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# Revista de Negócios

Studies on emerging countries

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## PRESENTATION

Revista de Negócios is located in Blumenau, state of Santa Catarina, Brazil, in the campus of Universidade Regional de Blumenau—FURB, postgraduate programme in Business Administration. Revista de Negócios is published quarterly in January, April, July and October on the website [furb.br/mn](http://furb.br/mn).

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## MISSION

Revista de Negócios advances the knowledge and practice of management learning and education. It does it by publishing theoretical models and reviews, mainly quantitative research, critique, exchanges and retrospectives on any substantive topic that is conceived with studies on emerging countries. Revista de Negócios is an interdisciplinary journal that broadly defines its constituents to include different methodological perspectives and innovative approach on how to understand the role of organizations from emerging countries in a globalized market.

## SCOPE AND FOCUS

Revista de Negócios aims to create an intellectual and academic platform, under the perspective of Strategic Management Organization, to promote studies on Emerging Countries. The Journal looks and reviews for contributions to the debate about researches on two specific topics: innovation and competitiveness and strategic organization in emerging countries. The topic of innovation and competitiveness covers all studies and researches related to how organizations can sustain their competitiveness, particularly focusing on innovations, entrepreneurship and performance. The second topic covers studies and researches on strategic management of organizations, more specifically on how companies can or should act at strategic level looking mainly but not only to external context, supply chain, competitive strategies in international market, and marketing approach. The editorial policy is based on promoting articles with critical perspectives seeking for the understanding of the differences and similarities among emerging countries and in comparison with experiences and theories on strategic management in developed countries. It intends to promote specific contributions of how theoretical and empirical studies on emerging economies may contribute to the advance of theories related to innovations and competitiveness and strategic management of or-

ganizations. It is welcome scholars particularly working on such topics to submit theoretical essays, empirical studies, and case studies. The Revista de Negócios is open to different methodological perspectives and innovative approaches on how to understand the role of organizations from emerging countries.

## TARGET AUDIENCE

The target audience of Revista de Negócios is the Brazilian international academic community in related fields of knowledge on business management.

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## Editorial Letter

The main objective of our Journal is to create an intellectual and academic platform, under the perspective of strategic management of organization, in order to promote studies in emerging countries. This editorial decision represents a new milestone in the history of our Journal, looking forward to contributing to the debate regarding researches on two specific topics: innovation and competitiveness, and strategic organization in emerging countries. We understand that the topic of innovation and competitiveness covers several studies and researches related on how the organizations are capable to sustain their competitiveness, particularly focusing on innovations, entrepreneurship, and performance.

The second topic covers studies and researches regarding strategic management of organizations. More specifically it focuses on how companies can or should act at a strategic level, examining mainly but not only to the external context, supply chain, competitive strategies in international markets, and marketing approach. We look forward to contributions from authors around the world, stating that this is our last joint edition, with articles published in Portuguese. We will continue accepting articles for both Portuguese and Spanish, but all publications and our website will be exclusively published in the English language.

Our editorial policy is based on promoting articles with critical perspectives, seeking for the understanding of the differences and similarities among emerging countries in comparison with experiences and theories on strategic management in developed countries. We intend to promote specific contributions of how theoretical and empirical studies on emerging economies may contribute to the advance of theories related to innovations and competitiveness, and strategic management of organizations.

We invite scholars particularly working on such topics to submit theoretical essays, empirical studies, and case studies. We are open to different methodological perspectives and innovative approaches on how to understand the role of organizations from emerging countries in a globalized market. Today all decisions go through a group of editors, but this journal continues with its headquarters at the Regional University of Blumenau - FURB, in the post-graduate program in Business Administration.

Guest editors were incorporated into the group of editors or into the academic and executive board. This new group is formed exclusively by researchers and editors with experience of several stemmed study centers from around the world, with publications related to emerging countries. The present issue is divided into two sections, Research & Reviews and Books & Resources Reviews, focusing on context effects and contextualization in entrepreneurship, governance and sales in management.

The present edition is centered on organizations interaction and countries integration. The first paper aims to characterize the interorganizational network of exporting companies in Maringá, Brazil. Social Network perspective is used to discuss the interorganizational relationship through concepts such as centrality, strong and weak ties, social embeddedness, embedded ties and arms-length ties. Interviewing 31 exporting companies, that when dealing with their relationships, the exporting companies concentrate their

relationships on the value chain (buyers and suppliers).

The second article discusses the philosophical foundations of business ethics and corporate social responsibility, from a critical conception of commonly used approaches, their assumptions and their justifications. The paper presents a theoretical and philosophical reflection, developed in order to question and appoint alternative solutions to the weaknesses of the most common justifications of corporate social responsibility.

The third paper examines the influence of multimedia content presentations on retention and satisfaction of business administration students, when subjected to different didactic standards. It found that classes with dynamic slides has better results, indicating that dynamic slides facilitate the logical and rational development of the discipline and raise students' motivation.

The last article evaluates and registers the importance of economic integration for the economic growth of countries, particularly Brazil and Mexico. The results allow to conclude that for the period prior to the integration there was no relationship between the Brazilian and Mexican GDP growth, and, for the period after, GDPs kept relationship between them.

We expect to create more than an academic research experience, but a place where the academic experiences can contribute positively to the growth of companies, nations and people.

Marianne Hoeltgebaum and Gérson Tontini

Editor and Coeditor

## Inter-organizational Relationships Networks in Internationalization Process of Exporting Companies

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### KEYWORDS

Networks,  
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Exporting companies

### ABSTRACT

This research aimed to characterize the interorganizational network of exporting companies in Maringá (PR). Social Network perspective is used to discuss the interorganizational relationship through concepts such as centrality, strong and weak ties, social embeddedness, embedded ties and arms-length ties. The population was 47 and the questionnaires were applied in 31 exporting companies, 66% of the population. When dealing with their relationships with organizations, the exporting companies concentrate their relationships on the value chain (buyers and suppliers). These relationships tend to be embedded and frequent, where each company plays only one role in relation to the other. Even though only four exporting companies cited their competitors as organizations with which they keep a more frequent contact, there is evidence of the existence of cooptation in these relationships. Eight exporting companies mentioned trade associations and companies formed by competitors as institutions with which they keep frequent contact, that is, these companies keep contact with competitors through institutions (evidence of the existence of cooptation). Limitations: The number of companies in the sample limits the statistical analysis. In trying to mitigate this problem, all the questionnaires were applied in loco assuring that the respondents were the correct informants. The number of variables in the ANOVA – GLM was limited to two, trying to keep the statistical power. As research suggestion, the population should be expanded. The role of institutions should be analyzed in depth, especially of the Mercosul Institute and the Banco do Brasil. The role of institution in the cooptation should be analyzed.

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### 1 Introduction

The researches on social networks are not recent. Among the pioneering work on social networks, two stand out: *The strength of weak ties* and *Getting a job*, both from Mark Granovetter, an American sociologist. The works were published, respectively, in 1973 and 1974. These works (Granovetter, 1973, 1974) introduced the discussion about the role of the networks in the promotion and access to existing opportunities in the social and economic structure and the job market. In the organizational theory, the social

network perspective emerged in the end of the 1970s, when authors such as Aldrich (1979) started to make use of the forms of interorganizational relationships as an analysis focus (Martes; Bulgacov; Reinert; Gonçalves; Augusto, 2006).

In Brazil, the studies on social networks have intensified in the last decade (Boehe and Toni, 2006; Bulgacov and Verdu, 2001; Maciel, 2007; Reinert, 2008a, 2008b, 2006; Rezende and Versiani, 2007). National research on networks, as well as international, concentrate on two approaches: networks as a way of governance and

networks as an analytical tool. In the first approach, research deals with corporate structures that take the network format. In the second, research discusses social relationships, social embeddedness, social capital and the construction of the network by using specific methodological procedures (Martes et al., 2006).

When studying interorganizational social networks through social network theory, the assumption that organizations are embedded in a network of social relationships is made, a network that influences the economic action (Smelser and Swedberg, 2005). In other words, the organizations are not independent in relation to other organizations, that is, there is interdependency between organizations that may facilitate or hamper economic action. This interdependency can be exemplified by the fact that organizations are unable to generate all the resources necessary to sustain themselves (Aldrich and Pfeffer, 1976) and enable their internationalization, so the organizations, through their relationship networks, seek to obtain the necessary resources to reach their organizational objectives.

The studies on international business are also not recent. The most commonly used model in the literature on internationalization is the School of Uppsala proposed by Johanson and Valhne (1977) (Chetty and Campbell-Hunt, 2004). However, Johanson and Valhne (2003) argue that the traditional models of internationalization, such as the original model of Uppsala and the stage model in the export process and model of innovation, among others, should be combined with new models, for not being able to explain the internationalization of certain types of companies such as born global and small businesses. The authors combined the mechanisms of the original model with the network vision focusing on the critical role of building and changing relationships in the internationalization process, which becomes the network approach to internationalization. From the need to consider new models, many lines of research on international business, partially connected, have emerged, such as new ventures or born global, high technology companies, industrial service companies and small businesses. A common feature of these many lines of research is that they emphasize the networks when they try to understand and explain the rapid internationalization of these companies (Johanson

and Valhne, 2003).

The issues that permeate this research are not new, but the purpose of this research is to contribute to aspects still little explored in the literature. The literature on international activities companies emphasizes limits to internationalization, such as lack of resources (financial, human, etc.) and knowledge (especially on markets and overseas experience), which can be overcome through networking relationships (Chetty and Angdal, 2007; Chetty and Campbell-Hunt, 2004; Freeman, Edwards and Schroder, 2006). Regarding the internationalization, these relationships have been discussed by several authors (Boehe and Toni, 2006; Chen and Chen, 1998; Chetty and Agndal, 2007; Chetty and Campbell-Hunt, 2004; Child and Rodrigues, 2006; Loane and Bell, 2006; Lorga, 2002; Mort and Weerawardena, 2006; Rezende and Versiani, 2007; Seppo, 2007) by the network approach to internationalization (Johanson and Valhne, 2003). The perspective of social networks and the network approach to internationalization have the same assumptions, but the literature on social networks is wider with respect to different types of relationships. By using a social perspective, it is possible to better analyze how different relationships affect the internationalization, which is an economic action (Swedberg and Granovetter, 2001). The originality of this work is focused on the fact that none of these previous works used the theory of social networks to study the internationalization of companies.

The practical relevance of this research is shown as managers understand that internationalization requires resources that can be acquired through inter-organizational relationships and the internationalization process is associated with the ability of the company to maintain inter-organizational relationships and to access resources through these.

This study, in turn, has as its main objective to characterize the inter-organizational network of exporting companies in Maringá (PR).

## 2 Theoretical Framework

Here this study's theoretical table is presented. The objective is not the full discussion of subjects related to the research, but to present



the foundations on which this work was built upon.

## 2.1 Social networks

A relationship is a connection between two agents (organizations, people, societies or even States) (Ross and Robertson, 2007). In turn, a network is a structure made of the relationships between the aforementioned agents (Scott, 2003).

When relationships happen between companies, they are called interorganizational and may be defined as the transactions, the flow and the links of resources relatively lasting, that happen between two or more organizations (Oliver, 1990). These relationships with external partners are extremely important to a 21<sup>st</sup> century company (Ross and Robertson, 2007). The relationships have shape and content. The shape or structure represent all the links the agents maintain with other agents, that is, it is the network design that shows the quantity of connections. The content refers to the quality of the relationships, namely, the type of relationship between the two agents. The relationship content also includes the flow of resources and information, council or friendship (Powell and Smith-Doerr, 1994).

One of the ways to study shape or structure of the interorganizational social networks is to use centrality measures. The agent's centrality reveals its importance within a network; the bigger the centrality, the more important it is. Agents with bigger centrality in a network maintain more ties with other agents, than the other agents (Wasserman and Faust, 1999).

As in relation to the content, interorganizational relationships may be simple or compound. The simple one occurs when one company has only one type of relationship with another company. The compound happens when one company has simultaneously more than one type of relationship within another company. For

example, DuPont is a competitor, partner, buyer and supplier of Celanese, another chemical company. A compound relationship includes all the dyadic relationships that exist between two companies, but represents only one link in a social network (Ross and Robertson, 2007).

Another representative work on the study of relationships' content is Granovetter's theory (1973) of weak and strong ties. A strong tie relationship characterizes itself by frequent interactions that supply access to available information and resources within the acting social circles themselves (Granovetter, 1983). By contrast, a weak tie relationship characterizes itself by sporadic interactions that supply access to information and resources beyond those available within the agents' social circles (Granovetter, 1983).

Still regarding the content, there is Uzzi's work (1997), in which the interorganizational relationships can be classified as embedded ties and arm's-length ties. Embedded ties reflect the social embeddedness concept (Granovetter, 1985), that is, the personal nature of business relationships and its effects on the economic process. Embedded ties present the following characteristics: trust, fine-grained information transfer and joint problem-solving arrangements, which in turn can generate benefits such as privileged access to resources, organizational performance improvement, etc. (Uzzi, 1997). Over-embeddedness, however, generates problems such as reduction of the flow of new information within the network, since coinciding ties with partners of the same network mean that there is little to no connection to external members that may contribute with innovative ideas (Burt, 1992).

Arm's-length (or market) ties reflect the economic nature of business and present the following characteristics: lack of reciprocity between exchange partners, no repeat interaction

and economic focus on the transactions. Therefore, there is no social content in the relationships between partners, business deals are one time only between said partners and the focus is the costs of the deals (Uzzi, 1997).

Uzzi (1997) highlights the importance of the two types of ties in order for the organizations to gain a competitive edge. Each type of tie offers different opportunities: embedded ties supply better access to the benefits that circulate on the network, while arm's-length ties help prevent the complete isolation of the market demand and give access to new information.

It is important to emphasize that while Granovetter's theory (1973, 1983) on weak and strong ties focuses on the frequency (intensity) of the interactions, Uzzi's theory (1997) on embedded and arm's-length (market) ties stresses the depth of the relationships. Furthermore, the relationships may be simple and compound (Ross and Robertson, 2007). Thus, there is the possibility of combining frequency, depth and quantity of the roles played (one or more), which results in eight types of relationship (Figure 1).

**Figure 1.** Relationships resulting from the combination of the attributes of the different types of ties

		<b>Embedded Ties</b>	<b>Arm's-length (Market) Ties</b>
<b>Strong Ties</b>	<b>Simple</b>	More frequency and depth – Type 1A	More frequency and less depth – Type 2A
	<b>Compound</b>	More frequency and depth – Type 1B	More frequency and less depth – Type 2B
<b>Weak Ties</b>	<b>Simple</b>	Less frequency and more depth – Type 3A	Less frequency and depth – Type 4A
	<b>Compound</b>	Less frequency and more depth – Type 3B	Less frequency and depth – Type 4B

Source: prepared by the author, based upon Granovetter (1973, 1983), Uzzi (1997) and Ross and Robertson (2007).

A type 1A relationship is characterized by frequent interactions, more social embeddedness and one role played. A type 1B is characterized by frequent interactions, more social embeddedness and more than one role played. A type 2A is

characterized by frequent interaction, small social embeddedness and one role played. A type 2B is characterized by frequent interactions, small social embeddedness and more than one role played. A type 3A is characterized by sporadic interactions, great social embeddedness and one role played. A type 3B is characterized by sporadic interactions, great social embeddedness and more than one role played. A type 4A is characterized by sporadic interactions, less social embeddedness and a role played. A type 4B is characterized by sporadic social interactions, less social embeddedness and more than a role played.

Relationships may occur between competitors, partners, buy from organizations and suppliers. They may be less or more frequent and deep, as well as influence the agents' economic actions.

### *2.1.1 Social networks and economic action*

Economic sociology may be defined, in a simple manner, as the sociological perspective applied to economic phenomena, and, in a more elaborate manner, as the application of theoretical frameworks, variables and sociological explanatory models to the array of activities which refer to product production, distribution, exchange and consumption as well as limited service (Smelser and Swedberg, 2005, p. 3).

To the new economic sociology, the concept of social embeddedness is fundamental, which can be defined as the overlapping between social relations, ties between the network agents and economic actions (Granovetter, 1985). In other words, embeddedness means that the economic actions are embedded within the social network structure.

The study of the networks, such as the works by Burt (1992), Uzzi (1997) and Powell and Smith-Doerr (1994), have been the center of the new economic sociology (Smelser and Swedberg, 2005).

The relationships may be cooperative or competitive, which will be discussed next.

### *2.1.2 Cooperation and competition in relationships*

The increase in the intensity of relationships has been one of the ways chosen by the companies with the objective of survival (Aldrich, 1979; Castells, 1999). The theory and the research on interorganizational relationships are being

discussed through two paradigms: the competitive and the cooperative, which try to explain the advantages of those companies when compared to the others. (M'Chirgui, 2005).

The competitive paradigm has excelled in the theory, research and the practice of strategic administration (Lado, Boyd and Hanlon, 1997). Understanding the sources of competitive advantage, which explain varying levels of profitability, has become the main area of research in strategic administration (Barney, 1991; Porter, 1986). The two most often used paradigms to explain the competitive advantages are the Positioning School (Porter, 1986), which argues that the competitive advantage is derived from an advantageous position in the industry, and the Resource Based View, which stipulates that the competitive advantage is a result of the mobilization and development of resources, competences and capabilities (Barney, 1991; Hamel and Prahalad, 1990, 1995, 1998; Teece, Pisano and Shuen, 1997; Wernerfelt, 1984), that allow the company to offer to consumers, superior products than its competitors (Lado et al., 1997).

