

RN

# 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, post-graduate programme in Business Administration. Revista de Negócios is published quarterly in January, April, July and October on the website [furb.br/rn](http://furb.br/rn).

**POSTMASTER:** Universidade Regional de Blumenau-FURB, Rua Antônio da Veiga, 140 - Victor Konder, Blumenau - SC, 89012-900. Department: PPGAD/FURB - D102.

## **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 organizations. 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.

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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

In this first issue of 2019, we selected a set of papers with different theoretical backgrounds, and different methods to approach topics like non-market strategy, customer loyalty, entrepreneurship and supply chain management. The articles address the main questions related to corporate strategy and management challenges, but also capturing the antecedents of firms' dynamics in different contexts: industry context, uncertainty, and cultural shape of the decision making by managers and stakeholders.

The first paper **“Research and theory of Corporate Political Activity (CPA): a bibliometric analysis”**, authored by Raul Beal Partyka, Jeferson Lana, Marina Amado Bahia Gama, Rosilene Marcon, has the aim to highlight the importance of the Corporate Political Activity in the context of companies seeking political alignment to develop their strategies. Using a bibliometric approach, the authors provided insights and propositions to the understanding of the reasons and forms by which companies are involved with the regulatory environment. The article also contributes to clarify the field of corporate political activities, their classification, and implications.

The second article **“Customer Loyalty and its Antecedents in Banking Service Rendering Context”**, authored by Gabriel Sperandio Milan, Luciene Eberle, Deonir De Toni, Pelayo Munhoz Olea, Suélen Bebber, as the purpose to analyze customer loyalty in the context of existing relationships between banking service providers and their customers. Based on a multivariate statistical approach with structural equation modeling, the model provides a specific framework to the understanding of the antecedents of customer loyalty, adapting strategies and actions to stimulate and generate better market and economic-financial results in the banking sector.

The third article **“Structural model of entrepreneurial behavior measurement”**, authored by Cristiane Krüger, Italo Fernando Minello, has the objective to develop a specific model to capture and estimate entrepreneurial behavior based on behavioral characteristics and entrepreneurial intent. Based on a structural model, the empirical study shows that the achievement dimension has been found as the main antecedent, suggesting strong evidences of the robustness of the model to measure entrepreneurial behavior.

The fourth article **“Determinants of Supply Chain Management, according to its managers”**, authored by Margareth Rodrigues de Carvalho Borella, Caroline Bombana has the objective to identify the determinants of the effectiveness of the supply chain (SC) operation and its management (SCM), from the viewpoint of its members or chain leaders. The study, based on the case of a regional industrial hub in the south of Brazil, found evidences that there is a conservative culture in the industrial hub of the city of São Marcos/RS, and lack of confidence is the main barrier. The originality of this study lies in highlighting the leading role of the manager, member or leader of the supply chain in sharing their perceptions on defining, beneficial and opposing aspects of the supply chain management and its operation.

Before concluding this Editorial, as always, we want to express our gratitude to all reviewers that helped us to achieve this current issue. We thank you and hope we can continue to count on your contributions to our Journal in future issues.

To our readers, we hope you will enjoy reading the articles, and expect you to contribute with our Journal in future issues on business strategies and emerging economies.

Mohamed Amal  
Editor

## Research and theory of Corporate Political Activity (CPA): a bibliometric analysis

Raul Beal Partyka<sup>1</sup>, Jeferson Lana<sup>2</sup>, Marina Amado Bahia Gama<sup>3</sup>, Rosilene Marcon<sup>4</sup>

<sup>1</sup> Universidade do Vale do Itajaí - [raul@edu.univali.br](mailto:raul@edu.univali.br)

<sup>2</sup> Universidade do Vale do Itajaí - [jlana@univali.br](mailto:jlana@univali.br)

<sup>3</sup> Fundação Getúlio Vargas EAESP - [abgama@gmail.com](mailto:abgama@gmail.com)

<sup>4</sup> Universidade do Vale do Itajaí - [rmarcon@univali.br](mailto:rmarcon@univali.br)

### KEYWORDS

Corporate Political Activity.  
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### ABSTRACT

Corporate Political Activity (CPA) are ways in which companies use themselves to try to influence regulatory policies and environments in their interests. This article aims to highlight the importance of the CPA in the context of companies seeking political alignment to develop their strategies. Through a bibliometric analysis, based on 180 articles, it was possible to verify that the United States, Canada, and China have effectively advanced research on the subject. Due to the need to develop further studies on the subject in Brazil, suggestions for future research are presented, because it is understood that, through a greater number of studies related to CPAs, we will understand the reasons and forms by which companies are involved with the regulatory environment. The article contributes to clarify the field of corporate political activities, their classification, and implications, advancing with future needs for the researchers of this community.

### PALAVRAS-CHAVE

Atividade Política Corporativa;  
Ação Política Corporativa;  
CPA;  
Estratégia de não mercado;  
Bibliométrica.

### RESUMO

As atividades políticas corporativas (CPA, do inglês Corporate Political Activity) são formas pelas quais as empresas se utilizam para tentar influenciar as políticas e os ambientes regulatórios em favor de seus interesses. Este artigo tem como objetivo destacar a importância da CPA no contexto de as empresas buscarem alinhamento político para desenvolverem suas estratégias. Por meio de uma análise bibliométrica, realizada com base em 180 artigos, foi possível verificar que Estados Unidos, Canadá, China têm avançado efetivamente em pesquisas a respeito do tema. Pela necessidade de desenvolver mais estudos sobre o assunto no Brasil, sugestões de futuras pesquisas são apresentadas, pois se entende que, por meio de um maior número de estudos relacionados às CPAs, passa-se a compreender os motivos e formas pelas quais empresas se envolvem com o ambiente regulatório. O artigo contribui em clarear o campo das atividades políticas corporativas, sua classificação e implicações, avançando com as necessidades futuras para os pesquisadores desta comunidade.

## 1 Introduction

The companies opt for political connections in order to influence the public power, and usually, their channel of action (Dorobantu et al., 2017) are the donations to the political campaigns. Therefore, they seek to finance political projects that are more interesting and with which they are more aligned. This direct involvement in politics occurs when companies realize that their particular interests in the business vs. state relationship are threatened by specific policy deliberations (Suarez, 2000).

Corporations also put pressure on policymakers (Buchholz, 1988; Mack, 1997), in order to communicate their views to legislators on proposed legislation. These activities give firms the opportunity to provide legislators with the motives for adopting a specific position on proposed legislation and attempting to influence policy outcomes (Hillman & Hitt, 1999; Mack, 1997).

In this sense, this research seeks to make a survey of existing publications on corporate political activity (CPA). The objective is to understand the ability of organizations to gain access to the regulatory environment and how this can influence the legislative process in a more business-friendly way and/or broaden access to government contracts.

Often organizations can spend a tremendous amount of resources trying to achieve even the smaller goals by not having access to insiders in the political process that can explain the functioning of the rules and the dynamics of political processes. In turn, the costs and asymmetry of information can affect operating costs and, potentially, the company's performance (Hillman *et al.*, 1999).

Thus, through a literature review related to CPAs, it was intended to show that the actual expenditure of a company in relation to the formulation of public policies depends on the participation of the company in the political process, as well as on its ability to persuade policymakers to take positions that favor it. That is, this article aimed to clarify the field of corporate political activities, their classification, and implications, advancing with future needs for researchers and, above all, presenting the contribution of Brazilian research.

Thus, this paper shows the main publications and results of CPA research in the world and in Brazil and how this field of study can be expanded, since "the ability to influence a political decision in

a company-friendly way is closely intertwined with the improvement of business performance" (Hillman et al., 2004, p. 847)

In this research, a sample of 180 articles was used. The results show that publications on CPA began to have significant numbers from the year 2011, reaching the apex in 2016. The top ten authors on the subject represent more than 30% of the total sample captured. In addition, 79% of the articles are empirical. It was also noticed that the empirical studies increased vertiginously and the theoretical articles did not have a great expression of publications throughout the analyzed period.

The methodology of the captured studies was also classified. In this sense, more than 50% of the sample is represented by quantitative articles, and the second classification, theoretical test, represents only slightly more than 16%.

The theories used by the authors were also categorized, and the CPA theory itself appeared in half of the articles in the sample. On the other hand, the other theories found are proportionally distributed among the other studies. The lobbying activity is the most used by the authors as a study variable, in empirical articles and also in theoretical articles.

Finally, a predominance of studies developed in the United States of America (USA) was observed. Besides the US, China and Canada also have more advanced research on the subject. Thus, the question that arises is: why are there few studies on the subject in Brazil? In studies already done in the country, we note the importance of CPA in companies, their use in corporate strategies.

In this study, the research questions and the discoveries of the 30 most cited articles are also reported. In the following section, the theoretical reference for to the research is approached. Section 3 is devoted to a more detailed presentation of methods and discoveries.

Data analysis and discussion of results are presented in section 4. In addition, successful avenues of CPA studies and a listing of new findings provided by this study.

In section 5 one does research in the national context. Section 6 concludes by commenting on the limitations and presenting the suggestions for future research, obtained on the basis of the investigations and identified in the study implications.

## 2 Theoretical Framework



Corporate political activity (CPA) is a subfield of the nonmarket strategy, which studies the political actions of companies in the regulatory environment (Boddeyn, 2007; Getz, 1997). CPA is defined as "corporate attempts to shape government policy" (Hillman et al., 2004, p. 837)

It is important to differentiate the CPA from works that deal with corruption since the CPA does not investigate corruption and does not promote activities against the law. The interest is in the actions that companies take in the formal rules of the game and that even some authors value (Porter & Kramer, 2006).

Corporate political engagements can be characterized as (a) corporate political actions and (b) corporate political activities, and have a corresponding sense. While the first term refers to "any deliberate firm action intended to influence government policy or process" (Getz, 1997, p. 32), the second, corporate political actions, refers literally to actions conditioned by institutional characteristics of political environments and structured by the organization to make strategic decisions within companies (Windsor, 2007).

The two terms are closely linked, since they relate to activities and actions in the literal sense of the word, before the corporate political environment. In this sense, we can mention the Political Action Committees (PACs) in the United States, which are entities created to receive campaign contributions. Political action has allowed companies to achieve goals such as entering new markets, ensuring the viability of current markets, reaffirming the autonomy of planning, establishing competitive market barriers and protecting current markets (Gundlach *et al.*, 1992).

Creating and preserving the competitive advantage of today's markets is a challenge to all strategic managers. The Corporate political activity emerged as a remarkable research framework to explain the company's performance in political arenas as a way to create and sustain the advantage (Hillman et al., 2004).

Finally, the CPA allows behavior that is not necessarily linked to a commercial strategy. It concentrates only on the behavior carried out in the governmental arena. There is a consideration of a substantial portion of the academic work in business and its environment and in the relations between business and government (Getz, 1997).

### 3 Method

Motivated by previous readings, it was found in the literature review as the screening of documents on a topic, with information, ideas, data and written evidence from a particular point of view to achieve certain objectives or express certain opinions, as well as the effective evaluation in relation to the research carried out (Hart, 1998). In this article, the bibliometric method followed the model of Botelho *et al.* (2011), in order to provide the synthesis and analysis of the scientific knowledge already produced on the subject investigated, in addition to providing information that would enable the readers to evaluate the pertinence of the procedures used in the elaboration of the review (Botelho et al., 2011).

This scientific procedure is intended to allow readers, researchers or not, to approach the problematic, since "bibliometric methods reveal great potential for the quantitative confirmation of categories derived subjectively in published reviews, as well as to explore the research landscape and identify the categories" (Zupic & Cater, 2015, p. 457).

In this sense, a panorama about the scientific production was traced, with the objective of knowing the evolution of the theme over time and, above all, visualizing possible research opportunities related to corporate political activity (CPA) and corporate political action (CPA).

Therefore, this study sought to analyze the national and international scientific production on corporate political actions and corporate political activities. Throughout the study, such topics are treated only as CPA, which is justified by the corresponding meaning described in the previous section. To achieve the objective of this research, a bibliographic method was used in the Web of Science and Scopus databases. The period covered was from 1960 to 2017.

Some parameters were determined for the data collection. Firstly, the two bases were selected and the search terms were determined: "corporate political action" and "corporate political activity" and their plural variations. Another filter in this first moment was to determine that the terms should be present in the title or abstract. The preliminary result is presented in Table 1, noting that studies of corporate political activities represent more than 80% of the initial research.

**Table 1.** Terms found in the works

	WOS	SCOPUS	TOTAL
TERM	QTY.	QTY.	QTY.
<i>Activity/Activities</i>	148	156	304
<i>Action/Actions</i>	37	36	73
<b>TOTAL</b>	<b>185</b>	<b>192</b>	<b>377</b>

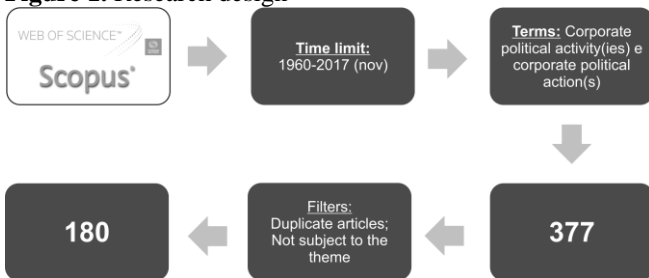
Source: The authors (2019), based on primary data.

The records were then organized using Excel software. For this, a manual selection was made for the application of two filters: removal of duplicate articles and those not suitable for the theme. In addition to the articles duplicated between the two platforms, eight articles were excluded because they were of the type of revision of the same book; 17 articles on the topic Ethics; four from the Health area and two from Public Health; eight of Law; seven of Social; 24 of Public Policies, one on National Culture, and the last one removed for having referenced a CPA article only as a model of methodology.

Figure 1 shows the process of obtaining the sample, with the general characteristics of this review. Figure 1 allows other researchers to replicate the study, by presenting the research design.

Considering the query for the search terms, a total of 377 articles were captured and, after the filters were applied, the sample was delimited with a total of 180 selected papers.

**Figure 1.** Research design



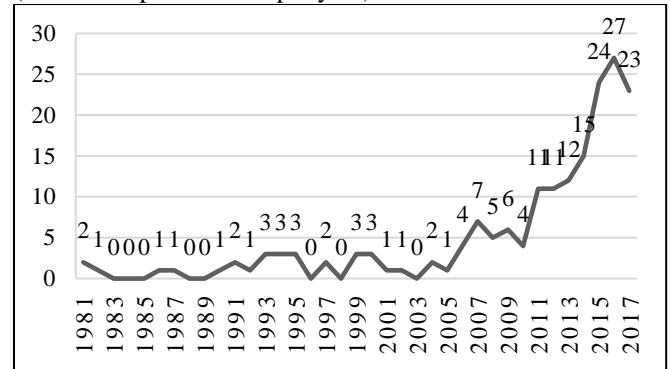
Source: The authors (2019).

#### 4 Data Analysis and Discussion of Results

This section aims to indicate the most relevant works that guided this research. The chapter is divided into sample data collection, data analysis and results. Several parameters are analyzed, such as classification of the studies over time, the methodology used, identification of theories, identification of activities/actions, the geographical distribution of the sample countries. Finally, we report the research questions and discoveries of the Top 30 most cited works.

First, Figure 2 shows the number of annual publications on the topic.

**Figure 2.** The behavior of CPA publications over time (number of publications per year)



Source: The authors (2019) based on primary data.

The first finding was from two pioneering publications in 1981: from Mulkern, Handler, and Godtfredsen, entitled Corporate PACs to fundraisers, and from Keim, Foundations of a political strategy for business. Although they are more than 30 years old, they are not among the most cited articles. Emphasis is given to the work since 1995, due to its higher incidence in citations. In this sense, the works of Getz (1997), Rehbein and Schuler (1999) and Hillman and Hitt (1999) stand out, specifically in this sample of articles selected. For authors such as Hillman et al. (2004) and Lawton et al. (2013), the focus on this theme started from the work of Shaffer (1995).

In the year 2006, there was a disruptive increase in the number of publications. In this CPA theme, 2006 recorded the highest incidence (four) since 1981, the year in which there were two publications. From the beginning until November 2017, the historical peak was in 2016, with 27 publications. This growth of interest over CPAs can be explained by Hillman e Hitt (1999) e Hillman et al. (2004), according to which corporate attempts to shape government policy in ways favorable to the company have not matched the prevalence of CPA practice in industry or political systems. The important progress of CPA understanding has been made and is derived from disciplines as comprehensive as strategic management, marketing, economics, sociology, finance, and political science.

When analyzing the composition of the 180 articles of this sample, it was verified that the term corporate political action(s) represents 17,22%. Therefore, the highest incidence is with the term corporate political activity(ies), identified in 149

articles, according to Table 2.

**Table 2.** Terms found in CPA works

TERM	QTY.	%
Action/Actions	31	17,22
Activity/Activities	149	82,78
<b>TOTAL</b>	<b>180</b>	<b>100</b>

Source: The authors (2019) based on primary data.

Regarding the authors who publish the most about CPA, Table 3 records that Schuler, D. A., is the author who presents more publications, with ten articles.

**Table 3.** Top ten authors who most publish on CPA

#	AUTHOR	QTY.	%
1	Schuler, D. A.	10	5.56
2	Hadani, M.	8	4.44
3	Rehbein, K. A.	7	3.89
4	Barron, A.	6	3.33
5	Rajwani, T.	6	3.33
6	Brown, R. S.	5	2.78
7	Lawton, T.	5	2.78
8	Dahan, N. M.	4	2.22
9	Hansen, W. L.	3	1.67
10	Jia, N. Keim, G. D. Lux, S. Mitchell, N. J. Tian, Z. Werner, T.	3	1.67

Source: The authors (2019), based on primary data.

As indicated in Table 3, it was also identified the lack of some authors already recognized on issues that involve the corporate relationship with the political environment. This shows that these authors did not specifically use CPA findings during their research. Examples of this are Faccio, Gilmore, Saffar, and Boubakri.

Another point that deserves to be highlighted is the fact that the ten authors that produce the most published, together, 57 works, which corresponds to more than 31% of the total publications on CPAs.

Regarding the study classifications, it can be observed in Table 4 that the most used approach was the empirical one, with 79.4% of the studies found. A total of 143 articles used data collected in the field or secondarily, to elaborate the works on CPA.

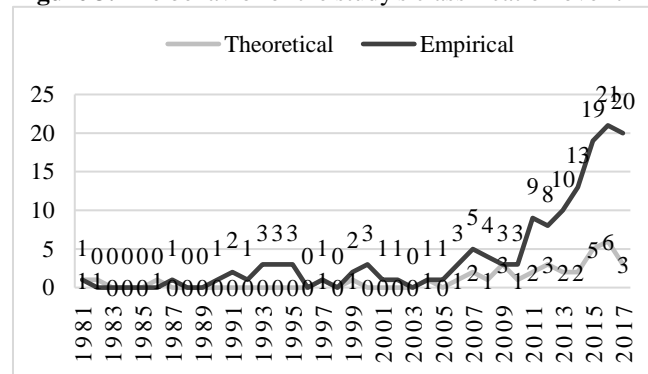
**Table 4.** Classification of the study of CPA articles

Type	QTY.	%
Empirical	143	79,40
Theoretical	37	20,60
<b>TOTAL</b>	<b>180</b>	<b>100</b>

Source: The authors (2019) based on primary data.

It was also sought to identify this classification over time, according to Figure 3, seeking to identify some standard activity of the researchers or moment of rupture in the searches.

**Figure 3.** The behavior of the study's classification over time



Source: The authors (2019) based on primary data.

As a result, we conclude that empirical-type studies were sovereign throughout the period, with the exception of two dates: 1982 and 1986, where there was a publication of the theoretical type in each period, against none of the empirical types. The same incidences were recorded in the years 1997 and 2004, with one paper for each classification, and 2009, with three for each classification. In Figure 3 it is still possible to visualize the periods in which both approaches had no publications. In addition, empirical research reached its apex in 2016, with 21 published articles.

The methodology used in the articles of the sample was also verified. Table 5 shows that there were six variations: quantitative, theoretical, literature review, case study, qualitative and quali-quantitative (QQ), with the two methods in the same article, quantitative and qualitative. With more than 50% of the total sample, representing 94 articles, the methodology of the quantitative type was the most used among 180 articles. The theoretical essay appears, with only 29 articles.

**Table 5.** Methodology used

#	TYPE	QTY.	%
1	Quantitative	94	52,22
2	Theoretical essay	29	16,11
3	Literature review	20	11,11
4	Case study	20	11,11
5	Qualitative	12	6,67
6	Quali-Quantitative (QQ)	5	2,78
	<b>TOTAL</b>	<b>180</b>	<b>100</b>

Source: The authors (2019) based on primary data.

Table 6 also highlights the methods used in the articles, divided into qualitative and quantitative, as well as the technique used within each of the classifications.

In the quantitative method, multiple regression, OLS regression, ANOVA, MANOVA, multivariate analysis, and the t-test were the most important. The same scanning was done with the qualitative method, in which the content analysis was mainly identified.

**Table 6.** Methods used in sample articles

TYPO	QTY.
<b>QUALITATIVE</b>	<b>12</b>
Content analysis	3
Inductive study; meta-analysis; thematic analysis	2
Systematic analysis; exploratory study; narrative	1
<b>QUANTITATIVE</b>	<b>94</b>
Regression	48
Regression OLS	15
ANOVA/MANOVA/ANCOVA	6
Regression with panel data	4
Regression logit; multiple regression; t-test	2
Sequence analysis; factorial exploratory analysis; chi-square test; correlation; estimates of maximum likelihood; MANCOVA; multilevel model for ordered dependent variables; saturated model; GLS regression; multilevel regression; multivariate regression; PLS regression; linear structural relationships (LISREL); theory of response by article (IRT); generalized moments method (GMM)	1

Source: The authors (2019), based on primary data.

Table 7 lists the theoretical-type CPAs used by the authors to justify and demonstrate theories of corporate political actions and activities in their research.

**Table 7.** Identification in theoretical articles

ACTIVITY/ACTION	QTY.	%
Lobbying (spending or lobbying), direct/indirect lobbying, reactive/proactive lobbying.	27	72.97
Contribution via PAC/existence of PAC	11	29.73
Contribution/Financing campaign or candidate	10	27.03
CPA/CPA transactional or relational	9	24.32
Information	4	10.81
Activities/grassroots involvement/mobilization	4	10.81
Construction of Electoral Circles	4	10.81
Coalition building/partnership	3	8.11
Advertising/support to public causes/advocacies	3	8.11
Directors/Managers/Board connected, who are politicians	2	5.41
Political or economic education	2	5.41
Financial Incentive or Disincentive	2	5.41
Strategy (information, money, taxation, and votes)	2	5.41
Government as a board member	2	5.41

Research reports and search results, questions	2	5.41
Litigation/threat of legal action	2	5.41
Construction of internal/external voters	2	5.41
Level of participation (joint action in a national industry association/national employer's Federation/European industrial association/European employers' Federation)	2	5.41
Collective action; Voluntary agreements; Collaboration between industry and policy formulation; Political communication; Hiring of experienced staff; CSR; Develop/promote (new or existing) self-regulation, alternative regulatory policy, non-regulatory initiative; Donations; Government Affairs Offices; Evidence-based training; Provide current or future employment; Provision of position papers; Political expenses; Government investor; Gifts, entertainment or other direct financial incentive; Prevent the emergence, neutralization/discredit potential adversaries; Provision of information; Political networks; Relations with NGOs; Soft-money; Bribery; Replacement, development, and implementation of policies; Constitutional support; A testimony; Votes	1	2.70

Source: The authors (2019), based on primary data. Note: The quantity and percentage refer to how many times the activity/action was used in the sample of 37 theoretical articles.

