clear that social capital is a higher order construct and it manifests in two dimensions: access to resources and mobilization of resources. The fist dimension, "Access to Resources", is defined by: a) the set of assets that is available in the social network such as trust, norms, reciprocity and b) configuration of the network (Granovetter, 1973, Coleman, 1988). The second one, "Mobilization of Resources", according to Lin (1999) is influenced by the configuration of the network. The returns of the social capital are associated to tangible benefits (i.e. money) and intangibles ones (satisfaction, reputation, etc.).

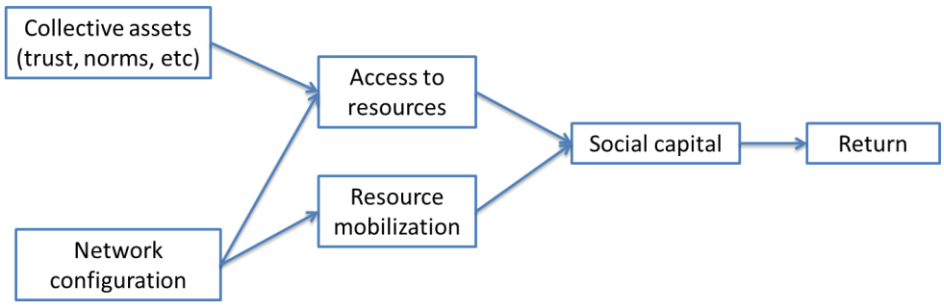

Figure 4 – Model of social capital according to Lin (1999)

The manner how this concept is operationalized by Lin (1999), in spite of having taken into account configuration of network, it assumes different perspective of Coleman (1988) regarding mobilization of resources. As discussed previously, Coleman (1988) believes that

obligations and sanctions of a dense and cohesive group can discourage opportunistic behaviors, thus, there is not necessary obligations to mobilize resource to create reputations or benefits for the group. However, this difference does not invalidate Lin (1999)'s model and it is frequently cited by later researches (Batt, 2008; Florin et al. 2003; Seibert et al. 2001; Wang et al. 2012).

Compared to the model proposed by Lin (1999), in a more modest approach, but not least efficient, Nahapiet and Ghoshal(1998) proposed another operationalization focused on elements that compose social capital and in a structured fashion. According to Nahapiet and Goshal (1998), social capital is a second order construct, multidimensional and composed not only by structural and relational aspects, but also by cognitive dimension.

Nahapiet and Goshal (1998) advocated that the structural dimension is defined by network characteristics, such as configuration, strength between nodes and its proximity (Granovetter, 1973; Coleman, 1988). The relational dimension is associated to trust, norms, reciprocity, obligations and identity of the agents (Coleman, 1988; Granovetter, 1985, Putman, 1995). Finally, the cognitive dimension represents how actors of the network interpret social phenomena and assign sense to reality. For these authors, cognitive dimension is equally important as the other two, once without a shared language, believe and symbology, there is low possibility to create social capital (Kogut & Zander, 1992, 1996; Nahapiet & Ghoshal, 1998). In spite of the importance of the cognitive dimension, it was not taken into consideration by other researches.

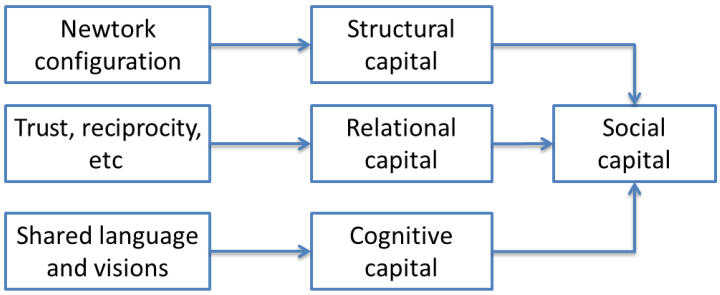

Figure 5 – Model of social capital suggested by Nahapiet & Ghoshal (1998)

Finally, Adler & Kown (2009), through an extensive literature review about this theme, suggested that social capital is originated by five elements: 1) rules; 2) norms; 3) believes; 4) trust; 5) social network. These five elements could be divided into those three dimensions proposed by Nahapiet & Goshal (1998), however Adler & Kown (2009; 2002) preferred to deal with them individually. The model proposed by Adler and Kown (2009) was initially proposed in 2002 (Adler & Kwon, 2002). The original model was very similar to the one suggested by Portes (1998) and Lin (1999), once it was focused on motivation and resource mobilization (Goal – Motivation – Ability). However, in the more recent study of 2009, the model became more similar to the one suggested by Nehapiet & Goshal (1998).

Despite the evolution between models of Adler & Kwon (2002, 2009), these authors highlighted in their models the benefits and risks associated to social capital. For them, the risks and benefits are attributes of the social capital and they will manifest in economic values. Moreover, Adler & Kwon (2002, 2009) let extremely clear that this attributes are influenced by contingent variables and complementary to other resources. Then, one certain benefit of the social capital can become a risk under one specific situation or vice versa. Some contingencies suggested are:

a) Task contingency: The benefits provided by the strength of the nodes will depend on the type of task to be realized. A strong link between nodes will beneficial to the group under stable situations and the task to be performed are associated to continuous improvement or exploitation. (Adler et al., 2009; Benner & Tushman, 2003; O'Reilly & Tushman, 2004). On the other hand, weak links are valuable under less stable situations and the task to be performed are based on innovations or new knowledge creation (Adler & Kwon, 2002).
b) Symbolic contingencies: It is important to highlight that norm and believes can also influence the manifestation of the strength of the link into benefits. For example, cultures that incentive collectivism between individuals can prompt values associated to strong links among nodes and reduce values of the weak links. On the other hand, cultures that emphasize entrepreneurship and innovation might inhibit values of the strong links and lever benefits of the weak link or structure holes.

Despite the several version of operationalization of the social capital, the model proposed by Nahapiet and Ghoshal (1998) was most referred between period of 2005 and 2008 (see appendix II) by diverse research area such as Operations Management (Carey et al., 2011; Krause et al. 2007; Villena et al., 2011), Industrial Marketing (Auh & Menguc, 2005; Hsieh & Tsai, 2007; Westerlund & Svahn, 2008), Human Resources and Innovation (Geletkanycz et al. 2001; Tian et al. 2011). The broad utilization of this model had also demonstrated its validity.

Therefore, from the three theoretical perspective approaching buyer-supplier relationship, this study judged that the social capital model suggested by Nahapiet & Goshal (1998), updated by Villena et al (2011), was the most appropriate to be adopted to in this research.

Additionally, Barney & Zhang (2008) also suggested that many studies that tried to explain relationship between companies in China end up in the social capital theory .

Social capital analyzes the relationship as an intangible good that can provide to the actors access to valuable resources that they do not control directly. This intangible good is intrinsic to the link between the agents, it does not belong to any of them and it manifest in three dimensions: structural, cognitive and relational.

The relational dimensions set the dynamism of the relationship where rules, norms and sanctions are created due to the structure of the network. In addition, trust, reciprocity and mutual expectations also contribute to keep cohesive the link between agents.

Conjointly with relational aspect, the cognitive dimension is fundamental to create the social capital through shared values, believes, languages and goals. It improves the communication, same basis for sense making, increases the willingness to collaborate, trust and reduce uncertainty and risks. (Morgan & Hunt, 1994; Nahapiet & Ghoshal, 1998).

4 Buyer/Supplier Relationship and supplier selection

In the prior chapters, it was disserted about selection criteria, analytical methods, and decision heuristics. It was observed that existing buyer-supplier relationship could be one of the decision criteria, and how crucial it is for the company's performance. This chapter will establish the link between buyer-supplier relationship and supplier selection as well as elaborate hypotheses to be investigated.

In the supplier selection literature, some studies separate criteria into "hard" and "soft" measures. The first group of criteria is those perfectly quantifiable measures such as quality, delivery, flexibility, warranty and service, while the second group is those more difficult to quantify, such as strategy alignment, empathy and relationship (Kannan & Tan, 2002). However, when quantifiable criteria are not able to differentiate the suppliers, buyers should employ some level of soft criteria to support their selection process, in this case, the quality of the relationship might be one of them (Lemke et al., 2000). This vision is also shared by Peng & Luo (2000) who reinforced that management connections can influence indirectly the decisions just as quality, delivery, propaganda and cost.

By reviewing the existing literature, it was noticed that the literature concerning buyer-supplier relationship explored, majorly, why and how companies should build their relations with others companies to extract more value from this interaction. Within this perspective, supplier selection should foster long-term relationship based on trust and collaboration, because it can increase information exchange, reduce opportunistic behavior, improve coordination, shared problem solving, flexibility and fairness (Brito et al., 2013; Chen et al., 2004; de Boer et al., 2001; Donaldson, 1994; Spekman, 1988; Swift, 1995; Xie et al., 2013).

Despite the benefits of supplier chosen basing on the long-term collaborative relationship, it is interesting for the buyer to conduct the supply initiatives once leaving it to the supplier, it might create elevation of cost, under commitment with innovation and possible barrier for new suppliers (Donaldson, 1994).

The trust between buyer and supplier mentioned previously can be built through the past performance of the supplier. If, since the first supply, the performance of the vendor exceeds the expected by the buyer, then buyer might feel satisfied, therefore, more probable to commit with future rebuy and trust (Swift, 1995). Additionally, the trust building between buyer and supplier can appear beyond action of supply, according to Huang et al (2008), it initiates with the price definition and proceeds into the negotiation phase.

Still under the umbrella of trust, under high uncertainty, turbulence and dynamic environments, decision makers might appeal to their trustworthy personal networks of suppliers to provide required products and services. Under these situations, task to qualify and evaluate if the suppliers from the markets will or not achieve the established requirements and specifications could become complex and costly, once the information might be distorted, not accurate nor updated (Heide & John, 1990; Peng & Luo, 2000; Xie et al., 2013).

By examining in detail the suggestion of Lemke et al (2000) from the social capital perspective, it is possible to assume that relationship quality can be divided into three dimensions (cognitive, structure and relational) and how embedded is the buyer and supplier in the network (Z. Chen et al., 2011; Moran, 2005; Villena et al., 2011). From the embeddedness in structural dimension, frequency and intensity of the information exchanges are evaluated and how close are the buyer and supplier. The intensity and closeness between

buyer and supplier are not synonym of quality by themselves, it should also be considered the type of information, its quality and relevancy, once redundant and overflow of information is not worthy, moreover too close with the supplier might induce new barrier to other suppliers (Moran, 2005; Villena et al., 2011).

Concomitantly, embeddedness in cognitive dimension might create shared languages, culture, visions, goals and business understandings. This dimension can create empathy and increase the willingness to cooperate. In addition, the embeddedness in relational capital creates trust, it also reinforce the willingness to commit as well as respect and reciprocity. Through the relational capital, it is also created the social norms and sanctions for relationship (Carter et al., 2007; Moran, 2005; Villena et al., 2011) . Putting together the effects of social capital with availability cognition and commitment heuristic, it is expected that buyer-supplier relationship will influence buyer to select the supplier with whom he has higher level of social capital, therefore, our second hypothesis to be tested was:

Hypothesis 2: *The higher is the social capital between the buyer and supplier, the higher will the buyer commit to the supplier.*

Extending the hypothesis 2, existing studies had already observed that supplier selection process and criteria can vary across nations (Minkov & Hofstede, 2012; Ribbink & Grimm, 2014; van der Rhee et al., 2009; Verma & Pullman, 1998), and China has been attracting attentions of the academia community and practitioners due to its economical relevance (Barney & Zhang, 2008; Hamilton, Knouse, & Hill, 2009; Nassimbeni & Sartor, 2007).

One particular point of China that intrigues researchers is the cultural issue concerning relationship. Hofsted (1988; 1985) had already observed this phenomenon when exploring the Confucianism, later, King (1991) had described in extreme detail that constructing a personal network is almost imperative in Chinese culture, once it is relation-oriented (*guanxi*-oriented) and it is used to mobilize resources and influences. As results of this resource mobilization, *guanxi* can impact positively on firm's growth and efficiency (Luo & Chen, 1997), net profit (Park & Luo, 2001), market share and return over assets (Peng & Luo, 2000), satisfaction of the buyer at the relationship maintenance stage (Z. Chen et al., 2011).

Many studies have explored relationship in China as a unique Sino-phenomenon; however, Barney & Zhang (2008) suggest that, despite the willingness to consider Chinese personal relationship as an exclusive phenomenon to that country, most of the models employed to study this issue pointed to the assumption of social capital theory. This suggestion slightly differs from the observation of King (1991), once social capital ignored the construction, philosophical and cultural aspects of the relationship. For example, while the Chinese family ethics is established between individuals, father-son, brother-sister, and husband-wife, the Japanese family ethics is established between members of the households and not between individuals. In spite of the limitation of the social capital theory, most of the researches have evaluated it as the most suitable approach to study an already established network of relationship, it is an consolidated model and it is broadly enough to model the relationship phenomenon, just as suggested by Barney and Zhang (2008).

Regarding supplier selection, Mummalaneni et al (1996) had already observed that Chinese supplier manager considered quality as the most important, followed by on-time delivery,

responsiveness to customer need, price/cost, quality of relationship with supplier, and professionalism of salesperson. In their conjoint analysis design, they exposed the buyer-supplier relationship (BSR) explicitly to the respondents; therefore, it might have not captured the subtleness of its influence, because the employment of relationship as supplier selection might be associated to the negative connotation (Gu et al. 2008; Liu et al. 2012; Wang et al. 2014; Warren et al. 2004). Additionally, Mummalaneni et al (1996) also suggested investigating how their results could be modified by a relationship oriented situations.

By incorporating the assumption of King (1991) that China is a personal relation-oriented society and personal network can be incorporated to the organization (Peng & Luo, 2000), then it is reasonable to consider that Chinese organizations are also some degree relation-oriented (*guanxi*-oriented). If personal network can mobilize resources and exert influences (Villena et al, 2009; Carey et al., 2007), then it is also feasible to presume that the personal relationship between buyer and supplier will influence on the decision-making. This influence should not be ignored, since more than 50% of the supplier selection decision are done by one individual (Lemke et al., 2000).

From the cultural perspective, basing on concept of social capital (Adler & Kwon, 2002; Moran, 2005), if higher is the social capital between the agents, then higher will be the commitment between the agents. Moreover, by the proposition of Evaristo et al., (2005), if more abstract is the organizational task, then higher is the influence of supranational and national cultures on it (linguistic, religion, ethnic, moral and social values). Therefore, it could be expected that if higher is the relation-orientation of a nation, then the buyers of that nation will rely more on their social network for their organizational tasks (Acquaah, 2007; King,

1991) and they will tend to commit more with the supplier under the influence of social capital. This logical relation between relation-orientation culture and level of social capital could be translated into the hypothesis 3a and 3b:

Hypothesis 3a: *In the relational situation, more relation-oriented buyer will tend to commit more with the supplier than lower relation-oriented buyer;*

Hypothesis 3b*: the more relational-oriented is the culture, the more the supplier selection decision will relay on the relationship;*

Back to some of the concepts discussed in the section 2.2, buyers will state explicitly the relevance importance of each supplier selection criterion in the decisional process, however, under multi-criteria trade-off decision, through heuristic (availability cognition, commitment and cultural biases) and legitimation perception; buyers will tend to demonstrate a discrepancy between actual and stated selection relevancies. However, prior studies that had observed discrepancies did not investigate the impact of the influence of the existing buyer-supplier relationship on the selection process. Mummalaneni et al (1996) investigated the Chinese managers' selection patterns, but had not investigated this pattern under relation-orientation effect. Meanwhile, Verma & Pullman (1998) had left out the relationship as selection criterion. Van der Rhee et al., (2009) investigated the cross-national differences but not the effect of relationship.

From the prior literature, Swift (1995) mentioned that multiple sourcing focused on low initial price of the product rather on the quality. However, single sourcing, the focus is on the collaboration, therefore, prioritizes the quality, delivery, communication and knowledge

transfer. Additionally, from the relational perspective, firms that foster long-term relationship should not focus on price, but on mechanism that build trust, commitment and willingness to collaborate (Ganesan, 1994; Morgan & Hunt, 1994; Nyaga et al., 2010). These mechanisms might increase initial cost of the collaboration due to training, specific investments and organization structure, however, they might increase the collaborative firm performance as ultimate result. Therefore, the present research stressed the study of Verma & Pullman (1998) by stating that price should be the most important decision criterion if there is low social capital between buyer and supplier, however, if there is a high social capital between buyer and supplier, the buyer will focus on quality (Dyer & Hatch, 2006a; Swift, 1995).

Hypothesis 4a: *Buyers that have lower level of social capital with the supplier will attribute higher relevance to price than buyer that have higher level of social capital with the supplier.*

Hypothesis 4b: *Buyers that have higher level of social capital with the supplier will attribute higher relevance to quality and delivery than buyers that have lower level of social capital with the supplier.*

Another factor that relates the buyer-supplier relationship with supplier selection is the legitimation that arises from the existing relation. Since fulfilled expectation, familiarity, proven and established performances are proxies for competences and values, therefore, legitimation might support the decision task and might also be easier to be recalled by the buyer (availability cognition). In this situation, legitimized suppliers might be more preferred than those without this resource (Carter et al., 2007; Hada et al., 2013; Packalen, 2007). This similar effect was observed on the investments decision of venture capitalists where higher social capital was similar to reputation of successful entrepreneur and it had legitimated them

to obtain more investments than those with lower social capital (Batjargal & Liu, 2004). In line with social capital theory, Coleman (1988) and Putman (1995) have also suggested that proximity between social members (bonding social capital) can also create the legitimation effect. Therefore:

Hypothesis 4c: *Under influence of high level of social capital, quality and delivery could be replaced by relationship through legitimation;*

Concerning the sustainability practices of the supplier, concepts from ethical positioning (Freestone & McGoldrick, 2007; S. H. Huang & Keskar, 2007; Sagar et al. 2011) had suggested that buying from the sustainable suppliers could improve reputation and better acceptance of the purchaser by the society. These benefits could positively impact indirectly the firm performance, therefore, supplier's sustainability should also be considered as selection criterion.

