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ANALYSIS OF THE COMPETITION, COOPERATION, AND COOPETITION: A COMPARISON BETWEEN PLANNED AND UNPLANNED RETAILER CLUSTERS

ANÁLISE DA COMPETIÇÃO, COOPERAÇÃO E Coopetição: Uma Comparação Entre Clusters Varejistas Planejados e Não Planejados Na Cidade De São Paulo

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ABSTRACT

Purpose – The purpose of this study was to verify if there are significant differences between planned and unplanned retailer clusters about the competition, cooperation, and coopetition.

Design/methodology/approach – An exploratory and quantitative study was carried out by an Exploratory Factor Analysis and Multigroup Analysis-PLS. A questionnaire was applied to 535 companies belonging to the planned and unplanned clusters of the automobile and furniture retail in São Paulo city.

Findings – The findings indicate that is possible to identify, in both clusters surveyed, that there is no difference about the cooperation/collaboration analyzed, as well as about the coopetition whether they are low or high. Unlike the competition that presented greater predominance in the unplanned clusters. Thus, we can say that in these clusters, there is a greater deal of competition than cooperation. The research findings also could identify that when a company is inserted in a cluster, it has different strategy for retail businesses relationships of cooperation, competition and coopetition.

Originality/value – The major contribution of this study to the literature and administrative implications is the identification that when a company is inserted in a cluster, it has a different strategy for retail businesses relationships of cooperation, competition and coopetition.

Keywords: Cooperation; Competition; Coopetition; Clusters; Retailer clusters.

RESUMO

Objetivo - O objetivo deste estudo foi verificar se existem diferenças significativas entre clusters varejistas planejados e não planejados quanto à concorrência, cooperação e coopetição.

Desenho / metodologia / abordagem - Foi realizado um estudo exploratório, quantitativo por meio de Análise Fatorial Exploratória e Análise Multigrupo-PLS. Foi aplicado um questionário com 535 empresas pertencentes aos clusters planejados e não planejados do varejo de automóveis e móveis da cidade de São Paulo.

Principais resultados – Os principais resultados indicam que foi possível identificar, nos dois clusters pesquisados, que não há diferença quanto à cooperação / colaboração analisada, bem como quanto à coopetição. Ao contrário da competição que apresentou maior predominância nos clusters não planejados. Assim, foi possível afirmar nesses clusters há maior competição do que cooperação. Os resultados da pesquisa também puderam identificar que quando uma empresa está inserida em um cluster possui uma estratégia diferenciada para as relações de cooperação, competição e coopetição dos negócios de varejo.

Originalidade / valor - A grande contribuição deste estudo para a literatura e implicações administrativas é a identificação de que quando uma empresa está inserida em um cluster, ela tem uma estratégia diferenciada para as relações de cooperação, competição e coopetição dos negócios varejistas.

Palavras Chaves: Cooperação. Competição. Coopetição. Clusters Varejistas.

1 INTRODUCTION

The consolidation of the theories about the competition and cooperation with the aim of mutual gains between competing firms has focused, in a general way, in regional *clusters* of business, business networks, industrial districts, *joint ventures*, local productive arrangements (APLs) and strategic alliances, especially with greater intensity in manufacturing organizations, according to the studies of Altenberg & Meyer-Stamer (1999); Bengtsson & Kock (2000); Porter (1998); Knorringa (1999); Milaneze & Battle (2008). However, the retail business *clusters* in large centers have become an object of relevant study, as recent researches of Teller (2008); Zaccarelli *et al.* (2008); Parente *et al.* (2012); Telles *et al.* (2013) and Gaspar *et al.* (2015) have shown, increasingly, the presence of competitive advantages related to these organizational formats.

Despite the intense research on *clusters* in the manufacturing companies and the importance of the geographical concentrations of industrial districts, few studies have focused on the retail geographical concentration and the intense competition observed in these settings.

Silva (2016) classifies the street retailer commercial clusters as unplanned *clusters* and the shopping centers as planned *clusters*, expressions that will be used in this study. According to the author, the planned commercial *clusters* derive from a governance, once they are planned according to the needs of the retailers. On the other hand, the unplanned *clusters* appear randomly on the streets because their entrepreneurs seek strategic locations to install themselves.