The cooperative paradigm, in turn, emphasizes the development of the collaborative advantage. Within this paradigm, the business world is made up of an interdependent social network developed and encouraged through strategic collaboration in order to reach mutual benefits (Lado et al., 1997). The cooperative strategy (or cooperative game, if using game theory terminology) happens when two individuals (companies or states) are capable of discussing the situation and agree on a rational joint plan of action, an agreement that should be met (Nash, 1953).

The cooperative game presupposes a bargaining situation, in which agents have the opportunity to collaborate to the mutual benefit in more than one way (Nash, 1950; Rubinstein, 1995). Researchers know that in an environment increasingly complex and turbulent, companies can improve their performance through strategic collaboration (Lado et al., 1997). The recent interest in cooperative strategy is based in the widely accepted notion that organizations are cooperative systems by nature (Barnard, 1979) that emphasize the harmonious interdependence between subsystems (Lado et al., 1997).

Each of these perspectives, competitive and cooperative, offering only a partial view of the

reality. Success in the business world of today requires that companies pursue competitive and cooperative strategies simultaneously. To improve their competitiveness, companies must adopt behaviors that reinforce the cooperation and trust and, in order to be effective collaborators, companies should compete for competences (Lado et al., 1997). Thus, cooperation may elevate the competitive position of a company (Chien and Peng, 2005; Lado et al., 1997).

To Lado et al. (1997), competition and cooperation are not the opposed sides of a continuum; they are independent variables which interaction or interdependency must be studied, to explain success in today's business world.

When the nature of the relationship between competitors is analyzed, there are four types of relationship that can be identified (see figure 2), taking into account the trade-off between cooperation and competition (Bengtsson and Kock, 1999; Lado et al., 1997).

Monopolistic or co-existential behavior characterizes itself by low competition and cooperation and does not include interaction between competitors. Cooperative behavior is characterized by high cooperation and low competitiveness between the companies that seek mutual benefits through additional resources, abilities and capabilities. The competitive behavior is characterized by high competitiveness and low cooperation, which reflect an entrepreneurial orientation to reach a superior performance position and generate a competitive advantage over the other companies. The cooperative behavior, in turn, characterizes itself by high cooperation and competitiveness, both reflected in a combination between cooperative and competitive strategies (Lado et al., 1997).

**Figure 2.** Strategic behaviors

		Competitive orientation	
		Low	High
Cooperative Orientation	High	<b>Cooperative behavior</b>	<b>Cooperative Behavior</b>
	Low	<b>Monopolistic or co-existential behavior</b>	<b>Competitive behavior</b>

Source: Adapted from Bengtsson and Kock (1999) and from Lado et al. (1997).

The results from Uzzi's work (1999) suggest in embedded ties relationships there are simultaneously cooperation and competition,

while in arm's-length ties competition predominates. The author, through studying New York's women's clothing industry, identified in competing businesses, linked by embedded ties, both competition as well as cooperation. Apart from competing with each other, their relations were characterized by trust, fine-grained information transfer and joint problem-solving arrangements. In the competing businesses linked by arm's-length (market) ties, only competition was identified, namely, the relationships between the companies was characterized by lack of reciprocity, non repeated interaction and an economic focus on transactions.

Within any relationship, cooperation and competition may coexist, which is called **coopetition** (Bengtson and Kock, 1999; Dowling, Roering, Carlin, and Winieski, 1996; Gnyawali and Madhavan, 2001; Lado et al., 1997; M'Chirgui, 2005; Tsai, 2002), and they may lead the partner companies to a better performance (Gnyawaly and Madhavan, 2001). Inter-organizational relationships constitute the coopetition' social structure, which manifests strategies both for cooperation as well as for competition (Chien and Peng, 2005). While Dowling, Roering, Carlin and Wisnieski (1996) indicated the probability of an increase in cooperative relationships, Ketchen, Snow and Hoover (2004) state that, in reality, coopetition is increasing.

Although competitive and cooperative paradigms dominate the theory and the research about interorganizational relationships, few studies have emphasized the benefits that companies may obtain when they compete and cooperate simultaneously (M'Chirgui, 2005). This cooperative behavior is apparent in industries based on knowledge, especially in the information technology domain (Carayannis and Alexander, 1999), in biotechnology (Quintana-Garcia and Benavides-Velasco, 2005), at total speed in smart card applications (M'Chirgui, 2005) and in the simulators industry (Chien and Peng, 2005). The coopetition was also identified among the chemical industry companies in Estonia (Seppo, 2007), as well as in the crystal (and glass) sector in Portugal (Lorga, 2002).

There are several perspectives that offer a useful theoretical table to analyze coopetition, such as RBV resource-based view and dynamic capabilities that can explain organizational

performance through the use and development of internal and external resources (M'Chirgui, 2005). The necessary resources to reach organizational goals may belong to the company (internal resources) or not. If the company does not possess the resources, there is a possibility of acquiring them with other companies in the environment, through buying (market resources) or through interorganizational relationships (relational resources) (Sanchez, 1995). Therefore, the organizations depend upon others in terms of resources, and that dependency will result in organizational relationships (Aldrich and Pfeffer, 1976).

Organizations can be seen as opens systems that necessarily bargain (Pfeffer, 1992) or make exchanges (in the words of Levine and White, 1961) within the environment in order to acquire resources (Pfeffer, 1992), because they are not capable of internally generating all the necessary resources to maintain themselves (Aldrich and Pfeffer, 1976). To those authors, the interorganizational relationships are considered a special case study of the relations between the organizations and their environments.

The environment may be viewed as an inventory of resources which are rare, valuable and essential (Pfeffer, 1972a; 1972b) to the organizational survival (Pfeffer and Salancik, 1978).

### 3 Methodology

This is an *ex post factum*, sectional, descriptive-quantitative research. The level of analysis is organizational; the analysis unit is the organization. The population is made up of 47 exporting companies from the city of Maringá (PR). The questionnaires were made use in 31 exporting companies, 66% of the population. The collected data was analyzed through Univariate parametric statistics (ANOVA – GLM Univariate) and network analysis (centrality calculation)

### 4 Analysis

The analysis of the interorganizational social networks was stated by identifying the **organizations** (companies and cooperatives) with which each export company from Maringá keeps in contact more frequently. It was observed that most companies indicated three or four other

organizations with which they keep in contact more frequently. The average number of organizations with which each export company in Maringá keeps in touch more frequently is 3.6 organizations.

It was observed that the export companies did not mention other export companies from Maringá (PR) as organizations with which they keep in contact more frequently, with the exception of two, which mentioned each other: Recco (beachwear) e Recco (lingerie). This means that each company has an interorganizational social network, but these networks are isolated from one another. Because of the, it was deemed unnecessary to elaborate a sociogram depicting these isolated networks.

There is a need to clarify the relationship between Recco (lingerie) e a Recco (beachwear), which is characterized by frequent and embedded ties, in which each company plays more than one role in relation to the other. Recco (lingerie) is a client of Recco (beachwear), and the later in turn is a supplier of Recco (lingerie). Moreover, they are partners when dealing with the export business.

The city of Maringá export companies' interorganizational relationships are focused on the chain of value (buyers and suppliers) and tend to be type 1A. They are characterized by more social embeddedness (Uzzi, 1997) frequent interaction (Granovetter, 1985) and one role played (Ross and Robertson, 2007), since from the 108 mentioned companies, 100 present only one type of relationship with export companies.

Uzzi's work results (1997) suggest that in embedded ties relationships there are simultaneously cooperation and competition, that is, there is cooptation (Bengtson and Kock, 1999; Dowling et al., 1996; Gnyawali and Madhavan, 2001; Lado et al., 1997; M'Chirgui, 2005; Tsai, 2002). Among the 108 organizations listed by export companies, four were competing organizations, so there is some evidence of cooptation.

Being part of trade associations is a way of relating to your competitors. Six export companies reported being part of trade associations. Another way of relating to your competitors is to constitute a new company to market the products, especially abroad, which was reported by two companies. It is noted that being part of trade associations and companies entails indirect relationships with the

competitors consequently there is evidence of cooptation through being part of trade associations and other companies.

In view the specific goal of characterizing interorganizational social networks in the city of Maringá's export companies, the relational data, collected via a questionnaire, was inserted in a database of the Ucinet 6 program to configure an affiliation matrix (Wasserman and Faust, 1999), which referred to the relationships of the city of Maringá's export companies with regional institutions.

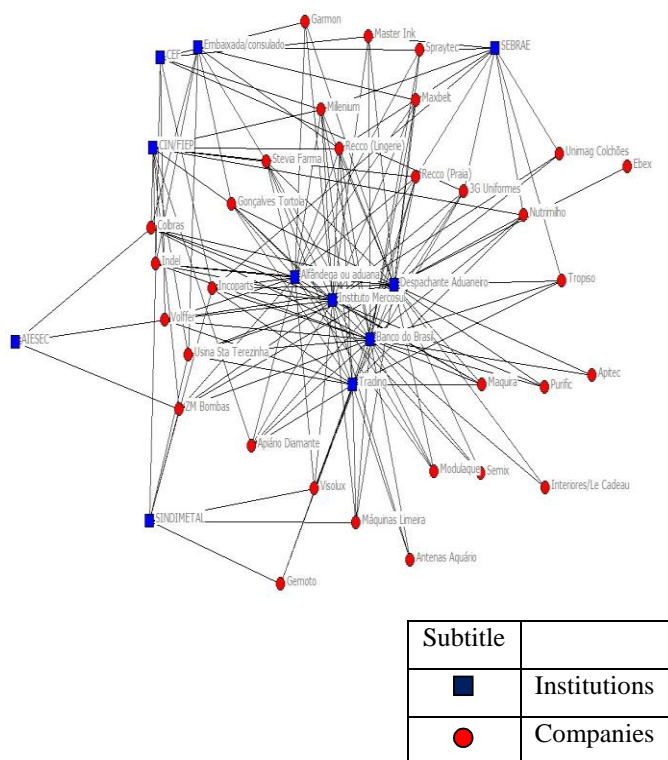
The previously identified regional institutions, which therefore were included in the questionnaire are as follows: (1) Mercosul Institute/ACIM; (2) Embassy/consulate; (3) CIN/FIEP; (4) CEF (Caixa Econômica Federal – Brazil's Federal Central Bank); (5) Customs Clearance Broker; (6) SEBRAE; (7) SINDIMETAL; (8) AIESEC; (9) Banco do Brasil; (10) Trading; (11) Customs.

Affiliation networks are two-mode, but have only one set of agents (in this case the export companies). The second way in an affiliation network is a group of events (in this case the regional institutions) to which the agents belong to. The data in an affiliation network are the agents and the events, the events are defined not by pairs of agents, but by subgroups of agents, each agent subgroup is a collection of agents that participate in one specific event (Wasserman and Faust, 1999, p. 30).

Seeking to reach a clearer representation of the city of Maringá export companies' interorganizational relationships, the relational data matrix was analyzed and originated several socio-metrical maps sociogram.

The sociogram shown in figure 3 represents the links between the city of Maringá's export companies and **regional institutions**. As it can be observed, five institutions (Mercosul Institute, Customs Clearance Broker, Banco do Brasil, *Trading* e Customs) seem to be more central in relation to the other six that are located in more peripheral regions of the network (Embassy/consulate, CIN/FIEP, CEF, SEBRAE, SINDIMETAL e AIESEC).

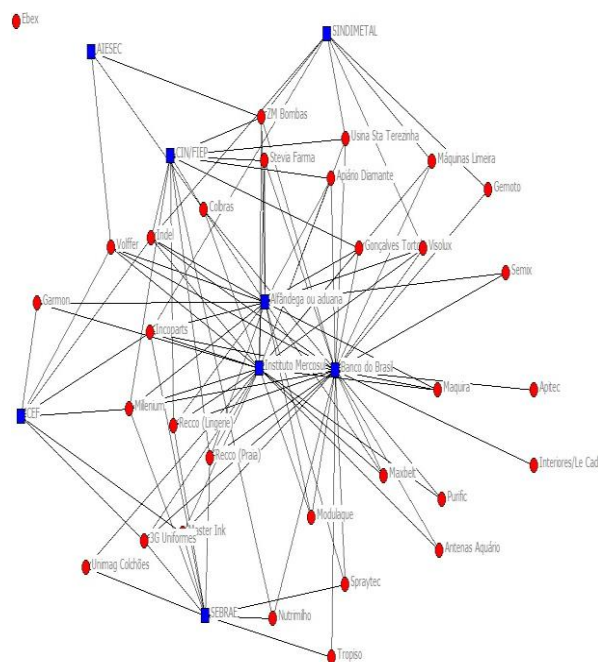
**Figura 3.** Social network configuration between companies and institutions



Source: Research data

Considering that the institutions named as Embassy/consulate, Customs Clearance Broker and trading do not represent just one organization, the choice was made to exclude them from the analysis and to redo the sociogram, here shown in figure 4, which represents the links between the city of Maringá's export companies and the regional institutions. As it can be observed, three institutions (Mercosul Institute, Banco do Brasil e Customs Clearance Broker) are more central in relation to the other five that are located in more peripheral regions of the network (CIN/FIEP, CEF, SEBRAE, SINDIMETAL e AIESEC).

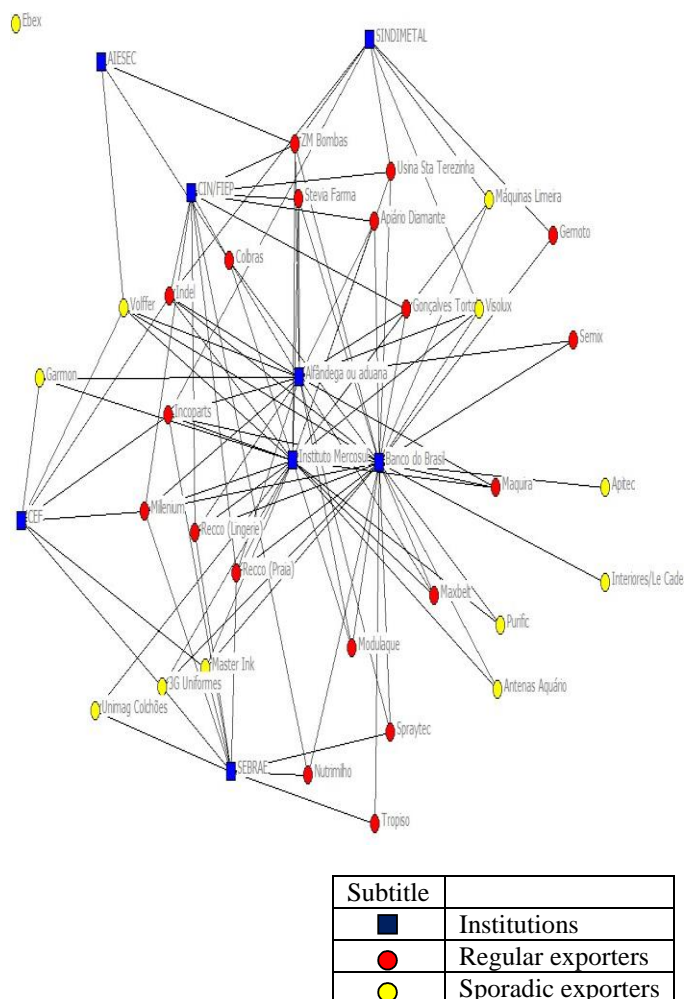
Figura 4. Social Network configuration between companies and institutions after excluding three institutions



Source: Research data

The sociogram shown in figure 5 represents the links between the city of Maringá's export companies by type of export and the regional institutions. As can be observed, the regular export companies tend to be more central than the sporadic export companies. Noting that Ebex, a sporadic export company, is left totally isolated, when the Customs Clearance Broker and two other institutions are taken out of the sociogram.

**Figure 5.** Social network configuration between companies considering type of exports and institutions after the exclusion of three institutions



Source: Research data

#### 4.1 Centrality calculations

One of the main purposes of the use of sociograms in network analysis is the identification of the network's most important agents and centrality measurement is one of the ways to quantify this importance (Wasserman and Faust, 1999). Aiming to quantify the importance of the city of Maringá's export companies as well as the regional institutions, several centrality calculations were carried out.