By considering the collaboration relationship between the agents, Klassen & Vachon (2008) suggested that more and more companies should improve their sustainability practices in the supply chain, therefore it is reasonable to expect, that once sustainability is one of the criterion, the higher is the collaboration, the higher will be the importance of the sustainability. Since, under low relational situation, buyers will still focus on price. From this inference, the hypothesis 4d could be suggested:

Hypothesis 4d: *Buyers that have higher level of social capital with the supplier will attribute higher priority for sustainability than lower level of social capital supplier.*

To operationalize the construct relationship or Chinese *guanxi*, prior studies explained that *guanxi* involves gift and favor exchanges, social activities, dinners and banquets, reciprocal obligations, mutual dependencies, feeling of indebtness and payback expectations. This type of relationship is a little bit different from the pure friendship or western commercial relationship; it includes long-term relationship cultivation through rituals of gifts-giving, dinners and banquets (Z. Chen et al., 2011; King, 1991). However, as ultimate purpose, these dynamic also has as goal of building trust, collaboration, expectation, reciprocity, norms and sanctions, therefore, social capital theory, as recommended by Barney & Zhang (2008) and Chen & Chen (2009a), fits perfectly in the modeling of this behavior and more specifically the relational capital.

Up to this moment, much has been discussed about selection criteria, selection decision-making, buyer-supplier relationship and its influence on the selection process. Through the literature review and hypotheses 2, 3 and 4, it could be expected that buyer-supplier relationship could lead organizations to a better performance and it also could contribute much to support the supplier selection through legitimation, trust, collaboration and support heuristic process. However, impacting studies had also demonstrated that relationship is also a two-edge sword, on one side, it engender positive effects to the company, on the other side, it erodes its benefits through suboptimal decisions, information overflow, opportunistic behavior, technological obsolescence, etc. (Gu et al., 2008; Tangpong, Hung, & Ro, 2010; Villena et al., 2011). In the next section, it will be discussed how potential harmful effects can manifest in collaboration relationships and how it can impact in the supplier selection decision.

5 Potential negative effects of collaboration

To establish a lasting and continuous collaborative relationship between buyer and supplier has been incentivated for more than 30 years (Dwyer et al., 1987; Helper & Levine, 1992; Morgan & Hunt, 1994; Ring & van de Ven, 1992; Webster Jr., 1992). The advantages, such as reduction of opportunism and uncertainty, increase of synergy, trust, commitment, shared values and strategies, cost reductions, increase of information exchanges, flexibility and fairness, etc. have been demonstrated, ratified and reinforced by diverse influential studies (E. Anderson & Jap, 2005; J. C. Anderson & Narus, 1990; Brito et al., 2013; Cao & Zhang, 2011; Grayson & Ambler, 1999; Kingshott, 2006; Luo & Chen, 1997; Villena et al., 2011).

In spite of these benefits, buyer-supplier relationship also carries some side effects, which is baptized by several studies as the dark side of collaboration. Among the existing studies, Villena et al (2011) suggested to categorize the harmful effects accordingly to the three dimensions of social capitals: structural, cognitive and relational.

From the structural dimension, the side effects might come from the proximity between buyer and supplier. The closeness induces a frequent and intense information exchange, it also makes them flow faster and with fewer obstacles; however, cohesive structure carries a high volume of redundant data and also reduces the acquisition of new and fresh information. Under this situation, buyers and suppliers might have an overflow of worthless information and face cognitive burden (Burt, 2000; Coleman, 1988; Molina-Morales & Martinez-Fernandez, 2009; Narasimhan et al., 2009; Villena et al., 2011).

From the cognitive dimension, the harmful effects might arise from the share culture, languages, visions, and believes. These shared aspects provide a common denominator to

develop the cooperation activities between buyer and suppliers. It works as a lubricant for the relationship, however, when network actors thinks too similarly, the group thinking or isomorphism appears and buyer and suppliers reduce their ability to generate new ideas that can challenge current status quo or to explore new situations and, ultimately, conducting to suboptimal decision making (Grayson & Ambler, 1999; Moorman et al., 1992; Uzzi, 1997; Villena et al., 2011).

From the last social capital dimension, relational aspect involves trust, mutual reciprocity, social norms and sanctions for the actors. These elements increase mutual commitment and psychological lock-in situation (Portes, 1998). All these factors improve the willingness to collaborate as well as increase in trust; however, they also generate the excessive of commitment and trust. The excessive level of trust might reduce the monitoring or safeguard mechanism between the agents, therefore, suitable for appearing of opportunistic behavior (E. Anderson & Jap, 2005; Grayson & Ambler, 1999; Villena et al., 2011). Concerning the opportunistic behavior, Ganesan et al (2010) demonstrated that reciprocity creates an unnecessary commitment and this commitment generates a buffer for opportunistic behavior in business-business relationship, therefore discourage buyer to switch supplier even under supplier's unethical or opportunistic behavior. Additionally, excess of relational embeddedness can also increase parochialism and inertia of the agents, then consequently, more vulnerable to macro environmental changes (Adler & Kown, 2009).

Now, extending the possible side effects of collaboration of the buyer-supplier relationships to the supplier selection, it is also possible to detect potential negative effects basing on two major assumptions: a) legitimation; b) commitment and trust.

As seen in the chapter 4, existing and personal relation between buyer and supplier can legitimize the supplier as capable, good quality, on-time delivery and requirement compliance. This legitimation could influence buyer through the availability cognition and make those suppliers that have higher level of relational capital be more preferred by the buyer. However, similarly to the relaxation in monitoring mechanism due to the relational capital, the legitimation based on relationship might relax the requirements for the supplier selection, therefore, buyer will legitimate not the highest performance supplier but the highest relational supplier. This effect is similar to the one that Xie et al (2013) observed, they suggested that buyers rely on the personal connections to make supply decisions under uncertainty situations. In addition to the legitimation's side effect, relational capital creates unnecessary commitment and elevates trust; then buyers tend to relax the safeguard mechanism giving conditions for appearance of the supplier opportunistic behavior. Applying it to the supplier selection process, it can be expected a relaxation of the requirements for the supply as well.

Extending the results of Villena et al (2011), through combination of legitimation, commitment and trust, it can be expected that buyer might tend to relax the supply requirements and will perform a less efficient decision compared to those buyers that have less relational capital with the supplier.

Hypothesis 5: *Buyer under influence of relational capital will relax in the quality, delivery and sustainability requirements.*

Part II – Methodology

This section aims to discuss and define the issues related to the methods to achieve the research purposes. To organize the discussion, it is divided into following major topics: research strategy definition and controlled experiment design.

6 Defining research strategy and methods

The construction of the scientific knowledge, unlikely to the popular one, requires objectivity, rigor, critical spirit and constantly search of explanations and solutions. Then, science is a construction process that cannot be done casually; it demands a structured and systematic process to achieve its purpose.

Regarding these structured and systematic investigation process, it cannot be affirmed that one is superior to another, but that one is more suitable than another to study a given phenomena. Therefore, the first and the most important criterion to be considered when defining a research strategy is the phenomena to be investigated, consequently the research question (Yin, 2002).

When the investigation is explanatory driven, then it aims to explore the phenomena, understand the existing dynamism and identify possible causal relationship among the involved factors. The main purpose in these situations is not to quantify frequencies, correlations or incidences, and then the most recommended research strategies are case studies, historical research and experiments. The differences among the three suggested strategies are the extension of controls that the researcher has on the effective behavioral

events and how emphasis the researcher gives to the historical against contemporaneous matters – see Table 3 (Stuart et al. 2002; Yin, 2002).

Table 3 - Major research strategies and form of question (source: Yin (2002))

Research strategy	Form of research question	Control of behavioral events?	Focus on contemporary event?
Experiment	How, Why?	Yes	Yes
Survey	Who, What, Where, When, How many, How Much?	No	Yes
Archive analysis	Who, What, Where, When, How many, How Much?	No	Yes / No
Historical research	How, Why?	No	No
Case study	How, Why?	No	Yes

Given the research question and purpose of the study stated in the chapter 1.1, this research adopts, deliberately, the one based on experiments due to: a) possibility of control and manipulation of the independent variables and investigate their effects; b) test effectively the causal relationship between the studied variables; c) contribute methodologically with the field of Operations Management, once this is extremely powerful and recommended research strategy to study decision making, however infrequent employed technique (Carter & Stevens, 2007; Rungtusanatham et al., 2011; Schulz, 1999).

7 Controlled experiments design and protocols

To investigate the phenomenon proposed in the chapter 1.1, this research has employed the controlled experiment with in two approaches: fist, the scenario-based role-playing and, second, the discrete choice analysis. The first one had as purpose the manipulation of the desired independent variable that will be used in the discrete choice analysis and the second

one aimed to investigate systematically the preferences of the respondent under successively comparison and trade-off situations.

7.1 Scenario-based role-playing design

The scenario employed in the present study was based on the study of Hui et al (2011) who investigated the contracting of a company to supply the computer equipment. The decision to employ the scenario of prior study as starting point was due to its proven realism and validity. The adoption of similar experiment scenarios by different studies of different authors is not unique to the present study, for example, Ganesan et al (2010) employed similar vignette of Joshi & Arnold (1997); however the "reuse" of the scenario is not just replicate the prior vignette as it is. In this situation, the background elements of the scenario could be reused, such as product, monetary values, roles, companies or even decisional situations, but the stimuli and independent variable should be adapted and coined to the respective studies. Afterwards, the adapted vignette with the stimuli should be re-validated and the dependent variables might be also changed.

In the present study, the experiment will be between subject and the respondents assumed the role of a purchasing agent of a company and his task is to acquire a lot of modified computer to support company's project. To reduce the influences of the unobserved variables, present research has delimited the purchasing situation according to the variables mentioned in the chapter 2.1.

Table 4 - Scenario variables definition

Purchase situation	References	Definition of scenario
Quantity of suppliers	Swift (1995), De Boer et al (2001)	Single supplier
Straight purchase or modified rebuy	De Boer et al (2001)	Modified rebuy: new LCD monitor requirements and identification system
Product to be purchased	De Boer et al (2001)	Critical and strategic product: Computer to support a new project
Role assumed	Hui et al (2001)	Purchasing agent
Purchasing process	Lemke et al (2000)	Requirements; quotation, qualification. Opt one supplier among three candidates;

Concerning the stimuli, present study manipulated the relational capital into high and low levels (see chapter 4 for the justification), while the structural and cognitive capitals were remained constant. The operationalization of these variables are based on Nahapiet & Goshal (1998), Villena et al (2011) and complemented by other prior studies (see Table 5). To compose the vignette, the background elements were the common module while the independent variable is the experimental cues module.

The manipulated element of the experimental module is described in the Table 5, afterwards tested and validated (see chapter 7.4). For the complete scenario please refer to Appendix V

Table 5 - Operationalization of the construct social capital and references

Dimensions	References	Operationalization	Level	Vignette
Structural	Nahapiet & Goshal (1998), Villena et al (2011), Moran (Moran, 2005), Lawson et al. (2008),Autry & Griffis (2008), Carey et al (2011), Rowley et al (2000)	Information exchange frequency and proximity	Constant	Technical information exchange between the buyer and any of the three suppliers happens when the buyer needs to purchase new products or problems must be solved.
Cognitive	Nahapiet & Goshal (1998), Villena et al (2011), Belliveau (1996), Carey et al (2011)	Shared value, languages, business vision, purpose and business understanding	Constant	The three suppliers have different business vision, goals and understanding slightly different among them. And they are also different from the buyer

Relational	Nahapiet & Goshal (1998), Villena et al (2011), Moran (Moran, 2005), Lawson et al. (2008), Autry & Griffis (2008), Rowley et al (2000), Carey et al (2011)	Friendship, trust, socialization, reciprocity	High	The buyer agent has personal relationship with one of the suppliers. They are friends and colleagues since college and socialization events are more often between this suppliers than the other two
			Low	The buyer agent has no personal relationship with any of the supplier. The relationship is strictly professional and socialization events are not often and the business are driven by contract.

7.2 Discrete choice analysis design

Several techniques can be used to support the decision maker and they might face trade-off in the multiple criteria selection process. Despite these techniques, prior studies observed that, in many cases, the final decision differs from the optimum one or even the stated one.

To capture the deviation between declared and actual relative importance of the selection criteria as well as the effect of the buyer-supplier relationship in this process, it is worthless to ask the respondent to rank explicitly the relative importance of each criterion, once the respondent will tend to answer that all the criteria are equally important and the outcome will provide low discriminant capacity. In this situation, the conjoint analyze technique can shed lights in this investigation (Johnson, 1974; Verma & Pullman, 1998).

Conjoint analysis is an efficient method to investigate, in a systematic manner, the relative importance (utilities) attributed to each observed criterion in the set of selection criteria. To achieve this purpose, conjoint analysis will create a set of reality-similar choices situation

based on the pre-defined criteria, and then present them to the decision maker. In many of these situations respondents are submitted into trade-off situation, they will have to compare their options, then choose the best alternative according to their evaluations or rank the alternatives that are presented to them in a sequential order. Afterwards, the responses can be analyzed through simply counting times an alternative was selected or logistic regression methods such as multinomial and conditional (Johnson, 1974; van der Rhee et al., 2009; Verma & Pullman, 1998). The analysis methods to be used will depend on the approach of the conjoint analysis deployed and in this study, conditional logistic regression was adopted (Ryan et al., 2012).

There are three main approaches for conjoint analysis methods: full profile conjoint, adaptive conjoint and choice-based conjoint. The first approach will elaborate and present to the respondents a set of choices with all the possible combinations of the attributes (selection criteria) and levels (characteristics of the selection criteria). For example two selection criteria (quality and price) with two level of each (high/low quality and high/low price) will result in 2 x 2 = 4 profiles and the respondents will have to rank each of the four profiles. The analysis method most used in this case is the Ordinary Least Square regression. Full profile conjoint is a relatively non complex approach; however, it is limited by the reduced number of selection criteria that it can handle, once five attributes with two levels each can be extremely challenging for this method as well as cognitive burden for the respondents (32 profiles).

The second approach is the adaptive or hybrid conjoint. In this case, the respondent will first answer the attractiveness of the levels of each attribute and then the importance of the difference between the most and least attractive level of attributes. Afterwards, the respondent

will be presented to a sub set of all the possible combinations between the attributes and levels. Despite of reducing the number of profiles to be evaluated by the respondents, it is also limited by the number of selection criteria as well as the full profile conjoint.

The third approach is the choice-based or discrete choice analysis. In this situation, a set of comparisons between created profiles will be presented to the respondents. Each comparison will be composed by two, three, four or fives profiles simultaneously and the respondent will have to choose the most attractive once. This can be considered as factorial conjoint once it extracts the orthogonal combinations among all the possible and the data analysis for this approach deploys multinomial logistic regression. The advantage of this method is the similarity with the real decision situation as well as larger quantity of attributes and levels that it can deal.

As can be seen in the chapter 2.1, supplier selection process involves a multi attributes decision and comparison between the potential suppliers, it is reasonable to adopt the third approach to investigate the phenomenon and this is also well accepted technique to investigate this event (van der Rhee et al., 2009; Verma & Pullman, 1998) .

7.2.1 Defining selection criteria and levels

The literature review of this study observed that quality, price, delivery are still the top three criteria when selection supplier in most of the cases (Y.-J. Chen, 2011; van der Rhee et al., 2009; Weber et al., 1991), and to assure that these criteria are still used, this research compared them to a set of attributes extracted from an extensive list of call of tenders from

diverse companies (see appendix IX). The adoption of call of tenders as part of metrics is because their rules are open to public, objective and transparent, which are essentials for a fair competitive situation.

Additionally to the prior three operational criteria, this study also included sustainability policies as one of the selection criteria. There is no doubt that sustainability practices can improve organizational performance through more efficient usage of raw material, (Rothenberg, Pil, & Maxwell, 2001), energy saving, waste recycling (Y.-S. Chen, Lai, & Wen, 2006) and better resource commitment (Daugherty et al. 2005). Moreover, buying products from a sustainable organization, purchaser can be legitimized as ethical, improve his reputation and became more accepted by the society (Freestone & McGoldrick, 2007; Sagar et al., 2011).

To conclude the list of attributes, the last criterion is the manipulated independent variable, the relationship between buyer and supplier. The variable is not demonstrated explicitly to the respondent, but name of the representatives and companies were employed as proxies and their manipulation were done in the vignette.

As suggested by Ryan et al., (2012), after having the attributes specified (quality, delivery, price, sustainability and relationship), the discrete choice design should establish the levels of each attribute. This study had defined the levels according to the current commercial situations. The quality and price levels were defined based on the actual computer suppliers (see appendix X). The delivery levels were defined on probability of delays and sustainability levels were based on ISO 14000 and reverse logistic (Y.-S. Chen et al., 2006). The last attribute, buyer/supplier relationship, were defined in three levels – three suppliers, due to

most of the selection process decides one supplier among three potential one. The final list of attributes and levels can be seen in the Table 6.

Table 6 - Attributes and levels for the discrete choice analysis

Levels	Attributes				
	Quality (% of defect product)	Delivery (Probability of delay)	Price (U$ / unit)	Sustainability (Practices)	Buyer/Supplier relationship
Level 1	0,001	0	U$ 1000	None	Nandroid computer – Claudio Siqueira
Level 2	0,01	5%	U$ 1200	ISO 14000	High Tech computer – Joao Alencar
Level 3	0,015	10%	U$ 1500	ISO 14000 + Recovery of used electronic devices	Top computer – Marcos Azevedo

7.2.2 Choice set design

As mentioned previously, in the full profile design, there will be $3^5 = 243$ profiles to be evaluated by the respondent which is not plausible, then the solution is to deploy the discrete choice analysis and the two major tasks are: a) define the profiles to be adopted and b) set of comparisons between the profiles. According to prior studies recommendation, there should not be more than 30 profiles to be evaluated and the most of the researches limit to 16 profiles or less to avoid degradation of the answer qualities (F. R. Johnson et al., 2013; van der Rhee et al., 2009; Verma & Pullman, 1998), therefore, present study also adopted 16 profiles.

To extract 16 profiles within 243 possible and to arrange them into 16 sets of three profiles per comparison, present study adopted XLSTAT that is based on D-Optimal algorithm for this goal. To see the full set of 16 profiles with the 16 comparisons please refer to Appendix VII. As there are 16 sets of three profiles per comparison totalizing 48 profiles to evaluate, it is extremely exhaustive for one respondent to perform all the conjoint tasks and also answer all

the other remaining questions; hence, it was split the 16 sets of comparisons into two blocks with 8 sets of comparison each (F. R. Johnson et al., 2013; Ryan et al. 2012).