In Table 8, the sample used was the empirical articles. In this way, the activities and/or actions that the authors used in the relation of their variables were captured to test the theories and hypotheses that they were proposing. Therefore, it is possible to use such a study, in comparison with the sample of activities/actions of the theoretical articles, to arrive at conclusions, as for example, which are the most used by the authors when empirical research is desired.

**Table 8.** Identification in empirical articles

ACTIVITY/ACTION	QTY.	%
Lobbying (Spending or Lobbying)/Direct Corporate Lobbying (Executive)/Lobbying Office in Washington	65	45.45
CAP (quantity, contributions, existence)/Micro CPA (if practice and how regular)/Macro CPA (social perspective and how it should be regulated)	54	37.76
Contribution/Financing campaign or candidate	15	10.49
Board Member, Directors, CEO, employee, or former government official or connected/Political Committee Member/Political Officer/Political Party Manager/Manager or official with political agenda	9	6.29
CPA (expenses and existence of actions/activities)/Formal CPA/Informal CPA	8	5.59

Activism via business council/Industrial associations/National associations/Payments to associated entities/Corporate groups	6	4.20
Collective action	5	3.50
Government as partner/Partial state ownership/Company owned by government/Privatized company	4	2.80
Construction of coalitions/Coalitions of interest/Coalition with competitors	3	2.10
Corporate Political Strategy (CPS)/Information Reference Strategy	3	2.10
Level of a company or institutional participation	3	2.10
Commercial organizations/Business Advisory Group/Relevant Business Associations	3	2.10
Relations with policymakers/Relationship with a host government	3	2.10
Individual action; Former civil servants on the board of directors/Former government official; Electoral building; Defensive actions/Proactive actions; Involvement in electoral politics/Executives involved; Short- or long-term exchange with government policymakers; Political influence/Influence on government regulations; Political Expenditures/Campaign Investments; Advertising/Advocacy support; Receive visits from government officials/Visit politicians.	2	1.40
Support a group of interests that occupy political posts; CSR; Direct participation of entrepreneurs in politics as a strategy of congressmen; Corporate Communications; Testimony of the congress; Contribution of CEOs; Direct petition; Company pride of local government; Write to elected officials about public policy; Campaign for candidates holding public office; Government branches with veto power in policy change in each country; Campaign funds; Government affairs offices; Have PAC; Invitation for hosting; Independent expenditures with federal organizations; Interaction government officials in industry meetings; Market opening petitions; Media; Member of the Chinese Communist Party; Party chief or general secretary on the board of directors; Negotiation with regulators; Appointment to public agency; Technical standardization (standards for anticipating the demands of policymakers and shaping policy); Public meetings on issues of local interest; Affair with party; Permissions; Political objectives; Revolving doors (personnel movement); Private political actions; Public welfare; Representation of political interests; Strategy of social force mobilization; Soft-money contribution; Bribery; Subsidies; Use law firm in Washington more than once every six months.	1	0.70

Source: The authors (2019), based on primary data. Note: The quantity and percentage refer to how many times the activity/action was used in the sample of 143 empirical articles.

Table 9 presents the theories used by the authors of the studies, on a scale of two or more apparitions.

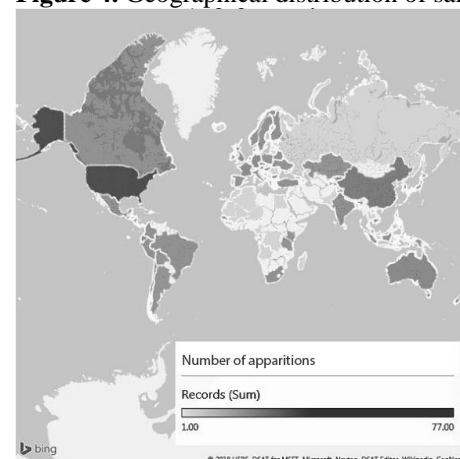
**Table 9.** Theories used

Theories	QTY.	%
CPA	90	50.00
Corporate Political Strategy (CPS)	14	7.78
Lobbying	11	6.11
Theory of resource dependency	10	5.56
Institutional (level, environment, change, characteristic, context, field, investors, property)	8	4.44
RBV	8	4.44
CSR	6	3.33
Institutional theory	6	3.33
Finance (performance, regulation, reporting quality)	5	2.78
Market (stocks, capacity, distortion, strategic, uncertainty)	5	2.78
Market and/or environment regulation	5	2.78
Political Capabilities, Nonmarket Strategy, Political Strategies, and Agency Theory	4	2.22
Political connections, Contribution via PAC, Firm performance, Political economy, Collective action theory, Class cohesion theory, Firm behavior theory, and Stakeholder theory	3	1.67
Political activism, Corporate elites, Political action of the firm, Corporate governance, Political influence, Organizational behavior, Political CSR, Business-government relationship, Social Network Theory, Bribery and corruption, Theory of capacities, Theory of the Transaction Cost, Varieties of Capitalism	2	1.11

Source: The authors (2019), based on primary data. Note: The quantity and percentage refer to how often the theory was used in the theoretical reference of the sample of 180 articles.

One of the highlights of this study is the analysis performed to identify the countries where the surveys of each of the sample articles were carried out, in the form of a map presented in Figure 4.

**Figure 4.** Geographical distribution of sample countries



Source: The authors (2019) based on primary data.

**Table 10.** Top 30 most cited works

#	Reference	Qty. quotes	Research question	Discoveries
1	Hillman e Hitt (1999)	500	How do general approaches to political action (transactional and relational), two levels of participation (individual and collective), and three types of generic political strategies (information, financial incentive, and constituency building) come about?	A comprehensive taxonomy of specific political strategies, constructing a decision model of political strategy formulation that integrates and expands the previous diffused literature and explores variables that affect the formulation of the political strategy
2	Hillman et al. (2004)	366	Review of academic work in management, political science, economics and sociology in the area of corporate political activity (CPA)	The CPA continues to grow and expand. As trade becomes increasingly global, goods and services move through more and more political jurisdictions, which in turn bring more and more political actors and institutions
3	Grier et al. (1994)	237	What factors determine the overall level of political activity in interest groups?	Industries with the greatest potential benefits of government assistance contribute systematically more, but the capacity to realize these benefits is limited by problems of collective action
4	Schuler et al. (2002)	221	How do companies achieve competitive similarity in the political process, considering the incentives created by the US electoral and political process?	To gain access to policymakers, politically active companies combine corporate political activities
5	Cooper et al. (2010)	144	Is there causal evidence of PAC's contributions to future stock prices?	The firm's support for the candidates is positively and significantly correlated with the transverse assignment of future returns
6	Hansen and Mitchell (2000)	130	How do you think of PAC contributions, lobbying, and charitable donations in terms of corporate strategic behavior and the implications of "strangeness" for different business policies?	The size of the company increases the likelihood of mobilization and political activity. Foreign companies adapt to local behavior but try to avoid the appearance of influencing the politics of another country
7	Getz (1997)	128	An analysis of the literature on corporate political action (CPA), integrating the perspectives of nine basic theories of social sciences.	It is understood very well which companies get involved in the CPA and their reasons for doing so. The nine theories of social science present complementary and non-contradictory images
8	Marquis and Qian (2014)	111	How and why do companies respond strategically to government signals about the corporate activity?	Signaling is a mechanism of political influence. Government dependence exposes companies to the pressure of legitimacy. They face the risk of association and are more likely to take CSR actions
9	Chin et al. (2013)	93	What is the influence on the organizational results of CEO political ideology, specifically with political conservatism versus liberalism?	CEOs vary in their preferences or values, and these differences give rise to heterogeneous results in firms
10	Lenway and Rehbein (1991)	80	What is the engine of corporate involvement with the US International Trade Commission?	Organizational backlash is an important determinant. The profitability of a company has more impact on certain types of political activity. The presence of a large number of politically inactive companies in one industry does not prevent other companies from becoming politically active
11	Lawton et al. (2013)	76	An analysis of the literature on corporate political activity (CPA) and the implications for organizational performance	It is necessary to use more RBV theory in the CPA to understand sustainable performance. The CPA perspective needs to move to the integration of theory rather than the disintegration of theory
12	Barley (2010)	75	How did corporations build an institutional field during the 1970s and 1980s to exert more influence over the US federal government?	The unions have invented political action committees (PACs). Environmental and public interest groups, as well as grassroots organizations, used later through trade associations, public relations firms and ad hoc organizations. Citizens and labor groups formed coalitions
13	Quinn and Shapiro (1991)	75	What forms and mechanisms of power business in US politics, under time series models, explain taxation and redistribution?	The forms are political partisanship, with Democratic administrations increasing the tax burden. Yet, involvement in electoral funding is also influential
14	Lux et al. (2011)	74	What factors, and to what extent, influence companies to become involved in the CPA; and if this affects the performance of the company, to what extent?	Many factors are CPA engines, very few affect the CPA. The CPA is positively related to the company's performance and is an important determinant of its performance
15	Stenzel and Frenzel (2008)	68	How do electric companies respond strategically to subsidy schemes that support renewable energy technologies?	They react where their core businesses are affected. Also, they will engage in a reactive or proactive way, depending on the degree to which they can benefit from future policies

16	Lord (2000)	66	What is the impact of corporate political activities (CPA) on legislative decision-making?	All political activities have at least some degree of influence in legislative decision-making. Legislators are "doubled," and can have personal beliefs and preferences as well as active leadership to change, approve or win legislation
17	Burris (1987)	60	An evaluation of six popular theories of political business partisanship	There is support for the Yankee-Cowboy theory and the theory of the regulatory environment. The most central or dominant firms tend to be politically moderate or liberal. The degree to which corporate political behavior is conditioned by fiscal and regulatory relations
18	Mitchell, Hansen, and Jepsen (1997)	60	How is the decision to form a PAC, the amount to be contributed and the number of candidates to be supported given?	The profit maximization model is supported. Size of contributions and the number of candidates explain more than 50 percent of the variance. Sales to the government are another motivation
19	Burris (2001)	59	What are the differences between companies and individual capitalists as political actors?	Corporations are more limited by pragmatic considerations, while individual capitalists are freer to follow their true political preferences in the choice of candidates or parties to be supported
20	Keim and Zeithaml (1986)	56	What is the theoretical basis for determining effective corporate political strategies?	Reducing information costs for the individual constituent increases the likelihood of political action. Companies with defined constituency programs have more impact on legislative decisions
21	Hadani and Schuler (2013)	50	What is the relationship between corporate political activity (CPA) and financial return?	The CPA is negatively associated with cumulative political investments and accounting performance; however, it is positively associated with market performance for companies in regulated industries.
22	Rehbein and Schuler (1999)	47	How does an integrative model of corporate political action, based on the behavioral theory of the company?	The internal characteristics of a company are a key factor, with the predictive power of behavioral theory as the basis for corporate political action.
23	Kroszner and Stratmann (2005)	35	Are politicians following the reputational development strategy rewarded with high levels of contributions to corporate campaigns?	The level of PAC contributions increases as a legislator clarifies its reputation.
24	Brasher and Lowery (2006)	34	How do organizations engage in corporate political activities?	Large companies are much more politically active than small ones. But not in terms of money spent in lobbying. The economic health of companies and levels of competition are not important factors.
25	Jia (2014)	34	If and when companies that are already involved in collective bargaining actions are more (or less) likely to pursue political actions.	Companies that are already members of a key collective political association are more likely to have an interest in political action. It is stronger in less economically developed provinces. Weaker where regulatory burdens for businesses are heavier and owners have amassed political connections during a previous political career.
26	Savell et al. (2014)	31	Review on the efforts of the tobacco industry to influence market regulations.	The industry mainly conveys these arguments through direct and indirect lobbying, promotion of voluntary codes and alternative policies and the formation of alliances with other industrial sectors.
27	Windsor (2007)	26	How are resource allocation choices involved in integrating cross-border and politically multinational corporations (MNCs)?	Cross-border CPA is a "horizontal" allocation of resources when operating in several countries. It is a "vertical" allocation of resources between subnational, national, regional and global levels. The multiple political areas are shaped by non-market institutions, corruption conditions and stakeholder demand for corporate social responsibility.
28	Schuler (1999)	25	How do corporate interests determine their preferences for political action?	Understanding corporate political action must involve organizational forces that affect how a company pursues, processes, and acts on information regarding public policy issues.
29	Wilson (1990)	25	How important do corporations attribute to different political activities and why corporations are, or not, politically active?	Business relationships are conducted directly between individual corporations and government, not collective ones. They are more politically active so that they can connect more to the government than to combat the supposed enemies of capitalism.
30	Keim (1981)	24	How does the public policy process lead to suggestions for making a business more effective participant in decision making?	A successful political strategy will encourage the authorities to better respond to business interests and the broader natural circle of business. The business will motivate these people to political action only by attracting their interests.

Source: The authors (2019), based on primary data.

The map was built with the aid of Excel software, based on the 180 selected articles. The work was done manually, in reading one by one, to identify the country or countries used as samples. In this illustration, you can identify which countries the CPA topic has already been explored. And the opposite also, in which countries there has not yet been data collection to test CPA theories.

The scale begins with the appearance of an article and follows up to 77 articles. As the map shows, the country where the subject is most searched in the United States of America.

Finally, a citation analysis was performed to identify the roles that had the greatest impact in the field, as assessed by the frequency of citations (Tahai & Meyer, 1999). In this way, Table 10 presents more comprehensively the understanding of the captured researches. For this, the 30 most cited articles were included in the study sample.

In short, these are the 30 most influential articles in the CPA area. Starting from this universe, the author's authorship, the number of times they were cited, the research question elaborated by the authors for each study and the findings made in each of the 30 articles.

## 5 Brazilian Research

From the point of view of Brazilian research, through bibliometric analysis and using the filters applied in this study, no publications of Brazilian authors related to CPA were found. Thus, a survey was made, through the research of Brazilian publications on CPA and the following characteristics were obtained: they were published in the *Brazilian Administration Review (BAR)*, *Revista de Administração Contemporânea (RAC)*, *Revista de Administração de Empresas (RAE)*, *RaUSP Management Journal* e *Revista Brasileira de Gestão de Negócios (RBGN)*.

The publications address, among other issues, how the formal and informal mechanisms of political strategy affect the relations of multinational companies and the government in Brazil (Bachuzi et al., 2013) and suggest a model for the process of formulating and executing political strategies using as base the ethanol sector (Silva et al., 2014). The study of Camilo et al. (2012) proposes that companies connected with the political environment tend to have a positive effect on profitability and make use of the connection in periods of greater uncertainty.

There are also studies that address the political connection and business groups. Costa et al. (2013) approach to the increased diversification of business groups, and Gama et al. (2018) suggest that there is a need for historical antecedents of the business groups added to the political connection so that there is an effect on the growth of the groups.

There are still a number of theses and dissertations that address the theme of political connections in Brazil. For example, Lana (2017) discusses how political connections increase the speed of government decisions on anti-dumping practices. Caldeira (2016) addresses the political capacities of the subsidiaries of multinationals operating in Brazil, while Simioni (2018) addresses issues of lobbying in times of uncertainty in the country.

There are still other study groups on the subject at the following universities: University of Brasília (UNB), University of São Paulo (USP), Federal University of Minas Gerais (UFMG) and Federal University of Rio de Janeiro (UFRJ). For example, the article of Macedo et al., (2015) addresses the political connection and investment decisions in the capital market. The study of Astorino (2015) shows the consequences of the political connections regarding their performance and access to credit granted by BNDES. Last, but not least, the study of Dias et al. (2017) analyzes the political connections during the electoral cycle of 2010-2014.

## 6 Conclusion and Future Studies

This article aimed to highlight the importance of research on corporate political action and corporate political activity in the world and the need to develop further studies on the subject in Brazil.

Through this bibliometric analysis, it was possible to verify that in Brazil there are few studies on the subject and these are restricted to a small number of researchers. On the other hand, in the United States, Canada, China and European countries there is an advance of the articles on the subject, since the political activities in the companies have been increasingly present and their impact on the profitability (Cooper *et al.*, 2010; Hadani & Schuler, 2013; Hillman *et al.*, 1999)

Because it is a subject that influences corporate profitability and impacts governments at



all levels - municipal, state and federal - research on corporate political action and corporate political activity can still be explored in the following aspects:

With regard to corporate political activities in the MNEs: (a) the comparison between the political activities of the MNEs in their country of origin and the MNEs in the destination country. What are the main capacities and resources needed for MNEs in the destination country to be able to influence local public policies? (Bachuzi et al., 2012; Caldeira, 2016; Cuervo-Cazurra & Genc, 2011; Hillman & Wan, 2005); (b) the impact on the end of the donations to electoral campaigns by companies in Brazil and the comparison with the same measure in other countries.

Regarding lobby/advocacy and lobbyists: (c) the role of government relations professionals or investor relations; the lobbyists (Caldeira, 2016; Simioni, 2018). There is also a preconception about the professionals of governmental relations in Brazil, perhaps for lack of information. In this sense, it is necessary to deepen the studies on the role of these professionals in the companies and how they work. It also becomes necessary to separate the role of government relations or lobbyist from the past, with the lobbyists of a new generation of professionals who are working in companies (Caldeira, 2016; Simioni, 2018).

Regarding the advocacy mechanism: (d) it would be interesting to deepen the research on the influence of social media as a mechanism of corporate political activity to pressure the government.

There are also issues such as: (e) the robotization of government relations consultancies, investigating the extent to which this will make the use of corporate political activities more precise, and more efficient the lawsuits with the government; (f) a fifth interesting study is the political strategy in the three spheres of government. The Brazilian studies use, for the most part, the federal sphere (Camilo et al., 2012; Costa et al., 2013; Lana, 2017), however, it is known that there is corporate political activity in municipalities and states. In this sense, what is the impact of corporate political activities in each of the areas?

Lastly, (g) it is suggested to develop a ranking with the main corporate political activities and what conditions are sufficient and/or necessary to have an impact on the profitability of the company.

Finally, during the reading of the selected articles, new nomenclatures were identified, adopted by the authors and by the authors' action in adopting other theories related to the corporate political involvement. Such terms can serve as a starting point for a new literature review since they were not addressed in this research. Are they: corporate political advertising, corporate political analysis, corporate political connectedness, corporate political groupings, corporate political objectives, corporate political nexus, corporate political spending, corporate political unit and, business political activity.

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## Customer Loyalty and its Antecedents in Banking Service Rendering Context

Gabriel Sperandio Milan<sup>1</sup>, Luciene Eberle<sup>2</sup>, Deonir De Toni<sup>3</sup>, Pelayo Munhoz Olea<sup>4</sup>, Suélen Bebbber<sup>5</sup>

<sup>1</sup> Faculdade CNE Farroupilha - [gabmilan@terra.com.br](mailto:gabmilan@terra.com.br)

<sup>2</sup> Universidade de Caxias do Sul - [leberle@ucs.br](mailto:leberle@ucs.br)

<sup>3</sup> Universidade de Caxias do Sul - [deonirdt@terra.com.br](mailto:deonirdt@terra.com.br)

<sup>4</sup> Universidade de Caxias do Sul - [pelayo.olea@gmail.com](mailto:pelayo.olea@gmail.com)

<sup>5</sup> Universidade de Caxias do Sul - [bebbber.suelen@gmail.com](mailto:bebbber.suelen@gmail.com)

### KEYWORDS

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### ABSTRACT

In this research, we analyzed customer loyalty in the context of existing relationships between banking service providers and their customers. Therefore, a theoretical model was proposed and tested with banking service natural person customers considering perceived value, service provider reputation, trust, bonding tactics (financial, social and structural), and switching costs as customer loyalty antecedents. A multivariate statistical approach with structural equation modeling was performed with a sample of 1.026 customers from three major banks in Brazil. The results evidenced in the present research could serve as benchmarking for other researchers or managers connected to the financial service sector (or bank service) when looking for a better understanding of the antecedents of customer loyalty, adapting strategies and actions to stimulate and generate better market and economic-financial results for this sector.

### PALAVRAS-CHAVE

Valor percebido,  
Reputação,  
Táticas vinculantes,  
Custos de troca,  
Lealdade de clientes.

### RESUMO

Nesta pesquisa, analisamos a lealdade do cliente no contexto das relações existentes entre prestadores de serviços bancários e seus clientes. Portanto, um modelo teórico foi proposto e testado com clientes de pessoa física de serviços bancários considerando valor percebido, reputação de provedor de serviço, confiança, táticas de vinculantes (financeira, social e estrutural) e custos de troca como antecedentes de lealdade do cliente. Foi aplicada uma abordagem estatística multivariada com modelagem de equações estruturais com uma amostra de 1.026 clientes de três grandes bancos no Brasil. Os resultados evidenciados na presente pesquisa poderiam servir de benchmarking para outros pesquisadores ou gestores ligados ao setor de serviços financeiros (ou banco) quando buscam uma melhor compreensão dos antecedentes de lealdade de clientes, adaptando estratégias e ações para estimular e gerar melhor mercado e resultados econômico-financeiros para este setor.

## 1 Introduction

Relationships between companies and their customers are increasingly dynamic (Palmatier *et al*, 2013) and managers are learning that they must collaborate when competing (Morgan & Hunt, 1994) to reduce risks, increase profit and, if possible, obtain some competitive advantage (Doney & Cannon, 1997; Shammout, 2018). For so, the relational practice has been turning into an important theme (Agariya & Singh, 2011), although it does not fit in any circumstance or type of market (Sharma, 2007). It is necessary not only to establish relationships with customers but also define strategies and allocate resources to keep them, improving profitability (Morgan & Rego, 2006; Larivière, 2008).

Due to the ferocity of the market competitiveness, the results from customers' retention and loyalty are, among others, core objectives of relationship marketing, and the great challenge becomes to recognize and value customers, motivating the strengthening of the existing relations, surpassing the simple purchase repetition (Caruana & Ewing, 2010; Bennett, 2014). Although customers' loyalty has been widely investigated, especially in the service area, it is verified that the studies have approached different antecedents that lead to its construction, identifying gaps for the development of future researches around the subject (Hennig-Thurau *et al*, 2002), especially when there is a relationship between the business partners (Srivastava and Singh, 2013) and in the field of financial services (Lewis & Soureli, 2006; Amegbe & Osakwe, 2018), assuming that customers loyalty may be considered as a desired consequence of the relationship between business partners (Srivastava & Singh, 2013), in this case, a Bank and its customers.

For so, studies that consider customer loyalty are opportune, even more in the financial services context (Baumann *et al*, 2011; Bhatnagar *et al*, 2017), once the Banks are relevant institutions for the market and the world economy, and people and companies need their services, what makes it relevant to analyze customer loyalty and its determinants in the context of existing relations between the Banks and their customers (Lewis & Soureli, 2006; Licata & Chakraborty, 2009).