**Table 1.** Centrality degree of the exporting companies in the city of Maringá (PR)

Companies	Degree 1	Degree 2	Degree 3
Indel	8	88	94
Millenium	8	91	97
Recco (Lingerie)	8	85	90
Incoparts	8	87	93
ZM Bombas	7	84	90
Volffer	7	74	79
Gonçalves e Tortola	7	76	80
Usina Sta Terezinha	7	65	69
Stevia Farma	7	76	80
Colbras	7	78	83
Recco (Praia)	7	85	90
Apiário Diamante	6	76	80
Visolux	6	72	76
3G Uniformes	6	64	68
Máquinas Limeira	5	55	58
Maxbelt	5	66	69
Master Ink	5	64	68
Nutrimilho	5	46	49
Spraytec	5	53	56
Maquira	5	66	69
Modulaque	4	66	69
Tropiso	4	33	38
Garmon	4	45	48
Semix	3	44	46
Antenas Aquário	3	49	51
Gemoto	3	33	35
Purific	3	49	51
Unimag Colchões	3	31	33
Interiores/Le Cadeau	2	27	28
Apitec	2	27	28
Ebex	1	0	0

Fonte: Research data

Initially, the degree of centrality that each of Maringá's exporting company has, was calculated, and consequently the number of contacts that each company has with regional institutions. The four companies which presented the highest degree of centrality were: Indel, Millenium, Recco (Lingerie) and Incoparts, each with eight contacts. Ebex presented the lowest centrality level with just one contact with Customs Clearance Broker (see table 1 – degree 1)

Aiming to confirm the apparent centrality of some institutions, revealed by the sociogram shown in figure 3, two centrality calculations were conducted: first, the degree of centrality of regional institutions was calculated, taking into



consideration with how many of the city of Maringá's export companies they relate to. This calculation confirms the sociogram's apparent centrality of the following institutions: Customs Clearance Broker, Banco do Brasil, Mercosul Institute, Customs (see table 2 – degree 1).

**Tabela 2.** Regional institutions centrality degree

Regional institutions	Degree 1	Degree 2
Customs Clearance Broker	29	117
Banco do Brasil	28	121
Mercosul Institute	23	063
Customs	18	054
Trading	17	045
CIN/FIEP	11	029
SEBRAE	10	018
Embassy/consulate	08	017
CEF	07	025
SINDIMETAL	07	018
AIASEC	03	010

Fonte: research data

Secondly, regional institutions centrality degree was calculated, taking into account the frequency of contact of the city of Maringá's export companies with these regional institutions, namely, the importance was weighed by the contact frequency. This calculation confirms the apparent centrality in the sociogram of the following institutions: Customs Clearance Broker, Banco do Brasil, Mercosul Institute, Customs and trading (see table 2- degree 2)

The two performed calculations, aiming to confirm the apparent centrality of some regional institutions, revealed by the sociogram represented by figure 3, that are, (1) the centrality degree of regional institutions, taking into account to how many of the city of Maringá's export companies they relate to (table 2 – degree 1), and (2) the centrality degree of regional institutions, taking into account the contact frequency of the city of Maringá's export companies with these regional institutions (table 2 – degree 2), do confirm the apparent centrality in the sociogram of the following institutions: Customs Clearance Broker, Banco do Brasil, Mercosul Institute, Customs and trading. There is an inversion in the centrality degree order from the first to the second calculation. Customs Clearance Broker, goes from first to second place and Banco do Brasil from second to first place. Considering the mentioned institutions such as embassy/consulate, Customs Clearance Broker, and trading did not represent

just one organization, the choice of excluding them and to redo the centrality degree calculations of the city of Maringá's export companies was made.

First, the centrality degree of each of Maringá's export companies was calculated, that is, what is the number of contacts that each company has with other companies, through regional institutions. The six companies that presented the highest centrality degree were Millenium, Indel, Incoparts, Recco (beachwear), Recco (Lingerie) e ZM Bombas. Ebex presented a zero centrality degree since its only contact, Customs Clearance Broker, was eliminated from the calculations (see table 1 – degree 2).

Secondly, the centrality degree of each of Maringá's export company was calculated, considering the number of regional institutions, that is to say, apart from the number of contacts that each company has with other companies through regional institutions, the number of contacts the companies have with regional institutions was added. The six companies that presented a highest centrality degree were Millenium, Indel, Incoparts, ZM Bombas, Recco (beachwear) e Recco (Lingerie). Ebex presented a zero centrality degree since its only contact, Customs Clearance Broker, was eliminated from the calculations (see table 1 – degree 3).

When comparing the three performed centrality degree calculations of the city of Maringá's export companies (see table 1 – degrees 1,2 and 3), it is observed that: (1) the eleven companies with the highest centrality degree vary very little. when the centrality calculation is done considering all the regional institutions, Usina Santa Terezinha is part of the top eleven companies (table 1 – degree1); when the centrality calculation is done considering only eight regional institutions, Usina Santa Terezinha is not part of the top eleven and yields its place to Apiário Diamante (table 1 – degrees 2 and 3). That is a consequence of Usina relating to three of the institutions that were taken off to do the calculation (embassy/consulate, Customs Clearance Broker, and trading); (2) when the centrality calculation is done considering only eight regional institutions (table 1 – degrees 2 and 3), the eleven companies with the highest centrality degree are exactly the same. The only difference appears when the calculation considers the number of regional institutions (table 1 –



degree 3) ZM Bombas stays ahead of Recco (Beachwear) and Recco (Lingerie)

As a result of the centrality analysis of the city of Maringá's export companies, the following hypothesis was developed.

**H1:** There is a positive relationship between centrality and regular exporting.

That is, the companies that export more regularly are more central than the ones that export sporadically. Centrality reflects the importance of the company, and, as a rule, this importance is linked to the size. To control the possible effect of size in centrality, the size was added to the model as a control variable. To allow the use of size by SEBRAE's criteria (2004), micro and small companies were grouped in one category and medium and big in another, thus eliminating the zeros.

To test the hypothesis, a General Linear Model technique was used, found in the statistical package SPSS 13.0. This technique allows the testing of the hypothesis that the average of a dependent variable are different between groups (independent variable). Furthermore, different from the ANOVA One-Way, it is possible to add to the model independent control variables, such as categorical and continuing, which allows a better refinement of the analysis, since the variation of the dependent variable, that is shared by the control variables, is removed before the variation is attributed to the independent variable which is being tested (Cramer, 2006). The model tested is presented below.

Centrality =  $B_0 + B_1$  Type of export +  $B_2$  SEBRAE Size

Considering that centrality is the dependent variable,  $B_0$  is the intercept, Type of export is the independent variable to be tested in the hypothesis and the variable SEBRAE size is used as the control variable. Initially, to test the model, the Levene equal variance test was done between the groups. Since the test was not significant at 90%, the hypothesis of equal variance between the groups was corroborated, which allows for the model GLM test.

It should be made clear that the hypothesis was tested twice, each time using a different degree of centrality: first, the centrality degree of

each of Maringá's export company has was used, that is, the number of contacts that each company has with other companies through regional institutions (table 1 – degree 2). Then, the centrality degree that each export company from Maringá has was used, this time considering the number of regional institutions, that is, apart from the number of contacts that each company has with other through regional institutions, the number of contacts the companies have with the regional institutions was added (table 1 – degree 3). The results of both hypothesis tests show that regular exporting is linked positively to centrality, when controlled by size, with a significance rate of 95%. For lack of space, the results could not be presented in their entirety.

## 5 Conclusion

When considering the relationships with organizations (companies and cooperatives), export companies concentrate their relationships in the value chain, which includes buyers and suppliers. These relationships tend to be embedded and frequent, within which each company plays only one role in relation to the other.

When considering relationships with regional institutions, export companies tend to relate more to five institutions: Mercosul Institute, Customs Clearance Broker, Banco do Brasil, *trading* e Customs. By eliminating the institutions embassy/consulate, Customs Clearance Broker and trading, since they do not represent one single institution, the institutions that stand out are Mercosul Institute, Banco do Brasil and Customs.

The importance of the Mercosul Institute to the city of Maringá's export companies was confirmed as this research developed. It is the only institutions focused on exporting based in this city. Among the 31 export companies studied, 23 stated having a relationship with the Institute. The centrality calculations (see table 2 – degree 1, 2 and 3) confirm the apparent importance of the Mercosul Institute revealed through the sociograms.

Participation in institutions such as the Institute Mercosur increases the possibility of acquiring competitive capabilities, or new information and opportunities with respect to internationalization. Regional institutions are essential for the discovery of new foreign markets.

A subject deserves to be highlighted: coopetition, namely, the existence of cooperation and competition between competing companies. Even though only four export companies mentioned their competitors as organizations with which they keep more frequent contact, there is evidence of the existence of coopetition in these relationships. Eight companies mentioned trading associations and companies made up of competitors as institutions with which they keep more frequent contact, that is, these companies keep in touch with competitors through institutions, and therefore, there is evidence of the existence of coopetition in these relationships.

The main theoretical contributions result from the relationship between the process of internationalization and networks of interorganizational relationships. Regular exporters are more central than sporadic exporters. This means that regular exporters maintains more than interorganizational relationships than sporadic exporters, that is, greater number of relationships maintained greater involvement in the foreign trade. This reinforces the assumption of economic sociology that economic actions are embedded in social networks, that is, reinforces social embeddedness. Exporting companies in general, maintains relationships with other organizations characterized by embedded, strong and simple ties. Exporting companies also maintains relationships with regional institutions, which are considered a substitute of weak ties. Relationships maintained with organizations and regional institutions reinforce the assumption of social networking theory that different types of ties are required for companies to achieve competitive advantage because each type of tie offers different opportunities. This work also reinforces that one of benefits of coopetition is to improve the competitive position of companies with respect to internationalization.

## 6 Implications and Further Research

Some limitations must be discussed. First, the number of companies (31) in the sample. It limits the statistical analysis. In trying to mitigate this problem, all the questionnaires were applied in loco assuring that the respondents were the correct informants. Besides that, the number of variables in the ANOVA – GLM was limited to two, trying to keep the statistical power.

As future research suggestion, the populations should be expanded. The role of institutions should be analyzed in depth, especially of the Mercosul Institute and the Banco do Brasil. Finally, the role of institution in the coopetition should be analyzed. Is it possible coopetition intermediated by an institution?

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## A Philosophical Reflection about Ethics and Corporate Social Responsibility

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### KEYWORDS

Ethics;  
Social responsibility,  
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Management.

### ABSTRACT

This article discusses the philosophical foundations of business ethics and corporate social responsibility, from a critical conception of the approaches commonly used, their assumptions and their justifications. The paper presents a theoretical and philosophical reflection, developed in order to question and appoint alternative solutions to the weaknesses of the most common justifications of corporate social responsibility. These discussions, according to the argumentative construction of this article, culminate in the proposition of four elements to be considered in a stronger debate about the theme: the ethical personality of organizations; ethics community; the liberty; and the identity between ethics and interest. These elements bring in themselves a different agenda for the debate on responsible business, corporate responsibility, business ethics and social ethics. By considering the ideas proposed in this article, management professionals and students, as well as researchers from the general areas of management will have differentiated and complementary references to the pre-existing ones to a understanding better a more consistent and well justified definition of an ethical and socially responsible company, going beyond current and sometimes fragile justifications which are, sometimes, social and academically discredited, as is the case with justification of the strategies of social responsibility from the argument that it generates profits for companies.

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### 1 Introduction

The most recent global financial crisis, which started in 2008, has expanded discussions involving elements of the economic, political and social spheres in the search for explanations of its causes and its possible consequences. The world witnessed actions of unprecedented proportions that were taken by governments of great powers to try to reestablish the capitalist order at the cost of billions of dollars.

At the same time, some specialists

questioned the ability of this economic system to ensure its functioning within the rules of the conventional game that has been played for two centuries (incidentally, a game which is heavily criticized by those who say they are deprived from their benefits, such as the Occupy movement in the United States and the Los Indignados movement in Spain). That is the result of a larger debate in the early twenty-first century, when the global society, devoid of references to action, sought alternatives to a model of economic and social development which was inspired by the ideas of the Enlightenment (Lipovetsky, 1992).

These discussions include the issue of

production and consumption of goods and services and imply a debate in the business context of what is, or is not, valid, ethical, and socially responsible. In Brazil, it is in this context that debates about ethics and social responsibility have gained breadth, becoming an essential topic in corporate discussions, in management education activities, in business forums, and in business media ever more intensely, comparing the movements around the subject which have developed since the 1990s (although the studies and business discussions on ethics and social responsibility come from the 1950s).

These questions reverberate in the academic context through the demand for a knowledge organization on the subject, and by the challenge of building a substantive theory on it. There are some theoretical perspectives being effectively used to support concrete problems; however, it is not difficult to observe that analysts are still beginning discussions on the subject, without a solid foundation that enables a definition of common parameters about the debate to be conducted. Thus, we understand that the main deficiency of the current situation about corporate ethics and social responsibility is the lack of conceptual references which establish the initial and common basis for a more robust theory (we acknowledge that there is a conceptual difference between ethics and social responsibility, and that even the latter is a form of manifestation of a successful implementation of the first; however, taking into account the discursive practice, and the theoretical and pragmatic convergence, here we decided for the treatment of the two topics under the same perspective).

In this essay, ethics and social responsibility are understood as socially validated behaviors and, as such, full of moral assumptions that are appropriate for an institutional and disciplinary discussion (Dimaggio & Powell, 1983; Suchman, 1995) that attempts to direct human and organizational behavior. But the view defended here is that there is a confusion of terminology and principles in the academic and business debate on the subject, which is due to the very nature of the philosophical and moral content involved, which, in our view, still requires further consideration to generate a better comprehension of practices and alternatives.

For example, it is not uncommon to find lists of moral advice disguised as discussion about

ethics and social responsibility, as if they, even when well intentioned, could solve the problems generated by contemporary situation; this makes such advice questionable despite the fact that, because they belong to the universe of consulting and economic journalism, they do not need to worry about the theoretical state of the questions addressed in councils and journalistic coverage on the subject. For us, only a more solid foundation will enable the overcoming of potential failures like these, making it possible to overcome forms of moral proselytizing in management discourse and practices. Indeed, offering moral advice conveys the idea that the concept of ethics has been duly clarified, because only this concept can give rise to moral actions. That is, such advice seems to assume there is already a consolidated theory coming from a socially established practice, which is certainly not the case of the debate on ethics and corporate social responsibility, at least in the way in the Brazilian academic and professional contexts.

Another example of the failure of typical conceptual definition existing in the literature concerns the relationship between morality and profit. About this subject, there are extreme alternatives of two types. One, based mainly in the arguments of Friedman (1970), who affirms that there is incompatibility between these elements and, therefore, the impossibility of defining ethics and corporate social responsibility as a solid field of studies. Thus, ethics and corporate social responsibility would be just ideological instruments of opportunistic capitalism (see section 2.2). The other, more grounded in the latest theories of Management, argues that it is possible, to reconcile these concepts and that a theory on the subject is not only possible, but also desirable in spreading the benefits of the companies to their stakeholders.

What draws our attention in both perspectives is that they have failed to conceptually solve this apparent difficulty, and the people involved are only invited to decide for only one or the other policy alternatives through subjective appeal. As an example we can mention the manuals of ethics and social responsibility used in undergraduate Business Management courses, which adopt the second position, but hardly discuss the foundation of business morality and the contents are dispersed into historical aspects, in examples, and in various cases. What

follows, then, is just a statement of this prior decision, and a reaffirmation of assumptions assumed from the beginning of the analysis.

We try to meet our objectives putting together our ideas, readings and evaluations from a Brazilian context, although our intention is not to propose a Brazilian theory, neither a theory for Brazil. Also, it is worth noting that, by the state of the art of the theme and the space available for the article, there is no presumption of proposing a definitive philosophical theory of ethics and social responsibility; we just intend to present a well-grounded reflection, with some ideas of possible alternatives for any hitches of the discussion on the topic.

## **2 Some (almost) dominant prospects and discourses**

This item focuses on a schematic characterization and an analysis of the three most evident perspectives in the academic literature about ethics and corporate social responsibility, which are: the moralistic perspective, the sociological/historical perspective, and the administrative perspective.

### **2.1 Ethics and corporate social responsibility as moral imperatives**

Moralism is understood here as a type of discourse that tries to convince the social actors to act in accordance with certain principles which are considered ethically correct by a person or a group. In the context of business administration, the moralist discourse manifests itself in expressions like the businessman must..., the leader must... and the company must.... Expressions and catchphrases like these are commonly present in the discourse of some professors, lecturers, journalists, and writers from the world of business. In these uses, the moralist discourse functions as a set of 'golden rules' that, if followed by those who are interested, ensures that actions are fully imbedded in an ethical and socially responsible nature.

At least since Moses and his Tablets of the Law, moralism is well known in the debate about ethics, especially by its tendency to reduce morality to a clear set of commandments that must be obeyed by all people. Its logic is simple: following the recipe that he offers, the problem of how to act in specific situations will be solved.

Besides being simple, the underlying logic of such speech is clearly fragile, because of the low level of this discourse effectiveness in terms of generating practical attitudes.

Moralism may seem effective to an entrepreneur who has the urge to add value to his or her product through an 'ethical label' valued by the market. Thus, by following the set of commands provided by 'priests of morality', the entrepreneur believes to be adopting a more ethical stance. However, from a concrete point of view, moralism is not effective because it simplifies matters and leaves out everything that is more problematic. In this case, moralism is concerned first about the appearance of ethical actions than about ethics itself.

Thus, through providing moral rules of simple content, the 'corporate Moses' presents himself as a defender of a common sense. He does not lead to any understanding of his own criteria of ethicality which, incidentally, he states in the advice he gives. That is, moralism is characterized by having a common point of view that is unwilling to question the bases that ensure value to its set of rules.