Another recommendation for the discrete choice analysis is the balance of the design, which means that in perfectly balanced situation all levels of each attributes should appears equally frequent along the complete set of comparisons. As well as the extraction of the profiles and comparison sets, this task was done by the XLSTAT application and it is possible to see in the Table 7 that the balance is relatively good, where in average each level of each attribute appeared 16 times, which is 33.6% of chances considered three levels (F. R. Johnson et al., 2013; Ryan et al., 2012).

The last remark for the discrete choice analysis it the overlap among the level of attributes. Overlap means that the same level of attribute is assigned to different profiles in the same comparison set. Under overlapped situation, the respondent will have fewer attributes to evaluate in the set of alternatives, therefore, increase the response efficiency. However, too much overlapping might reduce also the efficiency of the design due to the limitation of the trade-off situation. Prior studies have not made any specific recommendations regarding this issue, once some statistical software works with no overlapping algorithm, some work with few overlapping and some others let the researchers customize this option (F. R. Johnson et al., 2013; Ryan et al., 2012; van der Rhee et al., 2009; Verma & Pullman, 1998). Taking this into consideration, present study worked with few overlapping of the attributes levels, which can be seen in the Table 7.

Table 7 - Level of balance

Attributes	Levels	Mnemonic	No. of appearances	%
Supplier	Nandroid	Supplier_1	18	37.5
	High Tech	Supplier_2	15	31.3
	Top Computer	Supplier_3	15	31.3
Quality	0.001	Quality_1	19	39.6
	0.01	Quality_2	12	25.0
	0.015	Quality_3	17	35.4
Delivery	0	Delivery_1	14	29.2
	5%	Delivery_2	15	31.3
	10%	Delivery_3	19	39.6
Price	U$ 1000	Price_1	15	31.3
	U$ 1200	Price_2	15	31.3
	U$ 1500	Price_3	18	37.5
Sustainability	None	Sustain_1	18	37.5
	ISO 14000	Sustain_2	15	31.3
	ISO 14000 + Recovery	Sustain_3	15	31.3

7.3 Dependent variable

The dependent variables in the discrete choice analysis are the alternatives selected and the independent ones are the levels of the selection criteria, however, what is important in the study are the utilities attributed to each of them (quality, delivery, price, sustainability and relationship). To estimate each utility, conditional logistic regression was deployed and through this method it was possible to estimate the probability of choosing a specific supplier given a set of attributes. In the linear model of conditional logistic regression, one level of each attribute was selected to be let out from the regression, their regression coefficients assume value 0 and will be used as references for regression coefficients of other levels of the respective attributes. When the obtained regression coefficient is negative, it means that the given level is less useful than the reference one, on the other hand, when the regression

coefficient is positive, it means that the given level is more useful than the reference one (Ryan et al., 2012). The model adopted for this research is demonstrated in the Equation 3 and the reference levels are those with lowest performance and the relational reference are the suppliers without relational capital in the vignette (Nandroid Computer and Top Computer). The suppliers were transformed into dummy relationship variable where the relational supplier is assigned 1 and non-relational assigned 0. The justifications for each reference are in the Table 8

$$V = \alpha_1 \cdot Relationship_{Yes} + \beta_2 \cdot Quality_2 + \beta_1 \cdot Quality_1 + \gamma_2 \cdot Delivery_2 + \gamma_1 \cdot Delivery_1 + \delta_2 \cdot Price_2 + \delta_3 \cdot Price_3 + \theta_2 \cdot Sustain_2 + \theta_3 \cdot Sustain_3$$

Equation 3 - Regression model for the utilities estimation

Where:

α, β, γ, δ, θ = regression coefficients associated to each level of selection attributes as recommended by Ryan et al (2012)

Table 8 - Reference levels and justification

Reference level	Description	Justification
Relationship_no	Supplier_1: Nandroid Computer – Claudio Siqueira Supplier_3: Top Computer – Marcos Azevedo	How useful is the supplier with relational capital when compared to the manipulated situation (without relational capital)
Quality_3	0,015 % of defect products	How useful are the increase of quality compared to the lowest quality level
Delivery_3	10% of delay probability	How useful are the decrease of delay compared to the worst delivery option
Price_1	U$1000	How useful are the more expensive alternatives compared to the cheapest.
Sustain_1	None sustainability practices	How useful are the increase of each practice compared to the “none” option.

7.4 Respondents and data collection

Definition of the respondent is crucial in the research process, Rungtusanatham et al (2008) suggested that a same survey conducted with respondents of different organizational hierarchy might produce different results due to the different information access. This remark in choosing respondent for survey should be also debated in the experiment strategy.

In the experiment, there is a debate about using student vs. non-student subjects. The advantages of using student in a controlled lab are easier for data collection and homogeneity, therefore, gain in the internal validity. On the other hand, critics advocate that students are not representation of the market, thus, the result cannot be generalized. To overcome these critiques, non-student or companies' employees could be used in the experiments, however, in this case, the data collection is harder and it also might introduce more heterogeneity.

Despite of the critiques concerning the usage of students in experiments, there are enough evidences that this type of respondents has been well accepted in top journals of Operational Management and other fields as well, such as economy and marketing, once manuscripts with this technique were published consistently and also encouraged (Croson & Donohue, 2006; X. Huang et al., 2008; Jap et al. 2013; Laran & Janiszewski, 2011; Ribbink & Grimm, 2014; Taylor & Taylor, 2009; Zhao et al., 2013). According to Highhouse (2009), experiments are the most potent research design to investigate the causal relationship between two variables, then it is extremely important to incorporate this strategy into social science research. In cases where the phenomenon investigated is related to fundamental human behavior, results from student subjects can be extended to real business situations.

Concerning results between experiments using students and practitioners subjects, from prior studies, Huang et al (2008) and Shen et al (2011) have found strong evidences that there were no differences between usage of these two type of subjects. These evidences reinforced that phenomenon based on fundamental cognitive and emotional process is subject independent, once participants are responding to social cues, goals and incentives stimuli based on their values.

Additionally, no controlled experiment will be able to mirror a "typical" organization, once there is no "typical" organization. In this case, is more important for the researcher to understand, emulate the causal process (A variable causes B effect) and set a proper design to capture this relation than debating the type of respondent (Highhouse, 2009).

Supported by the recommendations and justification of other studies, present research established as respondent's profile those graduated professional with at least 3 years of experience in their respective business. Our study does not impose any restriction regarding the industry, once the design of the experiment aims to capture the cognitive process of the respondents and how they face trade-offs in a purchasing decision making (Highhouse, 2009; X. Huang et al., 2008; Rungtusanatham et al., 2011; Shen et al., 2011).

The data collection took place in China and Brasil in order to investigate the cross-national phenomenon. The data collection in China was done through a paid survey service, which is similar to those services of Qualtrics, Survey Monkey and Amazon M-Turk. (Buhrmester, Kwang, & Gosling, 2011; Paolacci, Chandler, & Ipeirotis, 2010). The Chinese survey services used is called "So Jump -问卷星" (www.sojump.com) and it is the biggest data collecting platform in China, with 150 million of people in its respondent pools and has conducted more

than 4200 validated survey, totalizing more than 1.7 million of valid questionnaires. This survey platform has partnership with several universities and corporations such as Tsinghua University, Beijing University, Chinese University of Hong Kong, Macau University of Science and Technology, Philips, Carrefour, Bank of China and Walmart.

In order to assure the quality of the responses and the data collecting services, in the questionnaire, there were several control questions (reverse questions) as well as respondent profile control. If the control question or the profile control is not correct, the questionnaire is invalidated and the respondent was not paid. The inclusion of the money rewards is extremely important, once this type of motivation reduces the dishonesty and increases the chance of the respondent answers the questionnaire correctly (Paolacci et al., 2010).

The data collection in China was conducted in July 2014 and validated in august 2014. The profile of respondent was set according to the experimental design (graduated professional with at least 3 year of working experience). It was collected 200 questionnaires at cost of U$1.5 dollars for each valid one (control question and profiles corrects).

In Brazil, the data were collected mainly by two ways: a) Professionals from LinkedIn network with desire profile, mainly mid and senior managers; b) MBA students in two Business Schools (EAESP/FGV and Metrocamp). The data collection took one and half month (September/14 to October/14) and two types of collection methods were employed because of accessibility to the respondents. First one was online using Qualtrics and the second one was traditional paper questionnaires. All the respondents were randomly assigned to the scenarios and discrete choice analysis.

E-mail with link of the online experiment was sent to the professionals of the Linked In network and MBA students of EAESP/FGV and returned 70 complete questionnaires. At Metrocamp Business School, traditional paper questionnaire randomized then were let to be filled out in the MBA classes (Project Management and Business Strategy) and then collected. With this method, it was collected 181 complete questionnaires.

All the respondents (China and Brasil) were randomly assigned to a scenario and, just as China, the respondent in Brasil were also motivated the respondent to answer correctly. As reward, it was promised to return a report to the professionals who answer the survey and for the MBA students it was offered small gifts to fill out the experiment.

7.5 Validation and pre-test

To conduct the present research, both local languages were adopted (Chinese and Portuguese). Portuguese questionnaire was translated from a English version of vignette and the discrete choice analysis that were pre-tested and validated by using a sample of 22 students from MBA courses of China Europe International Business School (Shanghai) and graduated students from Escola de Administração de Empresas de São Paulo / Fundação Getúlio Vargas (EAESP/FGV). The manipulation check was based on the questionnaires of Villena et al (2011), Rowley et al (2000) and Carey et al (2011) and tested the cognitive, structural and relational capital. During the validation, it was also tested the variable commitment, which is based on Krause (2007) and Benton & Melani (2005) – See Appendix VI. Concerning the Cronbach alpha of constructs, all of them were ranging between 0.7 to 0.95, which had demonstrated consistency for the measurement. The only remark is the relational capital

construct, despite the α=0.984 for the control sample, the manipulated sample's alpha was at level of 0.5. This low level of Cronbach's alpha could be attributed to the effect of manipulation, since other variables' alpha were similar between the manipulated and control sample. Additionally, low number of respondents for the pre-test could have also influence on the high variability of the results. This expectation was confirmed once in the full sample, the Cronbach alpha of relational capital for the manipulated sample was 0.7.

As outcome of the validation and pre-test, it was observed, using ANOVA, that there were statistical difference in the relational capital when manipulate the High Tech Computer and its representative, Joao Alencar (see Table 9), through personal connection, friendship, socialization events and reciprocity. On the other hand, we found no statistical differences in the cognitive and structural dimension when manipulate the relational capital. The commitment between buyer and a supplier with higher relational capital is also higher than those without relational capital, this difference is statistically significant with p-value = 0.1 and according to expected.

Table 9 - Manipulation check, validation and pre-test of English vignette

Descriptive		n	Mean	Std. Deviation	p-value
Cognitive	With manipulation	11	4.27	1.05	0.173
	Without manipulation	11	3.21	2.26	
Structural	With manipulation	11	4.06	1.09	0.537
	Without manipulation	11	3.55	2.49	
Relational	With manipulation	11	5.43	0.79	0.016
	Without manipulation	11	3.43	2.39	
Commitment	With manipulation	11	5.18	0.85	0.102
	Without manipulation	11	4.11	1.90	

Through these verifications, we considered that the vignette and manipulation were designed properly according to the recommendations of chapter 7.1. To improve the final version of the

vignette and the comprehension of the questions, suggestions of the respondents were incorporated.

To run this research in China, the validated English version was translated into simplified Chinese, then sent to be evaluated and commented by four researchers of Operations Management, two researchers of Organizational Behavior and one of Economic Decision. This process took one and half month (May/14 to mid Jun/14) and three major versions have been worked. The pretest was conducted through a sample of 38 paid respondent from the Chinese survey services So Jump – (问卷星) (www.sojump.com). This service is similar to Qualtrics, Survey Monkey and Amazon Mturk, which has been considered an inexpensive source of reliable data (Buhrmester et al., 2011).

The result of the pre-test in China was quite similar to the English version (see Table 10). Despite the manipulation of the relational capital was a little bit above the acceptable p-value (0.127 > 0.10), it can be considered acceptable once increasing the number of respondents; the difference tends to become statistically significant. In addition, the Chinese pre-test respondents were also paid to fill out the questionnaire.

Table 10 - Manipulation check, validation and pre-test of Chinese vignette

Descriptive		n	Mean	Std. Deviation	p-value
Cognitive	Without manipulation	15	4.156	1.327	0.836
	With manipulation	23	4.246	1.300	
Structural	Without manipulation	15	3.822	1.408	0.485
	With manipulation	23	4.087	0.911	
Relationship	Without manipulation	15	3.800	1.222	0.127
	With manipulation	23	4.272	0.635	
Commitment	Without manipulation	15	4.389	0.806	0.531
	With manipulation	23	4.544	0.688	

Part III – Results and Discussions

In this section, sample is described, data and discrete choice model analyzed. It will be structured in: Brazilian results, Chinese results, comparative analysis and then the potential negative effect discussions.

8 Sample description

The total sample of the study is composed by 349 valid questionnaires, approximately, 48.1% are Chinese (168) and 51.9% Brazilian (181). 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 working experience between 6 to 20 years (79%). Furthermore, 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%).

Table 11 showed that 55.15% of the respondents where allocated to scenario without relational capital and 45.85% allocated to scenario with relational capital; these same respondents, 49.86% were assigned to answer the block 1 of the discrete choice and 50.14% the block 2.

Table 11 - Respondents allocations in the vignette and discrete choice blocks

		Relational capital		Total	Discrete choice		Total
		Without	With		Block 1	Block 2	
Country	China	94	74	168	82	86	168
	Brasil	95	86	181	92	89	181
Total		189	160	349	174	175	349

Unlikely the Chinese sample which as 100% online, Table 12 showed that 75.2% of Brazilian sample was collected at Metrocamp Business School, followed by 13.9% from LinkedIn professional network and 11.6% from EAESP/FGV Business School. To collect the Brazilian sample, 71.3% of them were gathered in loco through traditional paper questionnaire and 28.7% through online tools.

Table 12 - Distribution of the colleting methods and places of Brazilian sample

		Type		Total
		Paper	Online	
Location	Metrocamp	129	7	**136**
	LinkedIn	0	25	**25**
	EAESP / FGV	0	21	**21**
Total		**129**	**52**	**181**

9 Brazilian results

As recommended by Highhouse (2009), it is not possible to mirror a typical organization in the experiment, however, the experiment must emulate a real situation and to assess this issue, this study asked the respondent to rank, from 1 to 5 (1=totally different with the real situation; 5= extremely similar to real situation), how the vignette and purchasing tasks were similar to the real situation and the result (Mean = 3.86; SD = 0. 86) was a quite realistic vignette and tasks. As see in the Table 12, Brazilian sample were collected by two forms in three different locations, therefore ANOVA was employed to check if there were differences in the perception of the realism of the vignette due to difference locations and methods. Results demonstrated that there were no statistical differences regarding methods (M_{paper}=3.84; M_{online}=3.88; p=0.769) neither locations ($M_{Metrocamp}$=3.85, $M_{LinkedIn}$=3.88, $M_{EAESP/FGV}$=3.86; p=0.993). With these results, it could be sure that the vignette reflected a highly realistic

purchasing situation and also accomplished the realistic recommendation suggested according to prior research (Hora & Klassen, 2013).

9.1 Manipulation check

To check the effectiveness of the manipulation, first, it was checked if the collecting methods and respondent's profile had influenced the manipulation, and, as expected, there were no statistical differences[1]. The absence of statistically significant differences between profiles (students and professionals) in the manipulation was not surprising, once the phenomenon investigated concerns the fundamental human behavior (X. Huang et al., 2008; Shen et al., 2011), thus, reinforced the statement that students, as well as practitioners, can be adopted in this type of controlled experiments.

Considering that there were no statistical differences of the behavior of the sample regarding collecting methods neither respondent's profile, this study assumed that Brazilian sample is a one single sample. Therefore, results of ANOVA test (Table 13 and Table 14) demonstrated that relational capital was effectively manipulated, once the manipulated respondents exhibited a statistically higher value for this social capital dimension than the control sample ($M_{relat\_control}$=2.605; M_{relat_manip}=4.930; p=0.000). Meanwhile, cognitive capital had no statistical difference between control and manipulated sample ($M_{cog\_control}$=3.105; M_{cog_manip}=3.302; p=0.413), as well as structural capital ($M_{struc\_control}$= 3.070; M_{struct_manip} = 3.453; p= 0.08).

[1] As there are an extensive number of ANOVA tables, please refer to the Appendix XI.

Table 13 - Descriptive statistic of the variable manipulation vs. control

Descriptive statistic of control and manipulated respondents

		N	Mean	Std. Deviation	Minimum	Maximum
Cognitive	Control	95	3.105	1.585	1	5.67
	Manipulation	86	3.302	1.645	1	7
Structural	Control	95	3.070	1.604	1	6
	Manipulation	86	3.453	1.256	1	6
Relational	Control	95	2.605	1.526	1	5.75
	Manipulation	86	4.930	1.369	1.5	7

Table 14 -Anova of manipulation check for social capital dimensions – Brazilian samples

ANOVA

		SSQ	df	MSQ	F	Sig.
Cognitive	Between Groups	1.753	1	1.753	0.673	0.413
	Within Groups	465.976	179	2.603		
	Total	467.729	180			
Structural	Between Groups	6.632	1	6.632	3.156	0.077
	Within Groups	376.179	179	2.102		
	Total	382.812	180			
Relational	Between Groups	243.993	1	243.993	115.457	0.000
	Within Groups	378.279	179	2.113		
	Total	622.272	180			

9.2 Stated Buying preference

As observed by Verma and Pullman (1998) and Van der Rhee (2009), when purchaser are asked directly to evaluate how important is each of their decision criterion, they tend to declare that all of them are equally important and they state a rank that they believe to be valid for the selection process. This behavior is not unique to industrial purchaser; it is already well known in the field of Marketing (Johnson, 1974) and it challenges companies to understand what are the buyer's real priorities.

The above brief description is the basic assumption for the hypothesis 1a and 1b that intended to verify how buyers expressed their selection criteria priorities and how they perceived the importance of the relationship among the selection criteria. Before testing the two hypotheses, it was verified if the control and manipulated sample declared different importance to each selection criterion.