In the big cities like São Paulo, it is common the concentration of retail stores that sell the same type of product or complementary products, inserted in the same place. It is possible mention the examples: Rua Barão de Limeira in the segment of motorcycles and accessories, waste furniture located at Rua Cardeal Arco Verde, luxury cars located at Avenida Europa, materials and timber for carpentry located at Rua do Gasômetro, articles made of rubber located at Rua Florêncio de Abreu, shoes located at Rua Bem-Te-Vi, among others (Parente, 2009; Telles *et al.*, 2013; Aguiar & Pereira; Donaire, 2014, Gaspar *et al.* 2015; Silva, 2016). Another example is the occurrence of segmented *malls* of furniture and vehicles, such as the *Shoppings* Interlar and Lar Center (furnitures), *Shopping* Crystal (cars) with units in the south, and east zones and the region of Grande ABC (Silva, 2016).

The coopetition has been studied as an instrument that meets the strategic deficiencies



of the competitive and cooperative arrangements, including the strategies with coopetition relationships that share positive and negative effects to compete and cooperate at the same time. With this, it is demonstrated benefits in this specific configuration, to develop or explore the sharing of essential experiences and competences in a cooperative manner, with a focus on the competitive advantages arising out of this interaction (Mitchell; Agle & Wood, 1997; Bengtsson & Kock, 2000; Leão, 2005; Bengtsson & Kock, 2014).

According to the above mentioned, it is justified the realization of this research, because there is a little conceptual clarity about the phenomenon of the coopetition between the companies, insufficient theoretical basis in the studies on coopetition and the necessity of the empirical research on a coopetition environment. It is still justified the choice of the planned and unplanned retail *clusters* of cars and furniture, in virtue of these two segments act both in planned clusters (*shopping malls*) as in the street shops (unplanned clusters), thus facilitating a multigroup comparison. Finally, this research aims to verify if there are significant differences between planned and unplanned retailer *clusters* in relation to the competition, cooperation and coopetition.

The contribution of this study is related with the empirical evidence of the competitive advantages for the planned and unplanned commercial *clusters*, as indicated recently and even superficially in the literature (Silva, 2016). Thus, this study focus specifically on two retailer business segments: cars and furniture, both active in the city of São Paulo (SP). The references taken are the studies of Krugman (1991); Porter (1998); Bengtsson & Kock (2000); Teller (2008); Teller; Reutterer & Schnedlitz (2008); Zaccarelli *et al.* (2008); Amato Neto (2009); Telles *et al.*, 2013 and Bengtsson & Kock (2014).

2 LITERATURE REVIEW

2.1 Cooperation, competition and coopetition

Currently, with the fierce competition found in many sectors, there are few companies that get enter isolated into new markets and develop innovative products (Leo, 2005). Thus, with the high competitiveness, the organizations have been developing new strategies for survival in the market, such as, for example, develop cooperative relationships, in which the companies cooperate and compete at the same time, experiencing the same problems and opportunities (Oliver, 1990, Verdu & Silva, 2012; Bengtsson; & Kock, 2014; Silva, 2016).

According to Silva (2016), the relationships of cooperation, such as business strategy, supplement themselves, as a result of the competition that, if considered isolated, probably should not sustain a desirable return for the organizations, when compared this return with the strategies of cooperation and competition. The tendency to collaborate and compete simultaneously with the competitors is what many authors have defined as coopetition (Lado; Boyd & Hanlon, 1997; Leão, 2005), according to Brandenburger & Nalebuff (1996), Azevedo; Carvalho & Silva (1999) Leão (2005) and Bengtsson & Kock, (2000, 2014).

2.2 Retail clusters

Currently in large urban centers, there is a geographical concentration of retail businesses in the same segment, acting in the same location. Only in the metropolitan region of São Paulo, Silva (2016) identified 68 retail segmented streets (unplanned *clusters*) and 56 *retail malls* (planned *clusters*). According to the author, this type of organizational format has demonstrated competitive advantages, such as: searches mutual benefits to join resources, capabilities and complementary



skills, innovation, complementarity, among others.

Thus, authors such as Lado; Boyd & Hanlon, (1997); Bengtsson & Kock, (2000); Zhang *et al.*, (2010); Song & Lee, (2012) and Bengtsson *et al.*, (2013), assure that instead of taking advantage of the actors involved, the organizations that accept this type of strategy seek share values to sustain and maintain reciprocal interdependencies.