Certainly, intention underlying moralistic advice can be pure and almost holy. For example, a moralist might say that an ethical entrepreneur should not cheat their customers. This seems to be ethical and even unquestionable. But while displaying this line of action, the moralist leaves out what is most important: why cheating would be reprehensible? In the exploration of this example, we can question whether there is a difference between an intentional cheating and a mistake. Would unconscious cheat be ethics? If an entrepreneur acquires a deteriorated raw material, ignoring this fact, and turns it into a bad quality good that will be sold later, is it cheating customers? Should not they be responsible for quality control of raw material? And, knowing about the lack of quality of the raw material at a later time, would it be ethically necessary to inform the problem to customers? More generically: are inadvertent mistakes immoral actions? These issues are not always reflected in the moral universe, as it describes the ethical issues at their most superficial and immediate aspect without questioning what is part of the complexity of concrete human actions.

In fact, the strong presence of moralism in the business world is the result of its own



superficiality. It is easy and inviting because it simplifies; but, in this case, simplifying is eliminating the core of corporate ethical problems. Moralism will never provide reasons why actions that it advocates would be possible in a market context.

For example, whenever it is possible, a company uses sophisticated and targeted advertising resources to generate more demand, arguing that its product is superior to others. The advertising argument can be false because it promises things that are not necessarily true. However, it is validated in the market context, given the current stage of advertising technologies development. About that, a ‘corporate Moses’ would say: do not deceive your customers – without specifying what that means in this context.

There is, in the above example, a question that remains unanswered in the moralist discourse: why should not a businessperson deceive their customers? Why does a businessperson have to give up on their own interest? In other words, why must we be ethical or not when meeting interests means offering what is not necessarily granted by us? Without answering this, the question of ethics and corporate social responsibility comes down to the observance of the rule by the rule, since there is no reason why this particular rule should be object of respect by the agents. The authority of the ‘moral priest’ derives from the fact that he or she considers to be solved what has not been solved; therefore, this authority is fictitious, and anyone can climb an ethical pulpit and start a form of preaching. The question is about knowing why this is the pulpit that gives the authority to the preacher and not to any other person. Without this, we think that the ethical discourse has no value.

We believe that moralism can make the ethical problem superficial and potentially create more problems than solutions. Thus, although it is a discourse that provides easy and immediate answers, they have no durability and have a tendency to deteriorate rapidly in some form of pharisaism. For this reason, we understand that a conceptual discussion of ethics and social responsibility should start by avoiding the easy path of moralism. No set of rules will solve the problem of complexity of human actions in corporate environments.

## 2.2 Ethics and social responsibility as historical and sociological consequence

A second perspective of the discourse on ethics and corporate social responsibility is what you might call ‘sociological and/or historical perspective’. This line of thinking is concerned with analyzing the emergence of an entrepreneurial mindset oriented by ethical aspects and to meet social interests. Thus, it seeks to explain the concern with ethics as a response to current demands, such as the new demands of globalized markets, increasing consumer awareness, competitive intensification, the unavoidable presence of information and communication technologies, and so on.

This perspective can then be characterized as an essentially suspicious discourse in relation to the concerns with ethics and corporate social responsibility, because it understands discourse as a direct result of specific social and historical conditions, linked to the economic, social and technological base. Just by understanding that the concern with ethics and corporate social responsibility is a form of consequence, the sociological and historical discourse seeks to identify its causes, but it does not go deep into its specific nature.

It is understood that by reducing the question of ethics and corporate social responsibility as being motivated by a concern to economic and historical issues, this perspective deprives them of their right to existence. As it presents itself as a reflection of economic and political conditions, we understand that ethics and corporate social responsibility cannot be treated separately, as a stand-alone instance. That is, issues of ethics and social responsibility are reduced to consequences of sociological and historical movements, they are ideological responses related to capitalism strictly oriented to the economic outcome. As such, they are deprived of the possibility of being understood as a field of study which has an epistemological legitimacy that can be understood from its very bases. Like any form of ideological discourse, this should also be the subject of a review which will show what you want to hide (cf. Marx, 1988). In this case, the component underlying ethical and ideological discourse is certainly the search for profit and the maintenance of competitive conditions demanded by the market.

This is not a reflection of the issue of

morality with traditional deontological (the action for its own value) and teleological (the action for its purposes) discourses. In this perspective, morality cannot even be thought in itself, because it is the result of social movements and the innovations in market evolution. For sociological and historical overview of ethics, what is new is only the corporate response to current economic and social conditions, and the correct understanding of this answer lies in the apprehension of its causes. What matters to this perspective is not, properly speaking, ethics, but the social and economic causes that move corporations to try to become more ethical.

There is something wrong with this discourse on ethics and corporate social responsibility. Taken to the extreme of a sociological and historical determinism, almost all phenomena of the world can be explained from the same view. But that is not in accordance with what is set as a goal: to make a theoretical platform possible so that it fosters the self-development of problems related to ethics and to the corporate world. Accordingly, the sociological and historical perspective is not sufficient since it contributes to just a partial understanding of the issue.

We believe that knowing a phenomenon means not only connecting it to its social and historical causes, although this information will certainly help in the understanding. It is agreed that to know is to understand certain phenomena within the context of their specific complexity. We must take into account its novelty: what constitutes its positive character and what makes it distinct from other manifestations of the past. Reducing a phenomenon to a set of known causes is a triviality that repeats the same formal scheme (in that, with it, it just loses its specific color and becomes equal to all others). We should not believe 'all cats are gray in the dark'.

In sum, although we acknowledge the existence of a historical and sociological component in the configuration of discourses and actions developed around or on behalf of ethics and corporate social responsibility, we can say that the autonomy we are seeking for the subject is not legitimate because the whole issue can be summarized in the need of addressing the increasing openness of the world markets. Accordingly, there is no need of any new conceptual basis for the issue of ethics in

corporate environment, and good causal sociological studies can end up the problem. Against this, it is argued that the sociological aspects are not the whole issue, although an important one. The demonstration of this statement will be given if here we manage to indicate non-sociological dimensions involved in the topic of corporate ethics; that is, the autonomy of the object of this study will have to be demonstrated through the pointing out of elements that cannot be reduced to historical causality.

### 2.3 Ethics and social responsibility as administrative practice

The problem of ethics and social responsibility is also presented within the field of management studies, probably the context in which the subject is discussed the most. It is widely known that the field of management is far from building an analytical homogeneity that allows the interpretation of the subject evenly. Historically, this plurality has been fed by the performance/structure, constructivist/positivist, local/global, individualist/collectivist debate (Reed, 1998). The predominant component of the administrative point of view, the functionalism, when occupied with the analysis of ways of generating competitive advantages for the company, included the ethical concerns throughout the production and consumption process. Thus, we seek primarily to create a strategic value in the mindset of consumers, so that ethics and social responsibility have become additional characteristics of goods and services. This provides a company, one supposes, their differentiation from competitors, and a sustainable competitive advantage by exploiting these elements (Barney, 1991), as well as by the association of the latter to a composition of forces in an industry or economic sector (Porter, 1985).

The management literature is certainly the most ambiguous of the set under review, as it oscillates between an open utilitarianism and some form of humanism. This becomes noticeable by the adoption of ideas rooted in functionalism and ideas associated with postmodernism (Cooper & Burrell, 1998), or even when defending themselves, on one side as an instrumental rationality (Weber, 1999) and on the other as a substantive rationality (Ramos, 1981). That is, it can either focus on the issue: a) under the purely instrumental bias (realized, for example, in

announcements of missions and visions of the future of the strategic plans or in the actions of commercial advertising); b) under the moral bias with the aim of developing concerns with ethical values in an authentic way. This dichotomy is an emerging clash between an ideal of corporate responsibility and the distance of this in the context of corporate practice (Cragg, 2012).

Indeed, the literature on administrative ethics and social responsibility fully assumes the very ambiguity of the issue of corporate ethics: how do we associate an ethical value to a good or a service? Does the association of this 'additional value' mean a change in the level of consumer beliefs, creating the belief that something more was incorporated to the product? In this case, it would be, above all, a strategy of persuasion. Or, on the contrary, does the addition of this value imply a change in the production system and consumption – in any change made as a recognition of the importance of ethics?

In the Brazilian context, empirical researches have emphasized the ambiguity of how this issue is handled. Borges, Medeiros and Casado (2011) analyzed the relationship of ethics with business competitiveness from the view of management students, and the results suggested the ambiguous and contradictory symbolic opinion of students in relation to the manager's role and in relation to the practice of proper management in this context.

The literature about management is very illustrative with respect to this ambiguity that permeates the whole issue of ethics and corporate social responsibility (Arnold, Audi & Zwolinski, 2010). In fact, ethical concerns, when considered as genuine and given a high value, seem to lead to a cooling of the search for results, and not a search intensified by the prospect of more competitive advantage.

The analysis of the literature on the subject seems to indicate that ethics is only welcomed when it brings effective results for organizations. If so, then this concern is a strategic move to expand corporate results and implies no real change in the processes of production and consumption. This helps to understand the discourses that seek to show that ethics and social responsibility are necessary to businesses, as customers can pay more, or human resources departments can make workers more motivated. What is hidden is of course the opposite question,

namely: What if customers do not pay more? And what if workers do not work harder? Are ethics and social responsibility no longer necessary?

Although it is not necessary here to continue with this characterization, a difficulty is taken as evidenced from the perspective of management. Although having a large contribution to the understanding of the subject, this perspective is partial and fragile as a proposal to suggest concrete resolutions. This explains why this managerial literature is ambiguous in its concern with ethics and social responsibility, at least in the Brazilian context. Probably, this difficulty, which is within the scope of corporate ethics itself, is derived from the contradiction that seems to characterize the subject by comparing interest and ethics.

### **3 A philosophical perspective of ethics and the corporate social responsibility**

In the research undertaken by the authors, it was identified a big philosophical literature on ethics and corporate social responsibility, including many books and academic journals with many articles published each year. Specifically in Brazil, we identified some books and articles dealing with the subject, most of them developed by authors associated with the administrative perspective, such as Ramos, Arruda and Whitaker (2005), and Ashley (2005). However, we believe that for this literature, a better conceptual basis is still necessary for defining and solving some fundamental problems

With this construction, we think that a substantive theory of ethics and corporate responsibility will propose basic conceptual problems so that solutions may prove viable. So, here we present and discuss briefly some basic elements that we consider are necessary to constitute philosophical discussion of ethics and corporate responsibility (not a moralist, a historical and sociological, nor a managerial discussion). This is not, of course, an exhaustive list, but a set of elements that need to be introduced in a future theory on the subject. We anticipate that it is possible that some features of these elements are shared with the other perspectives. In this case, what is characteristic of this theory is the way it presents and attempts to solve the problems derived from such elements.

### 3.1. The ethical personality of the company

One of the key issues that a philosophical discussion of ethics and corporate social responsibility must try to answer is: why should an organization be ethical and socially responsible? There are instrumental responses to this question, but that would probably lead directly to the administrative level and for an obvious answer: because it generates higher performance. However, by responding that way, we would affirm that the bond between organization and ethical duty is exterior to the company. We analyze now, in more detail, the meaning of externality of duty.

A business organization has a widely accepted operating logic, which is making a profit for shareholders. Generally, it is stated that it should also adopt good ethical values. Thus, these ethical values would be added to the pre-existing in the form of the expression business logic 'also'. And, it is precisely this expression that characterizes the externality of ethical value with respect to the logic of organization, because everything that is related in the form of an 'also' is something added from outside, which is juxtaposed, but to which does not constitute an organic link. If the intention of a business is to generate profit, so 'also' being ethical and having social responsibility is an adjunct to the primary intention, which is to generate results for shareholders.

Being exterior and only an adjunct, the link between ethics action and business logic may or may not occur because suppressing one does not mean suppressing the other. As they are only juxtaposed, an action on one does not necessarily imply an action on the other. Thus, depending on a strategic assessment of market conditions, the interference of personal values of managers or of other factors, ethics could be dropped out without prejudice to the primary function of a business organization.

Thus, the basis for ethical action is always dependent on an economic decision of one or more actors, but is not organically linked to an intrinsic need of the organization itself. In other words, the link between duty and organization takes place under a contingent mode (this reinforces why we understood that the sociological/historical and the managerial approaches are fragile, since by them, if the context changes, ethics and social responsibility

intention changes, but the profit intention is maintained.). This characterizes the absence of organicity between the business logic and ethics and, therefore, the lack of solidity of duty: ethical actions may or may not be adopted, depending on the convenience or the context of each organization.

We understand, therefore, that the contingency undermines the ethical aspect of decision making, in that it establishes an outside relationship with the values adopted. An analysis of the main models of ethical decision making shows this (Ferrel et al., 2013). If the values are aggregated to pre-existing organizational logic in the form of an 'also', ethics will not have an actual existence, let alone effectiveness, as it will have its condition of existence defined according to the convenience of the moment.

This indicates that companies do not need to be ethical or socially responsible because it is their nature to be just as it is their common nature to seek profits for its shareholders. By the restricted view of profit, the understanding of Friedman (1970) that a company does not need to have social responsibility other than to making a profit (because the profit already has social value) is unquestionably correct. According to Friedman, the adoption of ethical and socially responsible measures will generate more costs, which undermines the logic of firm's efficiency, and some agent of the exchange system must pay this additional cost. Ethics would be a kind of inefficiency, since its cost would be paid by the consumer, who is the most vulnerable part of the exchange system.

The relationship which is stated here between ethical action and the interiority of duty cannot go unnoticed. We understand that one of the bases for the reasoning of a corporate ethics is precisely this organicity between ethical values and business logic. The moralistic view insists, simply, on the need for values to be assimilated by the company. We do not propose this understanding; we believe that the values must become part of the essence of companies themselves. This merger should occur in such a way that it is no longer possible to understand the company without its ethical values, and this company will not be able to operate without its actions being a reflection of these values: what it is will mean a way of acting ethically. With that, it will have acquired an ethical personality.

But ethics and corporate social responsibility should involve an organic change in the company, so that it has an ethical personality, in a way that its mode of being can no longer be disconnected from its mode of acting. Thus, a theory of ethics and corporate social responsibility cannot go without dealing with the transformation process of an organization that considers ethics under an instrumental perspective into another that cannot exist without adopting specific values. That is, it must explain how corporate ethical personalities can be generated. The process of incorporation of ethical personality by companies is a first major theoretical challenge that needs to be subject to a robust theory on ethics and corporate social responsibility. Without it, the duty will maintain its external aspect.

### 3.2 The ethical community

It is understood that ethics and corporate social responsibility are attributes of a collective, rather than a single entity. Thus, a difficulty for understanding it is related to the collective nature of this ethical modality. This is not an ethic that has its basis in the individual, but a collective entity that aggregates a set of individuals. This aspect makes a difference when trying to understand how corporate ethics works.

To facilitate the understanding of this aspect, it is possible to take a glimpse on Ancient Greece followed by an abrupt return to our days. The ancient Greek city-state was characterized as a collective ethic identity, based on the overlap of religious, ethical and political values (Coulanges, 1905). Thus, fouls against the duty were understood as religious faults and simultaneously as fouls against the state. The penalty called ostracism (a kind of exile) was to deprive a citizen of their political participation, religion and humanity – as a foreigner could not be a citizen in another city. This means that there was no value to a man out of his ethics community and removing him from this context was a punishment even more severe than death. The whole being of a person was in connection with his/her location and the set of values of his/her community. Without them, the person would be stripped of his/her humanity (that meant ostracism).

In the contemporary world we give up on ordering our personal lives under metanarratives (Lyotard, 1979), which are the major theories that give meaning to life and guide us through

permanent references. Nowadays, we live in a world marked by an intense individualism and a form of increasingly acute privacy. In this context, people are worth for themselves and not because they are citizens of some country or because they share beliefs with other people – as the followers of a religion. They are a person because they are an individual and not because they are part of something broader that includes other individuals or share values. The fact that we cannot share most of our beliefs with others does not affect our humanity, and even when we assert our independence acutely, we are not separated from something greater than what is essential to our human condition. It is possible to disagree and criticize almost everything and yet, we still have the right to do so.

Given the descriptions of Coulanges (1905) and Lyotard (1979), we note, however, a radical change in the way the ethical references are experienced in the ancient world and nowadays. To an ancient Greek person there was almost no alternative between being ethical or not, because not being ethical meant a sin, a political crime and disobedience to the basic rules of human society. For them, not being ethical meant undermining their own humanity. However, for a contemporary person, the ethical space is much larger. We experience a diverse environment in which it is not necessary to have stable or homogeneous references. We may assume different values in different circumstances, also due to the multifunctionality of the social roles we play. As we have several functions, we can adopt various kinds of values (Lipovetsky, 1992).

If this is indeed our ethical condition of existence, how can an organization propose to adopt common values which are necessary for the establishment of its ethical personality? How can shared ethical values be shared in a context of excessive individualistic fragmentation? The Lyotard's (1979) description of the postmodern condition is certainly a historical environment in which the task of sharing common references has become a challenge that must be considered with special attention. It makes no sense to propose ethical values assuming relative ease in obtaining credit for them in face of several autonomous individuals. Indeed, a world characterized by unrestricted value of the person makes coercion and ethical conviction much more difficult to be realized. Our society is extremely heterogeneous

and democratic, which makes the possibility of collective beliefs to be smaller than any other known historical context.

But the possibility of establishing an ethical community is a prerequisite for the establishment of an ethical personality, that is, for the intrinsic adoption of values by an organization. In other words, without having a group of individuals sharing values and acting according to them, an organization does not possess ethical personality. The establishment of an ethical community is therefore a necessary condition for the transformation of an organization into an ethical personality. The necessary convergence can be difficult in a postmodern context, and this is a challenge for a well-grounded theory and practice based on ethics and corporate social responsibility.