The verification shown that there were no statistical differences between control and manipulated sample regarding the stated relevance of quality ($M_{control}$=3.58, $M_{manipul}$=3.28; p=0.215), delivery ($M_{control}$=3.11, $M_{manipul}$=3.23; p=0.514), price ($M_{control}$=3.05, $M_{manipul}$=3.27; p=0.299), buyer-supplier relationship ($M_{control}$=2.64,$M_{manipul}$=2.48;p=0.5.24) and sustainability ($M_{control}$=2.73, $M_{manipul}$=2.75; p=0.939). These results were not surprising, once the stated relevance of the selecting criteria were personal and consciously asserted preference. They represented how respondents think that they were choosing the suppliers, and it is a pattern of purchasing behavior, therefore should be quite homogeneous in a population.

Once there were no statistical differences between control and manipulated sample, Brazilian respondents could be considered as one single sample and, in sequence, both hypothesis 1a and 1b could be tested. To proceed, ANOVA was adopted and evidences of different perceived priorities could be noted at Table 15 and Table 16 (p-value<0.001), therefore, additional pairwise tests were conducted.

Table 15 -descriptive statistics of stated selection criteria priorities – Brazilian samples

Descriptive statistic of stated importance of the selection criteria

	n	Mean	Std. Deviation	Minimum	Maximum
Delivery	156	3.16	1.133	1	5
Quality	154	3.44	1.477	1	5
Price	154	3.15	1.302	1	5
Relationship	155	2.57	1.591	1	5
Sustainability	156	2.74	1.378	1	5

Table 16 -ANOVA of selection criteria priorities - Brazilian samples

ANOVA of the stated selection criterion

	SSQ	df	MSQ	F	Sig.
Between Groups	77.122	4	19.28	10.053	0.000
Within Groups	1476.796	770	1.918		
Total	1553.917	774			

By analyzing the result of the pairwise tests, first, it was observed that quality was perceived more important than delivery ($p=0.045$), second, quality was also more important than price ($p=0.029$), third, no statistical difference were detected between delivery and price ($p=0.965$), fourth, no statistical difference was observed between BSR and sustainability ($p=0.267$), fifth, both BSR and sustainability were statistically less important than cost and delivery ($p<0.05$). Therefore, from deductive logic, it could be affirmed that quality is the most important, followed by delivery, price, and then sustainability and relationship, consequently, confirmed our hypothesis 1a and 1b, were buyers will state quality as most important, followed by delivery and price and the relationship will be perceived as the least important. These results were supported and consistent with prior seminal supplier selection studies (Y.-J. Chen, 2011; Dickson, 1966; Weber et al., 1991) and coherent with cumulative capability patterns and quality orientation (Amoako-Gyampah & Meredith, 2007; Bhuiyan & Baghel, 2005; Ferdows & De Meyer, 1990; Flynn & Flynn, 2004; Schonberger, 2007). Additionally, relationship as the least important declared criterion demonstrated that it might be associated to negative connotation.

9.3 Actual buying preference - discrete choice analysis

In the next section, discrete choice analysis was conducted to inquire the actual importance of each criterion in the selection process, for this purpose, conditional logistic regression was employed. The regression model and the reference levels are those in the Equation 3 and Table 8 as mentioned in the methodology chapter.

Two regressions were performed, the first one was performed with control sample, therefore, without the variable suppliers (proxy of the relational capital), once, at the control sample, and there are no differences between the relationships of the buyer with any of the three suppliers. The second regression was performed with the addition of the variable suppliers (transformed into dummy variable relationship_yes), once through the manipulation; relational capital was high between the buyer and the Supplier 2 (High Tech Computer) and compared it to suppliers with low level of this social capital dimension.

As outcome, the left side of the Table 17 demonstrated that in the absence of relational capital, the purchaser gave preference to highest quality product (α=0.3438; p<0.01), then, to the intermediate quality (no significant) and least priority to the lowest quality (reference).

Table 17 - Part worth of selection criteria (discrete choice model) - Brazilian sample

	Brasil					
	Without relationship			With relationship		
	Coef.	Std. Err.	p-value	Coef.	Std. Err.	p-value
Relationship_yes				0.5178	0.1280	0.000
Quality_1 (Best quality)	0.3438	0.1175	0.003	0.0932	0.1325	0.482
Quality_2 (Intermediate)	0.0353	0.1327	0.790	0.6033	0.1764	0.001
Delivery_1 (On-time)	-0.3428	0.1404	0.015	0.1782	0.1655	0.282
Delivery_2 (Mid possib. Delay)	0.1892	0.1100	0.085	0.7000	0.1216	0.000
Price_2 (U$1200)	-0.4035	0.1294	0.002	1.0035	0.1536	0.000
Price_3 (U$1500)	-0.7359	0.1330	0.000	-0.4777	0.1729	0.006
Sustain_2 (ISO 14000)	0.2486	0.1235	0.044	0.4274	0.1380	0.002
Sustain_3 (ISO + Recovery)	0.5119	0.1204	0.000	1.0288	0.1449	0.000

Surprisingly, regarding the products delivery, the purchasers seemed to not value on-time delivery as suggested by literature. When compared to the option of 10% of probability of delay, the buyers perceived on-time delivery less worthy than the worst performance level (α=-0.3428; p< 0.01). We speculate that this controversial result could be attributed to the excess of optimism and to the probability of delay was not the delay itself; therefore buyers did not perceive the third option as lower performance once the requested product could still possibly arrive on time.

Moving to the next criterion of the Table 17, it was noted that lowest price level (U$1000)[2] was the most attractive for the buyer, followed by the intermediate ($\alpha_{U\$1200}$=-0.4035; p<0.01) and at last the most expensive alternative ($\alpha_{U\$1500}$=-0.7359; p< 0.01). This result was not surprising once Verma & Pullman (1998) had already observed that price was the selection driver although purchasers had declared quality.

At last, under no influence of relationship, Table 17 showed that the respondents also preferred those with more sustainability practices than less ($\alpha_{ISO14000}$ = 0.2486; P-value < 0.05, $\alpha_{ISO+Recovery}$ = 0.5119; P-value < 0.01). This result was also expected based on the ethical positioning (Sagar et al., 2011), once, from the results, respondents considered (Likert scale 1 to 7) sustainability practices as synonym of better ethical reputation and acceptance by the society and not as just regulation and obligation ($M_{Sustain\_ethic}$=5.60, SD=1.06; $M_{Sustain\_regul}$=3.53, SD=2.00; p<0.001) .

By comparing the results of the control sample with the manipulated one, it is feasible to note some changes in the part worth of the attributes' level. The right side of the Table 17

[2] For the conjoint level, please refer Table 6

demonstrated that while in the control sample the most worthy level of the quality attribute was the one with lowest defect rate, under relational capital influence, the best quality level became insignificant and the intermediate quality level was considered the most relevant ($\alpha_{quality\_2}$=0.603; p<0.001).

Table 17 also indicated that while the most worthy level of delivery for the control sample was 10% probability of delivery delay, in the relational situation, the most relevant level was the 5% of probability of delay ($\alpha_{delivery\_2}$=0.700; p<0.001). In addition to quality and delivery, it was also observed an inversion of utility of the price's levels. While, the lowest price was the most useful level for the control group, under relational capital influence, respondents were willing to pay more for the same product, once, the U$1200 price seemed more worthy ($\alpha_{U\$1200}$=1.003; p<0.001) than highest and lowest price. Finally, there were no differences in sustainability between control and manipulated sample, once the both considered that more sustainability practices better is the supplier.

From this comparison, it could be infer theTable 18, which contains the most attractive option for the control and manipulated Brazilian sample. Once assumed that the suppliers are located in the same region of the buyer, they have the same problem-solving and production capability, they will accomplish all the technical, legal and financial requirements; buyer with low relation capital with supplier will tend to find product with best quality, cheapest and perform most sustainable practice as the most attractive option. In this situation, buyer will not care about 10% of probability of delay since it is not delay itself.

However, if there is high relational capital between buyer and supplier, the most attractive option changes subtly. Under influence of relational capital, buyers seem to perceive a little

bit less importance in quality and they will to pay more, but also require less probability of delay and equally strict regarding sustainability. It seems that under relational capital influence, buyers exchanged both quality and price with better delivery performance.

Attributes	Without relational capital	With relational capital
Quality	0.001% of defects	0.01% of defects
Delivery	10% of probability of delay	5% of probability of delay
Price	U$ 1000	U$ 1200
Sustainability	ISO 14000 + Recovery of used products	ISO 14000 + Recovery of used products

Table 18 - Most attractive options for control and manipulated sample

9.4 Stated vs. actual buying preference

The part worth of each level of the attributes obtained at the Table 17 demonstrated how the Brazilian sample perceived the importance of each of level and what was the most attractive alternative for the respondents (Table 18). Extending the results of the part worth, it was possible to check the influence of the overall importance of each one of the five attributes on the sample's choice. To perform this investigation, Equation 4 suggested by Bakken & Frazier (2006) was employed. First, the difference between the regression coefficients of the most and the least preferred level of each attribute was calculated; afterwards, these differences were summed and then calculated the percentage of each difference related to the total sum. The results of these calculations are in the Table 19

$$W_i = \frac{(\alpha_{\max\_i} - \alpha_{\min\_i})}{\sum_{i=1}^{n}(\alpha_{\max\_i} - \alpha_{\min\_i})}$$

Equation 4 - Overall weight of each attribute calculation

Where: i = attribute; n = total number of attributes; α = coefficients of the regression.

Table 19- Overall weight of each attribute at the Brazilian respondent decision

		Brasil					
		Without relational capita			With relational capital		
Attributes	Levels	Coef.	(Max-Min)	%	Coef.	(Max-Min)	%
Relational capital	Relationship_yes				0.5178	0.5178	12%
	Relationship_no				0		
Quality	Quality_2	0.0353			0.6033		
	Quality_1	0.3438	0.3438	18%	0.0932	0.6033	14%
	Quality_3	0			0		
Delivery	Delivery_2	0.1892			0.7000		
	Delivery_1	-0.3428	0.3428	18%	0.1782	0.7000	16%
	Delivery_3	0			0		
Price	Price_2	-0.4035			1.0035		
	Price_3	-0.7359	0.73591	38%	-0.4777	1.4812	34%
	Price_1	0			0		
Sustainability	Sustain_2	0.2486			0.427		
	Sustain_3	0.5119	0.5119	26%	1.0288	1.0288	24%
	Sustain_1	0			0		
	Total		1.9345	100%		4.3310	100%

By checking the left side of the Table 19 where buyers had low relational capital with any of the suppliers, it could be observed that decision making was mostly influenced by price (38%), followed by sustainability (26%), then quality and delivery (18% each). This sequence confirmed the hypothesis 1c, where stated priorities were different from those actual once. In this case, the emerged sequence was price, delivery, quality and sustainability (Table 20). The result reinforced the finding of Verma & Pullman (1998) who observed the price and delivery as the decision driver and differs from the study of Choi & Hartley (1996) where the price was the least important. This result was also partially similar to investigation of Van der Rhee et al (2009) where price could the third most important criterion for the selection of the English-French-Italian sample. The high importance of the sustainability could be explained by the perception of the buyer regarding quality and delivery levels. According to Kannan &

Tan (2002), once these levels could not support purchasers to differentiate the performance of the supplier, buyers will look for some other criteria, in this case, the sustainability.

By analyzing the right side of the Table 19 where the supplier 2 (High Tech Computer) was manipulated with high level of relational capital and the other two suppliers remained with low level of this capital, it was observed that the price was still the attribute that had most influenced the decision making (34%), followed by the sustainability (24%), then delivery (16%), quality (14%) and relationship (12%). From this outcome, it could be inferred that decision-making remained similar between the both samples (control and manipulation). The both sample had focused on the price as top priority, followed by sustainability, then delivery, quality and relationship. Thus, the relational capital was considered by the manipulated sample just another criterion as quality or delivery and did not received extra attention.

By analyzing the result, it could be observed that price have equally high influence on the decision-making independently of the relational capital ($M_{withtout}$=38%, M_{With}=34%), consequently, rejecting our hypothesis 4a. This result does not contradict the finding of Table 18, once, the both price levels exerted approximately 30% of influence on the decision-making, and the manipulated sample were willing to pay U$200 more than the control sample, and perceived U$1200 as more attractive than U$1000.

By checking the importance of quality and delivery under relational condition, it was noted that their relative importance had not decreased too much while compared to the no-relational condition, therefore, rejecting the hypothesis 4b. In addition, the relational capital importance was still lower than quality and delivery. Thus, we inferred that there might be a slight effect of legitimation, but, relationship had not replaced quality neither delivery, and it was

considered just another selection criterion. This result also demonstrated that buyers will tend to use "soft" criterion to complement the selection process and to differentiate suppliers when "hard" measures could not differentiate them (Kannan & Tan, 2002). As consequence, the hypothesis 4c was rejected for the Brazilian sample.

Concerning the hypothesis 4d, no change was observed between the priority of sustainability when compare the relational and no-relational sample, therefore it could also be rejected. Summarizing the stated and actual buying relevance of each selection criterion of the Brazilian sample, it could be inferred the Table 20.

Table 20 - Stated vs. actual selection preferences - Brazilian sample

	Supplier selection criteria		
Relevance	**Stated**	**Actual (Without relational capital)**	**Actual (With relational capital)**
1	Quality	Price	Price
2	Delivery / Price	Sustainability	Sustainability
3		Delivery / quality	Delivery
4	Sustainability / relationship		Quality
5			Relationship

9.5 Commitment and Relationship

Several studies had scrutinized the link between buyer-supplier relationship and commitment and trust had emerged as one vital element of this association (J. C. Anderson & Narus, 1984; Kingshott, 2006; Morgan & Hunt, 1994; Narasimhan et al., 2009). The relational capital of the buyer-supplier relationship incentives trust, reduce uncertainty, suggests social norms and implicit rules, it also creates reciprocity; raise mutual obligations and expectation of payback. Combining these aspects, hypothesis 2 suggests that buyer will tend to commit more with the supplier that has higher level of relational capital with him.

From the results of the Brazilian sample, the buyer was statistically more committed to the supplier with whom he had higher relational capital than lower relational capital (M_{commit_low}=4.12; M_{commit_high}=4.51; p=0.04). Hence, the hypothesis 2 could be confirmed for the Brazilian sample.

10 Chinese results

10.1 Manipulation check

Following the same procedure applied to the Brazilian data, the first step was to assess the effectiveness of the vignette manipulation and, for this purpose, ANOVA was employed. The Table 21 and Table 22 indicated that manipulation was effective once the manipulated sample exhibited higher relational capital than the control sample ($M_{relat\_control}$ = 3.073; M_{relat_manip} = 5.047; p < 0.001), while cognitive has no statistical difference ($M_{cog\_control}$ = 2.824; M_{cog_manip} = 2.826; p= 0.991), neither the structural capital ($M_{struc\_control}$ = 2.817; M_{struct_manip} = 3.140; p = 0.08).

Table 21 -Statistic description of the manipulation check - Chinese sample

Descriptive statistic of social capital dimension manipulation

		n	Mean	Std. Deviation	Minimum	Maximum
Cognitive	Control	89	2.824	1.243	1	5.33
	Manipulation	69	2.826	1.223	1	5
Structural	Control	89	2.817	1.212	1	5.67
	Manipulation	69	3.140	1.001	1	5
Relational	Control	89	3.073	1.008	1	4.75
	Manipulation	69	5.047	0.796	3.25	7

Table 22 -ANOVA of Chinese sample manipulation check

ANOVA for the social capital manipulation

		SSQs	df	MSQ	F	Sig.
Cognitive	Between Groups	0	1	0	0	0.991
	Within Groups	238	156	1.524		
	Total	238	157			
Structural	Between Groups	4.07	1	4.07	3.216	0.075
	Within Groups	197	156	1.266		
	Total	201	157			
Relational	Between Groups	151	1	151.463	178.414	0.000
	Within Groups	132	156	0.849		
	Total	284	157			

10.2 Stated buying preference

Moving forward with the analysis, it was investigated the relevance of each stated buying criterion from the Chinese sample and ANOVA was employed. First, to check perception homogeneity between the control and manipulated sample, relevance of selection criterion was defined as dependent variable, and the independent is the presence or absence of relational capital (manipulated vs. control). Just as expected, no statistical differences were observed between control and manipulation regarding the stated relevance of each buying criterion ($p_{delivery}$=0.514; $p_{quality}$=0.215; p_{price}= 0.299; $p_{relationship}$= 0.524; $p_{sustain}$= 0.939). This outcome demonstrated that the relevance of these selection criteria was personal perception of importance and they were manifestation of how respondents thought they were selecting.

After finding out that there were no difference between control and manipulated sample, it is acceptable to consider the Chinese sample as one single sample regarding the stated buying preference, therefore, ANOVA was adopted again to inquiry this issue. As outcome, Table 23

and Table 24 indicated that there are statistically significant differences between the importance attributed to the buying criteria and additional pairwise test were conducted.

Table 23 -descriptive statistics of the selection criteria priorities - Chinese samples

Descriptive statistic of the supplier selection criteria

	n	Mean	SD	Minimum	Maximum
Delivery	167	2.95	1.14	1	5
Quality	162	4.30	1.08	1	5
Price	161	3.30	1.18	1	5
Relationship	164	1.72	1.06	1	5
Sustainability	167	2.94	1.26	1	5

Table 24 -ANOVA of the selection criteria priorities - Chinese samples

ANOVA of the supplier selection criteria

	SSQ	df	MSQ	F	Sig.
Between Groups	556.025	4	139.006	105.922	0.000
Within Groups	1070.878	816	1.312		
Total	1626.904	820			

From the pairwise test, it was noted that quality was statistically stated as more important than price (p<0.001) and more than delivery and sustainability (p<0.001). Price was asserted as more important than delivery (p<0.01) and sustainability (p<0.05). After that, no statistical difference was observed between delivery and sustainability (p=0.936) and the both were more important than relationship (p<0.001). From the logical deduction, it could be inferred that the sequence of the stated priority was: 1. Quality; 2. Price; 3. Delivery/Sustainability; 4. Relationship. From this sequence, the hypothesis 1a and 1b were confirmed. While the quality was stated as the most important criterion, the relationship was considered as the least relevant.