3 METHODOLOGICAL PROCEDURES

In order to achieve the objective proposed in this research, an exploratory and quantitative study was conducted with acting retail companies in *clusters* of planned and unplanned automobiles and furniture belonging to the city of São Paulo. For this purpose, we used a structured question-naire, which was applied to 535 companies from which 298 companies belonging to the unplanned *clusters* and 237 companies to planned clusters.

3.1 Universe, sampling and research sample

In order to identify the amount of unplanned *clusters* on the streets and avenues of the city we used the reportage of Veja magazine - Guide of São Paulo (2013), about the thematic streets, which identified the existence of 68 unplanned retailer *clusters* in the city. From this total, five refer to the segment of cars and seven operate in the trade of furniture. Subsequently, it was conducted a survey on CNEFE (National Register of Addresses for Statistical Purposes), in the IBGE site (2013), to identify the number of existent retail companies in each street/avenue in the segments of automobiles and furniture.

In relation to the planned *clusters*, we conducted a survey in the Brazilian Association of *Shopping* Centers - ABRASCE (2013), which indicated the existence of 56 *shopping malls* in the city. From this total, only seven sell cars and five sell furniture. The identification of the quantity of existing stores in the planned clusters was performed by means of research in the websites of each *shopping*.

Thus, from the planned and unplanned *clusters* selected as objects of study concerning this research, it remained the following: (a) unplanned *clusters* of furniture - three streets; b) unplanned *clusters* of cars - five streets; c) planned *clusters* of furniture - four *shopping* malls and, finally, (d) planned *clusters* of cars - seven *malls*.

From the survey of the number of streets and *shopping malls* and the number of shops in each selected *cluster*, we arrived to the survey universe that is composed by 1101 stores of planned and unplanned *clusters* concerning the segments of furniture and cars. The subjects of the research were the owners/managers of the companies inserted in the retailer *clusters* mentioned.

For the calculation of the sample it was used the statistical formula of unknown sampling frequency, in virtue of being a finite population, according to Bussab & Morettin (1986):

$$n = \frac{z^2 \cdot f(1-f) \cdot N}{e^2 \cdot (N-1) + z^2 \cdot f \cdot (1-f)}$$

Where: f = unknown sample frequency with value as 0.5; Z = confidence interval of 95%, which is equivalent to 1.96; N = universe of stores in each *cluster*; e = error of 5%. With the calculation it was estimated a sample of 615 companies, belonging to both planned and unplanned *clusters* of automobiles and furniture.

The method of selection of the interviewees was the systematic sampling (Hair Jr. et al.



2005), probabilistic, considering that the authors had knowledge of the universe of companies belonging to each *cluster* (planned and unplanned). Therefore, the systematic leap was adopted from the division of the universe of 1101 companies by sampling of 615 of them, whose result is approximately 2. However, due to the difficulty of accessibility in the planned *clusters*, it was possible to search a total of 535 companies.

The demographic variables served to characterize the profile of the respondents. The other parties were drawn up on the basis of theory, seeking to make a comparison among **the existing co-operation and competition in the coopetition** that occurs between the store owners of the planned and unplanned retailer *cluster*. Figure 1 details the theoretical basis that gave rise to the research instrument of each construct, with 51 indicators.

Constructs	Theoretical Basis
	Luo (2005); Lado; Boyd & Hanlon (1997); Bengtsson & Kock (2000. 2014); Loureiro
Cooperation	(2007); Zaccarelli et al. (2008); Amato Neto (2009); Kim et al. (2013); Silva (2012).
	Porter (1998); Bengtsson & Kock (2000); Kim et al. (2013); Ferreira (2012.); Silva
Competition	(2012); Zaccarelli et al. (2008); Teller (2008); Bengtsson & Kock (2014).
	Nalebuff & Brandenburger (1996); Lado; Boyd & Hanlon (1997); Bengtsson & Kock (2000); Gnyawali & Madhavan (2001); Dagnimo & Padula (2002); Luo (2005,2007);
Coopetition	Raweewan (2006); Leão (2005); Merofa & Bueno (2009); Gnyawali & Park (2009); Li; Liu & Liu (2011); Silva (2012); Enberg (2012); Donato (2013); Bengtsson & Kock (2014).

Figure 1 A theoretical basis for the eleberation of the research just	······································
Figure 1- A theoretical basis for the elaboration of the research instr	ument

Source: authors.

The marking of the answers happened by means of a bipolar semantic scale as 0 (zero) to 10 (10) points (Hair Jr. *et al.*, 2005), in which the respondent indicated the degree of concordance for each assertion.