Facing the exposed, we identified a variety of studies on deepening the understanding of how to

encourage bank customers to develop customer loyalty over time (Kashif *et al*, 2016; Pumim *et al*, 2017). Therefore, there is a latent need for a better understanding and consolidation of the relationships among the antecedent constructs of customer loyalty (Jing *et al*, 2011; Dagger & David, 2012). Thus, the central question that guided this study is: What is the influence of perceived value, service provider reputation, customer trust, financial, social and structural bonding tactics, and switching costs on banks customers' loyalty?

Based on that, we sought to better understand some relations among the customers' loyalty antecedents in the context of three main Brazilian Banks. In this research, the following constructs were approached: perceived value, service provider reputation, customer trust on the service provider, bonding tactics (financial, social and structural) and switching costs. For so, the core objective of the research was to analyze these constructs as antecedents of customers' loyalty from the construction, testing, and validation of a Theoretical Model.

## 2 Theoretical Background

The first constructs discussed are perceived value and reputation as antecedents of customers' loyalty on the service provider (Sirdeshmukh *et al*, 2002; Grewal *et al*, 2004). Perceived value comprehends the comparison between the benefits the customer receives from the product and/or service obtained and the sacrifices incurred to obtain it (Zeithaml, 1988), what can affect customer's perceptions and influence the image and reputation of the company as well as its brand (Hidalgo *et al*, 2008). On the other hand, reputation is understood as the collective judgments of an organization, based on assessments of the financial, social and environmental impacts attributed to the company over time (Barnett *et al*, 2006; Yoon *et al*, 2014). This way, it is perceived that the customers are more likely to keep the existing relationships with the suppliers if their needs have been answered and perceive a high value (Tai, 2011; Ulaga & Eggert, 2006). The implication of this is that perceived value constitutes barriers to the exchange of supplier or service provider. Studies evidence that perceived value has a direct impact on service provider reputation (Milan *et al*, 2015a;

Milan *et al.*, 2015b). This way, the first research hypothesis was formulated:

**H1:** Perceived value positively influences service provider reputation.

For the service sector, it is fundamental the maintenance of a favorable reputation, because the greater the degree of intangibility of an offer, the greater should the concern with the level of reputation of the company be (Fombrun, 1996). Because of that, several authors highlight that service provider reputation generates a positive and direct effect on trust construction between a company and its customers (Jones *et al.*, 2000; Jones *et al.*, 2007; Walsh & Beatty, 2007; Jin *et al.*, 2008; Chang, 2013). This way, the second research hypothesis is presented:

**H2:** Service provider reputation positively influences customer trust in the service provider.

When it comes to reputation, it is important to study its relation with switching costs (Helsegen & Nettet, 2007), in terms of all the costs involved when a customer decides to change the service provider (Grzybowski, 2008). Switching costs are generally elevated in the same proportion of the perceived benefits (Li & Petrick, 2010). The accumulation of knowledge and experience consolidated by the observation of the partners' behavior, may build a bond between reputation and switching costs (Johnson & Grayson, 2005). Therefore, a high reputation tends to increase switching costs and, consequently, avoid customers' desertion (Walsh *et al.*, 2006). Based on that, the third research hypothesis was proposed:

**H3:** Service provider reputation positively influences switching costs.

Loyalty is the customer commitment in the sense of buying, consuming or using a product and/or service, resulting in the purchase repetition and the preference maintenance to a certain supplier or service provider through time, even if situational influences and competition efforts have the potential to cause an exchange or change behavior (Oliver, 2010). In this sense, switching costs create a resistance to begin a new relationship (Zhou, 2014), evidencing the importance of switching costs effects on customers' retention and

loyalty, because switching costs may be used by companies as a mechanism relating the defensive marketing strategies to keep and amplify the relationships with customers (Caruana & Ewing, 2010; Bansal *et al.*, 2005), increasing companies' profitability (Burnham *et al.*, 2003; Aydin & Özer, 2006).

Loyalty is also built by the customer perception intrinsic to the comparison of the actual service provider with alternate service providers and the costs associated with breaking the existing relationship. Because of that, even unsatisfied, customers may keep long term relationships to avoid switching costs (White *et al.*, 2007). Dagger and David (2012) affirm that switching costs positively influence customers' loyalty, but it is necessary to better investigate this relation. An elevated switching cost makes customers feel positive or, even, negatively involved in the relationship they are engaged to (Burnham *et al.*, 2003; Aydin & Özer, 2006). For so, Schoefer and Diamantopoulos (2008) argue that, when customers experience high switching costs, their retention or loyalty does not depend just on the satisfaction, but the barrier imposed on their getting out. It is necessary to consider that if the benefits are elevated, customers tend to feel "imprisoned" and involved in the relationship (Dagger & David, 2012; Pumim *et al.*, 2017). According to this, the fourth research hypothesis is presented:

**H4:** Switching costs positively influence customers' loyalty.

A service company, that constantly seeks for a good reputation, aggregates psychological value to its services and decreases the risks perceived by the customer in the (re)purchase process (Dowling, 2001) and that may create a narrow connection between the customer and the company (Milan *et al.*, 2015b). This way, a good reputation besides increasing switching costs, helps shaping customers' future behavior in relation to the company (Davies *et al.*, 2010), improving its image in the market (Fombrun, 1996) and empowering customers' loyalty (Dunn & Schweitzer, 2005; Bartikowski & Walsh, 2011). In this direction, the fifth research hypothesis was proposed:

**H5:** Service provider reputation positively influences customers' loyalty.

Trust is fomented when there is the compliance with the promises made and the attendance to the customers' specific needs (Morgan & Hunt, 1994; Sheppard & Sherman, 1998; Jin *et al.*, 2008). Trust is formed by cognitive and affective aspects and can be understood as a psychological state, a future expectation (Chenet *et al.*, 2010). Many see trust as a behavioral intention or behavior that reflects certain dependence of an exchanging partner in relation to the other and that involves vulnerability, uncertainty, and risks (Moorman *et al.*, 1993). That is, for trust to develop, some efficient bonding tactics with the customer must serve to reduce such uncertainties and risks intrinsic to the relation (Cross & Smith, 1996). So is the importance of studying bonding tactics (financial, social and structural), that must enhance the trust deposited by customers on the service provider and their loyalty (Wang *et al.*, 2006; Liang & Wang, 2005; 2007; 2008; Schakett *et al.*, 2011; Wang, 2014), because a great part of the bonding tactics cannot be easily imitated by competitors (Yufang & Xiaobing, 2012).

The financial bonding tactics are directed to some type of financial advantage for the customer, as, for example, tax exemptions or reduced taxes for a service provision or even financial gains generated by the exchange partner (a service provider), what can facilitate the establishment, maintenance and consolidation of a lasting relationship between the involved parties (Zhang, 2005; Yufang & Xiaobing, 2012). As for the social bonding tactics, they are personal bonds or connections built during the interaction between the parties (Wang *et al.*, 2006; Liang & Wang, 2007). The degree of familiarity or personal friendship and shared preferences (Wilson, 1995), besides reinforcing the personal connection and proximity, giving support or advice to the customer, being empathic and sensible, creates a feeling of affiliation or connectivity, sharing experience, what reinforces the existing relationship (Liang & Wang, 2008). Finally, the structural bonding tactics, that are based on a strong capacity of the company in solving problems, that attend to the customers' needs and expectations, in a different way, uniting them by a common interest (Yufang & Xiaobing, 2012), and that are related to the structure, management and institutionalization of norms in a relationship (Liang & Wang, 2007). This kind of bonding tactics provides a structural solution to customers, with aggregated value

advantages and strong differentiation features (Liang & Wang, 2005; 2007), elevating the level of customer perception around the investment made on the relationship (Da-Hai *et al.*, 2009; Wang, 2014). By providing this kind of bond, companies can consolidate their relationships with customers, differentiating themselves from competitors (Liang & Wang, 2008) and stimulating their loyalty building (Liang & Wang, 2005; 2007; Wang & Liang; Wu, 2006; Wang, 2014). It is possible, then, to present the sixth, seventh and eighth research hypotheses:

**H6:** Financial bonding tactics positively influence customer trust in the service provider.

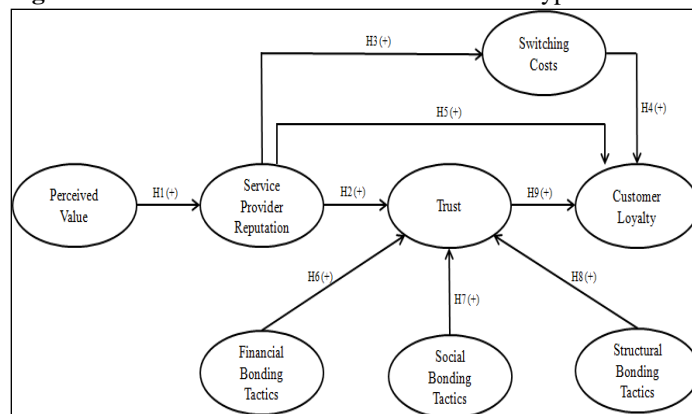
**H7:** Social bonding tactics positively influence customer trust in the service provider.

**H8:** Structural bonding tactics positively influence customer trust in the service provider.

Trust also exercises an essential role mainly on customers' propensity in maintaining and amplifying the relationships with the same service provider, empowering their retention or loyalty (Singh & Sirdeshmukh, 2000; Morgan & Hunt, 1994). Trust relations are crucial for service providers that adopt strategies that stimulate customers' loyalty building (Dagger *et al.*, 2011; Dagger & O'Brien, 2010). By the way, in relation to trust, new researches are suggested to verify their effects over customers' loyalty (Jin *et al.*, 2008; Jiang *et al.*, 2011), aiming at amplifying the inherent literature to the service area (Powers & Jack; 2008; Ha *et al.*, 2010). For so, the ninth research hypothesis was established:

**H9:** Customers' trust in the service provider positively influences customers' loyalty.

**Figure 1.** Tested theoretical model and research hypotheses



Source: Elaborated by the authors.



### 3 Research Method

A cross-sectional survey research was performed (Fink, 2013), with 1.099 customers from three of the main banks in Brazil. For so, a research questionnaire was elaborated and applied as a data collection instrument. To measure the constructs, a seven-point Likert scale was used ("1. Totally Disagree" to "7. Totally Agree"), except for the construct Perceived Value, for which a ten-point semantic differential scale was applied (Bearden *et al.*, 2011).

For the constructs operationalization, the adopted scales are presented in Table 1, which also presents the observed variables labels, the number of items of each scale and the authors that served as a reference to build the data collection instrument (questionnaire).

Table 1. Constructs Operationalization

Constructs	Observed Variables Labels	Number of Items	Authors
Perceived Value	VALUE_1 to 4	4	Sirdeshmukh, Singh & Sabol (2002)
Service Provider Reputation	REPUT_1, 2 and 4 REPUT_3	4	Ganesan (1994) Doney & Canon (1997) Milan <i>et al.</i> , 2015a
Trust	TRUST_1 to 4 TRUST_5	5	Doney & Cannon (1997) Hewett <i>et al.</i> (2002) Morgan & Hunt (1994)
Financial Bonding Tactics	FIN_BT_1 to 4	4	Liang & Wang (2008)
Social Bonding Tactics	SOC_BT_1 to 4	4	Liang & Wang (2008)
Structural Bonding Tactics	STRUC_BT_1 to 6	6	Liang & Wang (2008)
Switching Costs	SW_COSTS_1 to 3 SW_COSTS_4 to 6 SW_COSTS_7	7	Edward & Sahadev (2011) Jones <i>et al.</i> (2000) Burnham <i>et al.</i> (2003) Dagger & David (2012) Bansal <i>et al.</i> (2004)
Customer Loyalty	LOYALTY_1 to 7	7	Dagger & O'Brien (2010) Zeithaml <i>et al.</i> (1996) Plank & Newell (2007)

Source: Elaborated by the authors.

After structured, the questionnaire was submitted to three researchers-professors and three experts (bank managers) for content validation and, right after, the pretest was performed (Malhotra *et al.*, 2012) with thirty respondents with a similar profile from the target population. Such questionnaires were not incorporated in the final sample.

The questionnaires were sent out to the potential respondents (bank customers), by e-mail,

explaining the objective of the research and requesting it back properly filled out, corresponding to the self-fulfilling method. The questionnaire processing was performed as they were applied. Each questionnaire received a code, being inspected and tabulated in the database. Data analyses comprehended data multivariate statistics, based on structural equation modeling. To perform the analyses, IBM SPSS® 21 (Statistical Package for Social Sciences) and AMOS® 21 (Analysis of Moment Structures) software were used.

The research target population comprehended natural person customers, located in a city of the south region of Brazil, with an account in one of the three main banks of the country. The research sample was selected by a convenience non-probabilistic sample technique (Malhotra *et al.*, 2012). The sample attended the normality, homoscedasticity, multicollinearity and data linearity suppositions (Tabachnick & Fidell, 2012; Warner, 2013) and after the missing treatment (listwise deletion) (Raghunatham, 2015) and outliers (uni and multivariate) (Warner, 2013), from the 1.099 collected questionnaires, the final sample resulted in 1.026 cases. It is important to comment that the chosen data entry matrix was the covariance matrix and the maximum likelihood estimation method (Kline, 2011; Byrne, 2016).

Thus, aiming at evaluating the proposed Theoretical Model general fit indices and verify the adequacy of the causal relations, three quality fit measures were used, based on the classification of Hair Jr. *et al.*: (i) absolute fit measurement (GFI and RMSEA); (ii) incremental fit measurements (AGFI, TLI and NFI); and (iii) a parsimonious fit measurement (CFI). It is important to note that for the GFI, AGFI, TLI, NFI and CFI indices, values equal to or greater than 0.90 indicate a good model fit. On the other hand, for RMSEA the values between 0.05 and 0.08 are considered acceptable (Hair Jr. *et al.*, 2014, Kline, 2011).

## 4 Results

### 4.1. Sample Characterization

The final sample has comprehended 1.026 natural person customers from the three main banks in Brazil, from which 466 (45.4%) respondents were female and 560 (54.6%) male. From these, 498 (48.5%) are customers from Bank

A, 262 (25.5%) from Bank B and 266 (26.0%) from Bank C. The average age was 32 years old, (608 or 59.3%) has complete or incomplete high education (269 or 26.2%) has concluded or ongoing post-graduation. On average, they are customers from the bank for nine years (403 or 39.3%) and predominantly use the services provided in the bank agencies, self-service, and internet; although 190 (18.5%) of them only use the services on the internet.

#### 4.2. Individual Constructs Validation

To evaluate the relations in the proposed Theoretical Model (research hypotheses), before verifying its validity, by means of the model fit indices and subsequent analyses, we performed the constructs individual validation. For individual constructs validation, unidimensionality, reliability and constructs convergent and discriminant validities were evaluated. As the Cronbach's Alpha presumes that the scale items are unidimensional and that all these items are equally correlated (Gerbing & Anderson, 1988) tending to be an "inflated" measure because of the way it deals with the variances of errors associated with the indicators (Finn, 2000), the Composite Reliability of the construct and the extracted variance were also verified (Malhotra *et al*, 2012).

According to the adopted criteria, Composite Reliability equal to or higher than 0.70 is acceptable (Malhotra *et al*, 2012). For the extracted variance, it is recommended that values should exceed 0.50 (Malhotra *et al*, 2012). All constructs Composite Reliability are above the recommended value, varying from 0.84 to 0.97. Concerning the extracted variance, values are also satisfactory, varying from 0.56 to 0.83. The results presented in Table 2 show the scales reliability used for the constructs measurement.

Table 2. Composite reliability and extracted variance of the constructs

Constructs	Composite Reliability	Extracted Variance
Perceived Value	0.84	0.56
Reputation	0.90	0.67
Trust	0.96	0.83
Financial Bonding Tactics	0.92	0.76
Social Bonding Tactics	0.95	0.82
Structural Bonding Tactics	0.92	0.65
Switching Costs	0.91	0.62
Customer Loyalty	0.97	0.81

Source: Research data.

The constructs convergent validity was analyzed by means of the statistical significance of estimated parameters (variables factor loadings), based on t-values of each construct relative indicators, which must be equal or higher than 1.96, conferring them statistical significance ( $p < 0.05$ ) (Garver & Mentzer, 1999) and by the evaluation of adjustment measures based on the Confirmatory Factor Analysis implemented for each construct or sub-model (Kline, 2011; Bagozzi & Yi, 2012; Brown, 2015). The results are presented in Table 3.

Table 3. Adjustment measures by construct (sub-models)

Constructs	GFI	AGFI	RMSEA	TLI	NFI	CFI
Perceived Value	0.990	0.938	0.071	0.982	0.986	0.993
Reputation	0.970	0.909	0.069	0.947	0.988	0.994
Trust	0.981	0.974	0.062	0.967	0.985	0.987
Financial Bonding Tactics	0.989	0.964	0.071	0.980	0.991	0.995
Social Bonding Tactics	0.984	0.958	0.061	0.985	0.990	0.993
Structural Bonding Tactics	0.975	0.949	0.058	0.948	0.987	0.989
Switching Costs	0.981	0.955	0.054	0.964	0.988	0.992
Customer Loyalty	0.982	0.927	0.074	0.983	0.979	0.990

Note: For GFI, AGFI, TLI, NFI and CFI, values above 0.90 indicate goodness of the model fit, whereas, for the RMSEA, values between 0.05 and 0.08 are considered acceptable (Kline, 2011; Hoyle, 2012; Byrne, 2016). Source: Research data.

For the analysis of the constructs discriminant validity, the procedure suggested by Fornell and Larcker (1981) was applied. Extracted variances from the constructs are compared with shared variances. Therefore, discriminant validity exists when constructs extracted variances are higher than the shared variances. In Table 4 the results are presented.

Table 4. Discriminant validity

Constructs	Perceived Value	Reputation	Trust	Financial B. Ts.	Social B. Ts.	Structural B. Ts.	Switching Costs	Customer Loyalty
Perceived Value	<b>0.55</b>							
Reputation	0.46	<b>0.66</b>						
Trust	0.35	0.69	<b>0.83</b>					
Financial Bonding Tactics	0.30	0.39	0.29	<b>0.75</b>				
Social Bonding Tactics	0.31	0.36	0.23	0.35	<b>0.81</b>			
Structural Bonding Tactics	0.42	0.46	0.38	0.51	0.63	<b>0.64</b>		
Switching Costs	0.15	0.16	0.08	0.18	0.19	0.22	<b>0.61</b>	
Customer Loyalty	0.48	0.53	0.41	0.34	0.43	0.50	0.33	<b>0.80</b>

Note: The values in boldface represent the extracted variances, whereas the others correspond to the shared variances.

Source: Research data.

As the result of the extracted variance of the construct Service Provider Reputation (0.66) presented inferior value to the shared variance with the construct Trust (0.69), and may show a possible redundancy between these constructs because they are correlated, the test of Bagozzi and Phillips (1982) was performed to verify its discriminant validity. Based on the results, the values of the differences between the  $\chi^2$  of the fixed model and the free model were meaningful, indicating that there was no correlation among the constructs. This way, the discriminant validity of these constructs was assumed.

#### 4.3. Validation of the Proposed Theoretical Model and Test of Hypotheses

From the estimation of the structural model, we could begin the validation of the proposed Theoretical Model, which was performed from the goodness of the model fit indices (Kline, 2011), as shown in Table 5. Observing the results, it is verified that almost all the fit indices (GFI, 0.902; RMSEA, 0.068; TLI, 0.928, NFI, 0.939 and CFI, 0.957) are in the recommended parameters (Kline, 2011; Hoyle, 2012; Byrne, 2016). Only AGFI (0.885) was lightly under the recommended, however, in the frontier zone. By the way, there are authors that comment that the values for GFI and AGFI can vary greatly depending on the size of the sample, pointing that such indices do not present so significant values as the values found in other measures (Bagozzi & Yi, 2012; Nunkoo *et al.*, 2013).

Table 5. Model fit indices

Proposed Theoretical Model	GFI	AGFI	RMSEA	TLI	NFI	CFI
Fit indices	0.902	0.885	0.068	0.928	0.939	0.957

Source: Research data.

Continuing the validation of the proposed theoretical model, the hypotheses test was performed. This way, in Table 6, the hypotheses, the structural paths, the non-standardized coefficients (b), the errors, the standardized coefficients ( $\beta$ ), the t-values, the probabilities and, logically, the results of each hypothesis are presented.

Table 6. Test of hypothesis results

H <sub>i</sub>	Structural Paths	Non Standardized Coefficients (b)	Errors	Standardized Coefficients ( $\beta$ )	t-values	P	Results
H1	VALUE → REPUT	0.442	0.025	0.712	16.525	p < 0.001	Supported
H2	REPUT → TRUST	0.873	0.044	0.775	19.867	p < 0.001	Supported
H3	REPUT → SW_COSTS	0.590	0.055	0.399	10.447	p < 0.001	Supported
H4	SW_COSTS → LOYALTY	0.301	0.026	0.339	11.691	p < 0.001	Supported
H5	REPUT → LOYALTY	0.669	0.064	0.510	10.320	p < 0.001	Supported
H6	FIN_BT → TRUST	0.046	0.019	0.057	2.444	p = 0.015	Supported
H7	SOC_BT → TRUST	0.081	0.038	0.285	2.077	p < 0.001	Supported
H8	STRUC_BT → TRUST	0.276	0.036	0.196	7.614	p < 0.001	Supported
H9	TRUST → LOYALTY	0.153	0.047	0.131	3.167	p = 0.002	Supported

Note: Resultant from the hypotheses test, at a significance level of 0.05.  
Source: Research data.

According to the results, the nine research hypotheses were statistically supported, being them: **H1** (perceived value positively influences the service provider reputation,  $\beta = 0.712$ ,  $p < 0.001$ ), result found by Milan *et al.* (2015) and Yonn *et al.* (2014), **H2** (service provider reputation positively influences customer trust on the service provider,  $\beta = 0.775$ ,  $p < 0.001$ ), convergent with Jones *et al.* (2007) study, **H3** (service provider reputation positively influences switching costs,  $\beta = 0.399$ ,  $p < 0.001$ ), confirming the results found by Helsegen & Nettet (2007), **H4** (switching costs positively influence customers' loyalty  $\beta = 0.339$ ,  $p < 0.001$ ), confirming Dager & David (2012) and Pumim *et al.* (2017) results, **H5** (service provider reputation positively influences customers' loyalty  $\beta = 0.510$ ,  $p = 0.015$ ), as pointed out by Bartkowski & Walsh (2011), **H6** (financial bonding tactics positively influence customer trust on the service provider,  $\beta = 0.057$ ,  $p < 0.001$ ), **H7** (social bonding tactics positively influence the customer trust on the service provider,  $\beta = 0.285$ ,  $p < 0.001$ ), **H8** (structural bonding tactics positively influence customer trust on the service provider,  $\beta = 0.196$ ,  $p < 0.001$ ), filling the research gaps pointed by Lian & Wang and Wu & Wang (2014) and **H9** (customers' trust on the service provider positively influences customers' loyalty,  $\beta = 0.131$ ,  $p < 0.001$ ), which confirms the significant influence of trust on customers loyalty (Dagger & O'Brien, 2010).