The relationship declared as least important criterion was a little surprising for the Chinese sample, once several studies have demonstrated that China is a society based on relationship

(Z. Chen et al., 2011; King, 1991; P. K. C. Lee & Humphreys, 2007; Park & Luo, 2001; Warren et al., 2004), therefore, it should not be so irrelevant. However, its negative connotation, which is associated to bribery, injustice or corruption, could be assumed as one of the reason that made it been stated as lowest relevant selection criterion (P. Wang, 2014; Warren et al., 2004).

10.3 Actual buying preference – discrete choice analysis

After having found out the declared buying preference, to identify the actual purchasing priorities, it was performed two conditional logistic regressions and the references levels were those that were already mentioned in the methodological section (see Table 8).

By performing the conditional logistic regression, from the left side of the Table 25, it is possible to note that under no-relational situation, among the three level of quality, the respondents perceived the best quality offer as the most worthy ($\alpha = 0.3383$; $p < 0.01$), followed by the lowest quality alternative and the intermediate level was non significant.

Table 25 - Part worth of selection criteria (discrete choice model) - Chinese sample

	China					
	Without relationship			With relationship		
	Coef.	Std. Err.	p-value	Coef.	Std. Err.	p-value
Relationship_yes				0.5716	0.1235	0.000
Quality_1 (Best quality)	0.3383	0.1150	0.003	0.2041	0.1259	0.105
Quality_2 (Intermediate)	0.0602	0.1337	0.652	-0.1972	0.1496	0.188
Delivery_1 (No delay)	-0.4773	0.1381	0.001	-0.2534	0.1523	0.096
Delivery_2 (Mid possib. Delay)	0.2170	0.1050	0.039	0.0860	0.1169	0.462
Price_2 (U$1200)	-0.0599	0.1276	0.639	-0.3298	0.1400	0.018
Price_3 (U$1500)	-0.4523	0.1304	0.001	-0.6228	0.1435	0.000
Sustain_2 (ISO 14000)	0.1685	0.1240	0.174	0.1523	0.1322	0.249
Sustain_3 (ISO + Recovery)	0.6626	0.1178	0.000	0.1539	0.1318	0.243

Regarding the delivery criterion, the control sample valued more the mid probability of delay alternative ($\alpha = 0.217$; $p<0.05$), followed by the highest delay probability alternative and considered the on-time delivery alternative the least useful ($\alpha = -0.4774$; $p<0.001$). The reason for this behavior might be similar to the one observed in the Brazilian sample where probability of delay was not delay itself, therefore, on-time alternative might be not so attractive.

In term of price, the control sample preferred the cheapest alternative to the most expensive offer ($\alpha = -0.4523$; $p<0.01$) and concerning sustainability; they also perceived the option with more practices as the most useful ($\alpha = 0.6626$; $p<0.001$).

By analyzing the selection decision with relational influence, from the right side of the Table 25, it is possible to observe that buyer will prefer suppliers with whom he has relationship ($\alpha = 0.5716$; $p<0.001$). However, buyers did not find any of the two other quality levels (α non significant) more attractive than the lowest quality alternative. Concerning delivery alternatives, manipulated sample preferred the option that suggests 10% of probability of delay than on-time delivery ($\alpha = -0.2534$; $p<0.1$). Once more, as the possibility of delay is not delay itself, the respondents might be optimistic to expect on-time delivery even in those suppliers that have a record of 10% of probability of delay.

Regarding the price attribute, the manipulated sample could be considered, like the control sample, as price sensitive once buyers preferred the lowest price to those higher prices alternatives ($\alpha_{U\$1200} = -0.3298$; $\alpha_{U\$1500} = -0.6228$; $p<0.05$). Finally, the sustainability seemed to be less important in the manipulated condition once the both option with sustainability practices were worthless for the respondents (α non significant).

From the reasoning above, it is possible to deduce the alternatives that had best attracted the Chinese sample in the Table 26.

Table 26 - Most attractive options for control and manipulated sample

Attributes	Without relational capital	With relational capital
Quality	0.001% of defects	0.015% of defects
Delivery	5% of probability of delay	10% of probability of delay
Price	U$ 1000	U$ 1000
Sustainability	ISO 14000 + Recovery of used products	None

10.4 Stated vs. actual buying preference

To inquire the possible discrepancy between the stated and actual buying preferences, Equation 4 was performed for the Chinese sample and calculated how each attribute had influenced the decision-making of the respondents and the results are presented in the Table 27.

As can be observed in left side of that table, in the control sample, the two most important were the delivery (37.1%) and sustainability (35.4%), followed by the price (24.2%) and the attribute that had least influence on the decision-making was quality (3.2%). Once more, the low impact of the quality on the decision-making did not contradict the preference for the mid-range quality alternative, but it demonstrate that in the trade-off situation, buyer will attribute much more priority for the delivery than any level of quality.

From the non-relational situation, it could be observed that the results had confirmed the hypothesis 1c. While the most important stated criteria was the quality and price, in the actual no relational situation, the respondent preferred the delivery and sustainability.

Table 27 - Overall weight of each attribute at the Chinese respondent decision

		China					
		Without relationship			With relationship		
Attributes	Levels	Coef.	Max-Min	%	Coef.	Max-Min	%
Relational	Relationship_yes				0.572	0.572	39.5%
	Relationship_no						
Quality	Quality_1	0.338(n.s)			0.204(n.s)		
	Quality_2	0.060	0.060	3.2%	-0.197(n.s)	0.000	0.0%
	Quality_3	0.000			0.000		
Delivery	Delivery_1	-0.477			-0.253		
	Delivery_2	0.217	0.694	37.1%	0.086(n.s)	0.253	17.5%
	Delivery_3	0.000			0.000		
Price	Price_1	0.000			0.000		
	Price_2	-0.060	0.452	24.2%	-0.330	0.623	43%
	Price_3	-0.452			-0.623		
Sustainability	Sustain_1	0.000			0.000		
	Sustain_2	0.169	0.663	35.4%	0.152(n.s)	0.000	0.0%
	Sustain_3	0.663			0.154(n.s)		
Total		1.869			1.448		

Differently from the control sample, from the right side of the Table 27, it is possible to observe that quality had no significant influence on the decision-making, and delivery had also decreased drastically its influence on the buyer (37.1% → 17.5%). In addition, quality and sustainability had also become insignificant; meanwhile, price had become the most influential attribute for the manipulated sample (24.2% → 43%). Finally, Chinese sample under relationship influence, the relational capital is not just another criterion, but one of the main criterion that can influence the decision-making (39.5%).

From the prior results, it could be noted that statement of hypothesis 4a neither 4b, could be confirmed, once price was the third most relevant and the most important attribute under relationship situation. Additionally, it was observed that under high relational condition,

buyers tended to replace quality, delivery and sustainability by the relationship, which is a proxy of legitimation, thus, confirming the hypothesis 4c. Finally, the hypothesis 4d, which suggested higher preference for sustainability practices under relational situation could not be confirmed neither, once this attribute, through the influence of relational capital became non significant for the decision-making.

By examining the results and the hypothesis, it could be observed that there were strong evidences that had demonstrated discrepancy between stated and actual selection relevancies. When respondents were asked to declare their preferences, quality was the top priority. However, the actual preference showed that quality had only 3.2% of influences over the decision-making even lower under relational situation. Under high relationship condition, quality was non significant for the supplier selection.

Among the five selection criteria, price prompted as an interesting attribute. While respondents declared it as the second most important, during actual decision it became the third most influential with 24.2% of impact on the decision-making and it assumed the most important position under relational situation with 43% of influence on the selection. The increase of its importance might be due to the legitimation effects of relational capital, once the trust of the relational capital can legitimate the supplier as good quality, on-time delivery, and sustainable (Batjargal & Liu, 2004; Coleman, 1988), therefore, the only two criteria to be used for decision were price and relationship.

Finally, on the ride of legitimation, the stated importance of sustainability was also neglected under relational capital effect. Therefore, with these observations we could deduct that stated preferences are built by personal experiences or existing knowledge, for example, cumulative

capabilities and quality orientation (Rosenzweig & Easton, 2010; Zhao et al. 2006). However in the real purchasing situation, buyers are exposed to a multi criteria decision situation where trade-offs must be dealt. In this situation, it was observed that respondents were caught by their own cognitive traps where quality was sometime ignored and price began to gain relevance. Intriguingly, when the respondents were manipulated by relational capital, the price and relationship became the two major criteria to be employed for the selection process, which reflected the facet of Chinese relation-oriented culture (King, 1991). From the above rational, it is possible to synthesize outcome in the Table 28.

Table 28 - Stated x actual buying preferences - Chinese sample

	Supplier selection criteria		
Relevance	**Stated**	**Actual (Without relational capital)**	**Actual (With relational capital)**
1	Quality	Delivery / Sustainability	Price
2	Price		Relationship
3	Delivery / Sustainability	Price	Delivery
4		Quality	
5	Relationship		

10.5 Commitment and Relationship

Regarding commitment and relational capital, hypothesis 2 suggested that buyer will tend to have higher commitment with the supplier with whom he has more relational capital, and from the Chinese sample, it could be observed from the results that the manipulated sample had statistically higher commitment with the relational supplier than the control sample ($M_{commit\_control} = 4.275$; $M_{commit\_manip} = 5.104$; $p < 0.000$), thus, confirming the hypothesis 2.

11 Brazilian-Chinese buyers comparison

Each nation has its unique culture and values, Hofstede (1985), through his remarkable work, had mapped a set of organizational value system that varies from country to country. Later, more researches had explored and extended the original value system stated by Hofstede. For example, Hamilton et al (2009) explored the different business environments between China and western countries; Wederman (2013) investigated the commercial bribery in China; Feng et al (2011) studied the cognitive of Chinese culture of doctrine of mean and its impact in the stock management; Cui et al (2013) explored how Chinese culture of product utility differed from the western's and how it can influence the inventory management. Among many phenomena, a recurrent subject when approach cross national comparison with China is the Chinese relationship dynamism, known as "*guanxi*", and its influences on the business (Barney & Zhang, 2008; Park & Luo, 2001; Peng & Luo, 2000).

Reinforcing existing studies, this study had also observed differences in the Chinese and Brazilian sample regarding cultural perception. In the present study, it was compared, through a Likert scale ranging from 1 to 7, how these both sample perceive the importance of relationship that emphasizes simultaneously the exchange of favors, gifts and socialization; cultivation of personal relationship and mutual dependencies and creation of obligations and duties. And just as expected, the Chinese sample perceived this type of relationship more useful than Brazilian sample ($M_{Brasil}=4.937 < M_{China}=5.460$; $p < 0.001$). From this result, this study had strong evidence to affirm that, apparently, the Chinese culture is a little bit more relation-oriented than the Brazilian one.

By confirming the cultural difference between Chinese and Brazilian sample the, it is possible to assess the hypothesis 3a, which suggested that more relational-oriented is the culture, more the buyer will tend to commit to the supplier. This hypothesis was built based on the assumption that the trust, reciprocity, mutual expectations and obligations and social norms have more relevance in the social dynamism for the higher relation-oriented culture than the less oriented. And from the results of the present research, it was observed that the Chinese buyers had, indeed, higher commitment with the supplier that had high level of relational capital than the Brazilian purchasers ($M_{commit\_BR}=4.30 < M_{commit\_CHN}=4.64$; $p < 0.01$), therefore, confirming hypothesis 3a.

11.1 Stated buying preference

To check the stated buying preference between Chinese and Brazilian sample, the results of chapter 9.2 and 10.2 (see Table 29) were compared and it was possible to observe that qualitatively, in the both sample, the quality was asserted as the most important criterion and buyer supplier relationship as the least relevant.

Table 29 - Stated supplier selection priorities Chinese vs. Brazilian sample

Stated relevance	Chinese sample	Brazilian sample
1	Quality	Quality
2	Price	Delivery / Price
3	Delivery / Sustainability	
4		Sustainability / Relationship
5	Relationship	

This result is a strong evidence of both, Chinese and Brazilian, samples have incorporated recognitions that quality is fundamental for the business performance and it is a order qualifying criterion (Amoako-Gyampah & Meredith, 2007; Ferdows & De Meyer, 1990; Harvey, 1998; Spring & Boaden, 1997). Moreover, the cumulative capabilities perspective

could explain the subtle discrepancies in the priorities of price and delivery, once quality is defined as the foundation and there is no strict sequence for the other criteria.

Contrary to quality, buyer supplier relationship was assigned as the least relevant for supplier selection despite its proven importance for the organizational performance. This result is not surprising, once organizations recommend that the selection process should stay away from the personal influence and be as fair and objective as possible (Lemke et al., 2000). Basing on this recommendations, organizations in many situations request quotations from several potential suppliers, adopt quantifiable criteria and diverse debiase methods (K.L. Choy et al., 2005; Kaufmann et al., 2010; Lemke et al., 2000; Riedl et al. 2013), summing to this assumption, relationship or *guanxi,* in many cases, is related to negative and unethical connotation (Lovett, Simmons, & Kali, 1999; P. Wang, 2014; Warren et al., 2004). Therefore, it is normal that Chinese and Brazilian sample would have attributed low relevance for this criterion when they are requested to declare their preferences.

11.2 Actual buying preference

From the previous chapter it was demonstrated that asserted buying preferences had not vary much between the Chinese and Brazilian sample, due to the already broad disseminated quality concepts and negative connotation of relationship, but how these two samples behave under real alike purchase situation?

To compare the both sample's actual purchasing preferences, first, it was compared the most attractive alternatives for each of them and then the overall selection priorities. From the

Table 30, it is possible to notice that without relational capital (control sample) the both sample have similar preferences for the supplier option (best quality, lowest price, and best sustainability practices). They differ in the preference of delivery, while Chinese sample is a little bit stricter (accept 5% of probability delay), Brazilian sample is more generous (10% of probability of delay). As discussed previously, the both sample might not perceived probability of delay as a threat due to the overconfidence bias, once probability is not delay itself (Carter et al., 2007; Gino & Pisano, 2008).

Table 30 - Best attractive alternatives - Chinese vs. Brazilian sample[3]

	Brazil		China	
Attributes	**Control**	**Manipulated**	**Control**	**Manipulated**
Quality	Quality_1	Quality_2	Quality_1	Quality_3
Delivery	Delivery_3	Delivery_2	Delivery_2	Delivery_3
Price	Price_1	Price_2	Price_1	Price_1
Sustainability	Sustain_3	Sustain_3	Sustain_3	Sustain_1

However, from the manipulated sample, Chinese and Brazilian respondents have much more differences than common thoughts. First, the Chinese sample has relaxed the quality compared to Brazilian one, afterward; the delivery was less strict for the Asian sample and finally, the sustainability also became less demanded. This result is the fist strong evidence that Chinese sample tends to rely on the relational capital to legitimize quality and sustainability of the supplier more than the Brazilian sample (Batjargal & Liu, 2004).

By checking the overall selection priorities from the Table 31, it can be identified that Brazilian respondents chose their suppliers based on price, once this attribute was perceived as the most useful for decision making, then followed by sustainability, delivery, quality and relationship. Nevertheless, regarding the influence of the relational capital, the Brazilian

[3] For the description of each level check Table 6

sample had showed few variations between the control and manipulated sample. On the other hand, the Asian sample, when under influence of relational capital, it had considered quality and sustainability irrelevant, once relational capital could be synonym of quality, capability and good will. Consequently, the only relevant attributes to evaluate were the price and the relationship.

Table 31 - Overall supplier selection utilities - Chinese x Brazilian sample

	Brazil		China	
Attributes	**Control**	**Manipulated**	**Control**	**Manipulated**
Relationship	-	12%	-	39.5%
Quality	18%	14%	3.2%	0%
Delivery	18%	16%	37.1%	17.5%
Price	38%	34%	24.2%	43%
Sustainability	26%	24%	35.4%	0%
Total	100%	100%	100%	100%

The behavior under relational capital had demonstrated that, in a more relational driven country, the relationship is a proxy for varied qualifications of the supplier, it is a heuristic for decision making under multi-criteria situation. Meanwhile, in a less relational driven country as Brazil, the relational capital was perceived as important as any other decisional criteria. Relationship by itself was not an order-winning criterion, however, it will be useful to rank evaluations when the alternatives of the suppliers are equally attractive in the quantifiable perspective. Therefore, this rational also confirmed the hypothesis 3b.

12 Potential negative effects of collaboration

Benefits of the collaboration are irrefutable; however, its side effects should neither be denied. Potential negative effects of the collaboration, such as escalation of commitment,

opportunism, ineffective decisions, low innovation and so on, have attracted attention of the researches (Ganesan et al., 2010; Molina-Morales et al., 2011; Warren et al., 2004).

Collaborative relationship, through frequent and intense information exchanges, shared languages, believes, cultures and business goals, creates a proper condition for ineffective decisions. A close relationship also increases the volume and redundant information, then cognitive burden for the involved agents, moreover, trust, commitment, mutual obligations and reciprocity can reduce the safeguard and monitoring mechanism which is perfect for appearance of opportunistic behavior (E. Anderson & Jap, 2005; Grayson & Ambler, 1999; Molina-Morales & Martinez-Fernandez, 2009; Villena et al., 2011).

Regarding the potential harmful effect, the results of Table 30 exhibited that both sample relaxed in term of quality when influenced by relational capital, while Brazilian sample relaxed from best to intermediate, Chinese sample reduced from best to worst quality level. Moreover, Brazilian sample while under influence of relational capital, buyers were willing to pay more for a lower quality product (price: U$1000 → U$1200), therefore, demonstrating a slight evidence of suboptimal decision which is a harmful effect of relational capital. In spite of quality-price trade-off in the Brazilian sample due to the relational capital, Brazilian buyers had not replaced the quality, neither delivery nor sustainability attributes by legitimation of relational capital (see right side of Table 31).

While Brazilian sample had not replaced the quantifiable criteria totally by relational capital, Table 30 and Table 31 demonstrated that, under relational situation, Chinese sample, more than loosen the requirements in quality, delivery and sustainability, they had replaced these criteria by the relational capital. This result was a strong evidence of using legitimation for

selection. To be sure about this affirmation and heuristic process, this research had questioned how respondents relied on the relational capital as proxy of quality and efficiency. From the scale of 1 to 7, Chinese sample stated more emphasizes on this issue than the Brazilian sample (M_{China}=4.86 > M_{Brazil}=3.98; $p < 0.001$), thus, confirming the hypothesis 5 for the Chinese and Brazilian sample, once demonstrated the potential negative effect of the relationship in the supplier selection process.