After the first version of the research instrument, this was submitted to analysis and validation of four experts in the field, in order to verify whether the indicators proposed in the construct (demographic characteristics, cooperation, competition and coopetition) were appropriate to answer the research question. Then, it was carried out a pre-test with 22 companies located in furniture retailer clusters that were not part of the sample, seeking to identify the level of understanding of the content of the research instrument.

3.3 Method of data analysis

In order to analyze the constructs cooperation, competition and coopetition in the retailer clusters of planned and unplanned automobiles and furniture, in a first moment was used the Exploratory Factor Analysis - EFA), in virtue of the constructs cooperation, competition and coopetition are large and for not knowing the relationship of dependency between the variables. In addition, by not having the certainty that the variables had a relationship structure and even if the existing structure between the variables of the constructs under analysis could be interpreted in a consistent way. Thus, the data were reduced to a manageable size, which allowed a better interpretation of the results achieved. Therefore, it can be argued that the EFA was used to verify the unidimensionality of the factors as input to the use of the structural equation modeling.

Before analyzing the EFA results, it is necessary to first check your premises, as the determination of Prearo *et al.* (2011), such as the size of the sample, multivariate normality and multicollinearity, by means of the tests of Sphericity, Bartlett, *Kaiser Meyer Olkin* - KMO, *Measure of Sampling*

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Adequacy - MSA and correlation matrix.

As to the size of the sample, this research meets the assumptions of the method, with the survey of 535 companies. The other assumptions: MSA tests- *Measure of Sampling Adequacy* and KMO - *Kaiser-Meyer-Olkin* of each construct: cooperation, competition and coopetition have been complied. With respect to the multivariate normality, it should be noted that Eisenbeis (1977) and Huberty (1994) *apud* Prearo *et al.*, (2011, p.628) indicate the relaxation of this assumption when the multivariate normality is complied by means of a fairly large sample, as is it the case of this research.

By means of the EFA, 9 (nine) variables were eliminated, being 3 (three) of each of the constructs (cooperation, competition and coopetition) which had little adherence to the construct or with a correlation higher than 90% comparing with other variables that exist in the same construct.

Subsequently, to compare the constructs in the planned and unplanned retailer clusters, the Multigroup Analysis was used, based on minimum partial squares-PLS. Chin (1998), Keil *et al.* (2000), Henseler (2012) and Prearo (2013) claim that this technique is known as PLS-MGA.

In relation to the PLS-MGA, the quality criteria were analyzed first. This was carried out by means of AVE, *R-Square*, compound reliability and *Cronbach's Alpha*, in order to make the comparison of the constructs cooperation, competition and coopetition between the planned and unplanned *clusters* of automobiles and furniture (Hair Jr. *et al.* 2009; Prearo, 2013; Ringle; Silva & Bido 2014).

3.4 Research theoretical-empirical model

The theoretical-empirical research model is presented in the Figure 2.

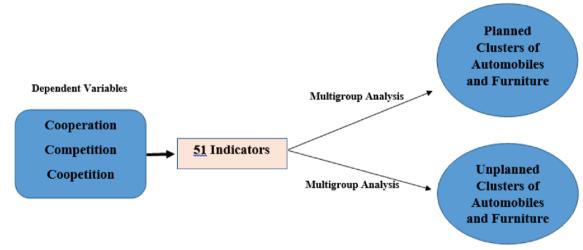


Figure 2- Research theoretical-empirical model

Source: authors.

The theoretical-empirical model combines the three constructs (cooperation, competition and coopetition) in the comparison between the planned and unplanned trade retailer *clusters* of automobiles and furniture to check if there are significant differences between them in relation to the competition, cooperation and coopetition.



4 PRESENTATION AND ANALYSIS OF THE RESULTS

4.1 Brief characterization of the enterprises

From the prospect of 535 companies in the field research, 298 (56%) (group 1) belong to unplanned *clusters* and 237 (44%) (group 2) belong to the planned *clusters*.

4.2 Exploratory factorial analysis (EFA) of the constructs

The EFA was used to verify the unidimensionality of the factors as a result of entry to the posterior employment of the Multigroup Analysis. For the extraction of the factors of the constructs, by means of the EFA, their premises were first checked. For the appointment of the factors of each construct, it was taken into account the indication of Hair Jr. *et al.* (2009) that it should be appointed the factors by means of the variable with the highest factor load. In addition, the order of the variables obeyed the respective power of explanation.