Another way of verifying the effectivity of the hypotheses test is by means of the determinant

coefficients ( $R^2$ ) based on the squared multiple correlations of each dependent variable, what indicates that the variance proportion of a dependent variable is explained by the independent variables, that is, the greater the explanation power of the regression equation, the greater the prediction of the dependent variable by the independent ones (Tabachnick & Fidell, 2012; Meyers *et al*, 2013). The determination coefficients ( $R^2$ ) of the tested Theoretical Model are presented in Table 7.

Table 7. Determination coefficients

Variables	Determination Coefficients ( $R^2$ )
Reputation (REPUT)	0.528
Trust (TRUST)	0.662
Switching Costs (SW_COSTS)	0.185
Customer Loyalty (LOYALTY)	0.682

Source: Research data.

The results for the structural model indicate that 68.2% of the variance of **Customer Loyalty** (dependent variable) is explained by its independent variables, in this case, Switching Costs, Trust, Bonding Tactics (Financial, Social and Structural), Service Provider Reputation and Perceived Value. And 18.5% of the variance of **Switching Costs** can be explained by Service Provider Reputation and Perceived Value; while 66.2% of the variance of Trust can be explained by the Bonding Tactics (Financial, Social and Structural), by the Service Provider Reputation and Perceived Value; and, finally, 52.8% of the variance of the **Service Provider Reputation** can be explained by Perceived Value. In general, the results presented suggest a good explanation power of the constructs in the model.

## 5 Final Considerations

Following a research interest in the sense of better understanding the existing relationships between the Banks and their natural customers, that is, in the context of Business-to-Consumer (B2C) relationships (Milan *et al*, 2015a), a Theoretical Model was proposed, tested and validated and contemplated perceived value, service provider reputation, customer trust on the service provider, bonding tactics (financial, social and structural) and switching costs as antecedents of customers'

loyalty. In view of the model fit indices (Table 6), the confirmation of the nine research hypothesis (Table 7) and the high explanation power ( $R^2 = 0.682$ ), we conclude that the model contributes for a greater understanding of customers' loyalty in the banking sector.

For this reason, the results evidenced in the present research could serve as benchmarking for other researchers or managers connected to the financial service sector (or bank service) when looking for a better understanding of the antecedents of customer loyalty, adapting strategies and actions to stimulate and generate better market and economic-financial results for the institutions of this sector. Finding out the constructs that better explain customer loyalty is very opportune, once it can generate more effective managerial insights, positively making an impact on a customer portfolio performance, or the financial institution itself, from the construction, maintenance and strengthening of the relationships with customers.

Another contribution of the research concerns the bonding tactics (financial, social and structural), that still present research gaps, mainly in the studied context (Liang & Wang, 2005; Wang, 2014). As the bonding tactics are a kind of investment in the relationship of the service provider (in this case, the banks) in relation to their customers, they can aggregate value to the existing relationship and the business performance, reducing the probability of the customers to migrate to other service provider or even use a variety of banks simultaneously, what is very common in the Brazilian context, dispersing the capacity of service usage and customers' investments. As it was evidenced, the bonding tactics (financial, social and structural) positively influence customers trust in the service provider (**H6**, **H7**, and **H8**), which positively influences customers' loyalty (**H9**), and can create a virtuous cycle between the bank and their customers under a future perspective.

In relation to the methodological limitations, it should be stressed that a cross-sectional research does not enable the verification of the changes on customers' perception through time, as well as does not ensure its effective loyalty. It is suggested, therefore, longitudinal studies involving the tested constructs. Another limitation is the fact that the research has used a non-probabilistic sample. Although it was obtained a reasonable number of

valid cases, this kind of sample constitutes a barrier for the results generalization. As the geographical scope of the research was restricted to individuals that live in the region, this might have caused some bias. The performing of researchers with wider probabilistic samples would be a way to attenuate these two limitations and bring different results, even due to the size and regionalism existing in Brazil.

By the way, more studies around the influence of personal value and demographic variables about customers' loyalty in the bank sector are welcome (Henrique & Matos, 2015). Therefore, it is stimulated the possibility of moderation effect tests, verifying customers different behaviors; as well as mediation analysis both for the used constructs (for example, trust) and other possible constructs (for example, commitment), verifying its effects on customers' loyalty. Analyzing and accompanying the effectivity of customers' loyalty programs in the bank sector and in other service sectors (e-commerce, retail, education, health) is something opportune (Söderlund & Colliander, 2015; Bhatnagar *et al*, 2017), as well as the effect of other types of initiatives that connect with customers of different behaviors in relation to the past, as, for example, social responsibility actions that build and reinforce the brand, brand trust and brand commitment (Nikhashemi & Valaei, 2017), the image and the corporative reputation within the financial sector (Yusof *et al*, 2015), what can reverberate on customers' loyalty, besides the relationship quality which is a composite of attitudes and behavioral intentions (Finch *et al*, 2018).

Finally, it is stressed that the proposed Theoretical Model, even having presented satisfactory fit indices, should not have its validation considered as definitive. For this reason, it is opportune to continuously stimulate its refining, replication, and comparison with alternative models, always seeking for its enhancement.

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## Structural model of entrepreneurial behavior measurement

Cristiane Krüger<sup>1</sup>, Italo Fernando Minello<sup>2</sup>

<sup>1</sup> Universidade Federal de Santa Maria - [cris.kruger@hotmail.com](mailto:cris.kruger@hotmail.com)

<sup>2</sup> Universidade Federal de Santa Maria - [minelloif@gmail.com](mailto:minelloif@gmail.com)

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### ABSTRACT

The traditional methods of evaluating entrepreneurial behavior carry a degree of uncertainty and subjectivity with several uncontrollable independent variables. Faced with this fragility, the modeling of structural equations can be a tool that contributes to the understanding of this behavior. In order to contribute in this direction, this study aimed to develop a structural model for measuring entrepreneurial behavior based on behavioral characteristics and entrepreneurial intent. The research is applied, quantitative, descriptive and exploratory. In order to satisfy the problem raised, data collection instruments already validated were used. The sample consisted of 2,519 respondents. The internal consistency of the scales proved to be reliable for the measurement and evaluation of the constructs. In the descriptive analysis it was identified that the achievement dimension obtained higher score, moreover, more than 90% of the participants present entrepreneurial behavioral characteristics and intend to undertake. Then, behavioral characteristics and entrepreneurial intention were related by developing a structural model for entrepreneurial behavior. It was concluded that the model is apt to measure entrepreneurial behavior. The research was limited to the construction of a model of measurement of entrepreneurial behavior from the instruments answered by undergraduate students from a public higher education institution. Future studies can expand the constructs addressed in the structural model, as well as be replicated in other institutions of higher or basic education in order to compare, deepen and new findings, in addition to considering a longitudinal follow-up. The originality of the study lies in the development of a structural model for measuring entrepreneurial behavior.

### PALAVRAS-CHAVE

Comportamento empreendedor,  
Características comportamentais empreendedoras,  
Intenção empreendedora,  
Equações estruturais.

### RESUMO

Os métodos tradicionais de avaliação do comportamento empreendedor carregam grau de incerteza e subjetividade com diversas variáveis independentes incontroláveis. Diante dessa fragilidade a modelagem de equações estruturais pode ser um ferramental que contribui para o entendimento desse comportamento. A fim de contribuir nessa direção, este estudo objetivou desenvolver um modelo estrutural de mensuração do comportamento empreendedor a partir de características comportamentais e intenção empreendedoras. A pesquisa é classificada como aplicada, quantitativa, descritiva e exploratória. No intuito de satisfazer a problemática levantada utilizou-se instrumentos de coleta de dados já validados. A amostra foi composta por 2.519 respondentes. A consistência interna das escalas se mostrou fidedignidade para a medida e avaliação dos construtos. Na análise descritiva identificou-se que a dimensão realização obteve maior pontuação, além disso, mais de 90% dos participantes apresentam características comportamentais empreendedoras e têm intenção de empreender. Em seguida, relacionaram-se características comportamentais e intenção empreendedoras desenvolvendo-se um modelo estrutural para o comportamento empreendedor. Se concluiu que o modelo é apto para mensurar o comportamento empreendedor. A pesquisa limitou-se a construção de um modelo de mensuração do comportamento empreendedor a partir dos instrumentos respondidos por alunos de graduação, de uma instituição de ensino superior pública. Estudos futuros podem ampliar os constructos abordados no modelo estrutural, bem como ser replicado em outras instituições de ensino superior ou básico no intuito de comparação, aprofundamento e novos achados, além de considerar um acompanhamento longitudinal. A originalidade do estudo está no desenvolvimento de um modelo estrutural de mensuração do comportamento empreendedor.

## 1 Introduction

The development of entrepreneurial behavior has been placed as a priority in political, economic and scientific agendas and debates in several countries of the world, including Brazil, given the proven influence that this aspect has on the economic and social development of a nation (Tschá & Cruz Neto, 2014). Rocha e Freitas (2014) emphasize that one of the ways to develop entrepreneurial behavior is an education oriented towards entrepreneurship.

It cannot be guaranteed that this entrepreneurial behavior is decisive for the success of the entrepreneurs in the conduct of their enterprises, however, one can predict which characteristics of the entrepreneurial behavior are important in this process and which have relation with the intention to undertake (Carneiro *et al.*, 2017), which can contribute to the enactment of more efficient and targeted programs for the formation of entrepreneurs.

The entrepreneurial individual, for Schaefer and Minello (2016), is the actor capable of innovating in the evolutionary process of the contemporary world, able to solve problems and absorb opportunities, considering this subject agent of change. The understanding of entrepreneurship through several researches has characterized it not only as a way of knowing, but also as a way of being (Schaefer & Minello, 2017).

In this sense, Salhi and Jemmali (2018) consider it important that university students are interested in entrepreneurship as an option not only for career but for life. Let them adopt entrepreneurship with their hearts and minds (Salhi & Jemmali, 2018). Lima *et al.* (2015) find that this entrepreneurial training contributes not only to the formation of companies, but also to the creation of jobs and innovation in organizations.

Faced with this, it is evident that one of the university's roles is to promote development through teaching, research and extension, benefiting society as a whole (Etzkowitz, 2013). If entrepreneurial behavior contributes to socioeconomic development, studying and analyzing the individual in order to promote and disseminate this behavior becomes a key factor in understanding this phenomenon.

Moreover, when we talk about entrepreneurial behavior, especially intention, traditional methods of evaluation carry a degree of

uncertainty and significant subjectivity with several uncontrollable independent variables (Carneiro, 2008). Facing this fragility, the modeling methods can be a tool that contributes to the understanding of the degree of pertinence regarding the entrepreneurial behavior (Mendonça *et al.*, 2015).

Given this, it is questioned: Is it possible to develop a measurement model that associates entrepreneurial behavioral characteristics and entrepreneurial intention? On this, the objective of this study was to develop a model for measuring entrepreneurial behavior based on behavioral characteristics and entrepreneurial intent.

The research is justified based on the assumption that the entrepreneurial intention, which comes from behavioral aspects subjective norms, personal attitude and perception of behavioral control (Liñán and Chen, 2009), can also result from the entrepreneurial behavioral characteristics (Mansfield *et al.* 1987). Therefore, the relevance in analyzing a model that associates these constructs and that can contribute to the measurement of the entrepreneurial behavior.

From the previous measurement of behavior, higher education institutions can review and boost their entrepreneurial actions, seeking to provide the market with more prepared and complete people, those with an entrepreneurial spirit (Schaefer, 2018).

## 2 Entrepreneurial Behavior

Entrepreneurship has been increasingly present in Brazil and in the world (GEM, 2017). More than a way of knowing, entrepreneurship is a way of being (Schaefer, 2018). For the author, this behavioral aspect has developed over the decades, in the form of different epistemological currents that seek to understand and describe this human behavior. For Schaefer (2018), behavior can be considered a primordial characteristic of living beings, especially the human being.

The entrepreneur does not deviate from his objectives, he acts repeatedly or changes his strategy in order to face challenges and overcome obstacles, even if personal sacrifice is necessary (Carreira *et al.*, 2015). These individuals are not static social actors, as far as behavior is concerned, on the contrary, they are dynamic beings (Krüger, 2017).

In this scenario, entrepreneurial behavior can

be described through different behavioral characteristics (Ramos, 2015). Filion (1999) specifies two approaches that scholars of human behavior use to understand entrepreneurial behavior: the school of personality traits, predominant between the 1960s and 1980s; and the school of behavioral characteristics that developed from 1980. This research will address the second school on behavioral characteristics.

## 2.1 Entrepreneurial Characteristics

Among the behavioral scholars, David C. McClelland (1972, 1978, 1987), who investigated the motivation to undertake associated with the need for achievement, stands out. McClelland was one of the first scholars to use behavioral science theories to conduct empirical studies on motivation to undertake (Krüger *et al.*, 2017).

As described by Matias and Martins (2012), McClelland perceived the entrepreneurs as differentiated individuals and proceeded to investigate their main externalized characteristics, so that it was possible to create programs that stimulated their development. McClelland's theory (1972) stands out for the ease of approach and is still considered one of the most important theories, known and complex among the behavioral theories of human psychological motivation (Ching & Kitahara, 2015).

McClelland's studies began to gain emphasis, improving since the 1980s, when the United States Agency for International Development (USAID), Management Systems International (MSI), and McBeer and Company, a consulting firm of McClelland, initiated a project for more comprehensive studies on entrepreneurial behavioral characteristics (Krüger *et al.*, 2017).

From this reorganization, the characteristics were grouped into three categories of different personal characteristics (dimensions): achievement, planning and power, as shown in Table 1.

**Table 1.** Entrepreneurial behavioral characteristics

Dimension	Characteristic
Achievement	Search for opportunities and initiative
	Ride Calculated Risks
	Persistence
	Requirement of quality and efficiency commitment
Planning	Information search
	Setting goals

	Systematic planning and monitoring
Power	Persuasion and contact networks
	Independence and self-confidence

Source: adapted from MSI (1990, p. 80-81) e Vilas Boas (2015).

These behavioral traits, for Engelman and Fracasso (2013), can contribute to the success of the enterprises, which makes their study and improvement essential. For Coan (2011), McClelland devoted himself to the study of the behavior of businessmen in society and their contributions to the economic development of nations, showing that entrepreneurs are responsible for their decisions and believe in their ability to achieve good results (Coan, 2011).

These characteristics, for Raupp and Beuren (2011), gain relevance. This is because, not all individuals have the skills to undertake them, so the importance of development programs and stimulus of entrepreneurial behavioral characteristics, such as that developed by McClelland and contributors (Raupp & Beuren, 2011).

Zampier and Takahashi (2014) point out that this profile is marked by entrepreneurial actions, and such actions reflect the entrepreneurial behavior, which corroborates the idea of McClelland (1987), which segmented these characteristics. These sets point to the characteristics defined by entrepreneurial behavior in face of the challenges experienced in their daily lives (Krüger *et al.*, 2017).

For Câmara and Andalécio (2012), the literature on what entrepreneurs and their most striking characteristics are. For Souza (2015) the current challenge is to know how to promote entrepreneurial behavioral characteristics in individuals, so that they can act as protagonists of entrepreneurial activities.

These characteristics are evolved in the view of Minello (2014), who understands the entrepreneur as “the individual who develops something innovative, has the initiative, the capacity to organize and reorganize social and economic mechanisms in order to transform resources and situations to practical advantage and accept the risk or the failure of their actions” (Minello, 2014, p. 74).

For Nassif *et al.*, (2014), personal characteristics, including their innovative capacity and accumulated experience, as well as the constant improvement of the skills to create and

manage businesses, are the key for entrepreneurs to achieve success. Given this and a highly competitive market, it is important to raise some issues related to entrepreneurial behavior in the face of the world's challenges (Siqueira *et al.*, 2014).

The development of entrepreneurial skills and characteristics is a mode of "self-enrichment" (Boutillier & Uzunidis, 2014). Entrepreneurial behavioral traits can help individuals cope with the challenges of undertaking (McClelland, 1978).

For Minello (2014), the behavior of the entrepreneur, in the role of manager of his own business, is also evident in his ability to deal with adversity and adversity itself. In this sense understanding the relationship between behavior and entrepreneurial intention can help to improve such characteristics (Leiva *et al.*, 2014).

Over the years McClelland's approach has also received theoretical and methodological critiques (Oliveira *et al.*, 2016). Robinson *et al.*, (1991) and Shane e Venkataraman (2000) argue that features that increase the likelihood of achievement, such as exploring an opportunity, do not necessarily increase the likelihood of success. While Krueger *et al.*, (2000) point to limited predictive capacity.

Coan (2011) emphasizes that McClelland's work focuses heavily on aspects related to the behavior of individuals, with little attention to aspects of reality, such as culture, social class division, existence of hierarchies, economic, social, political and cultural achievement for all people.

Despite the criticisms, for Gomes (2004), McClelland provided contributions to the discussions on the subject, showing that men tend to repeat benchmarks, which in many cases influence the motivation to undertake. From the study of McClelland's characteristics, the more the value system of a society positively distinguishes the entrepreneurial activity, the greater the number of people who tend to choose to undertake (Gomes, 2004).

Vilas Boas (2015) also supports McClelland's study, stating that the instrument developed by him is still one of the main mechanisms for identifying characteristics of entrepreneurial behavior, used with great international scope and replicability. Matias (2010) corroborates this view by arguing that McClelland's criticism of McClelland's continued

broader and more rigorous empirical research on behavioral characteristics in developing countries is being adopted by international organizations such as the United Nations in a number of countries.

Therefore, when one intends to study entrepreneurial behavior it is essential to analyze the work of David McClelland (Brancher *et al.*, 2012).

When investigating entrepreneurial behavior, Hisrich *et al.*, (2014) highlight the role that intention or predisposition plays in the entrepreneurial activity, searching for the motivating factors that influence the behavior of the individual. For the subject to be an entrepreneur he must, in general, have the intention of being (Liñán & Chen, 2006). For the authors, the lack of interest in being an entrepreneur does not rule out this possibility, but it decreases in comparison to who has this predisposition.

## 2.2 Entrepreneurial Intent

Entrepreneurial intent is defined as the "self-acknowledged conviction by a person that he intends to create an enterprise and consciously plans to do so at some point in the future" (Thompson, 2009, p. 677). For the author it is a conscious and planned decision that drives the actions needed to launch a business. Individual entrepreneurial intent is a key construct in research into new business formation (Thompson, 2009).

Carvalho and Gonzales (2006) consider that the concretization of the idea of creating an enterprise, like a company, is preceded by the intention, which in turn can be planned. For these authors, in some cases the intention is formed instants before the idea is realized, in other cases, the intention may never coincide with the performance of the behavior. Therefore, it is assumed that the analysis of the entrepreneurial intention serves to predict the behavior of the individual as to the relation to undertake, but, one must be cautious about the second case mentioned (Davidsson, 1995).

Krueger *et al.* (2000) point out that the decision to become entrepreneur is voluntary and conscious, being, as already mentioned, a planned decision, therefore predictable and understood by models of intention. Years later, a longitudinal study by Kautonen *et al.* (2015) also confirmed that entrepreneurial intent can predict action to take.

Thus, the question of what influences entrepreneurial intent may be relevant to policy makers, educators, and researchers. So much so that Fayolle and Liñán (2014) consider entrepreneurial intention a vibrant field in entrepreneurship research. According to Almeida (2013), this possibility of predicting behavioral action has led to numerous theoretical models developing, offering a “coherent, parsimonious, generalizable and robust theoretical framework to understand and predict this behavior” (Almeida, 2013, p. 121).

The frame of the theoretical foundation on entrepreneurial intention can be attributed to Ajzen’s (1991) Theory of Planned Behavior (TCP).

### 2.2.1 Theory of Planned Behavior

The origin of TCP is attributed to the work of Ajzen (1991), entitled “The Theory of Planned Behavior”. In this study the author argues that TCP can predict behavior in comparison to that imposed by behavioral reliability (Ajzen, 1991, p. 179). For the author, in this theory all behavior requires a certain planning (Ajzen, 1991). Thus, according to this theoretical model it is possible to predict if any individual will create an enterprise in the future, analyzing its intention.

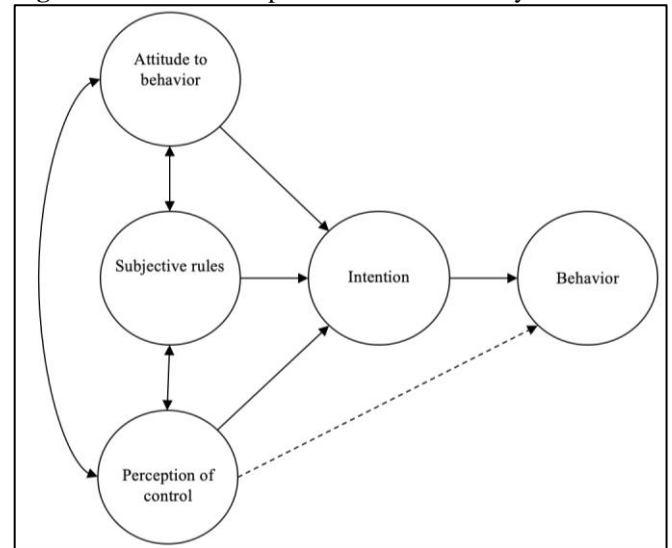
The theory, as Ajzen (1991) states, is of the area of social psychology, being an extension of the Theory of Rational Action. The convergence of these theories is in the intention of the individual to adopt a certain behavior. For Ajzen (1991) if a person has the opportunities, necessary resources and intention to perform a behavior, he will probably do so.

In TCP attitudes are prerequisites for performing behavior, the performance of this behavior is determined by the strength of the individual’s intention to do that behavior, and intention is a function of the individual’s attitude towards engaging in behavior (Kundu & Rani, 2008; Almeida, 2013). Figure 1 schematizes TCP.

The TCP “provides a useful conceptual framework for dealing with the complexities of human social behavior” (Ajzen, 1991, p. 28). In this theory, Ajzen (1991) explains, behavioral attitudes, subjective norms regarding behavior and perception of control over behavior may predict behavioral intentions, such as the entrepreneur. In turn, these intentions, in combination with the perception of control, may represent a considerable

proportion of the behavioral variance, such as entrepreneurial behavior (Ajzen, 1991; Liñán & Chen, 2009).

**Figure 1.** Schematic of planned behavior theory



Source: Adapted from Ajzen (1991).

Ajzen (1991) points out that TCP presents some gaps, the relations between attitude and subjective norms, attitude and perception of control and perception of control and subjective norms are still uncertain. For the author intent, perception of control, attitude toward behavior and subjective norms, each reveals a different aspect of behavior, and each can serve as a starting point in attempts to change that behavior (Ajzen, 1991).

The underlying basis of these beliefs in TCP provides detailed descriptions necessary to obtain substantial information about the determinants of a behavior. It is at the level of the beliefs that one can learn about the unique factors that induce a person to engage in the intention to undertake inducing another to follow a different course of action (Liñán & Chen, 2009).