In summary, the use of relational capital as proxy is not a condemn decision, yet, it can manifest in potential harmful effect when quality of the supplier is relaxed or not properly monitored (E. Anderson & Jap, 2005; Joshi & Arnold, 1997). In the present research, potential negative effects have been observed and discussed. Sample from both countries have relaxed in quality, which can be seen in the Table 30. The Brazilian sample, at the same time of giving more relevance to the intermediate quality product over a higher quality alternative, they were also willing to pay more for the intermediate quality product (U$1200 instead of U$1000), which was a demonstration of potential ineffective decision. In addition, the Chinese sample used the relationship as the second most important selection driver (see Table 31), thus, simply ignored quality and sustainability criteria when they were under a relational condition.

Part IV – Final Considerations

13 Conclusion

This study addressed cross-nationally the effects of buyer-supplier relationship in the supplier selection process. To achieve the proposed goal, this study had conducted a controlled experiment with discrete choice analysis and data collection was performed in two countries, China and Brazil. The outcomes supported some hypothesis and reject others as demonstrated in the Table 32.

Table 32 - Summary of hypothesis confirmation

Hypotheses	Brazil	China	Brazil vs. China
Hypothesis 1a: *Among quality, delivery, price, buyer-supplier relationship and sustainability as buying criteria, buyers will state quality as the most important in the supplier selection process, independently of the intensity of the buyer-supplier relationship*	Confirmed	Confirmed	
Hypothesis 1b*: Among quality, delivery, price, buyer-supplier relationship and sustainability as buying criteria, buyers will declare the existing buyer-supplier relationship as the least important in the supplier selection process, independently of the intensity of the buyer-supplier relationship.*	Confirmed	Confirmed	
H1c: *The importance for each supplier selection criterion declared by the buyer will be different from the actual importance attributed to the selection criterion.*	Confirmed	Confirmed	
H2: *The higher is the social capital between the buyer and supplier, the higher will the buyer commit to the supplier*	Confirmed	Confirmed	
H3a: *Buyer will tend to commit more with the supplier when higher is his relational-oriented is the culture.*			Confirmed
H3b: *the more relational-oriented is the culture, the more the supplier selection decision will relay on the relationship*			Confirmed
H4a: *Buyers that have lower level of social capital with the supplier will attribute higher relevance to price than buyer that have higher level of social capital with the supplier.*	Rejected	Rejected	
H4b: *Buyers that have higher level of social capital with the supplier will attribute higher relevance to quality and delivery than buyers that have lower level of social capital with the supplier;*	Rejected	Rejected	

H4c: *Under influence of high level of social capital, quality and delivery could be replaced by relationship through legitimation;*	Rejected	Confirmed	
H4d: *Buyers that have higher level of social capital with the supplier will attribute higher priority for sustainability than lower level of social capital supplier*	Rejected	Rejected	
H5: *Buyer under influence of relational capital will relax in the quality, delivery and sustainability requirements.*	Confirmed	Confirmed	

From the results analysis and discussion, several relevant and impacting conclusions could be drawn. The first is regarding how people declare their buying criteria relevancies. Independently of the country, buyers will tend to state that quality should be the most important and the relationship the least relevant to be considered to choose a supplier. This behaviour could be attributed to the already disseminated quality awareness and order qualifier concept, once the stated selection priorities do not differ too much from the Dickson's list, neither the suggestion of Weber et al. (1991). Moreover, the stated selection priority is also similar to the cumulative capability patterns that consider quality as the top priority to build other organizational competencies (Amoako-Gyampah & Meredith, 2007; Ferdows & De Meyer, 1990; Flynn & Flynn, 2004; Margaret, Noble, & College, 1995). The low importance attributed explicitly to the relationship could be explained by its negative connotations and unethical allusion, therefore, purchasers will declare clearly that this criterion as least relevant in the supplier selection (Argandoña, 2003; C. C. Chen & Chen, 2009b; P. Wang, 2014; Wedeman, 2013).

The second conclusion was drawn comparing the declared buying preferences with the actual ones extracted from the discrete choice analysis. From the comparison, substantial differences between them were confirmed. Under low relational situation, despite buyers were still considering quality for the selection, this criterion actually was considered less relevant than it

was declared. Surprisingly, in Brazil as well as in China, in the actual selection, quality dropped from the top declared priority to the fourth place behind delivery, price and sustainability.

Third, prior studies had mentioned that Eastern countries are culturally different from the western, especially, when referring to China, where millenary Confucianism and outstanding economical growth come into mind. From the present results (see chapter 11), it was demonstrated that Chinese culture is substantially more relation-oriented than the Brazilian, despite the internationalization phenomenon in both countries' business environment. This finding was an essential evidence that justified the conduction of this study in these two different countries. Additionally, this result could be the empirical foundation for other fields' studies such as organization studies, business strategy and internationalization where differences between countries should be empirically demonstrated (Hamilton et al., 2009; Minkov & Hofstede, 2012; Tjosvold, Hui, & Sun, 2004).

By identifying the cultural differences between Chinese and Brazilian, further conclusions could be presented. It was possible to observe that relational capital (trust, reciprocity, mutual obligations and expectations) increased the willingness to commit between a buyer and his supplier. This result supports the social capital theory as well as social exchange perspective. Moreover, by confirming the hypothesis 3a, the results suggested the relational capital had induced more willingness to commit when more relation-orientation is the culture. This conclusion extended the social capital theory by demonstrating that in different relation-orientated cultures, the same relational practice could be perceived as resulting in more or less social capital.

The fifth conclusion was extracted by analysing the influence of relational capital on the selection criteria. The evidences of this study demonstrated that relational embeddedness could impact definitively on how buyers decide. The intensity of the relational capital influence will depend on the relation-orientation of the decision maker, since higher is the relation-orientation, higher will be the impact. Under lower relation-orientation culture, the relational capital was considered just as another selection criterion and it was placed behind price, sustainability, delivery, and quality. It was used as a tiebreaker for supplier ranking in case of the buyer could not differentiate nor rank the supplier (Kannan & Tan, 2002).

On the other side, when the relation-orientation is high, like the Chinese culture, the relational capital could legitimate the supplier concerning quality and sustainability (Batjargal & Liu, 2004). Therefore, its impact on the decision-making was much higher, placed just behind price, which was the most important item. This similar phenomenon was speculated by Carey et al (2011) who suggested that relationship could replace formal contract and should be avoided.

Finally, regarding the potential harmful effects of relationship, it could be highlighted the following conclusions. Under a multi-criteria decision-making situation, rational analytic tools are not enough for buyers' decision-making; they also count on their own cognitive capability to select a supplier. It is known that rationality is bounded, therefore, decision makers appeal to some degree of heuristics that generated some decision bias. In this situation, the trust, mutual obligations, expectations, reciprocity and socialization that emerged from the relational embeddedness could legitimize a supplier and it will be considered as a proxy for quality, delivery and sustainability. The legitimation influences the

buyer's decision-making through availability cognition, commitment and confirmatory heuristics. They lead to a relaxation in supplier requirements, such as quality for Brazilian sample and quality, delivery and sustainability for Chinese sample. It was also observed that the degree that these attributes were relaxed was associated to how relation-oriented was the culture.

The relaxation in these requirements is similar to loose the monitoring mechanism in the relationship which can create situations for opportunism (E. Anderson & Jap, 2005; Hawkins, Wittmann, & Beyerlein, 2008; Villena et al., 2011). Additionally, it was also observed suboptimal decision in the Brazilian sample, since under influence of relationship; buyers were willing to pay more for a lower quality offer.

13.1 Theoretical implications

This study investigated the influence of buyer-supplier relationship on the supplier selection criteria and its potential negative effect through supplier selection process. Controlled experiment with discrete choice analysis was adopted as research strategy, which is not usual in Operations Management but highly recommended and employed in other fields such as Marketing, Psychology, Organization Behaviour and Behavioural Economics to investigate causal effects, human behaviour and decision makings (Bendoly et al. 2006; Rungtusanatham et al., 2011; Zhao et al. 2013).

The present research followed the major stream of supplier selection that studies the selection criteria and its importance. The findings extended prior studies by demonstrating: (a)

substantial discrepancies exist between stated and actual selection criteria, (b) that the importance attributed to supplier selection criteria are influenced by relational embeddedness, which is somehow different from the mainstream; (c) cross-national differences in supplier selection priorities could be attributed to how relation-orientated is the country's culture and (d) despite majority of the studies had suggested quality, delivery and flexibility as the highest selection priority, our study as well as Verma & Pullman (1998) and Hirakubo & Kublin (1998) agreed that price is actually the main decision criterion, supported by delivery, quality and sustainability.

By employing the social capital theory as theoretical model, the present study had also stressed this theoretical framework by demonstrating that in different relation-orientation cultures, the same relational practice could be perceived as resulting in more or less social capital.

Finally, concerning the potential negative effects of the relationship, this study contributed by demonstrating the emerging of each causes of the potential harmful phenomenon through manipulation of relational capital. From the lower relation-orientation culture, it was observed that relational capital relaxed the quality requirements and generated a suboptimal decision where buyers were willing to pay more for a lower quality offer. From the high relation-orientation culture, the relational capital induced the buyers to ignore completely the quality and sustainability. They used the relationship to legitimate the supplier, then employed availability cognition, commitment and confirmatory heuristic to rank their suppliers option. This phenomenon is similar to the one observed by Carey et al (2011) who suggests that relationship could replace formal contracts.

13.2 Managerial implications

From the managerial point of view, this study provides insights to managers regarding selection process and the effects of the relationship. The results showed that managers tend to declare quality as most important criterion, although their decision drivers were price and delivery/sustainability. Moreover, this study calls managers' attention that the higher is a person's relation-orientation culture, the more it will rely on the relationship for the decision-making. This phenomenon, from one side, made the decision-making faster and easier for the decision maker, but on the other side, it carries potential side effects, such as suboptimal decision, requirements relaxation and possibility for opportunism.

Additionally, this research also highlighted the importance of the findings for the internationalization activities. Present research had demonstrated that cultural differences are present in the supplier selection despite the global information and labour exchanges and it must be taken into consideration when outsourcing, negotiating or even establishing business units abroad. 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; P. Wang, 2014; Wedeman, 2013).

14 Limitations and future studies

As any controlled experiment, the results and finding should be generalized with parsimony. The findings of the present research are applicable to the selection of the supplier based on the process where the buyer should choose one among three potential suppliers. In case of multi-sourcing situation, the results of this study might be applied with precaution. Additionally, the present study explored the modified purchase of an essential support product (computer), then the extension of the finding to the purchasing of more critical resources or services should be limited.

By analyzing the attributes of the selection through discrete choice analysis, this study focused on quality, price, delivery, relationship and sustainability as selection criteria. However, the buying criteria are extensive (Y.-J. Chen, 2011), therefore, it was not possible to explore all the trade-offs. In addition, the effect associated to the increment of the level of each attribute on the selection priorities was not explored, which constitute an opportunity for future study.

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

Taking into consideration the limitations and extending this study, the first possible future study could manipulate others dimensions of social capital, such as cognitive or structural

dimension, and observe how it can influence the supplier selection. The second possibility concerns the investigation of the supplier selection in another controlled environment, for instance, multiple sourcing or highly critical and strategical materials. Third suggestion is other supplier selection criteria could be used to investigate the trade-off, for example, technical competence, continuous and radical innovation capability, warranty, after-sales services or flexibility.

Additionally, to improve the generalization power of this study, respondents from more countries could be considered, such as Italy, which is also known as a country that is relational oriented and United State of America, a more meritocratic and individualistic nation (Hofstede, 1985).

Finally, the last suggestion for future study is much more controversial. TV, newspapers, and managerial magazines have called attention to scandals of public-private corruption such as Petrobras Oil Company and railway trains supplier companies. As present research had demonstrated that relational capital can influence the supplier selection, it is recommend to replicate this type of study to investigate private-private corruption phenomenon (Argandoña, 2003). It is known that close relationship where favor and gifts are exchanged, payback are expected, mutual obligations are created and socializations are frequents can distort the business relationship (Gu et al., 2008; P. Wang, 2014), therefore, we considered private-private corruption as an intriguing subject to be investigated.

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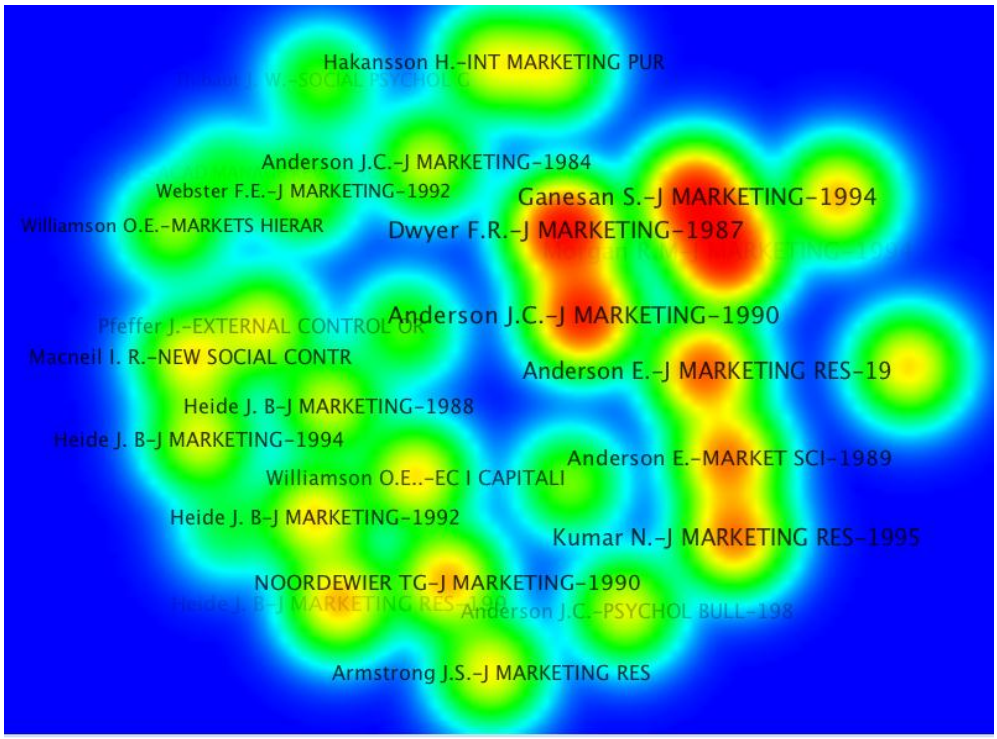
Appendix I – Citation and Co-Citation study regarding topic "buyer/supplier relationship"

Summary of the method: **1)** define the sample of papers whose bibliographic references were adopted to citation and co-citation analysis; **1.1)** database indexer used: *Web of Knowledge*. The sample was composed by the 30% of the most cited papers about the theme "buyer-supplier relationship"; **1.2)** the search was done by combining keywords: buyer, customer, supplier, seller, relationship; **2)** the database was cleaned, invalids references were deleted, authors name and manuscripts titles were standardized; **3)** count how many times each reference was cited and co-cited; **3.1)** auxiliary tools used to count were: MS-Access, Sitkis, Ucinet; Vosviewer;

Results: 1) The sample was composed by 383 papers published between 1990 and 2013, who cite 9431 references; **1.1)** To capture the most references it was considered those that were cited at least 5 times; **2)** The periods of analysis were divided into two major blocks: "90-2000" and "2001-2013"; **3)** Interpretation: the closer are the authors, the more co-cited are they and the more cited is the author, the stronger is the color;

Period 1990 to 2000



Period 2001 to 2013

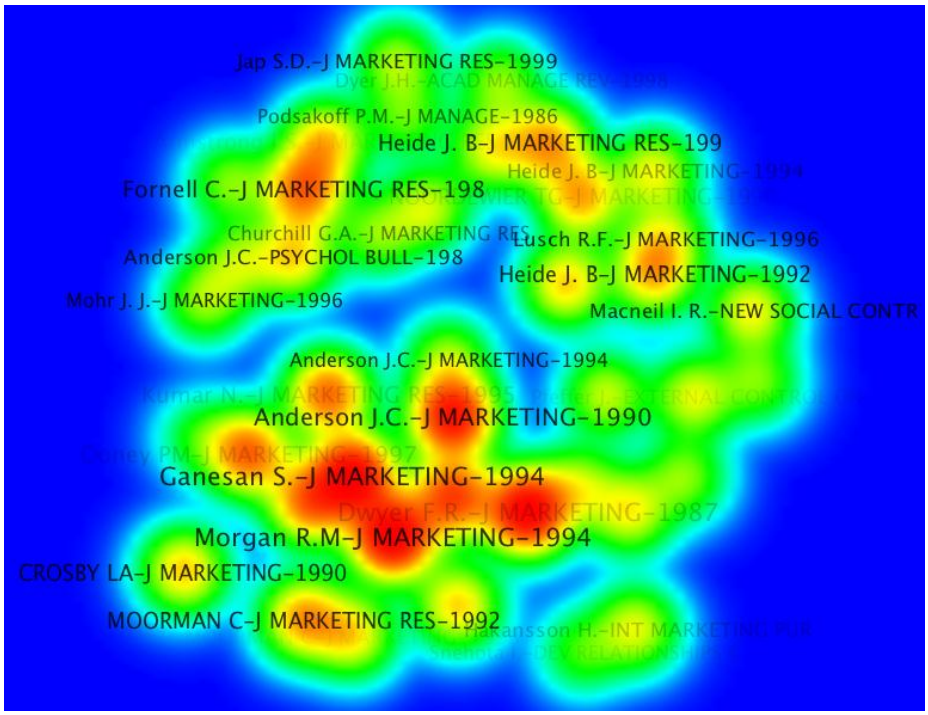


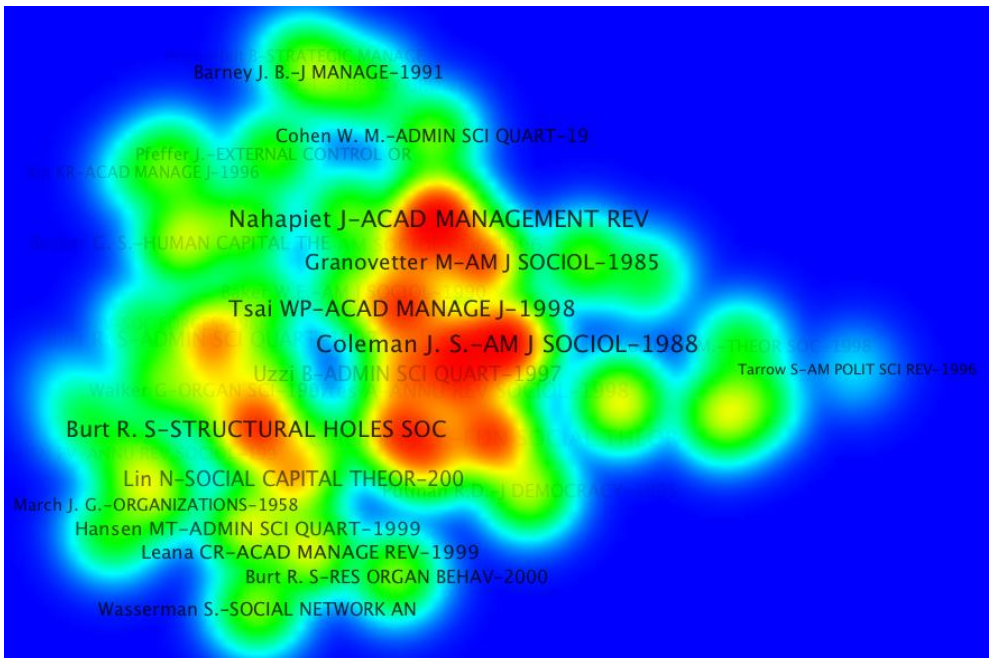
Figure 6 – Citation and co-citation map of the central authors about buyer-supplier relationship between period 1990-2000 and 2001-2013 (source: the authors)