Thus, the construct Cooperation/collaboration was formed by two factors: Exchange of Joint Information - EJI: V17, V16, V15, V13, V12 and V14 and Joint Actions - JA: V9, V8, V10, V11 and V18. The construct Competition was formed by four factors: Infrastructure -IF: V21, V22, V23 and V24; Competition - CPT: V31, V33, V29 and V34; Conflicts of Interest-CI: V36, V35 and V28 and Strength of the Clusters-SC: V26, V27 and V25. Finally, the construct Coopetition was formed by four factors: Market value - PF: V54, V53, V49, V52, V55 and V58; Cooperation: V59, V60, V61, V57 and V56 and Profitability - PF: V41, V42, V40, V43 and V45 and cost reduction - CR: V51, V50 and V46. According to Hair Jr. *et al.* (2009) and Prearo (2013), the factors extracted from the EFA are called first-order constructs and the constructs Cooperation, Competition and Coopetition are called as second order.

4.3 Quality criterion of the multigroup analysis

For the Multigroup Analysis, the quality criteria were initially analyzed. This evaluation was performed by means of AVE, R-Square, compound reliability and Cronbach's Alpha, in order to identify the relationship of the constructs and what most influenced the coopetition between planned and unplanned clusters.

Two groups were generated: 1 (unplanned clusters) and 2 (planned clusters). The shops of the group 1 are 298, while the total of the shops that make up the group 2 is 237. The Table 01 illustrates the AVE extracted from Multigroup Analysis of the two clusters.

2nd Ord. Const. No/PLN	1st Order Const.	AVE No/PLN	p-V. "t" No/PLN	2nd Ord. Const. PLN	AVE PLN	p-V. "t" PLN
AVE= 0.549	EJI	0.663	0,000	AVE=0.549	0.585	0,000
Coop/Collab.	JA	0.598	0,000	Coop/Collab.	0.574	0,000
	IF	0,685	0,000		0.588	0,000
AVE= 0.295	CPT	0.465	0,000	AVE= 0.273	0.625	0,000
	CI	0.581	0,000		0.405	0,000
competition	SC	0.519	0,000	competition	0.633	0,000
	VL	0.673	0,000		0.594	0,000
AVE= 0.395	COOP	0.618	0,000	AVE= 0.434	0.626	0,000
	PF	0.637	0,000]	0.632	0,000
Coopetition	CR	0.554	0,000	Coopetition	0.688	0,000

Table 01- Average variance extracted from Multigroup Analysis.

Source: Prepared by the authors.



We can notice that in the Table 01 both the second-order constructs as the Cooperation/ Collaboration, Competition and Coopetition, as the first order constructs are statistically significant, because in all the cases the "t" test has significance ($p \le 0.05$), meeting the referral made by Hair Jr. *et al* in both *clusters*. (2009) and Prearo (2013).

The Table 01 also illustrates that the proposed model does not converge to a satisfactory result regarding the second-order constructs as the Competition, Cooperation/Collaboration and Coopetition, because only the Cooperation/Collaboration in the unplanned clusters with AVE=0.549 meets the indications of Prearo (2013) and Ringle, Silva & Bido (2014), which should be greater than 0.5. The second-order constructs, in both the clusters, presented AVE with values below 0.50. As to the first-order constructs, we can see that CPT has not met the theory in the unplanned clusters, but has met in relation to the planned clusters, because the AVE value was 0.625. The construct CI comply with the theory in the planned clusters with AVE= 0.581. The other constructs of first order, JA, COOP, SC, IF, PF, CR, EJI and VL comply with AVE from 0.50 in both clusters.

2nd Ord. Const.No/PLN	1st Order Const.	No/PLN	p-V. "t" No/PLN	2nd Ord. Const PLN	PLN	p-V. "t" PLN
CR=0.930	EJI	0.922	0,000	CC= 0.909	0.892	0,000
Coop/Collab.	JA	0.881	0,000	Coop/Collab.	0.869	0,000
	IF	0.897	0,000		0.850	0,000
CR=0.840	CPT	0.774	0,000	CC= 0.793	0.868	0,000
	CI	0.805	0,000		0.562	0.011
compettion	SC	0.756	0,000	competition	0.838	0,000
	VL	0.925	0,000		0.897	0,000
CR=0.923	COOP	0.890	0,000	CC= 0,935	0.893	0,000
	PF	0.896	0,000		0.895	0,000
Coopetition	CR	0.788	0,000	Coopetition	0.868	0,000

Table 2- Compound Reliability (CR) of the Multigroup Analysis

Source: Prepared by the authors.