Souza (2015) explains that TCP comprises three independent variables that precede the formation of intention, through which it is possible to predict behavior. For the author, the first variable, attitude, allows to determine the favorable moment for a given behavior; to the second variable, subjective norms, refers to the very perception that an individual has about the community that surrounds him and that determines his behavior; the third variable reflects the degree of perception of control that the individual has, which leads him to determine the behavior (Souza, 2015).

For Souza and Silveira (2018) TCP is a theory that explains the entrepreneurial intentions serving as support for different models of entrepreneurial intention. According to Lortie and Gastogiovanni (2015) the theoretical model of Ajzen (1991) has become one of the most widely used theories to explain and predict the behavior of individuals, such as entrepreneurial behavior.

For Krueger and Carsrud (1993) intentions are the best and only predictor of such behavior, both conceptual and empirical. Later for Davidsson (1995) the main determinant of entrepreneurial intent is a person's conviction that starting and managing the enterprise itself is the best alternative for it. The model tested by the author summarizes and integrates much of what is known of previous research on factors that influence the entrepreneurial inclinations of individuals (Davidsson, 1995).

Other research models on entrepreneurial intent were developed by Autio *et al.* (1997), Kristiansen and Indarti (2004), Smithikrai (2005). Kristiansen and Indarti (2004) proposed a methodology to identify determinants of entrepreneurial intention, aiming at comparing the impact of results in different economic and social contexts. The model of Kristiansen and Indarti (2004) was replicated in Brazil by Nascimento *et al.* (2010). The Brazilian authors obtained better results than those from the original study.

Through multiple regression, Smithikrai (2005) analyzed the predictive power of attitude toward entrepreneurship, the social norm, and entrepreneurial intent perceived among respondents. The results pointed out significant differences in the entrepreneurial potential of students involved in business. As far as entrepreneurial intent was concerned, there was a perception of the importance of attitude and social norm as factors that made it feasible (Smithikrai, 2005).

The following year, Carvalho and Ganzález (2006) elaborated an explanatory model for entrepreneurial intention that included elements of personal background, entrepreneurial knowledge, entrepreneurial motivations, entrepreneurial self-efficacy and institutional surroundings. In the same period, the study of the relation between convenience and viability on the entrepreneurial intentions, through structural equations (Guerrero *et al.*, 2006).

TCP was promoted by the authors Liñán and

Chen (2006, 2009), Liñán (2008). The authors proposed a model of psychometric measurement of the entrepreneurial intention adapted from TCP (Ajzen, 1991), the Entrepreneurial Intention Questionnaire (QIE). Entrepreneurial intent is based on TCP (Ajzen, 1991), which for Schlaegel and Koenig (2014) and Krueger and Carsrud (1993), provides a solid theoretical basis.

The QIE de Liñán and Chen (2006) was developed and validated years later (Liñán & Chen, 2009). This instrument was developed to verify the degree of entrepreneurial intention of students of higher education, being constituted by a set of assertions that represent the dimensions of entrepreneurial intention, perception of behavior, subjective norms and personal attitudes.

Liñán and Chen (2009) postulate that the future behavior of a person is preceded by intention: the stronger a person's intention to engage in a specific behavior, the more likely it is that the actual behavior will be realized. In addition, the intention to perform a given behavior is the result of three cognitive antecedents: (i) attitude towards behavior; (ii) subjective norms; and (iii) perceived behavioral control (Krueger & Carsrud, 1993; Schlaegel & Koenig, 2014).

Behavior attitude refers to the individual's assessment of their own behavior, whether positive or negative (Oliveira *et al.*, 2016). The evaluation is the most affective component of the attitude, determining the motivation and strength of the intention of the behavior. In this sense, the favorable attitude is associated with a greater intention to act (Moriano *et al.*, 2007).

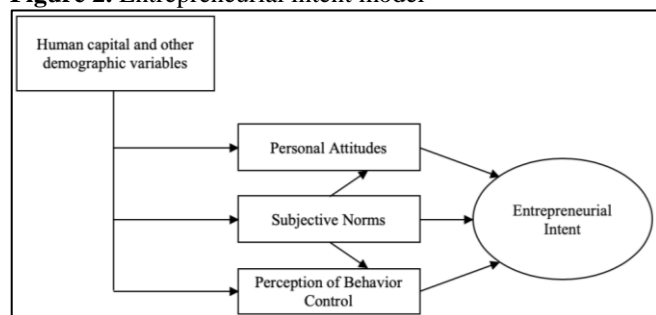
The subjective norms refer to the social pressure exerted to perform - or not - a behavior and reflects the effect of social values on the individual (Morales *et al.*, 1994). The subjective norm is the most social component of the model, in that it incorporates the influence of significant people to the subject in the decision to develop their professional career through entrepreneurship (Oliveira *et al.*, 2016). Figure 2 shows the entrepreneurial intention model of Liñán and Chen (2009).

From the Figure 2 the concepts of the respective dimensions are described. Personal attitudes relate to the degree to which the individual holds a positive or negative personal assessment of being an entrepreneur. This dimension encompasses assertions that include the affective, such as "I like, it is attractive to me", as well as



evaluation considerations, such as “it has advantages for me” (Liñán & Chen, 2009, p. 596).

**Figure 2.** Entrepreneurial intent model



Source: Adapted from Liñán and Chen (2009, p. 597).

For these authors, subjective norms measure the perceived social pressure to carry out entrepreneurial behaviors or not. This dimension refers to the perception that the people considered as a reference for the individual will or will not approve the decision to become an entrepreneur (Liñán & Chen, 2009).

The perception of behavioral control is defined as the understanding of ease or difficulty of becoming an entrepreneur. Liñán and Chen (2009) call attention to the similarity with the concepts of Bandura (1977) on self-efficacy and of Shapero and Sokol (1982) for perceived viability. In addition, the authors considered human capital and demographic variables as influencers of the dimensions that will interfere with the entrepreneurial intention (Liñán & Chen, 2006, 2009).

The first version of the QIE was applied to a sample of university students from Spain and Taiwan (Liñán & Chen, 2009). In Brazil the respective instrument was validated from the studies of Couto, Mariano and Mayer (2010) and Hecke (2011). Other Brazilian studies also contemplated this instrument, for example, Almeida (2013). Years later, in 2011, the QIE underwent some adjustments to improve the psychometric scale, elaborated by Liñán, Urbano and Guerrero (2011). This new scale was validated in Brazil recently by Souza and Silveira (2018), who consider fit the model of measurement of entrepreneurial intention in the context of Brazilian universities.

In this sense, for the present study the entrepreneurial intention construct based on TCP (Ajzen, 1991) was adopted, through the QIE (Liñán & Chen, 2009).

### 3 Methodology

The study is classified as applied, quantitative, descriptive and exploratory (Hair Jr. *et al.*, 2009; Sampieri *et al.*, 2013).

The research was carried out at the Federal University of Santa Maria, located in the south of Brazil. Currently the institution has 132 undergraduate courses and a population of more than 26 thousand regularly enrolled students (UFSM, 2019). For this population a minimum sample of 750 respondents was calculated, taking into account the number of variables of the data collection instruments (Hair Jr. *et al.*, 2009).

For the collection of data, two previously validated instruments were used. The first one refers to the entrepreneurial behavioral characteristics (CCE's) developed by McClelland (Mansfield *et al.*, 1987) in order to raise the entrepreneurial behavioral characteristics of the students. This questionnaire is based on the ten CCE's of McClelland (MSI, 1990), composed of 55 assertions (Table 2).

**Table 2.** Assertives and characteristics

CHARACTERISTICS	ASSERTIVE					
Search for opportunities and initiative	Q1	Q12	Q23	Q34*	Q45	FC
Persistence	Q2	Q13	Q24	Q35*	Q46	FC
Commitment	Q3	Q14	Q25	Q36	Q47*	FC
Requirement of quality and efficiency	Q4	Q15	Q26	Q37	Q48	-
Ride Calculated Risks	Q5	Q16	Q27	Q38*	Q49	FC
Setting goals	Q6	Q17*	Q28	Q39	Q50	FC
Information search	Q7	Q18	Q29*	Q40	Q51	FC
Systematic planning and monitoring	Q8	Q19	Q30	Q41*	Q52	FC
Persuasion and contact networks	Q9	Q20*	Q31	Q42	Q53	FC
Independence and self-confidence	Q10	Q21*	Q32	Q43	Q54	FC

\* Negative assertives.

Source: Adaptation of Mansfield *et al.*, 1987.

In Table 2 the symbol \* corresponds to the negative questions in which the score must be subtracted from the final result of the respective characteristic and six points should be added at the end of the sum. Questions 11, 22, 33, 44 and 55 are assertive used to avoid that, often unconsciously, the respondent presents an excessively favorable self-image, they are excluded from the analysis. The Correction Factor is used if the sum of the score of these questions is equal to or greater than 20 points. If this occurs, all SCC's should be corrected by subtracting the corresponding points (Mansfield *et al.*, 1987).

Table 3 shows the correction factor for CCE's.

**Table 3.** Correction factor for CCE's

If the Correction Factor score is	Subtract the following correction number from the total score of each characteristic
24 or 25	7
22 or 23	5
20 or 21	3
19 or less	0

Source: Adaptation of Mansfield *et al.*, 1987.

The maximum score is 25 points for each of the characteristics. When the total is equal to or greater than 15 points the individual has the characteristic, in the end, it is understood that if the subject behaves as an entrepreneur (Mansfield *et al.*, 1987).

In order to analyze the entrepreneurial intention, QIE was adopted (Liñán & Chen, 2009), validated in Brazil, initially by Couto, Mariano and Mayer (2010) and later by Hecke (2011). Currently QIE compose the study GUESSS (Lima *et al.*, 2014), which analyzes the entrepreneurial behavior of undergraduate students from different institutions of higher education in Brazil.

Through the QIE, the entrepreneurial intention model was tested by measuring the intention mentioned and the variables that influence it (Liñán & Chen, 2009). The QIE is composed of 20 assertions, separated into 4 blocks, according to the respective dimension: personal attitudes, subjective norms, perception of behavioral control and entrepreneurial intention. The total value of each dimension is the sum of the respective assertions.

No first block is listed as assertive from one to five, addressing as personal attitudes. Not second, they have as subjective norms. The third block is composed of six items and refers to the perception of behavior control. The other focal blocks are behavioral attitudes, perceptions of control and subjective norms, the quality of the cultural environment, and social impact.

From these dimensions occurs the influence on the entrepreneurial intention, according to the presented in the theoretical reference (Ajzen, 1991; Liñán & Chen, 2009). The fourth block corresponds to the assertions related to the entrepreneurial intention, in which it is desired to understand the respondents' perception of the intention to undertake. Table 4 shows the composition of the QIE and the sum of each dimension.

**Table 4.** Composition of QIE

DIMENSION	ASSERTIVE
Personal Attitudes	Q1+Q2+Q3+Q4+Q5
Subjective Norms	Q6+Q7+Q8
Perception of Behavioral Control	Q9+Q10+Q11+Q12+Q13+Q14
Entrepreneurial Intent	Q15+Q16+Q17+Q18+Q19+Q20

Source: adaptation of Liñán and Chen (2009).

The application of the instruments took place in the university researched throughout 2018. The applications were classroom-based, in the different undergraduate courses of the institution, in which undergraduate students were invited to participate. The applications occurred sequentially, from a previous schedule, in order to avoid that the same student answered the questionnaires twice.

After consolidating the collected data, a conference was held to verify possible typing errors. For the treatment and analysis of the data collected, statistical tests were performed using the SPSS and SmartPLS software, at which time the data were analyzed based on the models proposed by McClelland (Mansfield *et al.*, 1987) and Liñán e Chen (2009).

For each of the instruments were calculated minimum, maximum, average and the standard deviation of each characteristic and dimension. Then, to estimate the reliability, the internal consistency of the instruments was measured by Cronbach's Alpha Coefficient (Sampieri *et al.*, 2013).

In order to analyze the association between the entrepreneurial behavioral characteristics and the dimensions of the entrepreneurial intention, Pearson's Correlation Coefficient was used, which according to Collis and Hussey (2005), refers to a parametric technique that indicates the measure of strength of association between two variables.

In order to measure the relationship between the entrepreneurial behavioral characteristics and the entrepreneurial intention, it was used the Modeling of Structural Equations. For this modeling the partial least squares method was used based on correlation matrix, given the possibility of not occurring the data normality (Chin, 1998).

The criteria for acceptance of the Structural Equation Model were the convergent validity analysis, with factorial loads above 0,7 and Mean Extracted Variance (AVE) above 0,5 (Hair Jr. *et al.*, 2009). Even if there is no specified difference, discriminant validity is identified when the square root of the AVE of the construct is greater than any correlation of this with the other constructs of the model (Chin, 1998). This discriminant validity was

also analyzed through the correlation of the items, which should be larger in its dimensions than its correlation with other constructs.

To adjust the model was considered the suitability index of the model, obtained through the geometric mean between the mean R2 and the mean stroke. This indicator is considered adequate, in the applied social sciences, when above 0,36 (Wetzels *et al.*, 2009).

From the calculation of the indicators (characteristics and intention) through the Modeling of Structural Equations the structural model was developed to measure the entrepreneurial behavior.

## 4 Analysis

### 4.1 Descriptive statistics

For the analysis, 2.519 valid instruments were considered. The Cronbach's Alpha for the CCE's instrument obtained  $\alpha = 0,879$ , for the QIE totaled 0,788, which means that such responses are reliable. Table 5 shows the descriptive statistics for the constructs studied.

**Table 5.** Descriptive statistics

Inst.	Characteristics/ Dimensions	Min.	Max.	Mean	Standard Deviation	Variance
CCE's	Search for opportunities and initiative	6,00	25,00	19,2946	2,85564	8,155
	Persistence	6,00	25,00	16,3335	2,60825	6,803
	Commitment	6,00	25,00	18,8757	2,83545	8,040
	Requirement of quality and efficiency	5,00	25,00	17,8051	3,17489	10,080
	Ride Calculated Risks	5,00	25,00	16,4903	3,14689	9,903
	Setting goals	5,00	25,00	17,1501	3,25799	10,614
	Information search	5,00	25,00	17,9194	2,98837	8,930
	Systematic planning and monitoring	5,00	25,00	17,7233	2,92236	8,540
	Persuasion and contact networks	5,00	25,00	16,3100	2,94717	8,686
	Independence and self-confidence	5,00	25,00	16,9420	2,92177	8,537
QIE	Personal Attitudes	5,00	25,00	18,5931	4,68558	21,955
	Subjective Norms	3,00	15,00	12,3740	2,38556	5,691
	Control Perception Behavior.	6,00	30,00	17,0159	5,57519	31,083
	Entrepreneurial Intent	6,00	30,00	18,1342	6,91945	47,879

Source: Authors (2019).

Variance is a measure of variability that uses all data, it is useful to compare the variability of two or more variables. Meanwhile the standard deviation is defined as the positive square root of the variance, that is, it is a little easier to interpret than the variance, since it is measured in the same units of the data. The coefficient of variation is a measure of relative variability: it measures the standard deviation in relation to the mean (Dennis *et al.*, 2013).

The highest standard deviation and variance occurs in the dimensions of Control Perception and Entrepreneurial Intent, which have the highest number of items, six, which means that a distinction is made between the answers. The

lowest standard deviation and variance occurs in the Subjective Norms dimension, which contemplates only three items and demonstrates uniqueness in the responses.

It is identified that all characteristics obtained minimum scores below the 15-point limit, which for McClelland are non-existent (Mansfield *et al.*, 1987), this means that one or a few students do not have these entrepreneurial behavioral characteristics. The ten CCE's of the students, based on the mean, were scored above 15 points, indicating the existence of the behavioral characteristics (Mansfield *et al.*, 1987).

Among the ten behavioral characteristics, the characteristic search for opportunities and initiative that obtained the highest average 19,3, which refers to the individual's proactivity in the face of adverse situations and the search for opportunities to create or expand a goal (MSI, 1990).

On the other hand, persistence and persuasion and contact networks obtained the lowest scores (16,3). Persistence is a behavioral characteristic that denotes how the individual acts in the face of a significant obstacle; acts repeatedly or changes strategy in order to face a challenge or overcome an obstacle (MSI, 1990).

This characteristic is also related to the accomplishment of personal sacrifices or the conception of an extraordinary effort to complete a task or activity (MSI, 1990). On the other hand, the persuasion and contact networks characteristic is about discussing strategies in advance to influence and persuade others, the use of key people to achieve proposed goals, and how the subject acts to develop and maintain relationships (networking) (MSI, 1990).

Inferred that 92% (2.323) of the researched students can effectively be considered entrepreneurs (McClelland, 1987), because they obtained final scores equal or superior to 15 points. Only 8% (196) had an individual final result lower than 15 points, for these students it is indicated that the entrepreneurial behavior must be improved (Lima *et al.*, 2015).

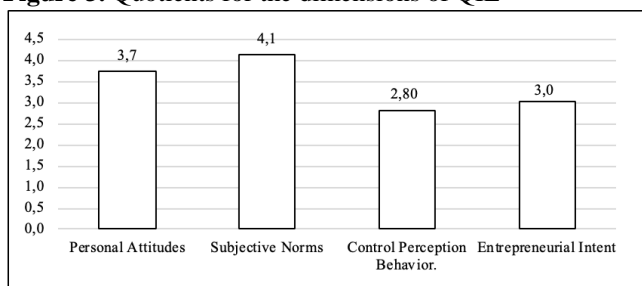
For McClelland (1987) the successful entrepreneurial subject must have or need to develop these ten entrepreneurial behavioral traits. The characteristics are segmented into three dimensions: Achievement (17,8), planning (17,6) and power (16,6).

The Achievement dimension presents the highest score (17,8), similar to the result of the

study by McClelland (1972). For the scholar this is because people are motivated by need for achievement, which drives them to success (McClelland, 1972). For the author, the specific need for achievement is present and generates a differentiated motivational structure in the entrepreneur (McClelland, 1972). Power is in the last position (16,6). The Power dimension is understood as “a concern with the control of the means to influence a person”, it is perceived that for the students studied this concern is not significant (McClelland 1972, p. 211).

As for the instrument of entrepreneurial intention (Table 5), it is observed that the dimension of subjective norms obtained the lowest score and personal attitudes obtained higher scores, however, it should be emphasized that in the QIE the dimensions do not present the same number of items. Thus, Figure 3 was elaborated, which shows the quotient of the total score of the dimension on the quantity of items of each dimension.

**Figure 3.** Quotients for the dimensions of QIE



Source: Authors (2019).

The more favorable the Attitudes, Subjective Norms and Control Perception, the greater the individual's intention to exert such behavior. From Figure 3 it is inferred that the highest score resulted in the Subjective Norms dimension, this means that, according to the individual's perception, the community around him determines his behavior (Souza, 2015). This dimension represents the perceived social pressure to carry out the behavior in question (Ajzen, 1991). In addition, Liñán and Chen (2009) indicate that subjective norms are the first filter to enterprising intentions.

In this study Subjective Norms obtained higher values than the other dimensions, that is to say that the respondents believe that their decisions will be approved or not, and that these decisions concern the social pressure exerted to carry out - or not - a behavior, reflecting the effect of social values on the individual (Morales *et al.*, 1994). The

subjective norm is the most social component of the QIE, insofar as it incorporates the influence of significant individuals on the decision to develop the professional career through entrepreneurship (Oliveira *et al.*, 2016).

The lowest score was obtained in Behavioral Control Perception, which for Ajzen (2002) is defined as the perception of the ease or difficulty of becoming an entrepreneur. Regarding this dimension of perceived behavioral control, individuals' manifest behaviors that they feel are able to control and dominate (Bandura, 1982).

It is observed that the students studied present an intention to undertake (Figure 3). Entrepreneurial intention is considered as the effort that the individual exerts or intends to exert to carry out an entrepreneurial activity (Ajzen, 1991). For Ajzen (1991) entrepreneurship is predicted by intentions that are derived from attitudes.

For the authors Schlaegel and Koenig (2014) and Krueger and Carsrud (1993), the future behavior of a person is preceded by intention, the stronger a person's intention to engage in a specific behavior, the more likely the actual behavior will be realized. It is inferred that the students intend to undertake.

The correlation matrix between the averages of the characteristics and the entrepreneurial intention of the students are presented in Table 6.

**Table 6.** Correlation of CCE's and entrepreneurial intention

	QIE			
	Attit. Pers.	Sub. Norm.	Cont. Per.	Ent. Int.
Search for opportunities and initiative	,241**	,150**	,214**	,216**
Persistence	,094**	,007**	,081**	,090**
Commitment	,144**	,116**	,127**	,108**
Requirement of quality and efficiency	,103**	,048*	,106**	,101**
Ride Calculated Risks	,143**	,057**	,178**	,145**
Setting goals	,197**	,088**	,181**	,194**
Information search	,151**	,073**	,161**	,156**
Systematic planning and monitoring	,154**	,098**	,137**	,139**
Persuasion and contact networks	,170**	,088**	,211**	,184**
Independence and self-confidence	,166**	,088**	,256**	,196**

\*\* The correlation is significant at the 0,01 level (bilateral).

\* The correlation is significant at the 0,05 level (bilateral).

Source: Authors (2019).

It is verified that the correlations between the entrepreneurial behavioral characteristics and the dimensions of the entrepreneurial intention were positive associations of intensity weak and weak, and that there is a direct relationship between them. The strongest correlation occurred between the Search for Opportunities and Initiative characteristics and the Personal Attitudes (0,24), Entrepreneurial Intent (0,22) and Control Perception (0,21) dimensions.

The correlation between the behavioral characteristics and the Subjective Norms dimension showed positive associations with the lowest values in relation to the other dimensions (Personal Attitude, Control Perception and Entrepreneurial Intent). In this way, it can be affirmed that there is no social pressure exerted on the students to become or not entrepreneurs, coming from the social circle in which they live, similar to that obtained by Moraes *et al.* (2016). Interestingly, it is observed that the social circle does not pressure these students to be entrepreneurs (Pearson's Correlation), but in the QIE (Liñán; Chen, 2009) social values, social pressure and influence of people that surround these students are showed significant.

#### 4.2 Structural equations

For the elaboration of the measurement model we opted for the modeling by structural equations. Initially the validation of the entrepreneurial intent model was carried out. Based on this, in accordance with the entrepreneurial behavioral characteristics, the structural model for entrepreneurial behavior was developed, the model is detailed below.

The use of modeling of structural equations is due to the theory-driven, confirmatory character of the model, which provides the possibility of accommodating multiple relationships between constructs in a single model (Hair Jr. *et al.*, 2014). For the confirmation of the models of this study the variance method was used in the SmartPLS.

From the theoretical models of the formal pathway we sought the convergent validity of the models. The convergent validity indicates how much a model measures, that is, the portion of the data that is explained by each of the respective constructs to their sets of variables or how much, on average, the variables positively correlate with their variables (Ringle *et al.*, 2014). The analysis of the indicators of Average Extracted Variance (AVE) occurred after the first data was run in the SmartPLS software.