A second step in building a theory of ethics and social responsibility is therefore to understand what actually characterizes an ethical business community in a postmodern environment. Probably, this theory must consider the difficulties present in the sharing of ethical beliefs by individuals living in an extensive ethical space, enjoying an extreme individual freedom.

### 3.3 The value of freedom

In the academic literature there are frequent examples of leaders that establish ethical values through codes, being them written or not. These leaders give an example that is expected to be followed by the other members of the company. But as supposedly free citizens, these members have the option to follow certain ethical parameters or not (of course this freedom is restricted by legal regulations establishing the minimum conditions governing the relationships among the citizens of a society).

However, in situations of organizational hierarchy there is not always freedom for the values to be adopted. Thus, it may happen that an organization adopts ethical values which not everyone agrees with, which can lead to a false assent on the part of fearful-of-losing-their-jobs individuals, something that will result in some form of personal self-righteousness, like the company self-righteousness stated above.

It is understood that it is not possible for an organization to adopt an ethical personality without free individual consent, precisely because the imposition could generate a silent resistance

and therefore the lack of organicity of corporate values. The imposition of collective values to individuals is contrary to the principle of individual freedom and undermines the organic nature of the ethical personality required for the realization of a true social responsibility, although it is common in the business instrumental view in favor of a strong cultural unity (Martin, 2002).

In other words, individual freedom should be understood as a fundamental requirement of ethics and corporate social responsibility insofar as values can only be organically assimilated by members of an organization in environments characterized by spontaneous agreement. Therefore, democratic procedures are necessary for the establishment of an ethical personality.

Although this element of the recognition of the political condition in which we live is inseparable from the intense value of the individuality of the previous element, it is understood that it should be treated separately. The previous issue was the difficulty in the ethical convincing of people highly focused in their own individuality. The question now is the recognition of freedom as a necessary condition for that conviction. That is, there will be no ethical personality in conditions of values imposition, which is typical of authoritarian environments and cultures.

In a perspective that escapes the domestic scope of companies, and in a context in which they perform more actions of social responsibility and of ethical behavior, the importance of adopting any of the measures due to free membership, and not by market conditioning (such as competition and quest for competitive advantage) is reiterated. These aspects are commonly thought of as if they were imposed, which common in the historical/sociological and in the administrative discourses is discussed above. Probably, it will be the adoption of practices voluntarily and by a free decision of executives and entrepreneurs that the partial understanding of these perspectives will be able to be denied. They are fragile because they, at the same time, inform the necessity of ethics of corporate social responsibility, and point out that, after the contingency factors that imposes them are over, those are disposable.

### 3.4 The identity between ethics and interest

As previously discussed, when the

administrative perspective on ethics and corporate social responsibility is presented there is some ambiguity in the literature concerning the interest and ethics. Indeed, the literature varies between strategies to add ethical value to a good or service in an instrumental way and the introduction of effective changes in the production and consumption processes.

Eventually, interest has been stated as something that can and even should be sacrificed in the name of ethics. The other side of this coin also seems to be true: the choice for interest is the negation of ethics. Accusations of bad intent or double intention permeate much of the discussions on the adoption of ethical values for organizations that cannot even leave the interest for results, that is, after all, its rationale and guides their actions (Chamberlain & Gordon, 1989; Gill, Biger & Mathur, 2011). As it was mentioned, a socially responsible organization could be a contradiction in some terms, because if it is socially responsible, it will have to stop being what it is in its essence. This way of understanding the problem is even prevalent in the historical/sociological perspective.

However, a conceptual analysis can demonstrate how the apparent contradiction is resolved. The primary interest of a business organization is the result, but it can get better results being ethical and socially responsible. In this case, it also converts its interest in being ethical and socially responsible. But it becomes so only on the basis of a denial of its fundamental interests; thereby, its own interest became disinterest. And it is precisely this lack of interest that potentially enhances the results (the interest becomes disinterest in the adoption of ethical and socially responsible principles and disinterest turns into interest for the final rise of the results).

An organization endowed with an ethical personality can overcome the apparent contradiction between interest and ethics. This seems to be the core foundation of the great discussion on the stakeholder theory, which states that the company must meet the interests of all stakeholders that affect it and are affected by it (Agle et al., 2008; Kacperczyk, 2009; Harrison, Bosse & Phillips, 2010).

Quite briefly, the stakeholder theory focuses on the challenge of how to produce goods and services creating value for all entities involved directly or indirectly, without causing damage to

any agent, while promoting economic development ethically. In this perspective, two major challenges to theorists of this field are: a) how the basic normative of the stakeholder theory can help the field of business ethics to provide useful insights into the ethical management processes; b) as alternatives to the debate, the stakeholders can provide normative reasons for the various agents concerned with the business when the market fails, that is, when the efficient use of resources is not efficiently distributed to society (Agle et al., 2008).

It must be noticed in our view of the ethical personality of the firms; ethics is not exploited as a competitive issue because organizational purpose makes results and ethics identical. It only would be exploited this as a source of competitiveness when intentionality is considered in a conventional point of view, that is, if one thinks that an organization needs to be ethical and socially responsible in order to gain competitive advantage. But this is not the case here.

Considering the perspective of an organization with ethical personality, these elements become identical in all of their actions, because they, while organic activities, eliminated the difference between intention and action. This process is similar to the adoption of characteristics that become internal due to the pressure of the environment. The fact that they have been originated in the exterior does not deprive them from their internal posterior incorporation. In this case, the essence is constituted through interaction with the externality. The identification of the causes, in this case, prevents us from seeing what is specific in the process of internalization of ethics.

Certainly, this does not mean that every organizational action that seeks results will be considered ethical and socially responsible simply because it affirms that it acts selflessly. These elements may even be a possible contradiction in most empirical circumstances, but surely, there is an insurmountable conceptual contradiction between them and that is what a good theory on ethics and social responsibility cannot forget.

#### 4. Conclusion

We believe we have established, in part, the specificity of a philosophical perspective for dealing with issues of ethics and corporate social

responsibility. This specificity is the need to specifically introduce four elements in the theory (even when these elements are present in the existing literature, they certainly are presented in a different way from the one exposed here). These elements are: 1 – the ethical personality of organizations; 2 – the ethical community; 3 – freedom, and 4 – the identity between ethics and interest. This means that the presence of ethics in corporate activities implies organic introjections of duty and the establishment of a community that shares the same values as the basis of a personal free decision. Moreover, a theory on the subject needs to eliminate the false contradiction between interest and ethics. Without this last component, discourses constantly oscillate between the naive or cynical belief and skeptical distrust. So, it is the appearance of the intention of being insurmountable that needs to be abandoned.

Apparently, there is a weakness in the discourses that focus on putting ethics and social responsibility as a differential factor of a particular corporation. Instead, it should be granted that ethical behavior is a condition of existence of a corporation. That is, ethics should not be seen as managerial, at the discretion of certain leaders with instrumental and marketing purposes, but it should be incorporated into the very nature of the firm in an institutionalized position.

In this sense, the study of effective conditions for the establishment of an ethical personality by organizations is the touchstone that allows it to overcome this unilateralism present in the mistrust and ingenuity. That is because the ethical personality that makes it possible to adopt a conceptually higher point of view, to the extent that surpasses the old distinction between appearance and reality, or between intention and action of the organizations. Therefore, it seems clear that future investigations must be developed considering these conditions, may it be from a conceptual point of view, or from an empirical point of view.

We emphasize that the view discussed here have the purpose of suggesting elements of a reasoned debate with preliminary exposure of components of a theory of ethics and corporate social responsibility, but not with the purpose of building up this theory. As indicated, our purpose was not to establish a theory, but to bring elements of a philosophical discussion in

searching of pinching new theories.

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## Teaching beyond Socrates: an experiment with ICTs for an undergraduate course of business administration at a University in southern Brazil

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### ABSTRACT

This research examined the influence of multimedia presentations on content retention and satisfaction of business administration students when subjected to different didactic standards. For this study we used experimental procedures with 147 undergraduate students of Business Administration at a university in southern Brazil. As for the retention of the contents, statistical differences were found between the experimental groups; classes with dynamic slides showed better results. As for the influences of teaching tools in students' satisfaction, the survey indicated that dynamic slides facilitate the logical and rational development of the discipline and raise students' motivation. Traditional slides, in turn, can disperse the interest of the student and suppress attention to the teacher.

## 1 Introduction

With the advances in information and knowledge for the society, educational institutions are facing an environment of rapid development and significant competition in which the challenge is the balance between operational efficiency and the quality of education offered (UZ, ORHAN & BILGIC, 2010). In this perspective, Ferreira et al. (2010) point out that one of the evidences of this new context that has changed the behavior of teachers, students and their own higher education institutions (HEIs) is the increased use of information and communication technologies (ICTs) in the classroom, especially with

audiovisual resources.

According to these authors, the use is even more pronounced in the area of applied social sciences, due to this area being close to the business one, in which such practice is indeed employed. In a complementary way, James, Burke and Hutchins (2006), point to the greater utilization effectiveness of audiovisual resources in theoretical and qualitative subjects and courses (marketing, economics, business administration), because the format of the multimedia software does not facilitate numerical manipulation (finance, mathematics and statistics).

Despite the apparent institutionalization of audiovisual resources in the area of applied social sciences (FERREIRA et al., 2010), there is a wide divergence in literature about the actual effectiveness of these resources in educational institutions. Several studies showed positive effects on the use of presentation software (slidewares) in the learning process (MANTEI, 2000; NOURI & SHAHID, 2005; SUSSKIND, 2008). In contrast, several studies have also pointed to the lack of relation or effect of its use in education (BEETS & LOBINGIER, 2001; KARREMAN & STRANNEGARD, 2004; HARDIN, 2007).

Another relevant factor is that many of these studies did not focus the elaboration of this didactic material. Because it is based on a software, there are numerous ways of handling it, which may vary from the correct and innovative use to the misuse of this feature.

Some authors advise that the teachers should focus on the text, visuals and the structure of the slide (UZ, ORHAN & BILGIC, 2010). Apperson, Laws and Scepanisky (2006) recommend that teachers use these resources wisely in order to support their speech and stimulate attention and productive discussion in class.

Regarding this, Wecker (2012) pointed out a difference between the regular slides (with too much text) and concise slides (in topics). According to his research, there is disagreement in the retention of designed content and those contained in the teacher's speech, depending on the type of slide used (WECKER, 2012).

Thus, this study sought to answer the following question: What is the influence of multimedia presentations in the retention of content and its impact on students' satisfaction in the classroom?

Therefore, this study aimed to analyze the influence of multimedia presentations on retention of content and satisfaction of academic management in the classroom by using mixed methods, when subjected to different didactic standards. An investigation about the effectiveness of the use of multimedia resources was conducted, taking into account their construction parameters and presentation as

indicated in the specialized literature.

After this first introductory section, we present in the second section the literature review with the major concepts, rules and evidence of proper application of these technologies in the classroom. The third section addresses the methodological design used to conduct this mixed methods research. The fourth section seeks to analyze and interpret the main results of the research, and finally, the fifth and final section will express the final considerations in order to address the research question and present limitations and suggestions for future research.

## 2 Theoretical Framework

The use of multimedia presentations is institutionalized in applied social sciences courses in Brazil (FERREIRA et al., 2010). The teacher adopts the use of multimedia resources with the thought "I do it because that is how things are done", as well as students require their use because "that's how the area should be" (BERGER & LUCKMANN, 2008).

Several studies over the past 10 years indicate students believe that the use of multimedia, in particular slide projection, facilitate their learning (APPERSON, LAWS & SCEPANSKY, 2006; MANTEI, 2000). The study by Apperson, Laws and Scepanisky (2006) indicated that although there was no significant difference between the scores of students with the use of slides in class, there are significant differences in their perception of the class. Thus, these authors concluded that students who have classes with slides believe that their classes are more organized, clear and interesting. Also, they have a better view of the teacher, and feel more encouraged to take notes about the classes (APPERSON, LAWS & SCEPANSKY, 2006).

In a complementary way, the study of Susskind (2008) also noted a positive effect of students with the use of slides in the classroom, and further pointed out that students feel more motivated during lessons to participate with questions and to carry out activities, exercises and tasks requested by the teacher. A piece of information resulting from this research is that even being more motivated, these students did not

feel bad about missing classes. For them, because it is easy to take notes during these subject classes, they believed their colleagues would also take good notes in their absence.

Other studies show a positive effect on retention of content with the use of slides produced by software (slidewares). In experiment 2, performed by Szabo and Hastings (2000) through a knowledge test, there was a significant difference between classes with slides (78% correct) and without slides (49% correct). Carrel and Menzell (2001), in Experiment 2, compared a slide presentation combined with an audio recording of a lecture, with this lecture without slides, and a video recording of the same lecture without slides. This study found significant differences between the three conditions, with the highest score retention of the content being the one presented with slides.

Still on the potential use of slides in content retention, research Wecker (2012) compared lectures (no slides), with classes with regular slides (built with whole sentences) and with lessons with concise slides (topics). The author separated the information contained in the slides and also the information transmitted orally, which were not contained in the slides. As a result, regular slides showed a large deletion of information transmitted orally by the teacher, in which learning was lower than in traditional lectures. However, the concise slides showed an enlargement of the retention of content, both through content of the slides, and in the knowledge communicated orally. (WECKER, 2012).

As for teachers, Hardin (2007) argues that the media did not interfere with classes in this positive perception on the part of students in the area of psychology. Although one of the teachers got a better assessment of classes with multimedia presentations, another one had a decrease in performance. Thus, the author points out the need to focus on the quality of classes in which the teacher needs to worry about his teaching style, his skill with the use of technology, and finally, his experience and training with multimedia presentations before using them in teaching (HARDIN, 2007).

The use of technology in education can be

more effective when used appropriately (SAVOY, PROCTOR & SALVENDY, 2009). To Savoy, Proctor and Salvendy (2009) in classes with the need to retain graphics, complex models, figures and schemes, the use of multimedia presentations can present a great advantage. However, in classes in which the student is expected to retain information and more abstract concepts, lecture-type classes with discussions were more efficient. In contrast, this study demonstrates the preference of students for lessons with multimedia presentations regarding traditional expository lessons (lectures), although there is not a direct relationship between content retention and preference for certain types of classes.

A study by Bucher and Niemann (2012) published in the journal "Visual Communication", used a device called "Eyes Tracking", in which is possible to identify the stimuli received from the environment by eye movement, and identify the level of attention, interest, as well as indicating in real-time which information which the viewer pays attention to, and which he ignores. The authors claim that the many criticisms of using slides may be put into check, because until then there was the notion of slides as text content, ignoring its capacity of being a multimodal instrument (including text, image, graphics, etc).

The study also points out the need to orchestrate presentations, synchronizing the verbal references with body language and visual projection (text and image). This fact allows a retention of non-linear content that enhances learning, which seems to emerge in the student learning environment, and interacts with all elements (speech, image, text) and not just focuses on a single element (BUCHER & NIEMANN, 2012).

Therefore, the slides used regularly with phrases may cause misunderstanding of teacher's speech, demonstrating not only the importance of the use (or no use), but also caution in the formulation of the material.

On the structural aspects, studies by Rickmann and Grudzinski (2000) indicate that although students believe that the use of slides is a technological resource which is more effective in the classroom, they may be dissatisfied with slides built incorrectly, or when flicked, without adding

examples and experiences. They conclude further that presentations prepared without following the "best practices" in the area have a negative effect on learning.

Susskind (2008) also found that students perceive lectures with slides as more pre-prepared and with less spontaneity. Also according to the author, as the slides present a formal structure, students may have less freedom to interrupt the teacher. Gabriel (2006) states that knowledge comes to be "parceled out" due to the use of markers and an extremely rational division of content, and the students begin to internalize these topics as the entire contents to be learned, and to study for exams only using them.