The compound reliability for the evaluation of the quality of the model in Table 02 shows that both clusters are statistically significant, because presented "t" test with $p \le 0.05$. But, in addition to the significance of the "t" test, Hair Jr. *et al.* (2009) and Prearo (2013) affirm that the assessment of the reliability of a measurement model can also be performed by means of the *Cronbach's Alpha* (internal consistency) and the compound reliability.

The composite reliability of the proposed model clearly appears in both clusters (planned and unplanned) and meets the theory with values higher than 0.02. On the other hand, in the first-order constructs, only the construct CI meets the theory in the unplanned clusters, unlike the planned, with a value of 0.562. The other first-order constructs had values higher than 0.70 in both planned and unplanned clusters.

Continuing with the Cronbach's Alpha (Table 03), Hair Jr. *et al.* (2009) and Prearo (2013) emphasize that it must be interpreted in the same way that the compound reliability, but their values must be greater than 0.70. It is also necessary to consider the "t" test, in which, in both the clusters (planned and unplanned), indicates a significance level less than 0.05 ($p \le 0.05$).



2nd Ord. Const. No/PLN	1st Order Const.	JA- No/PLN	p-V. "t" No/PLN	2nd Ord. Const. PLN	JA-PLN	p-V. "t" PLN
AC=0.917	EJI	0.898	0,000	AC=0.888	0.856	0,000
Coop/Collab.	JA	0.830	0,000	Coop/Collab.	0.810	0,000
	IF	0.846	0,000		0.765	0,000
AC=0.798	CPT	0.619	0,000	AC=0.745	0.799	0,000
	CI	0.637	0,000		0.542	0,000
competition	SC	0.535	0,000	competition	0.713	0,000
	VL	0.901	0,000		0.859	0,000
AC=0.911	COOP	0.845	0,000	AC=0.927	0.848	0,000
	PF	0.850	0,000		0.852	0,000
Coopetition	CR	0.607	0,000	Coopetition	0.772	0,000

Table 03- Cronbach's Alpha (CA) of the Multigroup Analysis.

Source: Prepared by the authors.

In the Table 03, the *Cronbach's Alpha* was good and showed to be adequate, but in spite of the proposed model is appropriate in two clusters, not all first-order constructs comply with the pre-established in the theory, because, in the unplanned clusters, the constructs CPT, SC, CR had values below 0.70 and the construct CI, values below 0.70 in both clusters. Hereinafter, in the Table 04 it is presented the power of explanation of the coopetition in each cluster.

2nd Ord. Const. No/PLN	1st Order Const.	R2 No/PLN	p-V. "t" No/PLN	2nd Ord. Const. PLN	R2 PLN	p-V. "t" PLN
	EJI	0.875	0,000		0.897	0,000
R2 = 0.291	JA	0.813	0,000	$R_{2}=0.250$	0.825	0,000
K2-0.271	IF	0.738	0,000	K2-0.250	0.753	0,000
Coopetition	CPT	0.569	0,000	Constition	0.482	0,000
1	CI	0.010	0.016	Coopetition	0.161	0.776
	SC	0.363	0,000		0.586	0,000
	VL	0.706	0,000		0.763	0,000
	COOP	0.589	0,000		0.478	0,000
	PF	0.792	0,000		0.713	0,000
	CR	0.689	0,000		0.431	0,000

Table 04- Pearson Determination Coefficient R² concerning the Multigroup Analysis.

Source: Prepared by the authors

Evaluating the *Pearson* determination coefficient concerning the model in the Table 04, the CI first-order construct in the planned clusters does not show statistical significance, because the value of the "t" test was greater than 0.05 ($p \ge 0.05$). The other first-order constructs and the coopetition presented a significance level less than 0.05 ($p \le 0.05$). So, with the purpose of identifying how the coopetition is explained in each planned and unplanned cluster, the Pearson determination coefficient R² shows that the coopetition is explained with 29.1% in the unplanned clusters and 25.0% in the planned clusters, both with p<0.05. According to the classification of Cohen (1988) and Ringle; Silva & Bido (2014), R2 equal to 2% is classified as a small effect, R² equal to 13% as the average effect and R² equal to 26%, as great effect. Thus, the proposed model is more adjusted to the unplanned clusters and the effect of explanation of the Pearson determination coefficient R² of 29.1% is considered high, while in the case of the planned clusters, the coopetition is considered moderate tending to high with R² of 25.0%.