Consistent with this step, we observed some adjustment indicators of the internal consistency model, such as Cronbach's Alpha and Collinearity. For Ringle *et al.*, (2014) these indicators demonstrate whether the sample is free from bias and whether the responses can be considered reliable. Next, we tried to establish the discriminant

validity, that is, if the constructs are independent of each other. This is obtained by observing the correlation of the items with their respective variables and other variables (Ringle *et al.*, 2014). In addition, the square root of the AVE of a construct with the other constructs is verified.

Then, the values of the path coefficients, which suggest the direction and strength of the relationship between the model variables, were considered. The meaning demonstrates whether the relationship between the two variables is directly proportional or inversely proportional (Hair Jr. *et al.*, 2014).

After this step the results were examined for correspondence with the theory. For Hair Jr. *et al.* (2014) an advantage of the adoption of structural equations is that it uses manifest variables, not directly observable, to represent a given construct, and, at the same time, allow the estimation error of this construct to be reduced.

When obtaining data in a survey should be aware of the risk of error in the measurement, because of the difficulty of understanding, sometimes by the respondent or even the concept of the different items to measure the variables. For Hair Jr. *et al.* (2014) this error is incorporated in the model, which establishes the relations between the theoretically established variables, so the reliability of the model can be tested. Therefore, the model of structural equations for the QIE is presented (Liñán & Chen, 2009).

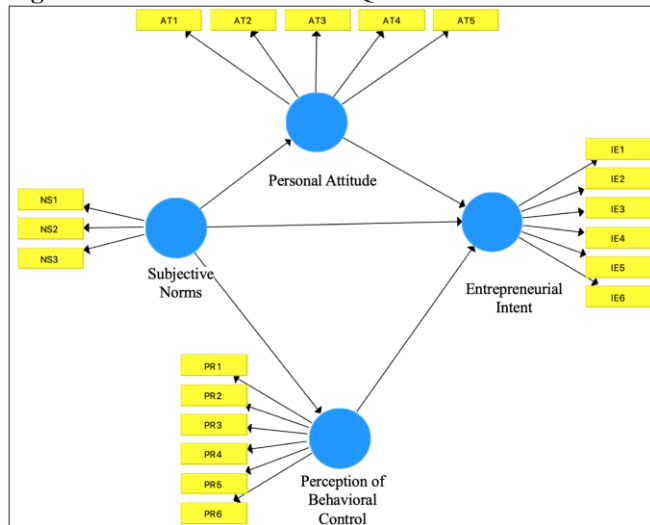
##### 4.2.1 Structural Model for Entrepreneurial Intent

Following the previously presented aspects the model of structural equations for the entrepreneurial intention was verified. In a similar study, Camozzato *et al.* (2018) have demonstrated, through structural equations, that entrepreneurial intent (Liñán & Chen, 2009) of the undergraduate students surveyed is positively influenced by personal attitudes and perceived behavioral control, while subjective norms exhibit a negative relation.

Also, Souza *et al.* (2018) measured the entrepreneurial intention (Liñán & Chen, 2009) through structural equation modeling, using partial least squares and PLS Path Modeling (PLS-PM) path model, similar to the one performed in this study. Based on these studies and what was presented in the theoretical reference on TCP and the Entrepreneurial Intention Questionnaire, Figure

4 demonstrates the exploratory phase measurement model for the QIE (Liñán & Chen, 2009).

**Figure 4.** Theoretical model for QIE measurement



Source: Authors (2019).

In yellow are the variables of each construct. The ellipses in blue correspond to the constructs of Personal Attitude, Subjective Norms, Perception of Control and Entrepreneurial Intent. The arrows indicate the relationship between the constructs. The data collected were tested according to the procedures previously described. Initially the validity of the model was verified.

Table 7 presents some of these indicators.

**Table 7.** Validity and Reliability Indicators

Construct	AVE	Compound reliability	R <sup>2</sup>	Alpha de Cronbach	Rho A
Personal Attitudes	0,668	0,908	0,182	0,872	0,895
Subjective Norms	0,752	0,901	-	0,834	0,835
Control Perception	0,615	0,906	0,098	0,875	0,879
Entrepreneurial Intent	0,734	0,943	0,646	0,927	0,928

Source: Authors (2019).

When the AVE values are greater than 0,50, it is assumed that the model converges to a satisfactory result (Fornell & Larker, 1981). Reliability is satisfactory when Cronbach’s alpha values are above 0,60 and 0,70 in exploratory research and when composite reliability values are above 0,70 and 0,90 (Hair *et al.*, 2014). It was found that the model tested showed a superior stroke to the minimum required (<0.5) and the appropriate reliability indicators (Hair Jr. *et al.*, 2009) (Table 7).

Next, the discriminant validity indicators of the structural model (Table 8) were analyzed, comparing the square root of the AVEs of each construct versus the correlation with the other constructs.

**Table 8.** Discriminant validity indicators

Constructo	Personal Attitudes	Subjective Norms	Control Perception	Entrepreneurial Intent
Personal Attitudes	<b>0,818</b>			
Subjective Norms	0,731	<b>0,857</b>		
Control Perception	0,427	0,350	<b>0,867</b>	
Entrepreneurial Intent	0,526	0,669	0,313	<b>0,785</b>

Source: Authors (2019).

In addition, the discriminant analysis can be observed in Table 9 by cross-loading the items of the constructs versus the other constructs.

**Table 9.** Additional discriminant validity

Item	Personal Attitudes	Entrepreneurial Intent	Subjective Norms	Control Perception
AT1	0,607	0,341	0,335	0,263
AT2	0,842	0,582	0,349	0,430
AT3	0,842	0,618	0,363	0,434
AT4	0,905	0,662	0,367	0,475
AT5	0,858	0,714	0,345	0,505
IE1	0,608	0,802	0,319	0,624
IE2	0,661	0,874	0,319	0,572
IE3	0,588	0,826	0,303	0,530
IE4	0,644	0,905	0,281	0,579
IE5	0,600	0,841	0,279	0,566
IE6	0,652	0,889	0,297	0,564
NS1	0,361	0,306	0,835	0,285
NS2	0,391	0,306	0,902	0,267
NS3	0,358	0,298	0,863	0,262
PR1	0,418	0,473	0,292	0,723
PR2	0,467	0,575	0,263	0,814
PR3	0,419	0,540	0,271	0,805
PR4	0,352	0,475	0,195	0,792
PR5	0,340	0,486	0,166	0,772
PR6	0,458	0,579	0,271	0,798

Source: Authors (2019).

In the discriminant validity, the square roots of the AVE values of each construct are compared with the correlations between the constructs (Fornell & Larcker, 1981). It was found that the square roots of the AVEs were larger than the correlations of the constructs.

From the analysis of the colinearities we excluded the item IE6, the data was rolled again. After re-verification of collinearity, item AT4 was excluded. Again, the data were rotated, excluding item IE4. The final collinearities are shown in Table 10.

**Table 10.** Final Collinearity

Items	Collinearity	Items	Collinearity	Items	Collinearity	Items	Collinearity
AT1	1,353	IE1	2,193	NS1	1,695	PR1	1,665
AT2	2,159	IE2	2,682	NS2	2,444	PR2	2,089
AT3	1,897	IE3	2,166	NS3	2,100	PR3	2,022
AT5	1,974	IE5	1,870			PR4	2,522
						PR5	2,385
						PR6	1,893

Source: Authors (2019).

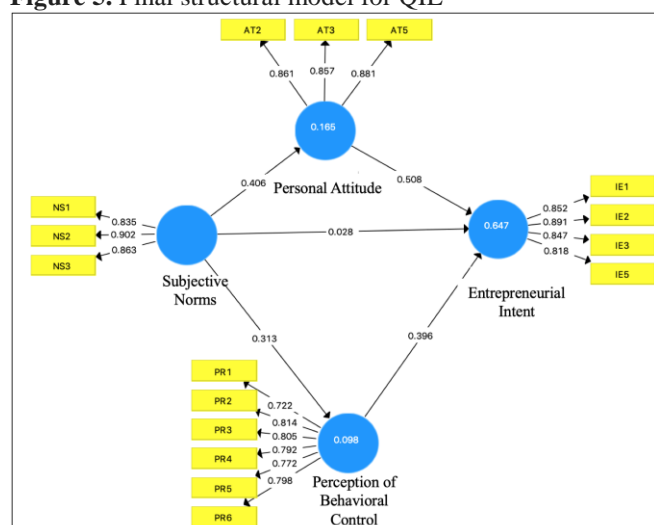
Table 11 presents the effect or utility for the construction of the model (f2) that proved to be satisfactory. The variable with the greatest explanatory power in the model was the Personal Attitude, with f2 = 0,428, this is consistent with the theory, which suggests the central role of attitude in the explanation of entrepreneurial intention (Ajzen & Fishbein, 2005).

**Table 11.** Usefulness of the construct

Constructos	Personal Attitudes	Entrepreneurial Intent	Subjective Norms	Control Perception
Personal Attitudes		0,428		
Entrepreneurial Intent				
Subjective Norms	0,225			0,109
Control Perception		0,334		

Source: Authors (2019).

After the analysis of the collinearity a new structural model was set up and is observed that the variable AT 1 represents a value below 0.7, therefore, it is opted to exclude it. Figure 5 presents the final structural model for the entrepreneurial intention construct.

**Figure 5.** Final structural model for QIE

Source: Authors (2019).

The final structural model presented positive relationships among all constructs, explaining 16,5% of Personal Attitude variance, 9,8% of Control Perception and 64,7% of the Entrepreneurial Intent. The relation between attitude and intention showed greater strength among the relations observed denoting the consolidated role of the observed theoretical relation.

Personal Attitude is the degree to which the individual has a positive personal evaluation or not in being an entrepreneur. In this study, this construct presented a value of 16,5%, which means that there is a positive evaluation by the students to become entrepreneurs. Although low, this percentage demonstrates that the entrepreneurial environment in the research institution can be more emphasized and strengthened.

The percentage of 9,8% for Behavioral Control Perception reveals the impression of the difficulties and facilities regarding the desire to undertake. In addition, there was a positive and

significant relationship between Behavioral Control Perception and Entrepreneurial Intent, which may represent that the researched students have entrepreneurial behavior and that they want to undertake.

The Subjective Norms show the social pressure perceived by the students as to the intention to undertake or not to undertake. In this study, no percentage was verified, which is consistent with the findings of the bibliographic review, as in the study by Souza and Silveira (2018).

The Entrepreneurial Intent presented a percentage of 64,7% on the influence of attitudes, norms and perception of behavior. This demonstrates that UFSM undergraduates are prone to the development of attitudes and perceptions of behavior that lead them to undertake.

Final structural analysis can be seen in Table 12.

**Table 12.** Values of the model path coefficients

Sense	Relations	Path coefficient
Positive	Personal Attitudes ↓ Entrepreneurial Intent	0,508
Positive	Control Perception ↓ Entrepreneurial Intent	0,396
Positive	Subjective Norms ↓ Entrepreneurial Intent	0,028
Positive	Subjective Norms ↓ Personal Attitudes	0,406
Positive	Subjective Norms ↓ Control Perception	0,313

Source: Authors (2019).

This study revalidated the QIE (Liñán & Chen, 2009). Regarding the scale, as in the studies of Liñán *et al.* (2011), Naia (2013) and Souza & Silveira (2018), adjustments were also necessary in this study, with the exclusion of some items that did not compromise validity of constructs. The model and scale were tested and validated, with the capacity to demonstrate that the students studied at UFSM present a significant percentage of entrepreneurial intention.

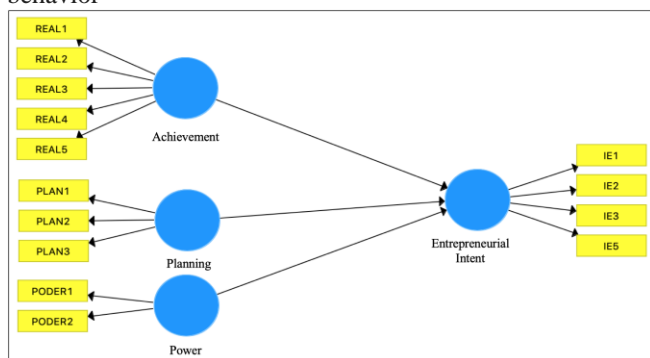
Finally, it is inferred that the final structural model and the scale proposed by Liñán and Chen (2009) were adequate in relation to the data collected in the UFSM. This makes it possible to proceed with the progress of this study, in the sense of elaborating the structural equations model for the entrepreneurial behavior from the entrepreneurial characteristics and intention.

4.2.2 Structural model for entrepreneurial behavior

Based on the validation of the structural equation model for the entrepreneurial intention instrument, following the previously mentioned assumptions, a model of structural equations for entrepreneurial behavior was developed, based on entrepreneurial behavioral characteristics, respective dimensions, and entrepreneurial intent.

Based on the theoretical reference, Figure 6 represents the exploratory phase of the theoretical model for entrepreneurial behavior relating entrepreneurial characteristics and intentions.

Figure 6. Theoretical model for measuring entrepreneurial behavior



Source: Authors (2019).

It is observed that in yellow are the variables of each construct. The ellipses in blue correspond to the dimensions of Realization, Planning and Power (Mansfield *et al.*, 1987) and Entrepreneurial Intent (Liñán & Chen, 2009). The arrows indicate the relationship between the constructs.

The data collected were tested according to the procedures previously described. Initially the validity of the model was verified. Table 13 presents some of these indicators. It was found that the model tested showed a superior stroke to the minimum required (>0.5) and the appropriate reliability indicators (Hair Jr. *et al.*, 2009) (Table 13).

Table 13. Validity and reliability for entrepreneurial behavior

Construct	AVE	Compound reliability	R <sup>2</sup>	Alpha de Cronbach	Rho A
Entrepreneurial Intent	0,726	0,914	0,059	0,874	0,885
Planning	0,657	0,852	-	0,742	0,750
Power	0,756	0,861	-	0,677	0,679
Achievement	0,521	0,844	-	0,780	0,850

Source: Authors (2019).

Table 13 shows the results of the AVE for the Entrepreneurial Intent, Planning, Power and Realization constructs, confirming the convergent validity of the model (AVE above 0,5). Tests for

internal consistency with Cronbach’s alpha above 0,6 and 0,7 are adequate and composite reliability above 0.8 and 0,9 are satisfactory (Hair Jr. *et al.*, 2014).

Then, the collinearity statistic was verified (Table 14), which was adequate for the evaluated items.

Table 14. Collinearity

Item	Collinearity	Item	Collinearity	Item	Collinearity	Item	Collinearity
IE1	2,193	PLAN1	1,360	PODER1	1,354	REAL1	1,483
IE2	2,682	PLAN2	1,685	PODER2	1,354	REAL2	1,396
IE3	2,166	PLAN3	1,529			REAL3	1,434
IE5	1,870					REAL4	1,589
						REAL5	1,523

Source: Authors (2019).

Table 15 shows the utilities of the constructs for entrepreneurial behavior. It is observed that the effect or utility of the model (f2) is satisfactory although considered small (between 0,02 and 0,14), and are relevant to the model (Ringle *et al.*, 2014).

Table 15. Utility of the construct for entrepreneurial behavior

Construct	Entrepreneurial Intent	Planning	Power	Achievement
Entrepreneurial Intent				
Planning	0,004			
Power	0,007			
Achievement	0,003			

Source: Authors (2019).

Table 16 presents the discriminant validity indicators of the structural model in comparison to the square root of the AVEs of each construct versus the correlation with the other constructs.

Table 16. Discriminant validity indicators for entrepreneurial behavior

Construct	Entrepreneurial Intent	Planning	Power	Achievement
Entrepreneurial Intent	<b>0,852</b>			
Planning	0,212	<b>0,811</b>		
Power	0,216	0,633	<b>0,869</b>	
Achievement	0,206	0,672	0,635	<b>0,722</b>

Source: Authors (2019).

In the analysis of the discriminant validity indicators for the entrepreneurial behavior (Table 16) the evaluation of the pharmacological loads of the indicators that should be larger for their own constructs than the others are done (Chin, 1998). Table 16 shows the cross loads distributed between the respective constructs, which indicates the discriminant validity of the observed items, since they present higher values in comparison to the other constructs.

The complementary discriminant analysis is also adequate and is shown in Table 17, where cross-loading of the items of the constructs versus the other constructs is considered.



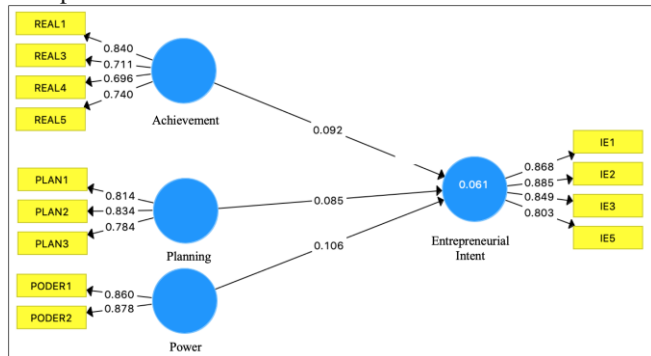
**Table 17.** Complementary discriminant validity for entrepreneurial behavior

Item	Entrepreneurial Intent	Planning	Power	Achievement
IE1	0,868	0,212	0,205	0,217
IE2	0,885	0,169	0,178	0,165
IE3	0,850	0,180	0,181	0,161
IE5	0,803	0,153	0,169	0,149
PLAN1	0,196	0,814	0,507	0,507
PLAN2	0,162	0,834	0,533	0,564
PLAN3	0,153	0,784	0,500	0,573
PODER1	0,182	0,561	0,860	0,563
PODER2	0,194	0,540	0,878	0,541
REAL1	0,222	0,468	0,477	0,822
REAL2	0,088	0,494	0,482	0,637
REAL3	0,119	0,468	0,423	0,695
REAL4	0,101	0,499	0,454	0,703
REAL5	0,150	0,564	0,500	0,740

Source: Authors (2019).

From the confirmatory structural model, it is verified that the variables REAL2 and REAL3 presented scores below 0.7. We chose to exclude the REAL2 variable that has the smallest value. Figure 7 presents the structural model of final relations for entrepreneurial behavior.

**Figure 7.** Structural model of final relations for entrepreneurial behavior



Source: Authors (2019).

The variable REAL4, after adjustment, kept score below 0,7, however, due to the proximity to the stipulated limit was chosen to maintain it. In addition, the Power construct has only two variables, which is a limitation of the model and its scale (Hair Jr. *et al.*, 2014).

Structural analysis indicated positive paths between the constructs of the model, as can be seen in Table 18.

**Table 18.** Values of the model path coefficients

Sense	Relations	Path coefficient
Positive	Achievement ↓ Entrepreneurial Intent	0,092
Positive	Planning ↓ Entrepreneurial Intent	0,085
Positive	Power ↓ Entrepreneurial Intent	0,106

Source: Authors (2019).

The model presented reinforces the entrepreneurial behavior as being able to be measured using the ten characteristics grouped in the dimensions proposed by McClelland (Mansfield *et al.*, 1987). This same model represents the possibility of measuring beyond entrepreneurial behavioral characteristics to entrepreneurial intention (Liñán & Chen, 2009). Although it has been necessary to exclude some variables, this is acceptable, since it is an initial model that can be improved in future research.

The structural model (Figure 7) showed positive relationships among all the constructs, explaining 5% of the Entrepreneurial Intent. It is inferred that the structural model based on entrepreneurial behavioral characteristics and entrepreneurial intention was adequate to measure the entrepreneurial behavior in relation to the participating students.

### 5 Conclusion

The present study aimed to develop a structural model for measuring entrepreneurial behavior based on entrepreneurial behavioral characteristics and entrepreneurial intention. It was found that this objective was reached by means of structural equations.

It was verified that the structural model presented positive relationships among all the constructs, explaining the Entrepreneurial Intent. It was observed that the structural model based on entrepreneurial behavioral characteristics and entrepreneurial intention was adequate to measure the entrepreneurial behavior of the participating students. Therefore, the proposed problem was solved by constructing and validating the structural model to measure entrepreneurial behavior.

In order to develop the model of entrepreneurial behavior measurement, we initially sought to identify the entrepreneurial behavioral characteristics and dimensions of the respondents, and to verify the dimensions of the entrepreneurial intention of the research subjects. This was contemplated through the answers of undergraduate students of the UFSM in the instrument of entrepreneurial behavioral characteristics of Mansfield *et al.* (1987) and in the questionnaire of entrepreneurial intention of Liñán and Chen (2009).

As to the identification of entrepreneurial behavioral characteristics and dimensions, it is

concluded that students, for the most part, have entrepreneurial behavior (Mansfield *et al.*, 1987). This behavior was measured by descriptive statistics. From the average, the characteristic search for opportunities and initiative has earned the highest score, revealing that these students are proactive and looking for opportunities.

However, on the other hand, the respondents are not persistent about what they want and also do not consider themselves influencers, characteristics that obtained the lowest scores. The successful entrepreneur must have ten entrepreneurial behavioral traits (McClelland, 1987). Thus, the dimensions that encompass these characteristics were verified. The achievement dimension had the highest score, similar to McClelland's (1972) result. For the author this is because people are motivated by the need for achievement, which tends toward success (McClelland, 1972).

Regarding the entrepreneurial intent, the respective scores were observed through the QIE (Liñán & Chen, 2009). In the descriptive statistics, the Subjective Norms dimension obtained higher scores among the undergraduate students surveyed, which reflects the effect of social values on the individual, demonstrating that for these students the social values, social pressure and influence of the people that surround them is significant.

The Pearson Correlation matrix was then performed between the behavioral and entrepreneurial intentions. It was found positive associations of intensity weak and weak, which indicates a direct relationship between them. The strongest correlation occurred between the Search for Opportunities and Initiative characteristics and the dimensions of Personal Attitudes, Entrepreneurial Intent and Control Perception.

After the identification of the entrepreneurial behavioral characteristics, verification of the dimensions of the questionnaire of entrepreneurial intention and relation of these constructs through Pearson's correlation, it was elaborated to relate the measurement model, through the modeling of structural equations.

At first, the structural model for the QIE was revalidated (Liñán & Chen, 2009), in which it was verified that the dimension of Entrepreneurial Intent presented a percentage of 64.7% on influence of attitudes, standards and behavior perception. This shows that UFSM undergraduates tend to develop attitudes and behavioral perceptions that can guide them to undertake.

In view of this, the structural model for entrepreneurial behavior was developed, considering the dimensions of the entrepreneurial behavioral characteristics and the dimension of entrepreneurial intention. From the modeling of structural equations, a structural model of final relations for entrepreneurial behavior was obtained. This structural model has been validated and demonstrates that entrepreneurial behavior can be measured using the dimensions proposed by McClelland (Mansfield *et al.*, 1987) and the entrepreneurial intention dimension of Liñán and Chen (2009).

It is understood that the results of this research direct to the development of actions that stimulate the entrepreneurial behavior in the different institutions of higher education. From the analysis of entrepreneurial characteristics and intentions of undergraduate students, it is possible to identify the percentage of students who present entrepreneurial behavior, as well as those who do not. These findings are essential to finding ways to provide the market with more prepared and complete people.