Thus, there is a considerable importance in "how to prepare" a multimedia presentation, as this may be one of the factors responsible for the success or failure in the teaching and learning process that uses this didactic resource. The literature in this sense is very broad and covers the use of text, images, colors, shapes, graphics, music and sounds, videos and training aids through presentation software. The following is a summary table (Table 1) of the fundamental principles, which are a consensus among experts for preparing the material effectively:

**Table 1: Fundamental principles for development of multimedia material (slides)**

Elements	Variables	Utilization method	Authors
Text	Font Type	Not serif (e.g. Arial, Calibri, Verdana)	Holtz (1997), Hobson (1997); Seaman (1998); Rickmann and Grudzinski (2000); James, Burke and Hutchins (2006); Wecker (2012)
	Font Size	Greater than 32 to 28 for titles and text	
	Number of Sources	No more than two (one for title and one for text)	
	Font Styles and Effects	Bold, italic and underlined only occasionally. Avoid capitalized phrases.	
	Text Quantity	No more than 25 words per slide	
	Use of Markers	Avoid indiscriminate	

		use	
Structure	Background	Conservative and intentional (to allow maximum utilization)	Gotsick and Gotsick (1996); Holtz (1997), Hobson (1997); Bolling and Lee (1999), Mayer and Moreno (2002); Apperson, Laws and Scepanisky (2008).
	Colors.	Sober (Establish a standard color for the presentation)	
	Contrast	Allow the overlap of elements	
	Distribution of Content	Diversify with balance, symmetry, unity and harmony	
Images:	Relevance	Allow for reference or link to the content	Holtz (1997); Bolling and Lee (1999), Mayer (2002); Moreno and Mayer (2002); Tuft (2003), Clark (2008)
	Originality	Innovative (avoid already seen pictures, drawings)	
	Size	Medium to large, not being limited to a predetermined space	
Graphics and Tables	Relevance	Allow for reference or link to the content	Holtz (1997), Keller-McNulty and Becker (1996); Bartsch and Cobern (2003)
	Size	Medium to large, to facilitate the reading of details of elements (subtitles, percentages).	
Animations and slide transition	Use of Animation	Timely and synchronized with the content in order to highlight certain elements	Holtz (1997); Moreno and Mayer (2002); Hoffler and Leutner (2007); Beard, Wilson and McCarter (2007); Berk (2012)
	Use of Slide Transition	Used intelligently, and synchronized with speech	
	Relevance	Emphasize or contribute to the development and	

		understanding of student	
Sounds and Videos	Use of Sound	As an intro or ending, or encouragement to a particular behavior (calm or excited)	Apperson, Laws and Scepansky (2008); Dosseville, Laborde, Scelles (2012); Berk (2012)
	Use of Video	Exemplifying or enriching the subject in question	
Didactics	Questions	To stimulate discussion and understanding	Seaman (1998); Quible (2002); DenBeste (2003), James, Burke and Hutchins (2006);
	Reflective image	Picture to stimulate a brainstorm to promote participation and interest	
	Good Taste Humor	Punctually to hold the attention and break the monotony	

Source: Authors.

With the diversity of evidence presented, it is important that teachers try to vary their presentations and promote the "wise use" of this technology in favor of their classes. For Mayer and Moreno (2003) the use of "smart" educational technology can be studied from three components: cognition, instruction and technology. The item cognition would be related to how people learn; instruction is about how the process of teaching and learning can be facilitated, and technology is about how to use it in a positive way in the process.

It is noteworthy, therefore, to mention the important role of information technology, especially multimedia presentations, as instruments of class facilitators, substantially supporting teachers in their challenge of teaching. The technology is at the teachers' service and help, offering organization and dynamics in their classes.

### 3 Methodology

This study aimed to verify the influence of multimedia presentations on retention of content

and satisfaction of students in an undergraduate course of Business Administration at a university in southern Brazil. We used a mixed approach (qualitative / quantitative), descriptive / explanatory with factorial experimental design (MONTGOMERY, 1997).

Therefore, with a population of 1044 students, we composed a non-probability sample of 147 students from the 7th term of the evening undergraduate course of Business Administration at a university in the southern region of Brazil, with an average age of 22 years (Reliability of the sample - 90% and margin of error of 6.3%). The public surveyed was divided into three (3) different classes of the course subject Strategic Planning.

The survey was conducted between August and October 2012, with the weekly observation of three classes, for a total of 60 classes, featuring such cross-sectional survey as for temporality.

As elucidated in Table 2, this study was divided into three distinct phases for a better understanding of the methodological process.

**Table 2: Phases of research**

	Phase I	Phase II	Phase III
<b>Stages:</b>	Period Experimental	Quantitative Analysis	Qualitative Analysis
<b>Procedures</b>	Expository / dialogued Traditional Slideshow Dynamic Slideshow	Evaluation (test)	Focus group Interview
<b>Analysis</b>	-	Retention of content	Satisfaction in the lesson (Organization, concentration, motivation and overall satisfaction)

Source: Authors.

#### 3.1 Phase I - Experiment

Experimental research is seen as a good example of scientific research by the level of control of the situation that is given to the researcher. Thus we can isolate all of the structures of the possible outside interference and this offers credibility to the results (KERLINGER,

1979). This author points out that the characteristic of experimental research, therefore, is that the independent variable is manipulated by the researcher avoiding misunderstandings and ambiguities.

Being a research in Applied Social Sciences, in which the elements of analysis are people and their reactions, there is no possibility of isolation according to the area of Natural Sciences; however, as described, all intervening variables were isolated to avoid biased research, and increasing the reliability of the experiment.

All classes were taught by the same teacher with the same content, syllabus, bibliography and duration, only with different pedagogical forms. During the period from August to October 2012, we followed 10 weeks of classes, two hours per week (4 credits) for each of the three classes, totaling 60 classes in which this experiment consists of. To avoid bias the teacher who conducted the lectures was not the researcher.

Thus the dependent variable was composed by the didactic conduction of content separated into three different groups:

- Group 1 - Expository: The classes were taught by means of lectures and dialogue. This is the control group of the experiment;

- Group 2 - Traditional slideshow: Subject (lessons) taught by traditional slides, as a single source and standard white background and black font color, font size medium to small, significant amount of text per slide, distribution of rational content, frequent use of markers, the absence of images, sounds, videos and graphs that promote interaction with students. (Not in accordance with the "wise use" characterized in the literature review of this article).

- Group 3 - Dynamic Slideshow: Classes taught by means of dynamic slides in accordance with the principles presented in Table 1. To characterize the dynamics we used slides with non serif fonts, sober colors, background contrast, large font size, few words per slide, distribution of creative content, occasional use of markers, use of images, sounds and videos relevant to the subject.

At the end of stage 01, in which subjects were exposed to different stimuli, we simultaneously performed phases two and three, which characterize the mixed characteristic of the

research. In the mixed method, there is an interconnection among the various pieces of information that can be compared, allowing greater openness from the perspective of research and further analysis of the data (CRESWELL, 2007).

This author also points out that in research employing mixed methods, the integration of numerical data and textual or visual data in a single study can be developed simultaneously, i.e., quantitative and qualitative data are collected in the same period of the research.

### 3.2 Phase II – Retention

Students of the 3 groups were submitted to and an evaluation at the end of the period of the experiment with opened questionnaires to check the variation of content retention. Such assessments were applied on the same day and period, in order to avoid bias in the research. Therefore, we formulated the following hypotheses:

H0: The mean range of scores that confirm content retention of different learning resources adopted are equal.

H1: The mean range of scores that confirm content retention of different learning resources applied are different.

With the hypotheses, we proceeded to a statistical analysis of the data to verify their variability and accordance with the normal model (Jarque and Bera Test for Normality). For variance analysis we used the analysis of variance one-way (ANOVA) which allows studying whether there are significant differences between the experimental responses which is used to measure statistical differences between the averages of two or more factors and t-test for independent samples to evaluate whether there is a statistical difference between the three groups surveyed. To aid the statistical analysis we used the SPSS Statistics (Statistical Package for Social Sciences) software, version 20.0 of IBM.

### 3.3 Phase III - Satisfaction

This phase aimed to verify students' satisfaction in the classroom, using the different didactic forms. Data collection was conducted with three focus groups with 8 members in each

group and mean time of one hour and thirty minutes.

We also held an interview with the professor of the course, in order to verify the perception of the use of different didactic forms of teaching according to his/her vision.

Focus groups and interviews were held by means of semi-structured guideline based on Birnbaum and Frey (2002), Apperson, Laws and Scepanisky (2006), Susskind (2008), Savoy, Proctor and Salvendy (2009), Uz, Orhan and Bilgic (2009). These interviews were recorded and later transcribed, generating 60 pages verbatim.

We used the technique of thematic content analysis to investigate the satisfaction of students, linking them with the educational resources adopted. According to Bardin (2010), content analysis consists of analysis techniques for messages through objective and systematic procedures, either qualitative or quantitative, which allow inference about the content of the message. The analysis was performed with the aid of the Atlas.ti 6.0 software

The students' satisfaction analysis in the classroom was expanded into four distinct topics to deepen the results: organization, concentration, motivation and overall satisfaction.

For organization we asked about the clarity of understanding, logical sequence of content, readiness in note-taking. The item concentration sought to identify whether students followed with ease the teacher's speech, if the content taught was easy to remember, and if there was dispersion of attention during activities.

In the item motivation we discussed with the students the willingness and initiative to attend classes, perform activities requested by the teacher, and the attendance of the subject lessons. To identify the overall satisfaction of the students in the classroom, we asked about the adequacy of the methodology of teaching the subject and the critical view of students about the approaches.

#### 4 Analysis

After the evaluations, the scores were tested with the Jarque-Bera test for verification of data normality. Because the result of the analysis was 5.32, that is, below the critical value of 5.99, it can

be said that this is a normal distribution. With the prerequisite of normal distribution of grades for evaluation, we used the analysis of variance test, ANOVA and t-test to verify the hypothesis established by research.

Table 3 shows the result of variations in average scores per class, and the result of ANOVA:

**Table 3: ANOVA Results**

Groups	Number of Respondents	Standard Deviation	F	Sig.
Groups 1 - lecture and dialogue	44	1.83	5,07	0.08
Group 2 - Traditional Slideshow	23	2.49		
Group 3 - Dynamic Slideshow	58	1.62		

Source: Authors.

Based on Table 3 above, and determined after the results of 125 evaluations of groups surveyed, it can be stated that there is evidence that there are differences in the average scores of the groups. Therefore, there is no statistical difference in the content retention element in relation to the textbook used. It is suggested, in accordance with Table 3, the reliability of the result is 0.92% (Significance 0.08).

The use of dynamic slides (average 7.37) was proven to be more effective in helping content retention than other didactic forms (dialogued lecture - average 6.22, and traditional slides - 7.28 average). In addition, the presentation with traditional slides also proved to foster better student performance than lectures.

Table 4 shows the results using the t test for independent samples.

**Table 4: t-test result**

Comparison between groups (t test for independent samples)		t	Sig.
Group1	Group 2	1.792	0.08
Group 1	Group 3	3.284	0.01
Group 2	Group 3	1.157	No sig. (0.876)

Source: Authors.



The t-test showed the following results: dialogued lectures and traditional slides (significance 0.08); dialogued lecture and dynamic slides (significance 0.01); traditional slides and dynamic slides (no representative significance). Although the results between traditional and dynamic slides did not show statistical differences between them, it can be stated that there is a difference in retention of content when classes with lectures are compared to classes with slides.

Through analysis of the result means and statistical tests (t-test and ANOVA), group 1 was different from groups 2 and 3, which were similar. The proximity of variance between groups 1 and 3 could also be noticed, opposing group 2, which is different. Therefore, there is statistical evidence that the results between the groups is not homogeneous.

This result confirms the positive effect of the use of slides in content retention. It is also important to mention the importance of using dynamic slides according to the literature of the field, because students who attended classes with such instruments outperformed the assessments. This data reflects the results of the research by Wecker (2012) in which concise slides (with topics) also resulted in higher performance in the sample.

After the presentation of the statistical results, a qualitative analysis was performed in Phase III of this research, which includes qualitative analysis regarding the satisfaction of students in the classroom, their concentration during the course and even their perception of the organization of classes.

#### 4.1 Group 1 - Dialogued Lectures

In this group the teacher taught the content only supported by his/her speech and experience, and punctually with the use of the blackboard as support.

Students participating in the focus group indicated that as for the organization, this type of methodology was difficult to understand because there was not a logical and gradual line of reasoning. Thus, repetition of content, ideas, examples and mixed issues hampered the overall

understanding of the subject. Moreover, the difficulty in organizing the content reported by students generated a direct and negative impact on concentration and motivation of the students in this group.

According to an interview with the students, the dialogued class decreased their interest in paying attention to the subject, and thus, the use of the computer for other activities such as accessing social networks, reading about other topics, and even parallel conversations among students became more frequent.

This result meets the considerations made by Apperson, Laws and Scepanisky (2006) that dialogued lectures are perceived as less clear and organized by the students than classes with slides.

Also due to the lack of clarity in the organization of content, the motivation of the students was also hampered because of the difficulty in focusing on the teacher's speech and also, according to them, making the classes somewhat monotonous and dull.

It is noteworthy to mention that, for relying overwhelmingly on the teacher's talk, such subject eventually became tiring and exhausting, in the view of the students surveyed and, therefore, during the first semester the students' participation in the proposed activities and the classes was decreased. In contrast, the fact that the teacher had brought examples and previous academic and professional experiences, even punctually, was evaluated as positive and stimulating by students. Thus, this study reflects the findings of Susskind (2008) in which dialogued classes had a lower participation rate during the course when compared to classes that use slides.

In addition, because the class was presented without a visually structured sequence, it eventually hindered students' note taking, who reported great difficulty in keeping notes organized and continuous during the class period under review.

Finally, these scholars have cited the use of innovative technologies, combined with images and videos as a way to increase motivation, satisfaction and interest in participating in class. Thus, they emphasize the need for constant recycling by the teachers/professors of the institution, in order to track trends and news

available to magnify the teaching / learning process.

However, they also highlighted that the teachers' role and performance could also be leveraged with a more active participation with the students, especially regarding the interaction during class.

#### 4.2 Group 2 - Classes with Traditional Slideshows

In this group, besides using the dialogued class technique, the teacher also used slides with a traditional format, i.e. using basic software, a single source and standard white background and black font color, font size medium to small, an expressive amount of text per slide, rational distribution of content, frequent use of markers, the absence of images, sounds, videos, graphics and didactic elements that promote interaction with students.

As an organization, these students perceived a greater ease in following the development of the curriculum, for it was possible to visualize the evolution of content during class. In addition, according to the research group the slides make it easier to associate the examples and experiences shared by teachers with the specific content being studied.

However, they considered that the slides, exactly because of their way of introduction, made the class become "dull", especially due to the lack of creativity and excessive amount of text. This fact confirms the claims of Rickmann and Grudzinski (2000) that presentations built incorrectly can cause dissatisfaction in the target audience.

According to students, due to the large amount of information on the slides, concentration and attention on the teacher were divided with the material content shown in the classroom. This division in concentration led to loss of focus on the content displayed by the teacher.

Thus, these facts can be understood from the research by Bucher and Niemann (2012), in which the "static slides" focused the attention of the students surveyed in a single element only. Moreover, the considerations by Wecker (2012) are confirmed, in which "regular slides" (with lots

of text) can restrict attention to the teacher talk and retention of the content transmitted orally.

For these reasons, the concentration of students was dispersed, according to their own report, due to the lack of innovation in the material presented by the teacher and also by the lack of interaction with the class. According to reports, the use of software in a "more advanced" way, that is, animations, videos and pictures, could have aroused the interest and motivation of the student to interact during the process of teaching and learning. Such information reflects the statements of Gabriel (2006), because the slides constructed in a linear and rational manner may have restricted the participation of academics during classes.

Such students, as well as then ones in the group with lecture/dialogued classes highlighted the professional and academic experience of the teacher, especially with the addition of examples during lectures. In contrast, students' satisfaction, as reported, could be expanded with the addition of dynamic activities, interaction and creativity on the part of the teacher, both in terms of technological and educational aspects. These considerations meet the claims of Hardin (2007), in which the teacher, besides worrying about his/her technological skills, needs to worry about his/her teaching style.

As for note taking, there was no consensus in the class because some students positioned themselves in the sense that they took their notes during lectures and studied to the evaluation through these notes, while others said they could not take notes and just studied the supplementary material provided by the teacher.

One factor highlighted by the students is that the teacher's refusal to share the slides on the virtual learning environment of the institution made it difficult to use these as material for note taking and study. In contrast, the teacher does not share the slides in a virtual learning environment because, according to him, the students only use this material as the basis for their studies. This discussion reflects another impasse for students of this field, which, according to Gabriel (2008) make students consider the slides as an element for studying, limiting themselves to the exclusive study of these slides for evaluations.

### 4.3 Group 3 - Lessons with Dynamic Slideshows

For this group, the content was taught with the aid of visual material made according to the rules of intelligent use listed in Table 1. Thus, we used videos, images, movements and didactic elements to support the teacher's speech.

As for organization, students said it was easier to follow the sequence reasoning and content taught by the teacher. Thus, unlike Groups 1 and 2 (Dialogued Lectures and Traditional Slides), classes with dynamic slides were perceived as more effective to organize the curriculum of classes.

However, this group also stressed the importance of the teacher in manipulating more appropriately the technological resources in order to better support their speech and avoid abrupt transitions and lack of harmony between speech and visually projected material. Thus, the need for synchronization between verbal reference and the teacher's body language to visual projection is reflected, in accordance with the notes by Bucher and Niemann (2012).

Yet such students highlighted the use of slides as an important factor to aid their concentration in class, as this feature is rarely used by teachers of this institution.

As for students' satisfaction with the course, there was more praise and less criticism compared to previous classes; however, this group also stressed the need for participation and interaction of the teacher with the class as a way to increase the group satisfaction with the course.

Students realized more clearness, clarity and fluidity in classes with dynamic slides because of the logical and dynamic structure, resulting in an increased motivation to attend classes.

Also, according to what the teacher of this subject stated in an interview, there was greater student participation during lessons, with appropriate questions and relevant and constructive participation, in line with the results by Susskind (2008).

Regarding the notes about the content, most students said it was easier to take notes of the content displayed by the teacher and projected on screen; however, some students pointed out the

difficulty in tracking all the elements together, sometimes losing the sequence of class. Although most students in this group have confirmed the use of their notes to study for the evaluation, the teacher noticed a smaller commitment of the class with dynamic slides to make notes during the exhibitions.