Appendix II－Citation and Co-Citation bibliometric study regarding topic “Social Capital”

Summary of the method: **1)** define the sample of papers whose bibliographic references were adopted to citation and co-citation analysis; **1.1)** database indexer used: *Web of Knowledge*. The sample was composed by the 30% of the most cited papers about the theme “Social capital theory” and “performance”; **.2)** the search was done by combining keywords: buyer, customer, supplier, seller, relationship; **2)** the database was cleaned, invalids references were deleted, authors name and manuscripts titles were standardized; **3)** count how many times each reference was cited and co-cited; **3.1)** auxiliary tools used to count were: MS-Access, Sitkis, Ucinet; Vosviewer;

Result: 1) The sample was composed by 450 papers published between 1996 a 2013, which cited 12721 references; **1.1)** To capture the most references it was considered those that were cited at least 5 times; **2)** The periods of analysis were divided into two major blocks: “1996 to 2004” and “2005 to 2013” **3)** Interpretation: the closer are the authors, the more co-cited are they and the more cited is the author, the stronger is the color;

Period 1996 to 2004



Period 2005 to 2013

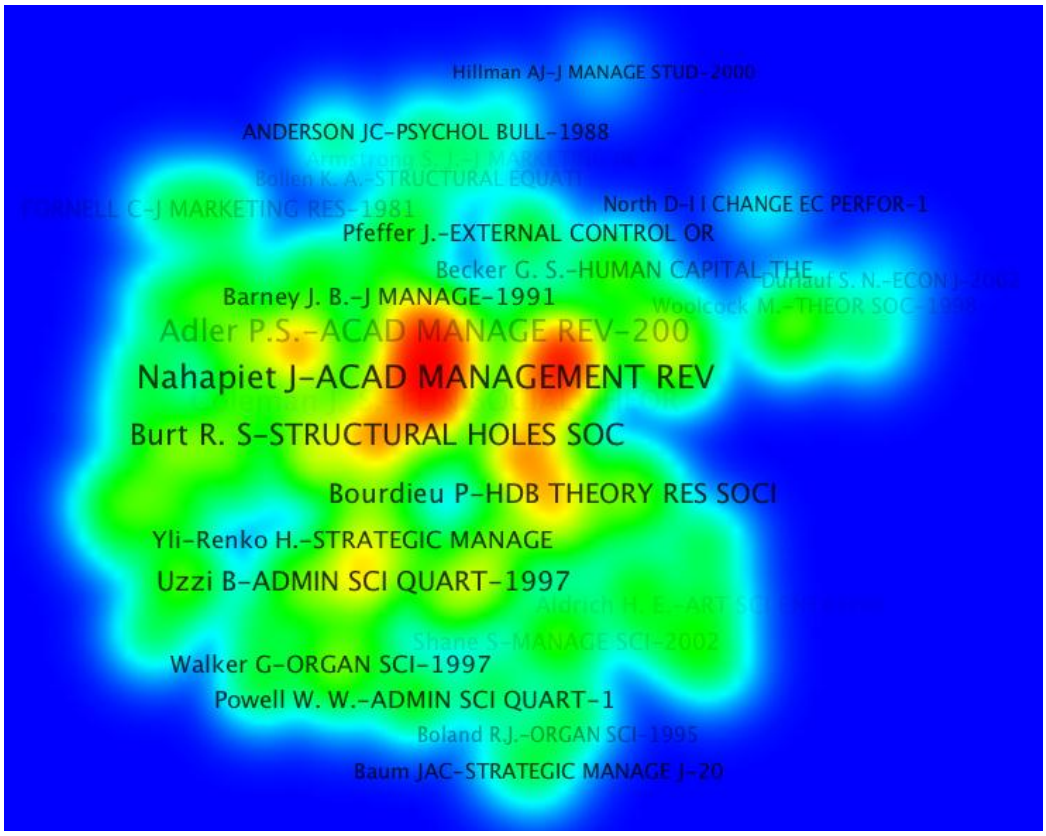
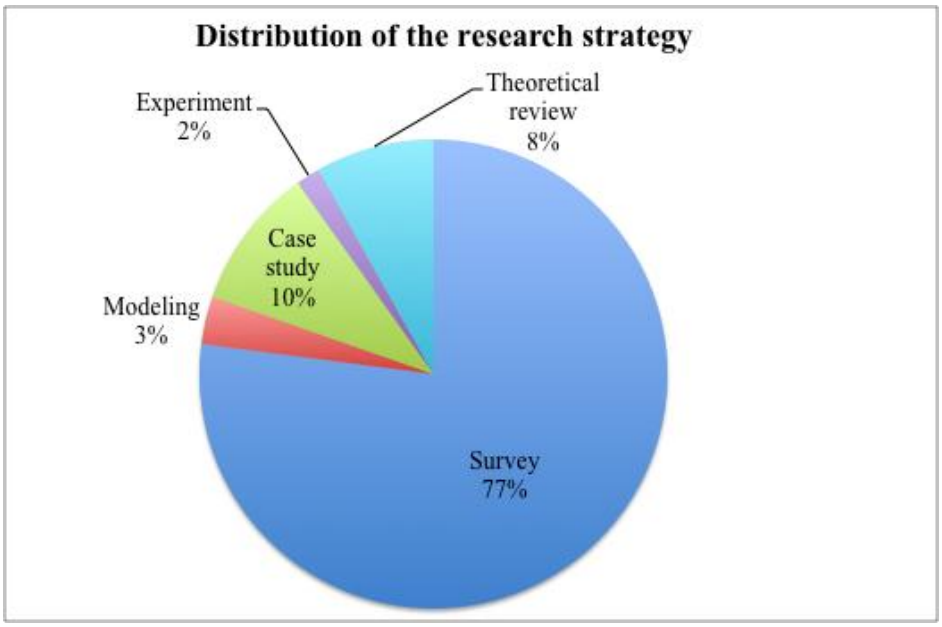


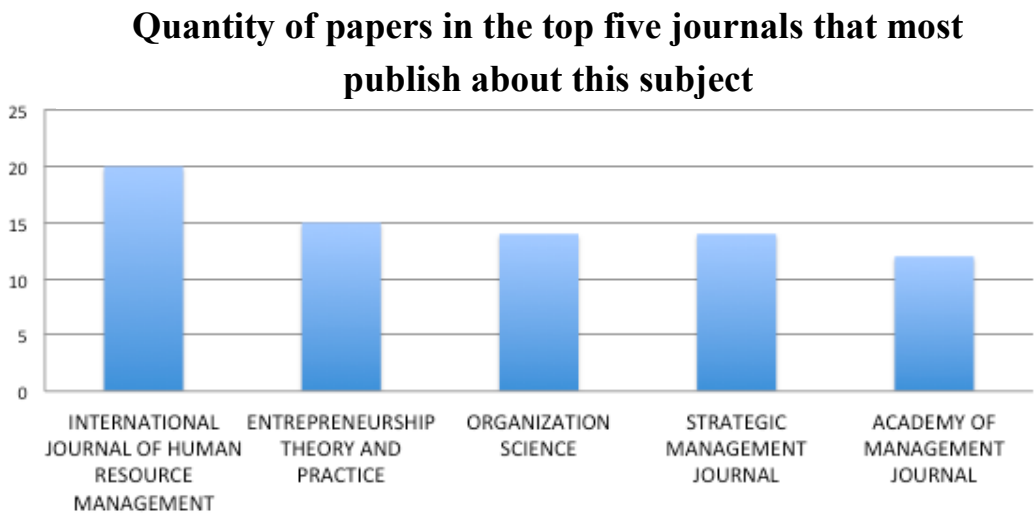
Figure 7 – Citation and co-citation map of the central authors about Social Capital Theory and Performance between period 1996-2004 and 2005-2013 (source: the authors)

Appendix III – Structured Literature Review "Social capital x firm performance"

Summary of the method: **1)** Define the sample of the papers that will be analyzed by Web of knowledge database indexer; **1.1)** the search was employed "*social capital theory*" e "*performance*"; **1.2)** The sample are composed by first tier of the 30% most cited paper concerning the subject; **2)** All the abstracts were read and those papers that do not approach the subject were discarded; **3)** Classify the papers according to each research method; **3.1)** Among the empirical ones, dependent, independent and control variables were identified; **3.2)** Relationships between dependent and independent variables were classified (positive, neutral , negative); **4)** Results were analyzed;

Results: 1) The sample was composed by 167 papers published between 1996 and 2013 that investigated relationship between social capital and performance (direct or indirectly); **1.1)** Within the original sample, 106 manuscripts were discarded, since only 61 papers employed some sort of performance measurement as dependent variable (cost, quality, market share, among others); **1.2)** Within the 61 papers, 47 employed *survey* as research strategy, one experiment, six case studies, two mathematic modeling and five theoretical review; **1.3)** Those 106 papers that did not approach the firm performance, they employed diverse other measures as dependent variables such as firm dissolution, CEO remuneration, innovation, employee hiring, and others; **2)** among the 61 manuscripts relating social capital and performance, just 8 mentioned the negative effect; **2.1)** The dimension structure appeared in 49% of the paper, relational dimension in 33.5% and cognitive 14.3%.





Dimension of the social capital as independent variable	No. of time that was employed	Percentage in the sample
Structural	85	51%
Relational	67	40%
Cognitive	24	14%
Capital social (single construct)	19	11%
Other variables	15	9%

Obs: One manuscript can employ more than one dimension;

Appendix IV – Supplier selection criteria

Authors	Research strategy	Levels	Main selection criteria
Choi & Hartley (1996)	Survey	Operational	Financial, consistency (quality and delivery), relationship, flexibility, technical capability, customer service, confiability and price
de Boer et al (2001)	Review	Strategical and operational	Process strategy, purchase environment, type of the product, frequency of the purchase, form of purchase (first purchase, repurchase with modifications, direct repurchase), contextual variables (quantify of the suppliers, importance of the product, relationship with the supplier, level of uncertainty), level of integration, cost, price, delivery, quality.
Verma & Pullman(1998)	Experiment	Operational	Quality, cost, flexibility and delivery.
Hada et al (2013)	Experiment	Operational	Characteristic of supplied product, reference clients, supply capability and quality
Wadhwa & Ravindran (2007)	Modeling	Strategical and operational	Price, delivery time, capability, quantity of supplier;
Sucky, Eric	Modeling	Strategical	Cost to use the chosen supplier, cost to switch the supplier, commitment between parts;
Weber et al (1991)	Review	Strategical and operational	Price, quality, delivery, geographic location, technical capability, past business, management and organization, reputation, financial situation, historical performance, warranty, business relationship, image, negotiation, relationship between employees, communication, legal aspect, training, service attitude, maintenance service, operations strategy.
McCutcheon & Stuart (2000)	Case study	Strategical and operational	Cost, quality, delivery, non-competitor, complementarity, technological maturity, service improvement in the future, value added to the product, gain the market in the future;
Huang & Keskar (2007)	Review	Operational and social	Related to the product (responsiveness, dependability, flexibility), Related to the company (cost and financial, asset, infrastructure), social related (security, environment)

Authors	Research strategy	Levels	Main selection criteria
van der Rhee et al (2009)	Experiment	Operational	Flexibility (production, demand and variety), quality (qualifier criteria), cost (price), delivery e value-added services (support and services)
Swift (1995)	Survey	Strategical and operational	Product (stability, design, energy efficiency), availability of the supplier (proximity, image, warranty, financial condition), dependability (delivery on-time, reliability of the product, responsive time of the supplier), past experiences (reputation, past experience with supplier, user established preferences), price (total cost of production, low cost, cost/performance)
Demirtas & Üstün (2008)	Modeling	Operational	Benefits (quality, delivery, services, process flexibility, answer to changes), cost, opportunities (consistency, trust, communication, support to the project), risk (delay, complains, not accomplish the requirements)
Chen (2011)	Modeling	Operational	Price, quality, delivery, geographic location, technical capability, past business, management and organization, reputation, financial situation, historical performance, warranty, business relationship, image, negotiation, relationship between employees, communication, legal aspect, training, service attitude, maintenance service
Donaldson (1994)	Survey	Operational	Quality, responsibility, adaptability delivery, credit
Carter (2005)	Survey	Socials	Diversity in the company (sex, race, believes), environment, human rights, philanthropy, security
Ehrgott et al (2011)	Survey	Socials	Social (single construct)
Lemke et al (2000)	Survey	Strategical and operational	Quality, price, delivery, service, history of relationship, commitment, certification, volume, flexibility, competences, supplier's equipment, communication, trust, size of the organization and technology.

APPENDIX V – Research protocol – Scenario

Imagine that you are a purchasing agent for a medium-sized company. Your company has just been awarded a new project, which shall be started after 5 wk. As a purchasing agent, you are responsible for obtaining 40 computers within 5 wk. to support the project. After internal meetings with engineering department, this lot of computers is slightly different from what you are used to purchase. In this case you need to upgrade the regular monitor to a 22-in LCD touch screen one with biometric scanner to meet the user requirements in your project.

As purchasing policies of your company, before placing the order, you should quote with three different suppliers. Over the past 5 yr., your company has worked frequently with High Tech Computers Ltd, Top Computer Ltd and Nandroid Computer Ltd for the supply. Each of these companies has a sales representative who is in charge of the account of your company. They are João Alencar, Marcos Azevedo e Cláudio Siqueira respectively.

To proceed with the purchase, you called the sale representatives of those three companies to request their quotations. Two days after the contact, all of them returned their proposal and you should evaluate their offers to decide who will be awarded with the order.

[With relational capital]

You and João Alencar are friends since college and know each other very well, differently of Marcos Azevedo and Cláudio Siqueira with whom you just keep professional contacts. Besides, socialization events between your firm and High Tech Computer are very much often than with other two. Additionally, you feel more comfortable to expose business thoughts

with João than with Marcos and Cláudio. Finally, you feel that you get a more respectfully and reciprocity treatment by High Tech Computer than Top Computers and Nandroid.

[Without relational capital]

You keep an extremely professional contact with all the sales representatives; personal relationships are not close nether socialization event often. Additionally, you just share strictly needed information with your suppliers and all the business are rigorously driven by contracts.

Information exchange and technical interactions between your company and these three suppliers occurs when new products should be purchased or some technical issues should be solved, which are not very frequent.

Finally, the three suppliers have, among them, different ways of managing business, corporate culture, values, philosophies and business goals. You also considerer that they are slightly different of your company in theses aspects and you don’t feel closer to one or another supplier.

APPENDIX VI – Research protocol – Manipulation check

1. Concerning the cultural and organizational similarity between the suppliers previously described and your company, please rate the following statements where 1 = extremely disagree and 7 = completely agree

	1	2	3	4	5	6	7
1. High Tech Computer has a more similar corporative culture and management style with us than other two suppliers;	❍	❍	❍	❍	❍	❍	❍
2. High Tech Computer has a more similar business vision and understanding with us than other two suppliers;	❍	❍	❍	❍	❍	❍	❍
3. High Tech Computer has a more similar organizational goals and objective with us than other two suppliers;	❍	❍	❍	❍	❍	❍	❍

2. Concerning the information exchange and interactions between the suppliers previously described and your company, please rate the following statements where 1 = extremely disagree and 7 = completely agree

	1	2	3	4	5	6	7
1. Compared to other two suppliers, High Tech Computer has a more intense and frequent technical interaction with our company;	❍	❍	❍	❍	❍	❍	❍
2. Compared to other two suppliers, High Tech Computer has a more intense and frequent inter functional and inter departmental with our company;	❍	❍	❍	❍	❍	❍	❍
3. Compared to other two suppliers, High Tech Computer has a more intense and frequent information exchange with our company;	❍	❍	❍	❍	❍	❍	❍

3. Concerning the relational aspect of the suppliers previously described with your company, please rate the following statements where 1 = extremely disagree and 7 = completely agree;

	1	2	3	4	5	6	7
1. Compared to other two suppliers, we keep a closer and more frequent personal contact with High Tech Computer;	❍	❍	❍	❍	❍	❍	❍
2. Compared to other two suppliers, we feel more mutual respect with High Tech Computers than with other two suppliers;	❍	❍	❍	❍	❍	❍	❍
3. Compared to other two suppliers, we feel that High Tech Computers is more our friend than other two suppliers;	❍	❍	❍	❍	❍	❍	❍
4. Compared to other two suppliers, we trust more in High Tech Computers than other two suppliers;	❍	❍	❍	❍	❍	❍	❍

4. Concerning the commitment of your company and the three suppliers previously

described, please rate the following statements where 1 = extremely disagree and 7 = completely agree.