The applicability of the structural model of measurement of the entrepreneurial behavior developed is in the sense of helping to increase the percentages of individuals who, after completing their undergraduate studies or along the course, intend to entrepreneurial. This is because, based on the realization of the entrepreneurial behavior that these subjects, today students present, it is possible to foster activities that drive the behavioral dimensions: Realization, Planning, Power and Entrepreneurial Intent, next to the institution in which they are inserted.

This research meets the characteristics of originality, applicability and replicability required for impact research. The structural measurement model elaborated from the behavioral and entrepreneurial intentions is original, and no study was found to be the same as presented here. The applicability of the model occurs in the sense of being a tool able to measure entrepreneurial behavior. The modeling developed can be replicated from the available model and then compare the results with the established model.

## 6 Implications and Further Research

Finalizing the conclusions about the objective raised this chapter concludes with the

contributions, limitations and suggestions for future studies.

When addressing entrepreneurial behavior for the deepening of analysis it is inevitable to consider behavioral and entrepreneurial intentions, this study sought to contribute to a gap in the traditional methods of analysis of these constructs. The results of the developed measurement model contribute to broadening the frontier of knowledge about entrepreneurial behavior, besides providing subsidies for researchers in the area.

The approach proposed by the entrepreneur behavior measurement model through the structural model also presents considerable practical value, in which it becomes possible to include the experience in the behavioral area, contributing to the deepening and theoretical-practical advancement of this area of study.

An oddly important contribution of this study is the developed model that offers a deep set of data and several types of results that can be explored and analyzed with different approaches. In addition, this model can be transformed into software for measuring entrepreneurial behavior and can be adapted to other types of measurement as well as performance. It is expected that the work developed will contribute to the studies concerning the constructs addressed.

The academic contribution is given by the opportunity to publicize the results found through a structural model of measurement of the entrepreneurial behavior, product of the research, and it is expected that this model contributes to the improvement and incentive of the entrepreneurial behavior in the researched institution and, consequently, in return to the society of more entrepreneurial students.

As for the limitations, the study was restricted to the development of a structural model for measuring entrepreneurial behavior based on two already validated instruments (Mansfield *et al.*, 1987; Liñán & Chen, 2009). It is suggested that future studies amplify the constructs addressed in this structural model and consider other dimensions such as culture and cognition.

The research was limited to a public higher education institution, with only undergraduate students, with a cross-sectional view. As a suggestion for future research, studies in other institutions of higher education or basic are recommended in order to compare, deepen and new findings. In addition to considering a longitudinal

follow-up of the entrepreneurial behavioral evolution of the individuals surveyed.

The results found in this study, although specific to undergraduate students, can be analyzed, compared and inspire new research in other regions that may contribute to fill the gap observed by the lack of publications on related topics, different forms of measurement of entrepreneurial behavior and behavioral characteristics and entrepreneurial intent.

Finally, it is pointed out that this study developed a structural model for measuring entrepreneurial behavior, the theoretical model of the research was registered, and it is freely available for future research and improvements. Opportunity for which it is expected to demonstrate and disseminate the developed model and contribute to the advancement of research in the behavioral area.

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## Determinants of Supply Chain Management, according to its managers

Margareth Rodrigues de Carvalho Borella<sup>1</sup>, Caroline Bombana<sup>2</sup>

<sup>1</sup> Universidade de Caxias do Sul - [mrcborel@ucs.br](mailto:mrcborel@ucs.br)

<sup>2</sup> Universidade de Caxias do Sul - [cbombana@ucs.br](mailto:cbombana@ucs.br)

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### ABSTRACT

The objective is to identify the determinants of the effectiveness of the supply chain (SC) operation and its management (SCM), from the viewpoint of its members or chain leaders. We conducted a descriptive research with the use of a questionnaire applied in the companies located in the city of São Marcos/RS (state of Rio Grande do Sul). The sample comprised a total of 42 respondent companies from a population of 67 industrial companies, resulting in 63% rate of return. We conducted a qualitative step with the supply manager of the only large company in the sample, and we concluded that there is a conservative culture in the industrial hub of the city of São Marcos/RS, and lack of confidence is their biggest barrier. When it comes to SCM, this is the main determinant and it must be worked on from the start so as not to hamper the development of the relationship with the partners as well as the implementation and success of the SC strategy. The research is restricted to the industrial supply chains of the city of São Marcos/RS for presenting a more organized SC structure. The originality of this study lies in the leading role of the manager, member or leader of the supply chain in sharing their perceptions on defining, beneficial and opposing aspects of the supply chain management and its operation. Originality also resides in the consonance between the literature and the research findings. The managers who were interviewed revealed that having more knowledge about the theme is a prerequisite to assess the effectiveness of the actions and performance of the supply chain.

### PALAVRAS-CHAVE

Cadeia de suprimentos,  
Pólo industrial de São  
Marcos,  
Gerenciamento da cadeia de  
suprimentos,  
Determinantes do GCS.

### RESUMO

O objetivo é identificar os determinantes para o sucesso da operação de cadeia de suprimentos (CS) e seu gerenciamento (GCS), pela visão de seus membros ou líderes de cadeia. Foi conduzida uma pesquisa descritiva com a utilização de um questionário, aplicado nas empresas da cidade de São Marcos/RS. A amostra totalizou 42 empresas respondentes de uma população de 67 empresas industriais, resultando numa taxa de retorno de 63%. Uma etapa qualitativa foi conduzida com o gerente de suprimentos da única empresa de grande porte da amostra. Foi possível concluir que: o pólo industrial da cidade de São Marcos/RS possui uma cultura conservadora, onde a maior barreira é a falta de confiança. Ao se tratar de GCS, esse é o determinante principal que deve ser trabalhado inicialmente para não prejudicar o desenvolvimento do relacionamento com os parceiros, e conseqüentemente, a implantação e o sucesso da estratégia de CS. A pesquisa está restrita às cadeias de suprimentos industriais da cidade de São Marcos-RS por apresentarem uma estrutura de CS mais organizada. A originalidade do trabalho está no protagonismo do gestor da empresa, membro ou líder de cadeia, ao expor a sua percepção sobre aspectos definidores, benéficos e opostos do gerenciamento da cadeia de suprimentos e do seu funcionamento. A originalidade também reside na consonância, entre a literatura e os resultados da pesquisa, tendo revelado pelos próprios gestores, que ter mais conhecimento sobre o tema é um pré-requisito para avaliar corretamente o êxito das ações e o desempenho da CS.

## 1 Introduction

Supply chain is a theme that has been addressed within institutions because of its importance in business management. Its purpose is to integrate the internal areas of the corporation, seeking for suppliers, manufacturers and distributors which are committed partners to optimize their revenues.

To point out the importance of the supply chain, Wanke (2011) contemplates that inventory management influence on logistics and supply chain management has been increasingly more noticeable in academia, as well as in the corporate world. According to the author, the management of inventories in the supply chain, which is composed of several steps, may not be a trivial method, having the potential to effect significantly on the services provided to the consumer as well as in the costs of the company.

Barros (2007) states that no organization is independent, and that their operating capacity demands products and services from third parties, regardless of their scope area. Thus, the author states that new practices are being created and used by companies with the purpose of addressing their challenges. Today, in an extremely competitive market, cost effectiveness and efficiency growth are essential to organization's good results.

Due to the changes that are emerging in the global context, Gomes (2014) emphasizes that the creation of tactics and collaborative measures may be the best way to achieve excellent service conditions. It impacts the sales of the organization through low costs, inventory conservation and displacement of products throughout the productive chain.

According to Klose & Ikemori (2013), in a publication from *Jornal do Brasil*, the supply chain is seen as a unique feature as it interferes rigorously in the company's profit, being also considered as remarkable for the company's productivity and image. According to the same newspaper in some scenarios the costs of logistics together with the costs of purchasing materials account for 75% of a company's total expenses. On the other hand, improving the supply chain can result in numerous advantages such as a decrease in logistics costs by up to 25%; reduction of total expenses between 3% and 8%; improvement in product delivery times of

15% to 30% and 30% to 40% return on invested capital. Therefore, we can verify that the adherence to the supply chain and its management has a positive result on organizations.

This research is justified by the alternative that the supply chain (SC) provides, in an increasingly competitive market that is fuelled by an economic crisis, cost reduction and efficiency improvement without neglecting quality (Soares et al., 2017) and agility in delivering the product to the final consumer (Morita & Flynn, 1997). The Objective Theory (Kruglanski, 1996) and the Control Theory or Self-Regulation Theory (Carver & Scheier, 1982) present fundamentals that reposition the main decision maker in the role of performance analyst and feedback to act on the objectives and tasks of the organization in the future. The RBV (Resource Based View) and Transaction Cost Economics (TCE) Theories, coupled with lean manufacturing, just-in-time and Total Quality Management (TQM) approaches best explain the emergence of the supply chain, since it was originated from the need of cost reduction, especially in industrial companies (Cousins et al., 2006). The main objective of the article is to verify which aspects are considered relevant to the management and operation of the supply chain, according to managers of industrial companies, members and chain leaders.

The originality of this research lies in the vision and beliefs of the managers belonging to a manufacturing hub in a region of Italian settlement, which is permeated by a conservative culture and the individualism of its managers (Herédia, 2017), which is initially opposed to the collective actions required by the supply chain paradigm. The central aspect of the study is to verify what are the most important factors for the success and development of the supply chain and its management, according to the manager interviewed and what they would be willing to develop and share for a greater integration. The uniqueness of this study is also based on the presence of dissonant results that empirical studies have been presenting in relation to the postulate by theories that pave the supply chain approach and its management. Since its emergence in different areas of knowledge, these studies have pointed out that the understanding of integrating, conductive, constitutive and the supply chain performance aspects is still limited and has not received adequate attention in the construction

of a theory (Ho et al., 2002). Among the empirical studies are those of van der Vaart & Van Donk (2008), Naslund & Williamson (2010), Chen & Paulraj (2004).

Based on this scenario, this study addresses the supply chain theme and seeks to answer the following research problem: Which processes and aspects are important for the development and success of supply chain management according to the managers' viewpoint?

This question was answered by conducting a survey in the industrial hub of the city of São Marcos/RS. According to the managers interviewed, the aspects they would be willing to develop in a SCM context are the integration of internal management processes of materials and customer order management alone, sharing information exclusively about customer orders and production scheduling. Another finding is that the managers consider the SCM as a carrier of benefits for suppliers and customers in different attributes, as well as cost reductions, mainly of inventory, providing greater price competitiveness.

## 2 Supply Chain Management – a theoretical approach

Viana (2000) points out that, as organizations seek to synchronize their tasks, when they understand the management of their material assets and that they seek to repair themselves in order to achieve the elimination of losses, increasing the quality and competence of the services offered to its customers, it is when these companies will be able to coexist with the current parameters of materials management in the modern world.

Given this scenario, this chapter presents the bibliographic review of the topic under study on the processes of internal operations or activities involving the supply chain. It also seeks to inform about its risks and benefits.

Machline (2011) emphasizes in his approach that the administration of the supply chain in Brazil was similar to the United States, only with a few years of difference based on the American progress, where from 1990 onwards predominated the vision of supply chain, establishing the perception of business logistics by all links of the chain, from suppliers to final customers, in the form of an integrated vision, which over the years

has been expanded and modified, since the 21st century is seen as a global vision.

In this way, Scavarda & Hamacher (2001) describe that in the 1990s a new way of thinking about production strategies emerged, and from this moment on the relationship between companies and people began to be reviewed, causing a transformation in the supply chain and starting to operate in an integrated manner.

According to literature review, Table 1 presents the main definitions of the concept of supply chain management.

**Table 1.** SCM Concepts

Authors/Year	Supply Chain Management Concepts
Slack, Chambers & Johnston (2002, p. 415)	Supply chain management is the management of the interconnection between the companies that relate through connections, which produce value in the form of products and services to the final consumer in an efficient way.
Gonçalves (2004, p. 217)	Supply chain management is seen as a set of activities to efficiently integrate suppliers, manufacturers, distribution centres and storage, so that the products are marketed in the right quantity, in the right place and in a timely manner, focusing on cost reduction and high-level customer satisfaction.
Martins & Laugeni (2005, p. 170)	Supply chain management refers to the management practices that are necessary for all companies to add value to the customer, from the manufacturing of the materials to the production of goods and services until distribution and delivery to the customer.
Simchi-Levi, Kaminsky & Simchi-Levi (2010, p. 33)	Supply chain management is a set of approaches that efficiently integrates suppliers, manufacturers, warehouses and points of sale, so that the goods are produced and distributed in the correct quantities to the point of delivery and at the right time with the objective of minimizing the total costs of the system while meeting the requirements in terms of service level.
Chopra & Meindl (2011, p. 3)	The supply chain consists of all parties involved, directly or indirectly, in the fulfilment of a customer's request, including not only manufacturers and suppliers, but also transport companies, warehouses,

	retailers and even customers. It is dynamic and involves the constant flow of information, products and funds between different stages.
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In this way, the company that has a structured supply chain in its processes, besides having a systemic vision of the internal and external factors influencing it, can be ahead of its competition, promoting the achievement of its objectives and final customer satisfaction.

## 2.1 Contributions and risks of configuration in SC

Afonso, Afonso & Santos (2013), highlights some advantages in the integration of the supply chain, emphasizing the following gains: increased profitability for the parties involved in the process, greater credibility in procedures, improved response agility, lower costs with logistics and finally, a harmonious work environment. On the other hand, it is verified that besides the advantages there are some difficulties to be faced during the process of supply chain integration. The main factor is the clash between internal and external organizational culture, thus arising the difficulty in dissolving the old work paradigms.

Chaves & Callado (2014) show that the competitive advantages of an organization that has a supply chain is inventory reduction, which results in the attenuation of total production expenditures, reducing the prices of final products. Another positive aspect to be mentioned is the qualification of services provided to consumers that tend to improve due to the correct flow of information between the companies of the chain.

The current internal and external organization environment is busy and has many uncertainties and risks. Organization's managers are constantly busy with organizational processes. In light with this situation, imposing assertive quick decisions, require the use of methods for decision making which are effective in order to speed up and provide quality to the decision-making process involving the supply chain (Silva et al., 2008).

Thus, Aguiar, Tortato & Gonçalves (2014) reveal that in all supply chains, risks arise through the feelings of uncertainty because of the

implementation process, and that it is responsible for the changes within the organization, dispersion of customers and suppliers and the flow of information and materials that can lead to the lack of efficiency in the processes when administered in an irregular way.

When analysing the risks of supply chain implementation, Fernandes, Wrubel & Dallabona (2015) describe the main factors that cause a great impact on the organization such as: market instability, good customer relations and delivery deadlines, ineffective software used for control and mainly ill-prepared employees.

Therefore, we can confirm the supply chain importance for organizations when used properly, because according to Patto & Afonso (2009), there are still factors and obstacles to be clarified within the organizational environment that hinder the integration and interaction of the components of the chain such as cultural factors, lack of communication, lack of trust and technological factors. In this way, Pires (2004) points out that the problems faced in the supply chain go through the operational levels, being strategic, tactical and operational.

The critical success factors cited by Melo and Alcântara (2016) in their research address collaborative management in the supply chain, where there is information exchange, elaboration and realization of joint actions, as well as the sharing of knowledge and resources among the elements of the chain. Other factors addressed by the same authors include the use of information technology, the involvement of top management and the division of strategic clients and suppliers. In their opinion, when these elements are correctly employed, they contribute to the improvement of the supply chain performance in organizations .

Visentini and Borenstein (2014) observed that there are variables to be considered when implementing the supply chain. Internal factors such as the quantity of a produced item and the location of its facilities, as well as external factors such as the purchase of raw materials and the selection of suppliers. Therefore, it is necessary to have pre-established objectives or constraints to classify the elements as: minimum quantity of suppliers, budget controls and geographical location preferences in order to design a realistic supply chain project.

The research of Funo, Muniz Junior & Marins (2013) evidences five elements of risk that were analyzed that directly influence the supply chain: productivity, quality, organization, business strategy and the supply chain itself. Variables of relative importance, since they are influenced by the manager of each area and have different perspectives; as well as by the researched context, which affects events such as: economic and political changes of the country (crises), geographical location of suppliers and conflicts between countries. Therefore, the criticality of risk factors in the supply chain risk management should be reviewed periodically.

## 2.2 Relationship “supplier– company – client” in the SC

Based on the economic, social and cultural contexts, Pereira & Frazão (2009) argue that organizations are no longer independent, they are increasingly narrowing the relationship with their suppliers, in order to develop allies/partners that besides being agile, can positively achieve the expected outcome, which is to meet the customer’s needs. Therefore, having a good relationship and effective communication becomes the basis for a positive and lasting relationship in this win-win process.

Supply management has been gaining prominence in the organizations, composing the logistics process and becoming in charge of the negotiations with the suppliers in the chain as regarding price, delivery period, promotions and inventory, thus projecting a more competitive price for the final product (Tacconi et al., 2011).

Through the contact between buyer and supplier in supply chains, Claro & Claro (2004) evidenced in their research that trust is the foundation of relationships where motivating elements are analysed aiming at cooperation. In addition, the authors emphasize that the relationship between buyer and supplier goes beyond simple buying, where the supplier has much more to offer than timely delivery and competitive prices, thus being able to keep continually fuelling the trust deposited in them.

For Tacconi et al. (2014), the development of trust in the purchasing relationship between organizations, i.e., buyers and leaders of an

institution completely trust the supplier company. Nevertheless, the supplier must consider the following variables: degree of communication, customization and delivery timeliness, since these factors are irrelevant in the building of trust and considered as particularities influencing the supplier's behaviour.

In this way, it is the supplier’s duty to supply the organizations with additional products and services, which will compose the logistics defined as the supply chain. However, in order to improve the profits from this arrangement, it is fundamental to build a collaborative partnership between the participating companies for the effectiveness of the supply chain (Rodrigues & Sellitto, 2008).

Organizations that establish connections and that are committed to sharing knowledge and resources, which is what generates gains for the organizations. In addition, it is through the establishment of relationships that buyers and sellers identify opportunities and possible threats on the pathway they wish to follow in the course of their negotiations, and thus being able to redirect the strategy to be taken (Villar & Pereira, 2014).

Alves, Barreto & Martins (2015) list trust as one of the pillars for the development of strategic, long and true relationships among the companies that are part of the supply chain. The authors emphasize that in this new market competition, executors no longer act alone in the pursuit of individual success, however, it is necessary to exchange successes and risks for a win-win relationship, improving the performance of organizations, with offers that are aligned to the demands, innovation capacity as well as the reduction of costs among the supply chain members.

In the context of the supply chain, Deboça & Martins (2015) describe that in vertical relationships practised by most organizations, dealing with customers and suppliers is a connection of competitive nature, since these relationships, when badly planned with the absence of relationship strategies, show resistance among companies and low level of trust. This causes a generation of value to the end customer; thus, it is necessary to develop technical competence skills and to build trust to make progress in the relationship between the customer and the organization.

For an effective management of the supply chain, Tacconi et al. (2011) point out that the relationship with suppliers is the essential factor for the success of the organization, since in addition to having confidence, which is understood as a competitive advantage, it is necessary to foster: business ethics, efficient operational performance and an exclusive relationship, since suppliers need to have good conduct, dignity and commitment to their attitudes, as well as secrecy about the information exchanged and honesty.

In their research, Vanelle and Salles (2011) state that companies are seeking to improve their supply chain in order to become more competitive in the global context they are inserted. Their remarks were based on the relationship with their suppliers, emphasizing that they must operate with technology productive capacity as well as offering a competitive price, which is still seen as a strong decision-making criterion on purchase decisions.

Gattorna (2009) reports that strategic partnerships thrive on long-standing trading relationships based on knowledge sharing, both aligned with their skills, objectives, and detection of market opportunities and threats in a constantly changing market.

Therefore, in this context, we can observe that the relationship within the supply chain is seen as a key factor in the construction and durability of it. Luna & Kricheldorf (2011) explain that the performance of an organization is a result of the relationship of the elements belonging to the chain, such as customers and suppliers, which must be aligned with the same purpose and objectives in order to achieve their envisioned goals.

### 2.3 Supply Chain Implementation: a critical review of the literature

Given that supply chains aim to manage all the internal and external logistic tasks of an organization, it is seen as a potential tool that requires techniques and dedication from entrepreneurs to become viable. The SCM tends to manage all those involved in a network of goods, services or even finance, where due to their demand and complexity, the so-called alliances or partnerships between the industry and its distributors are poorly structured, requiring mechanisms to make them more comprehensive

and efficient (Sucupira, 2016).

In Table 2, Melo & Alcântara (2016) show the main critical factors identified in the implementation of the supply chain process, so this process can be successful.

**Table 2.** Critical factors identified in the supply chain implementation process

Literature	Critical factors
Mentzer & Moon (2005)	Coordination of marketing activities, demand planning and demand forecasting management.
Jüttner et al., (2007)	Coordination between process, configuration and social interactions.
Croxton et al., (2008)	Integration of strategic sub-processes and operational sub-processes with supply chain management processes.
Hilletofth et al. (2009)	Creating a demand, meeting the demand and coordinating these two processes through collaboration.
Rexhausen et al., (2012)	Demand segmentation, demand forecasting, sales and operations planning and level of adherence to demand management.
Anning et al., (2013) e Esper et al., (2010)	Integration and coordination between the processes of demand and the processes of supply.
Melo & Alcântara (2015)	Information sharing; planning and execution of joint actions; inter and intra-company interactions; performance indicators; involvement of senior management; segmentation of customers and suppliers; Information Technology.

Source: based on Melo & Alcântara (2016, p. 572).

Thus, it turns out that the implementation of the supply chain management requires changes in the organization's business process. Therefore, Pires (2004) considers that this process requires management and integration of the flow of information, so it can be done in a timely manner so they can focus on the end customer. And, to achieve the goals of the organization it is necessary to understand how to evaluate the system and control it, a topic that will be discussed next.

The literature review has pointed out warnings and limitations about the progress of the management and the supply chain management to the organization. Wood Jr. & Zuffo (1998) had already found out that almost 150 companies,

informally addressed, were still in the zero phase of integrated logistics, exclusively carrying out intra-firm materials management activities. In its five-phase model (0 to 4), the third and fourth phases deal specifically with supply chain management, which includes suppliers and customers in a systemic view of the company. According to the authors, these companies placed more emphasis on inventory management, material handling and warehousing than on the integration of intra-firm and inter-firm logistic processes.

Accordingly, Saad et al. (2002) also concludes that although managers and specialists of companies had some knowledge about supply chain and its management, they needed a better conceptual understanding as well as new and more systematic approaches for its implementation.

From the theoretical point of view, inconsistent frameworks on supply chain management have been presented due to the incoherent use of elements or constructs in the development of these models. Thus, further studies on supply chain management should be led to a unified theory that contemplates coherent elements in these frameworks (Soni & Kodali, 2013).

The approach of supply chain management and its application in companies is still not entirely clear and needs more private viewpoints, coming from those who are most interested in its practical implementation: the managers themselves.