## 5 Conclusion

Socrates, the greatest philosopher, perceived the transition of oral language to written language. This could turn out to be a revolution, and he feared that young people with the resource of writing and reading would harm the exercising of memory. Nowadays, the teaching transition to a digital era can be compared to a revolution, such as, the invention of the alphabet. In this sense, the use of ICTs in Education brings out the same characteristics of an event of change: uncertainty, instability, and contradiction.

This research aimed to examine the influence of multimedia presentations on retention of content and satisfaction of students in an undergraduate course of Business Administration at a university in southern Brazil.

Regarding the retention of the content, statistical differences were found between the groups in the experiment. The group in which classes were taught with dynamic slides outperformed the assessments/evaluations.

As for the influences of teaching tools in students' satisfaction, the survey indicated the importance of using slides to facilitate the logical and rational development of the course (organization). Furthermore, the divergence in using slides on the concentration of students was pointed out, because traditional slides can disperse students' interest and suppress attention to the teacher. However, if used dynamically and synchronized with the exhibition, including innovative features like videos, motion pictures, such instruments contribute positively to the "immersion" of the student in class.

Dynamic classes with slides, as a rule, can raise students' motivation in the course, especially regarding the student's ability to interact with the teacher and perform the tasks requested.

For students, overall satisfaction with

dialogued classes promote less satisfaction in the group, compared to classes with slides ; if these are dynamic, satisfaction is maximized.

The innovative character of the research is related to the fact that the use of multimedia presentations is not generalized, separating traditional and dynamic slides. Thus, it is evident that the proper use, innovative and creative, of this feature, based on the main principles of developing multimedia material, assist the teacher both in promoting retention of content and also students' satisfaction with the course.

However, even with the innovative possibility of these features, it is necessary to avoid the "show by the show" or "beauty for beauty". In other words, much more than the form of the material, it is necessary to use such elements and technological effects in order to contribute to the construction and dissemination of knowledge.

In all the experimental groups it was expressed that s multimedia presentations, when properly employed, can support the teacher to raise the class participation; however, the role of the teacher, his teaching, commitment and relationship with the class are crucial for maximizing the quality of education. Thus, the search of the teacher for skills in using and applying such technology needs to be shared with his/her concern about his/her teaching style (HARDIN, 2007).

## 6 Implications and Further Research

As a theoretical contribution this research breaks new grounds in defining slides built from the foundations described by experts in the field, clearing the understanding of the object under study. Such importance is justified by the fact that previous studies did not include construction parameters and their presentations, giving a broad connotation to the term slide.

Furthermore, slides are most effective when used correctly, so it is up to the teacher the clever use of specific software (SAVOY, PROCTOR & SALVENDY, 2009). Thus, as an empirical contribution there is the need to broaden the knowledge of teachers in the use of technological resources. As a result, the higher education

institutions (HEIs) lack teacher training activities to have the information about when and how to properly use these resources.

The limitations of this research are evidenced by the possibility of having intervening factors influencing the experiment; nevertheless, the careful way of establishing groups of the same population to maintain equal stimuli between groups allied to employment of mixed methods, triangulation with literature and statistical reliability contributed to minimize these limitations.

For future research, the use of comparative studies with other institutions and the use of different didactic forms of the same group can extend the results of this research.

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## Economic Integration: The Existence of Cointegration between Brazilian GDP and Mexican GDP

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### ABSTRACT

The process of globalization has expanded international relations and forced companies and countries to formalize a series of strategies to participate competitively in this process. Economic integration is one of these strategies and focuses on uniting efforts of economies with common economic and social interests, by promoting trade, stimulating markets and making the economic relations between these countries more productive and efficient. Considering the hypothesis that from the economic integration there was no relationship between the Brazilian and Mexican GDP, the main focus of this study is to evaluate and register the importance of economic integration for the economic growth of the countries. To analyze the GDP growth of Brazil and Mexico, before and after the integration in their respective blocks, it was applied the Cointegration tests model developed by Engle and Granger. The results obtained allowed to conclude that for the period prior to the integration there was no relationship between the Brazilian and Mexican GDP growth, and, for the period after the GDPs kept relationship between them.

## 1 Introduction

The globalization process has expanded the international relations and forced companies and countries to formalize a number of strategies to participate competitively in this process.

Economic integration is one of these strategies which focus on uniting economies efforts with economic and social interests in common, promoting trade, boosting markets and resulting in more productive and efficient economic relations between the countries. Through bilateral or multilateral agreements, a

country may grant benefits to allied country or economic blocs and members only participate in these agreements can take advantage of such benefits.

A country may be part of an economic block for several reasons, including the geographical distance as the Southern Common Market - MERCOSUL, North American Free Trade Agreement - NAFTA and the European Union - EU. Thus, the establishment of economic blocks is based not only on strengthening the economies, but also in political, social, environmental and cultural interests.

This document presents, in particular, two similar countries characteristics and how occurred their economic integration strategies, specifically Brazil and Mexico. The following data and information has been obtained in Solow (1956); Engle and Granger (1987); Bielschowsky (2000); Santos (2007).

Brazil adopted a protectionist policy even after its entry into MERCOSUL in 1991, in which the strategy was to prioritize an active industrial policy and tariff and nontariff barriers to protect the internal market for multinational companies. By the year 1990, Brazil was totally closed, outdated and with high inflation rates, its international integration had to gradually occur, and a policy of liberalization, as aggressive as that adopted by Mexico, would have destroyed domestic companies not providing supervision for compete with multinational companies. By allying with emerging countries with little economic potential, generally within MERCOSUL, it was possible to somehow boost the Brazilian economy. Mexico, with the entry into NAFTA, adopted strategy focused on export to get seen in the "first world" and abdicated economic growth planning executed by the state. The United States of North America - USA had strong interest in concluding this treaty (NAFTA), whose political reasons will be addressed throughout this study, and even allying the developed countries, Mexico did not enter the "first world" and not It achieved the expected economic growth, given that the treaty has contributed very little to the annual growth. Considering the hypothesis that from the economic integration Gross Domestic Product - GDP, both Brazilian and Mexican, are related to each other, the main focus of this study is to evaluate and record the importance of economic integration for the economic growth of countries. To analyze the growth of GDP in Brazil and Mexico, before and after integration in their respective blocks, and verify that the two economies have common balance in the long term, we used the cointegration model developed by Engle and Granger (1987). This test allows you to analyze the existence of cointegration in long-term relationships between two or more-time series. As an additional component, the logarithmic analysis is used in order to mitigate the possible deviations incurred due to the use of data with time series lower than recommended for analyzes of this kind.

## 2 Theoretical Framework

### 2.1 Research problem and purpose

Using the hypothesis that from the economic integration Gross Domestic Product - GDP, both Brazilian and Mexican, are related to each other, the following research problem is defined: What is the effect of economic integration in the Brazilian GDP growth and Mexican? In order to provide a complete answer to the problem of research, the study has the following general objective: Identify the behavior of the Brazilian GDP and Mexican GDP before and after the process of economic integration.

To facilitate this goal, the following specific objectives were established:

- i. Analyze if there Cointegration in time series of countries, allowing positive or negative assessment of economic integration;
- ii. Investigate GDP growth after economic integration, both in Brazil and Mexico;
- iii. Evaluate the importance of economic integration.

### 2.2 Literature Review

This subsection presents the literature review that forms the theoretical basis of the study, addressing the economic integration as a driving factor of the economic activities of countries with similar economic activities or even complementary; discussing economic growth as an indicator of the benefits provided by economic integration mentioned above; presenting the theory of cointegration, theoretical basis for the methodological characterization of the study.

#### 2.2.1 Economic Integration

Balassa (1964), by comparing the economic cooperation with economic integration, referred to this as an act of elimination of protectionist barriers that would complement an international agreement characteristic trade policy of economic cooperation. This initial observation of economic integration has evolved, according Bielschowsky (2000), since it comes from independent states that have the purpose of integrating their economies, obtaining strengthening and providing mutual assistance, generating benefits such as high internal efficiency and protection from external causes. Generally, these states are united by geographic locations and integration agreements should be favorable to do away with



the barriers that apply to trade in goods and services as part of their liberalization policies for countries outside the integration and, on the other hand, provide the approval of new members to the agreements. According to Carbaugh (2004), economic integration can be understood as a process of removing barriers and restrictions to trade, distinguishing economic integration levels that can be achieved:

i. Free Trade Area: member countries agree to implement a tariff rate of zero import; eliminate tariff and non-tariff barriers, and each member country has its own set of trade restrictions in relations with non-member countries;

ii. Customs Union: two or more countries involved agree on terminate all tariff and non-tariff barriers, with each partner country adopts the same commercial limits to non-member countries. The Common External Tariff - CET concedes a free trade at the perimeter of the customs union, so that all trade restrictions imposed on other countries to be balanced;

iii. Common Market countries involved agree, since the situation of a customs union also release the hand flow of labor and capital. It would be a more advanced stage of integration compared to a free trade area or customs union;

iv. Monetary Union: countries involved decide, from the stage of a common market, the creation of a common currency, unifying the national, social, tax and fiscal policies governed by a supranational institution and thus creating the basis for a "new country". difficult stage to be achieved because, in addition to removing trade barriers, economic sovereignty is transferred to a supranational authority;

v. Economic integration Total: countries involved come to define monetary, fiscal and social common, with an authority that is above the government of each country and in charge of developing and implementing these policies. Corral (2011) considered that economic integration - in the manner presented above and focused on the economic aspects - incorporated other significant aspects: the guarantee to avoid future conflicts; the increase in block trading power in international forums; the ability to increase the competitiveness of production through joint technological efforts. For analytical purposes of this study, in the case of Brazil economic integration through Mercosur, it is

characterized as a Customs Union and in the case of Mexico through NAFTA, as a Free Trade Area.

### 2.2.2 GDP Growth

Solow (1956) presented one of the basic models for the analysis of economic growth. First, the models presented addressed two issues:

i. Why some countries are richer than others?

ii. Why some countries grow faster than others?

According to Solow (1956), the accumulation of physical capital (real estate), the growth of the labor force, the accumulation of human capital and technological change, directly influence economic growth and, on that basis, was concerned to demonstrate that the product per capita ( $Y$ ) is an increasing function of the ratio between capital and labor. What best explains the rate of production or growth is a function given by the same:  $Y = f(K, L, A)$ , where  $Y$  is the final production of goods;  $K$  is the capital stock (which would be the total physical capital of a person);  $L$  total human capital available and able to produce something;  $A$  technology.

Solow (1957) also stated that from 1909 to 1949, the economic growth of countries occurred largely because of technology, because with the advancement and optimization of processes, activities have become more agile.

Mankiw, Romer and Weil (1992), based on the study of Solow (1956), retook the statement that the growth of a country can be based on only two variables: savings and population growth. However, the study only provided the direction and the effects that higher or lower level of savings and population growth can bring to the country and did not foresee that the magnitude of such effects, one of the criticized items. For any human capital accumulation rate, the greater the saving or lower population growth, the better the level of income. Also human capital accumulation can be correlated with the savings rate or population growth. Therefore, it would imply the accumulation of human capital of omission, giving a preview of the estimated savings ratio and population growth.

The impact of productivity was studied by Hall and Jones (1999), with the level of productivity, therefore, the higher the level of higher education will be the intensity and efficiency of work, making the most productive

country in the countries that do not have a high level of education.

More recent studies have included the quality of human capital as a differential factor of uneven growth among countries:

i. Manuelli and Sheshadri (2010) used a theoretical model to estimate the quality and not only quantity in assessing the impacts to economic growth;

ii. Erosa, Koreshkova and Restuccia (2010) conducted a study on human capital, seeking to understand why some countries between the difference in per capita income is twenty times, being demonstrated the importance of human capital quality and its impact on the country's growth.

#### *2.2.2.1 Influence of Economic Integration in the Brazilian GDP Growth.*

The Interest in economic integration has grown in recent years due to the benefits that this integration brings to the country to maximize corporate profits and become the most dynamic market. Can be presented as an example, the emergence of MERCOSUR, created in 1991 and composed of Argentina, Brazil, Uruguay, Paraguay and Venezuela (Bielschowsky, 2000).

In Latin America, economic integration interests were influenced by the Economic Commission for Latin America and the Caribbean - ECLAC. The ECLAC ideas brought developments in the integration process in Latin America, helping mainly with respect to its purpose and the present difficulties in the integration process (Bielschowsky, 2000).

Bielschowsky (2000) pointed out some aspects of the influence of economic integration in Latin American economies:

i. The importance of good coordination of macroeconomic policies among countries involved in the integration and as a mismanagement of government policies influence the growth of a country, ECLAC focused on the macroeconomic adjustment of Latin American countries making economic growth the country happened to gradually;

ii. The thought "CEPAL" considered the import substitution as an important factor in the feasibility of industrialization, i.e., replace imported by domestic production was the key issue for the country to develop the industry, and

thus could increase exports and consequently economically;

iii. The process of regional economic integration, with the creation of a common market was the answer to economic growth through import substitution. The market liberalization process has a resistance of interest groups, who saw the process as a threat to the internal market. So it was important that occurred a productive restructuring so that the domestic industry was able to compete with foreign firms. Economic integration still had a very strong connection with the country's economic growth, with the aim of that leverage the comparative advantages and economies of scale with the expansion of the market, bringing economic growth for the countries involved.

This set of mind Bielschowsky (2000) was brought in part by Gremaud, Vasconcellos and Toneto Jr. (2005), which pointed out the lack of coordination of macroeconomic policies and the difficulties that unilateral measures cause as big issue to be solved by the MERCOSUL.

To Krugman and Obsfeld (2005), the substitution of importation is not necessarily the best police to be adopted, because it does not match the comparative advantage (Model Ricardian), and is not always that we can find high potential industries with high earnings over labor. Another reasonable fact is that with the high Taxes the Government makes the importation expensive, directing the demand to the local market, making the local production increase.

Veiga (2007), in the other hand, analyzed that in 2002 the Brazilian exportation had a big increment, one of the reasons that put the economic integration is question, and how could it really help the country to grow.

To Sarquis (2001), the economic growth is very important to the emerging countries, because this helps the economic, so the country has more jobs, per capita income. Brazil good performances during five years, 2004 until 2008, when the GDP was increasing every year, during that time the GDP grew 4,8% or 3% on the per capita income. After the economic crises of 2008, when the Brazilian GDP started to slow down, in 2010 it picked up a little increasing 7,5% and 2,7 in 2011.

Some other consequences of economic integration with the growth of the Brazilian economy were observed by Sarquis (2011) as inhibiting factors for economic growth:

i. Brazil in 2009, had a fall in the volume of imported and exported around 10% and 11%, respectively, with a smaller decline than the developed countries;

ii. In 2010 there was a major recovery, with an increasing volume of 11.5%, but lower than developed countries (14.5%);

iii. The volume imported in 2011, grew 36% in Brazil, while the world average was 12.5% and 13.5% for developed countries.

#### 2.2.2.2. *Influence of Economic Integration in the Mexican GDP Growth*

The literature on Mexico's integration process is not abundant, especially with the approach taken in this study, and thus, was used to the full the work of Santos (2007).

In the 1980s, with the Mexican debt crisis, governments began the process of economic liberalization, from a strategy focused on exports so as to achieve economic growth. During the government of Miguel de la Madrid (1982-1988) in 1985, Mexico joined the General Agreement on Tariffs and Trade - GATT and, therefore, has scheduled a policy of reduction of tariffs and free trade agreements, getting management geared towards trade liberalization factors. When they started the negotiations of NAFTA, Mexico was already able to enter the agreement and, accordingly, effectively joined on 1 January 1994, since it was already in the market liberalization process. Mexico abandoned the protectionist policy, before prevailing in the country, and became a US ally, which was seen by Mexicans as the first step to become a developed country. Thus, Mexico hoped to attract targeted foreign investors to the country's structure and bring greater technological base, and thereby increase exports and become the most dynamic market. More than 65% of Mexico's foreign trade is for the US (SANTOS, 2007).

The entry of Mexico in NAFTA did not represent to the US only to maximize corporate profits, but rather geo-economics interests in Mexican natural resources in order to ensure safer conditions for investors and intellectual property, ensure power supply with low cost, and with the help Mexico combat illegal immigration and drug trafficking (SANTOS, 2007).

The strategy adopted by Mexico to attract foreign investment, thus boosting exports and thereby get economic growth, proved to be a

failure in growth rates and the country's social indicators. It is fact that increase of the foreigner investment and labor specialization occurred after the treaty did not bring to Mexico the expected growth or helped to take the country to the first world (SANTOS, 2007).

The annual rate of growth of the Mexican GDP, after the treaty was 2.5%, lower than the 2.3% of the 1984-2003 period. The impact of NAFTA was not relevant to the GDP growth, something around 0.5% per year, while the minimum wage decreased by 21.34% compared to 1994 (SANTOS, 2007).

#### 2.3. Cointegration test Engle and Granger

In econometrics, an important issue is the need of short-term dynamic integration with long-term balances. The analysis of the short-term dynamics is often accomplished by eliminating the variables trends, often by differentiation. However, this procedure does not consider potentially important information about the long-term relationships. The Cointegration theory developed by Engle and Granger (1987), devoted to the question of integrating short-term dynamics with long-term balances (MADDALA, 2003).