		1	2	3	4	5	6	7
1.	We would like to keep High Tech Computers as a partner;	❍	❍	❍	❍	❍	❍	❍
2.	We are more committed to keep a good relationship with High Tech Computers than with other two suppliers;	❍	❍	❍	❍	❍	❍	❍
3.	Our company believes that High Tech Computers is a partner;	❍	❍	❍	❍	❍	❍	❍
4.	Our company expects that relationship with High Tech Computer could last far into the future;	❍	❍	❍	❍	❍	❍	❍
5.	Our firm expects to keep working with High Tech Computer on a long-term basis;	❍	❍	❍	❍	❍	❍	❍
6.	It is assumed that business with High Tech Computer will generally occur	❍	❍	❍	❍	❍	❍	❍

APPENDIX VII – Research protocol – Discrete choice analysis and cards

[Standard text] Based on the information of the scenario, which of the proposals below is more attractive for you? Considered that all the suppliers are located at the same region where your company is established, one-year warranty, similar technical skills and competencies to solve problems and all the technical, as well as financial requirements are accomplished:

[Profiles]

Profiles	Supplier	Prob._Defect	Prob_Delay	Price	Sustainability
Profile1	Cláudio Siqueira - Nandroid Comp.	0,01%	10%	U$1000	Nothing
Profile2	João Alencar - High Tech Comp.	0,015%	5%	U$1000	ISO 14000
Profile3	João Alencar - High Tech Comp.	0,01%	10%	U$1000	ISO 14000 / Recovering used electronic equipment
Profile4	Marcos Azevedo - Top Comp.	0,001%	10%	U$1200	ISO 14000
Profile5	João Alencar - High Tech Comp.	0,001%	0	U$1500	ISO 14000 / Recovering used electronic equipment
Profile6	Cláudio Siqueira - Nandroid Comp.	0,015%	5%	U$1200	ISO 14000 / Recovering used electronic equipment
Profile7	Marcos Azevedo - Top Comp.	0,015%	0	U$1000	Nothing
Profile8	Cláudio Siqueira - Nandroid Comp.	0,015%	0	U$1500	ISO 14000
Profile9	João Alencar - High Tech Comp.	0,015%	10%	U$1200	Nothing
Profile10	João Alencar - High Tech Comp.	0,01%	5%	U$1500	Nothing
Profile11	Cláudio Siqueira - Nandroid Comp.	0,001%	5%	U$1000	ISO 14000 / Recovering used electronic equipment
Profile12	Marcos Azevedo - Top Comp.	0,01%	0	U$1200	ISO 14000
Profile13	Marcos Azevedo - Top Comp.	0,001%	5%	U$1500	Nothing
Profile14	Marcos Azevedo - Top Comp.	0,015%	10%	U$1500	ISO 14000 / Recovering used electronic equipment
Profile15	Cláudio Siqueira - Nandroid Comp.	0,001%	10%	U$1500	ISO 14000
Profile16	Cláudio Siqueira - Nandroid Comp.	0,001%	0	U$1200	Nothing

[Comparisons table]

Conjoint	Comparisons	Choice 1	Choice 2	Choice 3
Part 1	Comparison 1	1	3	15
	Comparison 2	2	4	16
	Comparison 3	7	9	5
	Comparison 4	8	10	6
	Comparison 5	3	5	1
	Comparison 6	4	6	2
	Comparison 7	9	11	7
	Comparison 8	10	12	8
Part 2	Comparison 9	5	7	3
	Comparison 10	6	8	4
	Comparison 11	11	13	9
	Comparison 12	12	14	10
	Comparison 13	13	15	11
	Comparison 14	14	16	12
	Comparison 15	15	1	13
	Comparison 16	16	2	14

[Cards example]

	1	**2**	**3**
Supplier	João Alencar - High Tech Computer	Marcos Azevedo - Top Computer	Cláudio Siqueira - Nandroid Computer
Prob. defect	0,015%	0,001%	0,001%
Prob. Delay	5%	10%	0
Price (per unit)	U$1000	U$1200	U$1200
Sustainability practices of the supplier	ISO 14000	ISO 14000	Nothing

	1	**2**	**3**
Supplier	Marcos Azevedo - Top Computer	Cláudio Siqueira - Nandroid Computer	João Alencar - High Tech Computer
Prob. defect	0,001%	0,015%	0,015%
Prob. Delay	10%	5%	5%
Price (per unit)	U$1200	U$1200	U$1000
Sustainability practices of the supplier	ISO 14000	ISO 14000 / Recovery of used electronic devices	ISO 14000

APPENDIX VIII – Research protocol – Declared priorities, guanxi and sustainability

1 - Please rate into increasing importance order (1 to 5) the following criteria to evaluate the suppliers where 1 = least important and 5 = most important:

_____ On time delivery

_____ Quality

_____ Cost

_____ Buyer/Supplier Relationship

_____ Sustainability

1. In our opinion, at the situations bellows, how useful is a relationship that emphasizes simultaneously the exchange of favors, presents and socialization; cultivation of personal relationship and mutual dependencies and creation of obligations and duties, where 1 = extremely useless and 7 = extremely useful;

	1	2	3	4	5	6	7
Obtain a better job opportunity and promotion;	❍	❍	❍	❍	❍	❍	❍
Reduce procedures and inspections to increase efficiency;	❍	❍	❍	❍	❍	❍	❍
Expand customer network and increase sales;	❍	❍	❍	❍	❍	❍	❍
Obtain better commercial conditions (i.e.: discounts and better qualities, etc.);	❍	❍	❍	❍	❍	❍	❍

5. Regarding the sustainability policies of a supplier such as ISO 14000, recovery of the used electronic devices, please attribute a note from 1 to 7 where 1 = Disagree completely and 7 = Agree Completely:

	1	2	3	4	5	6	7
It can increase the efficiency of the buyer company;							
It can improve the reputation of the buyer company;							
It is just an action to accomplish legal requirements;							
It can make buying companies be better accepted by the society;							
Sustainability is an action that does not increase value for the company;							

APPENDIX IX – Call of tenders and selection criteria

Documents	Company	Origin	Product	Criteria
Call for tender 61064176	São Paulo Metro Company	State Owned	Keyboards, video boards, power supplies for computers	Price, legal situation, financial situation, product requirements, Delivery, Quality, Company size
Call for tender 61744376	São Paulo Metro Company	State Owned	Air drier	Price, legal situation, financial situation, product requirements, Delivery, Quality, Company size
Call for tender 64114376	São Paulo Metro Company	State Owned	Tablets model iPad	Price, legal situation, financial situation, product requirements, Delivery, Quality, Company size
Call for tender E-12/010.350/2012	Rio de Janeiro Metro Company	Private Operator	Service of office environment decoration	Price, legal situation, financial situation, product requirements, Delivery, Quality, Company size
Call for tender 557304	Banco do Brasil	State Owned	Material against fire proof materials	Price, legal situation, financial situation, technical capability, Delivery, Quality, language
Direct purchase 1166/7072	Caixa economica federal	State Owned	Air conditioning	Price, legal situation, financial situation, product requirement, Delivery, Quality

APPENDIX X – Products catalogs and prices

 HP ENVY Recline TouchSmart All-in-one	 HP ENVY Recline 23 TouchSmart All-in-one
Starting at $1049.99 **Out of stock**	Starting at $1249.99 **Out of stock**
23" diagonal IPS Full HD touch display	23" diagonal IPS Full HD touch display
Windows 8.1 64 Windows 8.1 Pro 64	Windows 8.1 64 Windows 8.1 Pro 64
Intel Core i3 processors Intel Core i7 processors	Intel Core i5 processors Intel Core i7 processors
8GB DDR3 16GB DDR3	8GB DDR3 16GB DDR3
1TB Hybrid 256GB SSD	1TB Hybrid 256GB SSD
Intel Integrated HD Graphics	1GB NVIDIA GeForce GT 730A

Asus Eee Top ET2322INTH-05 23 inch Touchscreen Intel Core i7-4500U 1.8GHz/ 16GB DDR3/ 1TB HDD/ Blu-Ray Combo/ Windows 8.1 All-in-One PC (Black)

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APPENDIX XI – Results and tables

BRAZILIAN SAMPLE

Reality Check

Table 33 – Auxiliary Anova of reality check - Brazilian data collecting location

Location	n	Mean	SD	Minimum	Maximum
Metrocamp	136	3.85	0.882	1	5
LinkedIn	24	3.88	0.68	2	5
FGV	21	3.86	0.478	2	4
Total	181	3.86	0.817	1	5

ANOVA of reality check

	SSQ	df	MSQ	F	Sig.
Between Groups	0.01	2	0.005	0.007	0.993
Within Groups	120.255	178	0.676		
Total	120.265	180			

Table 34 - Auxiliary Anova of reality check - Brazilian data collecting mean

Collection mean	n	Mean	SD	Minimum	Maximum
Paper	129	3.84	0.905	1	5
Internet	52	3.88	0.548	2	5
Total	181	3.86	0.817	1	5

ANOVA of reality check

	SSQ	df	MSQ	F	Sig.
Between Groups	0.058	1	0.058	0.087	0.769
Within Groups	120.207	179	0.672		
Total	120.265	180			

Table 35 - Auxiliary Anova of manipulation check (no relational capital) - Brazilian data collecting mean

Descriptive statistic of control sample (without relational capital)

		n	Mean	SD	Minimum	Maximum
Cognitive	Paper	73	3.027	1.596	1	5.67
	Internet	22	3.364	1.553	1	5.67
Structural	Paper	73	3.023	1.575	1	5.33
	Internet	22	3.227	1.729	1	6
Relational	Paper	73	2.589	1.509	1	5.75
	Internet	22	2.659	1.618	1	5

ANOVA of manipulation check (collecting mean)

		SSQ	df	MSQ	F	Sig.
Cognitive	Between Groups	1.911	1	1.911	0.759	0.386
	Within Groups	234.147	93	2.518		
	Total	236.058	94			
Structural	Between Groups	0.707	1	0.707	0.272	0.603
	Within Groups	241.27	93	2.594		
	Total	241.977	94			
Relational	Between Groups	0.083	1	0.083	0.035	0.851
	Within Groups	218.864	93	2.353		
	Total	218.947	94			

Table 36 - Auxiliary Anova of manipulation check (with relational capital) - Brazilian data collecting mean

Descriptive statistic of the manipulation (with relational capital)

		n	Mean	SD	Minimum	Maximum
Cognitive	Paper	56	3.2679	1.71673	1	6.33
	Internet	30	3.3667	1.52715	1	7
Structural	Paper	56	3.3333	1.21771	1	5.33
	Internet	30	3.6778	1.31739	1	6
Relational	Paper	56	5.067	1.34459	1.75	7
	Internet	30	4.675	1.40066	1.5	7

ANOVA

		SSQ	df	MSQ	F	Sig.
Cognitive	Between Groups	0.191	1	0.191	0.07	0.792
	Within Groups	229.727	84	2.735		
	Total	229.917	85			
Structural	Between Groups	2.318	1	2.318	1.476	0.228
	Within Groups	131.885	84	1.57		
	Total	134.203	85			
Relational	Between Groups	3.001	1	3.001	1.613	0.208
	Within Groups	156.33	84	1.861		
	Total	159.331	85			

Table 37 – Auxiliary Anova of manipulation check (with relational capital) - Brazilian data collecting location

Descriptive statistic of the control sample (without relational capital)

		n	Mean	SD	Minimum	Maximum
Cognitive	Metrocamp	74	3.0405	1.58949	1	5.67
	LinkedIn	11	3.1818	1.82186	1	5.67
	FGV	10	3.5	1.35401	1	5
Structural	Metrocamp	74	3.0495	1.58059	1	5.33
	LinkedIn	11	3.1818	2.00756	1	6
	FGV	10	3.1	1.45763	1	4.33
Relational	Metrocamp	74	2.6216	1.52448	1	5.75
	LinkedIn	11	2.25	1.52069	1	5
	FGV	10	2.875	1.63406	1	4.75

ANOVA

		SSQ	df	MSQ	F	Sig.
Cognitive	Between Groups	1.933	2	0.966	0.38	0.685
	Within Groups	234.126	92	2.545		
	Total	236.058	94			
Structural	Between Groups	0.177	2	0.089	0.034	0.967
	Within Groups	241.799	92	2.628		
	Total	241.977	94			
Relational	Between Groups	2.136	2	1.068	0.453	0.637
	Within Groups	216.812	92	2.357		
	Total	218.947	94			

Commitment x Relational capital

Table 38 –Anova of commitment x relational capital (with and without relational capital) – Brazilian sample

Descriptive statistic of Commitment (Control x Manipulation)

	n	Mean	SD	Minimum	Maximum
Control	95	4.116	1.292	1	6.33
Manipulated	86	4.514	1.296	1	7
Total	181	4.305	1.306	1	7

ANOVA of Commitment verification

	SSQ	df	MSQ	F	Sig.
Between Groups	7.156	1	7.156	4.273	0.04
Within Groups	299.783	179	1.675		
Total	306.939	180			

Criterion x Control vs. Manipulation

Table 39 –Anova of stated supplier selection criteria – with and without relational capital (Brazilian sample)

Descriptive statistics of each criterion (control x manipulated)

		n	Mean	SD	Minimum	Maximum
Delivery	Control	85	3.11	1.069	1	5
	Manipulated	71	3.23	1.209	1	5
Quality	Control	83	3.58	1.547	1	5
	Manipulated	71	3.28	1.385	1	5
Cost	Control	83	3.05	1.209	1	5
	Manipulated	71	3.27	1.404	1	5
BSR	Control	84	2.64	1.669	1	5
	Manipulated	71	2.48	1.501	1	5
Sustainability	Control	85	2.73	1.357	1	5
	Manipulated	71	2.75	1.411	1	5

ANOVA (control x manipulated)

		SSQ	df	MSQ	F	Sig.
Delivery	Between Groups	0.552	1	0.552	0.429	0.514
	Within Groups	198.441	154	1.289		
	Total	198.994	155			
Quality	Between Groups	3.367	1	3.367	1.548	0.215
	Within Groups	330.607	152	2.175		
	Total	333.974	153			
Cost	Between Groups	1.842	1	1.842	1.087	0.299
	Within Groups	257.723	152	1.696		
	Total	259.565	153			
BSR	Between Groups	1.035	1	1.035	0.407	0.524
	Within Groups	389.004	153	2.543		
	Total	390.039	154			
Sustainability	Between Groups	0.011	1	0.011	0.006	0.939
	Within Groups	294.213	154	1.91		
	Total	294.224	155			

CHINESE SAMPLE

Commitment x Relational capital – Chinese sample

Table 40 –Anova of commitment x relational capital (with and without relational capital) – Chinese sample

Descriptive statistics of commitment (control vs. manipulation)

	n	Mean	SD	Minimum	Maximum
Control	94	4.2748	0.82729	2	6.17
Manipulated	74	5.1036	0.79558	3.33	7
Total	168	4.6399	0.91001	2	7

ANOVA of commitment

	SSQ	df	MSQ	F	Sig.
Between Groups	28.44	1	28.44	42.975	0.000
Within Groups	109.856	166	0.662		
Total	138.296	167			

Stated criterion preference – Control vs. Manipulation

Table 41 –Anova of stated supplier selection criteria – with and without relational capital (Chinese sample)

Descriptive statistics of each criterion (control x manipulated)

		n	Mean	SD	Minimum	Maximum
Delivery	Control	85	3.11	1.069	1	5
	Manipulated	71	3.23	1.209	1	5
Quality	Control	83	3.58	1.547	1	5
	Manipulated	71	3.28	1.385	1	5
Cost	Control	83	3.05	1.209	1	5
	Manipulated	71	3.27	1.404	1	5
BSR	Control	84	2.64	1.669	1	5
	Manipulated	71	2.48	1.501	1	5
Sustainability	Control	85	2.73	1.357	1	5
	Manipulated	71	2.75	1.411	1	5

ANOVA of stated supplier selection criteria (control x manipulated)

		SSQ	df	MSQ	F	Sig.
Delivery	Between Groups	0.552	1	0.552	0.429	0.514
	Within Groups	198.441	154	1.289		
	Total	198.994	155			
Quality	Between Groups	3.367	1	3.367	1.548	0.215
	Within Groups	330.607	152	2.175		
	Total	333.974	153			
Cost	Between Groups	1.842	1	1.842	1.087	0.299
	Within Groups	257.723	152	1.696		
	Total	259.565	153			
BSR	Between Groups	1.035	1	1.035	0.407	0.524
	Within Groups	389.004	153	2.543		
	Total	390.039	154			
Sustainability	Between Groups	0.011	1	0.011	0.006	0.939
	Within Groups	294.213	154	1.91		
	Total	294.224	155			

Comparative study – Chinese x Brazilian

Table 42 –Anova of stated supplier selection criteria – Chinese x Brazilian sample

Descriptive statistic of the stated importance for selection criteria

		n	Mean	SD	Minimum	Maximum
Delivery	China	167	2.95	1.137	1	5
	Brasil	156	3.16	1.133	1	5
Quality	China	162	4.3	1.08	1	5
	Brasil	154	3.44	1.477	1	5
Price	China	161	3.3	1.178	1	5
	Brasil	154	3.15	1.302	1	5
BSR	China	164	1.72	1.06	1	5
	Brasil	155	2.57	1.591	1	5
Sustainability	China	167	2.94	1.26	1	5
	Brasil	156	2.74	1.378	1	5

ANOVA of the stated importance for the selection criteria

		SSQ	df	SSQ	F	Sig.
Delivery	Between Groups	3.699	1	3.699	2.871	0.091
	Within Groups	413.509	321	1.288		
	Total	417.207	322			
Quality	Between Groups	57.679	1	57.679	34.712	0.000
	Within Groups	521.752	314	1.662		
	Total	579.43	315			
Price	Between Groups	1.891	1	1.891	1.229	0.268
	Within Groups	481.652	313	1.539		
	Total	483.543	314			
BSR	Between Groups	57.334	1	57.334	31.711	0.000
	Within Groups	573.136	317	1.808		
	Total	630.47	318			
Sustainability	Between Groups	3.322	1	3.322	1.912	0.168
	Within Groups	557.626	321	1.737		
	Total	560.947	322			