### 3 Methodology

The research has a descriptive step of quantitative character that was carried out through a questionnaire. The results were tabulated and analysed through the statistical method (Rodrigues, 2015). The purpose of the data analysis is to verify the perceptions or understanding of the companies from the city of São Marcos/RS, in the view of its managers, about the design, importance and management of the supply chain.

The research also presents a qualitative step that aims to corroborate with the findings of the quantitative research. In this step, we interviewed a manager of the purchasing area of a large company belonging to the metal-mechanic sector of the city of São Marcos.

#### 3.1. Quantitative step

To carry out quantitative research, we used a questionnaire with multiple scales (Rosa, 2004) adapted from a master's degree student dissertation. The key questions are presented in the search results chapter.

##### 3.1.1 Population and sample

For Malhotra (2012, p.270), a research population is the sum of all elements that share a common feature set, which is the universe for the research problem. Sampling is defined as a subset of the universe or population, which is selected from statistical methods and can be targeted to a group in the pursuit of the planned objectives through the study (Samara & Barros, 2007; Roesch, 2005).

The population of this research is constituted by companies of the industrial sector in the city of San Marcos, in the state of Rio Grande do Sul, because of their better supply chain structure when compared to those of commerce and services. According to data provided by the City Hall of São Marcos/RS as well as gross value-added analysis, there is a population of 67 manufacturing companies of durable and non-durable goods in the municipality. We used a quantitative research questionnaire to gather information from these companies. Table 3 shows that the city of São Marcos has the same economic distribution by sector when compared to the city of Caxias do Sul, which is the second metal-mechanic hub of Brazil, as well when compared to the State of Rio Grande do Sul as regarding Gross Added Value (GAV). The service sector ranks first, followed by the industrial sector and finally by agriculture and livestock. In terms of revenue, the industrial sector of the city of São Marcos represents 52.10% of its total revenue, followed by the agricultural activity 18.06%, wholesale and retail trade 19.85% and services 9.96% (São Marcos City Hall, 2016).

**Table 3.** Comparison of the representativeness of the sectors in the state economy

VARIABLES	VAB FARMING (in BRL)	VAB INDUSTRY (in BRL)	VAB SERVICES (in BRL)	GDP PER CAPITA (EACH PERSON) (in BRL)
São Marcos	≈ 29 million	≈ 166 million	≈ 308 million	27,991.19

Caxias do Sul	≈ 232 million	≈ 7 billion	≈ 11 billion	47,586.65
Rio Grande do Sul	≈ 28 billion	≈ 72 billion	≈ 208 billion	≈ 357 billion

Source: FEE. Centre for Economic and Social Indicators, Regional Accounts Core (2016/2017).

### 3.1.2 Data collection

Data collection was performed through a questionnaire obtained from the final dissertation of Rosa (2004). We made some changes in the questionnaire to align it with the objective proposed in this research. Some of the original questions were not used for the reason mentioned above. We also standardized the rating scale from 1 to 5. The original questionnaire used different scales and denominations ranging from 1 to 3, sometimes 1 to 5 and sometimes 1 to 8, and some questions presented alternatives of simple and multiple-choice responses. We sent the questionnaire for data collection to the 67 companies of the city of São Marcos/RS.

### 3.1.3 Pre-test and questionnaire

According to Gil (2010), the pre-test is used in order to evaluate the data collection instrument, verifying if the selected respondents identified difficulties in the understanding of any questions, as well as if there are any difficult terms to understand that can be confusing.

Firstly, we interviewed a professional from a large company based in Caxias do Sul, who suggested modifications in some academic terminology so it would be clearer for the target audience.

After that, the questionnaire with the suggested changes was sent to a professor with Ph.D. in Administration of the University of Caxias do Sul, who analysed and suggested the consolidation of some questions, since they addressed the same topic, avoiding response repetition and contradictions. After validating the questionnaire as regarding its concept and writing, it was sent to the 67 industrial companies of the city of São Marcos/RS. We also requested that they register their agreement on the presence, implementation and importance of practices and actions, as well as critical aspects of processes developed with suppliers and customers in the context of the supply chain management.

## 3.2 Qualitative step

We applied the qualitative depth and exploratory research method with the use of a questionnaire based on the quantitative questionnaire, aiming to confirm the general results of field research (Samara & Barros, 2007; Malhotra, 2012).

### 3.2.1 Qualitative data collection

We conducted an interview at a big supplier of parts and components for the automotive truck industry, which was founded in 1962 and is the oldest company in the city of São Marcos/RS. The company was selected among the 67 companies of the population because it has a higher level of supply chain management implementation. The respondent was the supply manager, who has been working in this area for 16 years. He has a Law degree from UCS, Post-Graduation in Business Management and Business Education and a master's degree in Economics.

Data were collected through a planned interview with the aid of voice recording in order to obtain a better interpretation of the interviewee's answers. Interviews were carried out according to the script with questions about strategy, constitution and relationship with the suppliers and customers.

### 3.2.2 Quantitative analysis

Quantitative analysis was performed through the analysis and interpretation of the respondent's answers. The text involving the content of his interview presented in the form of a table next to each question to facilitate its understanding.

## 4 Results Presentation

As reported in the methodology, quantitative research was carried out in the 67 companies of the city of São Marcos/RS (representing 100% of the population), from which we obtained a sample of 42 questionnaires answered (corresponding to 62.69% of the population).

### 4.1. Analysis and interpretation of quantitative results



According to Marconi & Lakatos (2008) statistical tabulation and data analysis is represented through tables and charts, and its interpretation is the step that aims at adding a more comprehensive definition to the interviewee's answers, linking them to the other practical and theoretical foundations obtained in the study.

Based on the 42 companies that participated in the research which represented the study population, 40% of the respondents were buyers, 12% directors, 14% managers and 34% managing assistants.

In Table 4, the employee scale is divided according to data from SEBRAE (Brazilian Micro and Small Business Support Service) (2013), in which the size of the companies is classified according to the total number of employees. It is evident that most of the companies participating in the research are classified as micro-enterprise because they have up to 19 employees, as well as small enterprise which have between 20 and 99 employees. On the other hand, there is a company in the region with 500 employees which is classified as a big enterprise.

**Table 4.** Total number of employees

Total Number of Employees	Frequency	Percentage
1 to 19 employees	20	48%
20 to 99 employees	16	38%
100 to 499 employees	5	12%
Above 500 employees	1	2%
<b>Total</b>	<b>42</b>	<b>100.00%</b>

The metal-mechanics/metallurgical industry stands out as the most representative of the sample with 55%, followed by the furniture industry reported with 19% (Table 5).

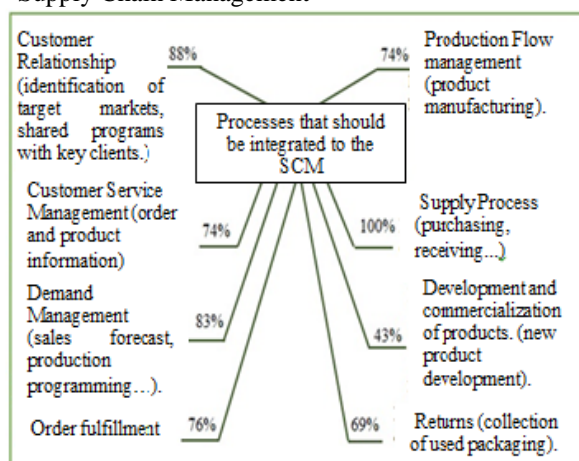
**Table 5.** Business Segment

Business Segment	Frequency	Percentage
Food	0	0.00%
Auto Parts	1	3%
Metal-Mechanics Industry/Metallurgical	23	55%
Furniture	8	19%
Other	2	5%
Plastic/Polymers	4	9%
Wine Industry	4	9%
<b>Total</b>	<b>42</b>	<b>100.00%</b>

Figures 1 to 6 show the % of companies that answered affirmatively when asked about the importance of being present and contributing or impeding the development of the management and operation of the supply chain.

In Figure 1, when the managers were asked about which of the processes listed should be integrated into the Supply Chain Management (SCM), there was a high level of agreement, specially about the supply process reaching 100% of respondent companies, with the exception of product development, with less than 50%. This may demonstrate that the companies interviewed consider product development as an internal company activity, an individual technology that should not be brought into the scope of the context of supply chain (SC) management. The result may be associated with lack of trust on suppliers, upstream end suppliers and downstream end distributors and customers. The trust between buyer and seller is one of the key elements for the implementation of supply chain management (Tangpong et al., 2015, Melo & Alcântara, 2015) and appears here as a dissonant aspect for the sample analysed.

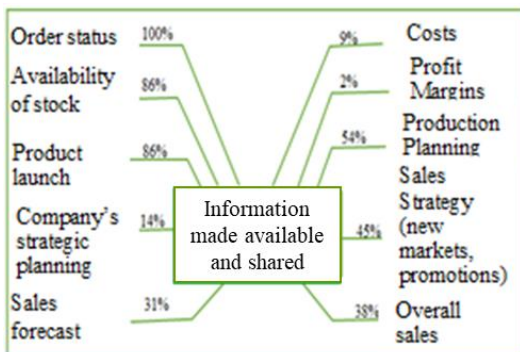
**Figure 1.** Processes that should be integrated into the Supply Chain Management



Companies were asked about the type of information that should be made available or shared with SC partners, suppliers and customers. The results have demonstrated (Figure 2) that the companies are conservative and careful about their sales information, costs, profit margins, strategic planning and sales forecasting, leaving them limited to the internal scope of the organization. This is evidenced by the low percentages of companies that have agreed to these actions. Even production planning and sales strategies present

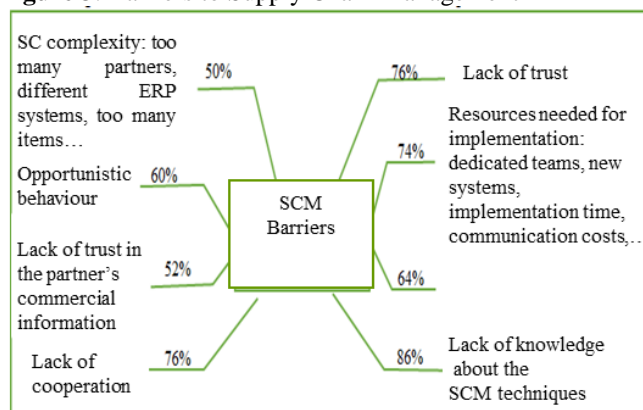
ambiguous results, not showing predominance in sharing or not. What most of these companies agree to share is what they already share with customers and suppliers: order status, product launch and stock availability. These actions are all essential for supplying and sales, focusing on the transactional aspects of business sustainability. This result corroborates with that obtained by Wood Jr. & Zuffo (1998) 21 years ago, most respondents ranged from Phase 0 to Phase 1 of logistics and supply chain integration. Melo & Alcântara (2015), Anning et al. (2013) and Esper et al. (2010) consider the sharing of information in the chain as a critical element for the implementation and success of supply chain management.

**Figure 2.** Types of Information made available and shared with partners



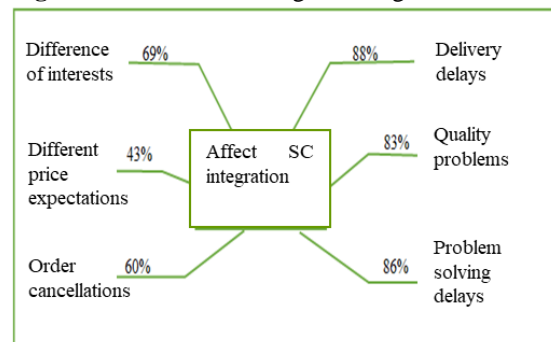
The lack of knowledge about SCM techniques was the barrier that had the highest percentage of companies (Figure 3) agreeing that, once present, it hinders the implementation and management of the SC. The other barriers also presented most companies being adherent to the damage they cause to the SCM. This result is fully in line with the findings of Saad et al. (2002) points out that greater knowledge about the SCM theme facilitates its implementation, improving the performance of the chain.

**Figure 3.** Barriers to Supply Chain Management



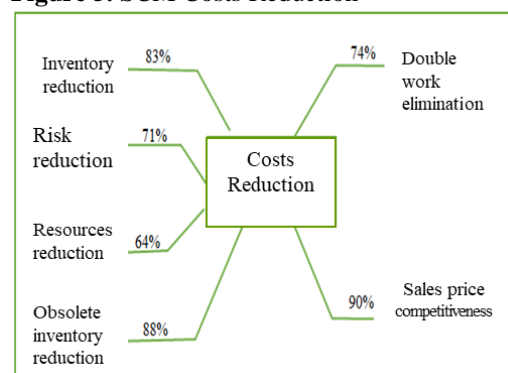
With reference to the factors that affect SC integration (Figure 4), and except for the "different price expectations", the other factors were considered as very influential for the SC integration by most companies. The most significant percentages are present in those aspects that are known to interfere directly in the SC material flow. Aspects such as delivery delays, quality problems and problem solving delays can interrupt the continuous supply of resources along the chain, compromising the performance of the internal chain of operations of each company, and the external performance of the SC, as pointed out by Croxton et al. (2008), Hilletoft et al. (2009) e Rexhausen et al. (2012).

**Figure 4.** Factors affecting SC integration



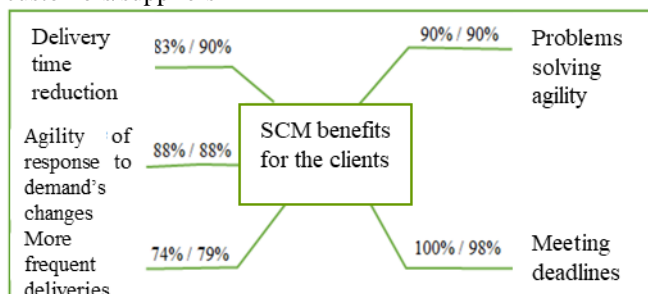
Regarding the direct benefits that the SCM context can offer, a significant majority of the respondent companies, (Figure 5) consider that this practice contributes greatly to inventory, risk and resources reduction, obsolete inventories as well as the elimination of double work and sales competitiveness. This result is supported by the Mentzer & Moon (2005) promulgations on the coordination between demand management and internal planning that the supply chain management should promote.

**Figure 5.** SCM Costs Reduction



The SCM greatly contributes to customer service attributes for most of the sample companies, such as reduced lead time, responsiveness under varying demand, more frequent deliveries, agility in problem solving and deadline compliance (Figure 6). These are the aspects that confer performance and market competitiveness to overcome competition or to act in the SC. The first percentage refers to the companies answers in relation to the customers, and the second percentage is in relation to the suppliers, which is based on the perception that these attributes also tend to perform better for both customers and suppliers.

**Figure 6.** Attributes that tend to be improved by the SCM for customers/suppliers



#### 4.2 Analysis and interpretation of qualitative data

According to Gil (2010), the analysis of the answers obtained through qualitative research consists in assigning a designation to the relevant concepts that are found in the document's texts, in the transcription of the interview and in the records of observations. The responses of the interview conducted with the supply manager (Table 3) were transcribed, revealing that his organization has already a first-tier supply chain management structure of customers and suppliers (through contracts and supply rules - ISO standard). According to the manager, this is seen as a strong point to establish their partnerships with various automakers (customers).

Based on the interview, we can observe that because of its big size, the organization has a supply chain that was initially implemented because of compliance with the automaker's supplying standards. However, because of the decreasing supply demand, due to the country's economic and financial problems, the automakers stopped making big purchases, thus impacting on the chain management process. The SC was supposed to have expanded by now, but it halted on its first tiers. Another factor that has negatively

influenced the development of the chain was the fact that it was a family business. Rooted in a vertical administration structure, the organization reflected the difficulties of changing internal processes as well as releasing funds for such procedures.

**Table 3.** Transcript of interview with the manager responses

QUESTIONS	ANSWERS
1. Has your company adopted the Configuration or the Supply Chain Management strategy?	"Yes, we have supply chain management."
2. Is it constituted by suppliers, by customers or by both?	"It is currently made up of customers (mostly automakers, which have drastically decreased demand levels due to the current economic and financial crisis in the country), our partners, first-tier suppliers and our organization. "
3. How is the relationship with the suppliers that are part of your supply chain? (contracts, rules and regulations).	"The relationship happens through contracts. We have a supplier manual with rules of delivery, fines for non-compliance as well as penalties for quality and delivery problems. Tabulation and graphical analysis are done to list the three critical suppliers in the chain, the ones with the greatest supply problems. These are called for an alignment meeting and to verify the real reasons for such problems. We also visit the supplier to help with what we can, and if the problem persists, we end the partnership and look for a supplier replacement. "
4. Is this relationship only with the first-tier, or with the other tiers too?	"We only work with the first-tier, but we are already trying to maintain a relationship with the other tiers, in order not to affect the end customer. Because it is a family business and because every process is new, it also depends on well-planned strategic planning, organization, direction, and control. We rely on qualified people, trained staff for inspection and control, as well as money to purchase efficient software that will avoid inventory/delivery failures to the maximum. Once everything is aligned and functioning systematically as a

	single integrated process, we can achieve agility and efficiency in our business processes through a strategic supply chain stretched to the other tiers. "
5. Is your company part of the supply chain of any customers?	Yes, because we have many loyal customers to our brand and to our product quality.
6. If so, which customers? The most important ones? The most strategic ones? The A clients? Among others.	"With all the customers in the OEM market. It is an acronym in English that means the Original Equipment Manufacturer, which is our case in relation to the automakers: Mercedes Benz of Brazil, Renault, Nissan and Fiat are the companies which we have partnership. Therefore, our company manufactures a certain product developed by the automaker's engineering development under total secrecy. "
7. What was the criterion used by customers to include your company in their supply chain?	"A relevant and strategic factor was the ISO/TS standards certification. It is mandatory for automaker's suppliers, and we were already certified before they signed with us. This has given us a competitive edge at the time. We have products all over Brazil, taking our brand everywhere. The company has more than 50 years of experience in the industrial sector. "

Based on the responses transcribed in Table 3, we can verify the risks that members of the supply chain are subject to as a result of external market problems, or internal problems of any of the members, which affect the supply chain as a whole. This risk-sharing characteristic should be known (Soni & Kodali, 2013) and internalized by member companies as a sine qua non feature in supply chain implementation and should not be underestimated.

## 5 Conclusion

As represented in this study, the supply chain consists of cooperation between organizations seen as a dependency-based business arrangement in order to foster strategic positioning and benefit operational capacity (Bowersox, et al., 2014).

In this sense, starting from the research problem, "what processes and aspects are important for the development and success of supply chain management according to the managers themselves?".

In order to meet the pre-established objectives, we used quantitative research methodology by applying a validated and adapted questionnaire within a population of 67 industrial companies, of which 42 were the respondents. We also carried out a qualitative research of depth with exploratory character through a questionnaire based on the quantitative questionnaire.

In this context, the quantitative research showed an industrial audience represented mostly, by micro and small companies from the metal-mechanic sector. From the sample of 42 companies, only one company, the biggest one, has a semi-structured first-tier supply chain, which is more likely to have a well-structured supply management as it has more demands and more capital for investment.

When analysing the other factors, we also concluded that the majority of participants are composed of conservative family businesses, descendants of Italian immigrants who preserve their sales and costs information carefully, which is characteristic of a more individualistic culture such as this one that has established in the hilly region of the state (Heredia, 2017). Consistent with this fact is that when analysing the factors that affect the supply chain, it becomes evident that most consider the lack of trust and lack of knowledge as a barrier to the relationship with the members of the network and to the possible implementation of the SCM.

Reduced lead times, quick response to market demand, more frequent deliveries, problem solving agility, and meeting deadlines are the benefits provided by SCM in both supplier and customer relationships.

Therefore, the information gathered through quantitative research was the base for the analysis of the qualitative interview, which identified a family business that has been in the market for over 50 years, and still has not changed its strict culture-based behaviour. However, this company needs to

reformulate its thinking, breaking paradigms as well as changing its vertical way of conducting processes, to a systemic view of the whole. These changes must begin at the strategic point of the organization, which is the board of directors.

The information collected from the interview meet the beliefs of the micro and small companies that answered the quantitative research. We identified the same line of thought in the participants, on the topic of lack of trust and organizational culture in all relevant relationship issues between members.

The research problem and objectives of this study were fully accomplished. Through quantitative and qualitative research methods applied in the companies of the city of São Marcos/RS, we could verify that when properly managed and administered, the supply chain confers great benefits to the organizations that implement them.

The theoretical contributions of this research refer to the predominance of activities being conducted intra-firm, geared, according to Wood Jr. & Zuffo (1998), essentially for the administration of materials. This finding can be attributed to the small and medium size of the majority of the sample companies. Also supported in the literature by Tacconi et al (2014), only information about the activities to maintain supply and the feasibility of production programs are shared with suppliers and customers, becoming a paradox when the lack of confidence is pointed out as a barrier to the implementation of the SCM. According to the respondents, another finding that corroborates with the literature is the need of having a greater conceptual knowledge about the functioning and results obtained from the SCM (Saad et al., 2002).

In practical matters, the qualitative study reveals that bigger companies, which are members of the first-tier supply chain of automotive vehicle manufacturers, interact with suppliers and customers, also of the first tier, more structured and functionally operative. This inter-firm relationship aims at achieving the desired performance objectives of the SCM or SC which are: price competitiveness, shared risk of demand oscillations, downstream integrated production programs with the automakers, and we can also say that there is a guaranteed demand in periods of economic stability (Soares et al, 2017; Vanelle & Salles, 2011). The empirical results of this study

can contribute to the ratification of the SCM theory, which still lacks an integrative systemic view (Cousins et al., 2006; Jütner et al., 2007) and the description of more aspects that facilitate and prevent such integration .

## **6 Implications and Future Research**

This study corroborates with what the literature has indicated as the implicit factors in the SC interaction connections, which may favour its implementation and management, or, impair, and reduce the competitiveness of the chain. According to the managers interviewed, a desire of better serving the client as regarding delivery time, inventory reduction and information sharing that is not related to new products, are the aspects that contribute to the SCM effectiveness. On the other hand, mistrust, lack of cooperation and opportunism, accompanied by an unprecedented uniqueness in the sample, which is the lack of knowledge about SC and SCM, make it difficult to fully implement it. These findings promote practical implications on the side of managers in seeking the knowledge about the technical, functional and strategic characteristics of the configuration of the SC in order to apply the concept correctly, obtaining the maximum possible performance. The theoretical implications are related to the question: what size should be a sustainable supply chain that is viable and trustworthy to its members? This question may base a future research in a developed and manageable industrial hub due to its small size, that is of the city of São Marcos. The results obtained can be used to reproduce the same research in larger industrial hubs with greater number of supply chains.

## **7 Limitations of the Study**

The research in its original scale was applied in larger companies than the ones cited in this article, making it difficult to accurately assess the distortions that this can cause in the reliability of the results. Since all the scales were standardized to vary from 1 to 5 (1 = unimportant and 5 = very important) and the sample size is practically equivalent in both studies. We believe that the difference in size did not cause significant distortions in the analyses. In addition, the number of questions was reduced in relation to the original

questionnaire and considering that the response rate in this article was greater than the one originally obtained, we believe that the distortions are within the limits considered acceptable for the survey type with adapted scales.

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