According to Gujarati (2006), Cointegration tests showed great importance in the field of economic and econometric studies. Considered that the cointegration suggests the combination of two or more-time series, this combination may be stationary even though the individual non-stationary series. Through these tests can check for long-term balance between economic variables.

The study Engle and Granger (1987) noted that, from the economic point of view, two or more variables are cointegrated if they are jointly move over time and their differences are stable even when each particular series contain a stochastic trend and is therefore not stationary. The most economic series is presented as non-stationary, since share common stochastic trends.

If two or more series move along synchronously time their movements have the same length. Thus, in the same order they are cointegrated, i.e., is  $I(d)$ , where  $d$  is the order of integration. If these sets are not individually stationary and follow a stochastic trend, a linear combination between them is usually stationary, because the common trend is removed. The linear combination makes the stochastic trends of the

two series to cancel out each other. In other words, two or more series are cointegrated if not stationary, but is formed by a combination thereof is integrated into zero-order, i.e.  $I(0)$  (GUJARATI, 2006).

Engle and Granger (1987) formulated a test to check for Cointegration between two or more variables. This test, following the unit root verification procedures developed by Dickey and Fuller in 1976 and 1981, is to estimate the first difference of waste,  $\Delta u_t$  as a function of these values with a delay ( $u_{t-1}$ ) and past values for successive differences  $\Delta u_t$  if there is suspicion of auto serial correlation.

### 3. Methodology

The research method is descriptive quantitative, with the following hypotheses to be tested:

$H_1$  = from the Economic Integration was no relationship between the Brazilian GDP and Mexican GDP;

$H_0$  = from the Economic Integration there was no relationship between the Brazilian GDP and the Mexican GDP.

Therefore, for this study, they were considered as independent variables Economic Integration and the dependent variable to GDP growth.

All the information of this study was obtained in official publications in Brazil and Mexico, supplemented in database international institutions in Brazil and Mexico. The series consist of the GDPs of Brazil and Mexico (in current US \$) were obtained through the site of the International Monetary Fund - IMF. For quantification of the data it was used cointegration method, developed by Engle and Granger em1987.

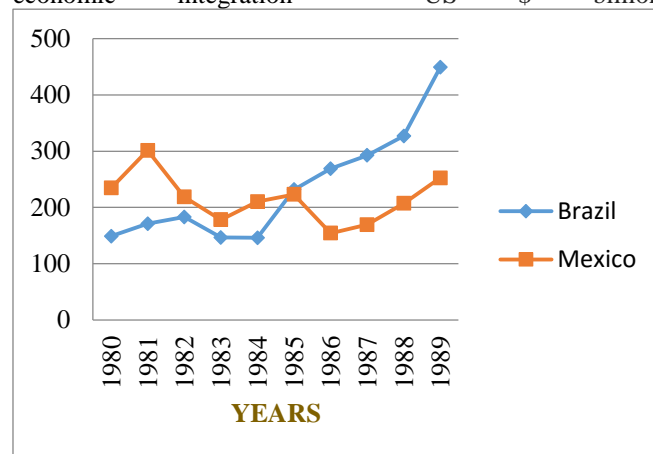
In order to better provide analytical capacity, we opted for the series of data from 1980 to the two countries, regardless of the time of integration of the blocks. For graphical presentation, data were organized into four series, considering the GDPs of Brazil and Mexico before and after the economic integration:

- i. GDP 1980-1989 Brazil;
- ii. GDP of Mexico from 1980 to 1989;
- iii. GDP 1994-2013 Brazil;

iv. GDP of Mexico from 1994 to 2013.

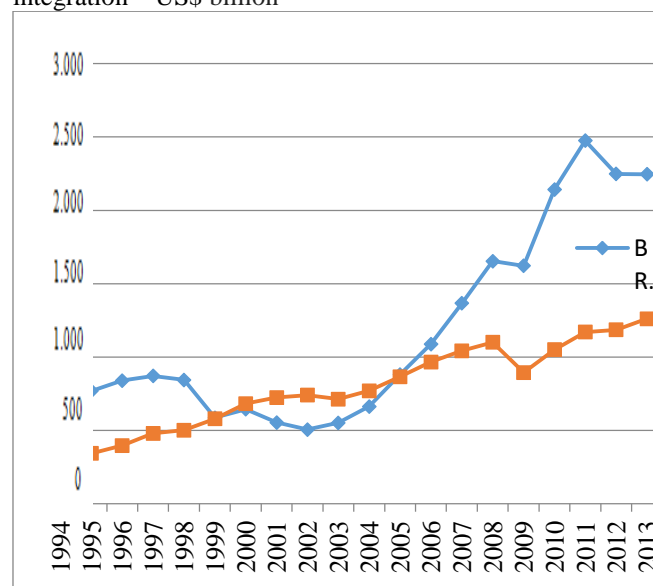
From the processing of data and the application of Cointegration test of Engle and Granger (1987), the following figures were generated:

**Figure 1** – Brazil and México GDPs before and after economic integration - US \$ billion



Source: Prepared by the authors, based on secondary data.

**Figure 2** – Brazil and México GDPs after economic integration – US\$ billion



Source: Prepared by the authors, based on secondary data.

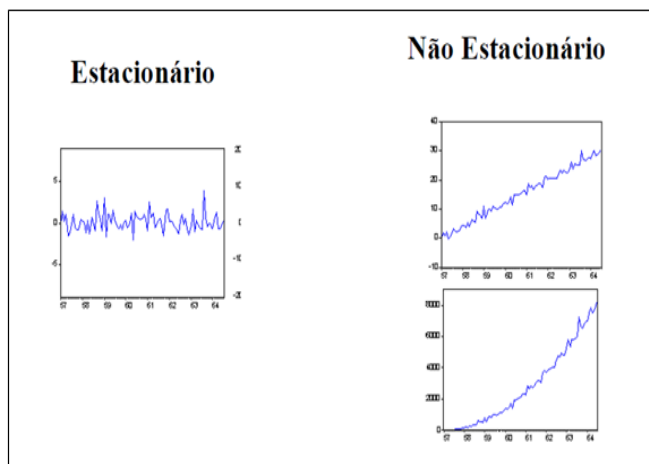
## 4 Data Analyses

Through Figure 1 and Figure 2, it is clear that the data series are presented as non-stationary as it does not develop, over time, around a constant mean and are not invariant with respect to time, as Gujarati (2006).

As analytical reference and better understanding, in Figure 3 contains the characteristic behavior patterns of stationary and

non-stationary series:

**Figure 3 – Stacionaries and No Stacionaries series**

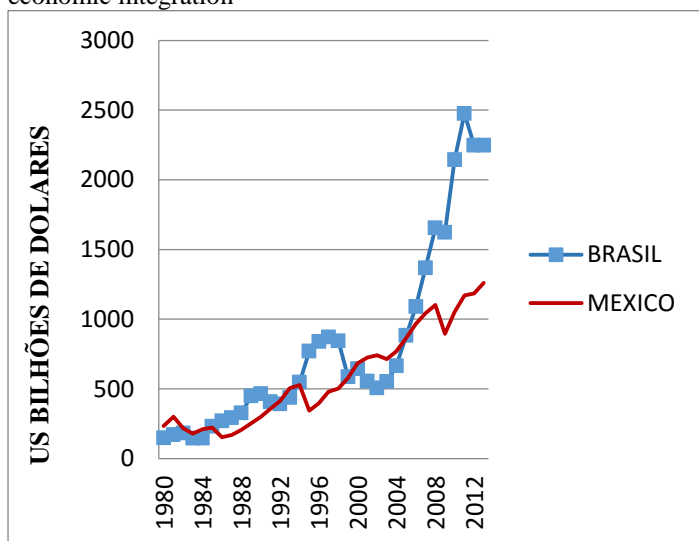


Source: Gujarati (2006)

In cases of application of regression on non-stationary time series on other non-stationary series, if there is no evidence of cointegration between them, it is clear that the result is a spurious regression and therefore there is no relationship of cause and effect between the variables (GUJARATI, 2006).

Figure 4 shows the two series together and their behavior, and although deem evidence of no stationary demonstrate present Cointegration property since the two series show signs of "run together", especially during the years preceding the 2008 crisis.

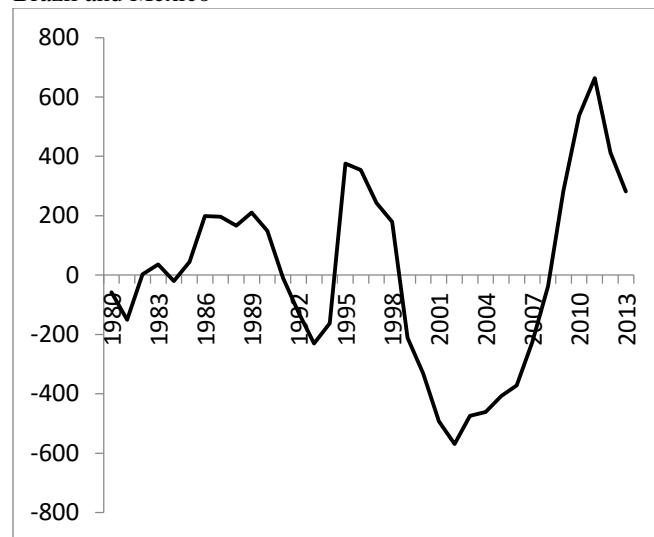
**Figure 4 – Brazil and México GDPs before and after economic integration**



Source: Prepared by the authors, based on secondary data.

As a first Cointegration Test stage of Engle - Granger (1987), a linear regression between the two variables (GDP of Brazil and Mexico) and was generated Figure 5 was adjusted, which shows the behavior of the residues of regression, informally, plays with the distance between sets over the years analyzed.

**Figure 5 – Waste of Cointegration Test Regression GDPs of Brazil and Mexico**



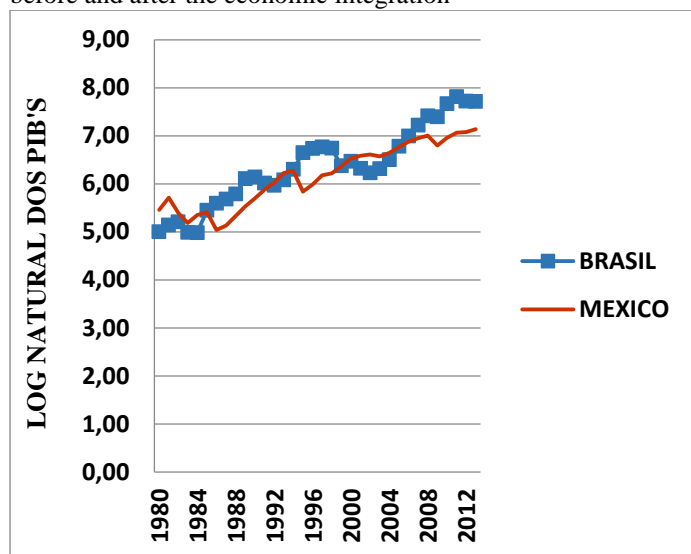
Source: Prepared by the authors, based on secondary data.

Although the dispersion of the number of waste proves increasing, over time, which may be a result of the increase in GDP size itself of the two countries over the years, visual inspection of the latter figure suggests that there is stationarity in waste and then cointegration of the original series, which weakens the possibility of spurious regression between the two variables.

To mitigate the effect of increasing the range of variables, the analysis procedure of repeated-series, but now, in their natural logarithms, which allows even the interpretation of the results in terms of elasticity relationship between the GDPs of two countries.

Figure 6 shows the behavior of two series over time, but transformed into logarithms.

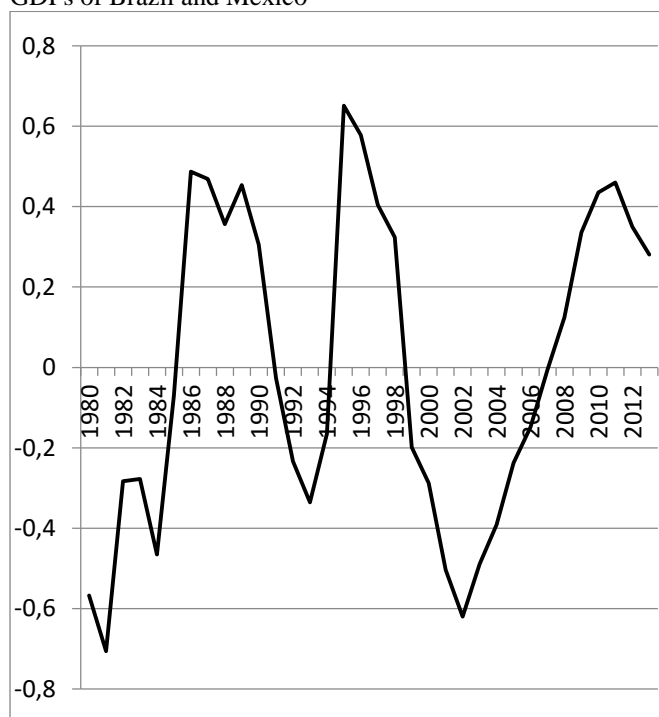
**Figure 6** – GDP Brazil and Mexico in natural logarithms, before and after the economic integration



Source: Prepared by the authors, based on secondary data.

With this version transformed the variables are the strongest evidence in favor of cointegration hypothesis of the series, which is further reinforced with the also visual inspection, in Figure 7, the new waste obtained from the new regression of cointegration test Engle-Granger to the logarithm of the series.

**Figure 7** – Residues from Cointegration Test Regression GDPs of Brazil and Mexico



Source: Prepared by the authors, based on secondary data.

Understood then how small the risk of spurious regression of integrated series of order 1 it is possible to move to the interpretation of results. It was introduced in the model a variable Dummy for the eventual change test in the relationship of two variables, after economic integration, and the estimates were those contained in Table 1.

**Table 1** – Regression to Break Test with the logarithm of the GDP's of Brazil and Mexico

SUMMARY of RESULTS

Statistics of regression	
R multiple	0,9984
R square	0,9967
Adjusted R square	0,9630
Standard error	0,3920
Observations	34

ANOVA

	gl	SQ	MQ	F	F of signification
Regression	4	1393,5349	348,3837	2267,4873	0,0000
Residual	30	4,6093	0,1536		
Total	34	1398,1442			

	Coefficients	Standard error	P-value	Startt	95% less than	95% higher than
BEFORE	6,4524	3,5533	1,8159	0,0794	-0,8044	13,7092
MEXICO_BEFORE	-0,1977	0,6634	-0,2980	0,7678	-1,5525	1,1571
AFTER	-0,0959	1,2245	-0,0783	0,9381	-2,5966	2,4048
MEXICO_AFTER	1,0536	0,1877	5,6135	0,0000	0,6703	1,4369

Source: Prepared by the authors, based on secondary data.

The analysis of the estimates of the p values suggest the following interpretation:

i. The estimate of 76.78% for the null hypothesis on the coefficient of the variable "MÉXICO\_BEFORE" does not allow the rejection of the hypothesis that there was no relationship between the GDPs of the two countries before the economic integration;

ii. On the other hand, from 0.00% the estimate for the null hypothesis on the coefficient of the variable "MÉXICO\_AFTER" allows the rejection of the null hypothesis that there was no relationship between the two countries PIBS after economic integration, i.e. accepted the hypothesis that, after economic integration, the GDPs of Brazil and Mexico kept relation to each other.

Once verified rejection of the hypothesis that there was no relationship between the GDPs of the two countries, through analysis with the variable "MÉXICO\_AFTER", it becomes unnecessary to analysis with the variable relative to GDP in Brazil.

In addition, it could be applied to a structural break test as proposed by Chow (1960). However, this test consists of splitting into two sub-periods in order to estimate parameters that each of these sub-periods, subjected to a statistical F test the equality of two sets of estimated parameters. It happens that the selected sample, four data series included in the periods before and after the economic integration of the two countries is not very extensive and the application of the Chow test (1960) become restricted to a priori choice of date / time of structural break and, therefore, would be unnecessary to apply this test.

## 5 Conclusion

This study sought to understand the factors that lead countries to realize economic integration and the influence of internationalization in GDP, specifically, Brazil and Mexico.

Using the cointegration test, we sought to determine whether economic integration could boost GDP growth.

Through the graphical analysis of the two series and the waste of the regressions for Cointegration tests of Engle-Granger of variables, we can accept the hypothesis that, from economic integration, the economies of Brazil and Mexico had a direct correlation in their GDP's.

This positive assessment of economic integration is sufficient to register their importance in the economic context of both countries, and dispenses a further discussion on the theoretical reflections of the study.

Therefore, it is concluded that both Brazil's GDP as Mexico grew after the integration of each country to their economic blocks (Mercosur and NAFTA).

Thus, when registering the important effect of economic integration in the Brazilian and Mexican GDP growth was both one as the other, responds to the problem of research and reaches to the overall objective of the same.

As an extension of this study suggest possibilities are the following:

i. Carry out the same test on a series of more extensive data, i.e., a sample that includes a larger number of years the integration of two countries in the respective blocks (including the structural Chow break test);

ii. For this broader range of data, apply the Durbin-Watson test on cointegration regression in

order to achieve greater certainty about the degree of cointegration between the variables proposed;

iii. Apply the correction mechanism Engle-Granger errors (1987) in order to obtain the equilibrium relationship between short series and long term.

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