In view of the above mentioned, through the analysis of the proposed model, the convergent and discriminating validities and the compound reliability were found, and the propositions inferred were tested in the conceptual model - which enables the continuity of the analysis.



4.4 Multigroup analysis of the constructs

The Multigroup Analysis by means of the PLS was made to verify if there are significant differences between planned and unplanned retailers *clusters* in relation to the competition, cooperation and coopetition. Thus, it must be carried out a comparison between the measurement models, seeking to understand the difference between the groups, both planned and unplanned clusters (Ringle; Silva & Bido, 2014).

This evaluation was performed by means of the test *Bootstrapping*. We calculated the value of the "t" test referring to *Student*, considered a parametric test, in addition to the MGA, considered a non-parametric test. The samples of each subgroup were subjected to the resampling by *Bootstrapping* procedure, and then the originating results served as a reference for comparison of differences between the groups (Veríssimo, 2011).

According to the Henseler (2012), to compare two subpopulations, it is necessary the non-parametric test MGA, when the subpopulations or groups are subjected to the analysis of *Bootstrapping*. The results of this analysis shall serve as a basis for testing the hypothesis of significant difference between the groups. The author also says that this test is equivalent to the non-parametric *Mann-Whitney Test*. For purposes of this study, it was used the non parametric test MGA, because according to Veríssimo (2011) and Prearo (2013), the non-parametric tests are more robust, and may even replace the parametric *Student "t*" test.

4.4.1 Multigroup analysis of the cooperation/collaboration construct

The results obtained from the *bootstrapping* illustrated in Table 05 concerning the Cooperation/Collaboration second-order construct with the construct of the first-order, JA, present a higher factor load in the unplanned clusters (0.908) and in the planned clusters (0.902). The same occurs with the construct EJI, with higher factorial load in the unplanned clusters (0.947) than in the planned ones (0.935). These results are different as regards the Cooperation/Collaboration in relation to the Coopetition, being the factorial load of 0.562 in the planned clusters and 0.297 in the unplanned ones. These results are statistically significant in both clusters (sig < 0.05), as we can see in the Table 05.

	Factor	p-V "t"	Factor	
	Loads	No/PL	Loads	p-V "t"
Cooper/collaboration	No/PLN	Ν	PLN	PLN
Coop/collab.→ JA	0.908	0,000	0.902	0,000
Coop/collab. EJI	0.947	0,000	0.935	0,000
Coop/collab.→Coopetition	0.297	0,000	0.562	0,000

Table 05- Bootstrapping of the Cooperation/Collaboration construct.

Source: Prepared by the authors

When comparing the difference of the factor loads among the clusters (planned and unplanned) in Table 06, we can see that the relationship between Cooperation/Collaboration and JA



presents a value of 0.007 and the Cooperation/Collaboration and EJI of 0.012. The parametric *Student "t" test* and the non-parametric AGM test show no statistically significant difference between planned and unplanned clusters because the results show a significance greater than 0.05 (sig > 0.05).

	Difference		p-V "t"
Cooperation/collaboration	between factor	p-V "t"	MGA
Cooperation/conaboration	loads No/PLN	No/PLN	No/PLN vs
	vs PLN	vs PLN	PLN
Cooper/collab> JA	0.007	0.739	0.401
Cooper/collab. EJI	0.012	0.378	0.206
Coop/collab.→ Coopetition	0.265	0,000	1,000

Table 06- Difference between the PLN/NPLN clusters – Cooperation/Collaboration.

Source: Prepared by the authors.

In the table 6, the relationship of the Cooperation/Collaboration with the Coopetition, showed no convergence between the *Student "t" test* and the MGA, once the "t" test affirms that there is significance in the difference between the planned and unplanned clusters (Sig < 0.05) and the MGA shows no statistically significant difference, being sig > 0.05. Despite this difference, we preferred to stay with the results of the not parametric test MGA, since the non-parametric tests are more conservative (Veríssimo, 2011; Prearo, 2013).

In short, the first-order constructs JA and EJI occur more in the unplanned clusters and the second-order construct, Coopetition, occurs more in the planned ones. However, none of these constructs showed a significant difference. Thus, it can be stated that there is no statistically significant difference between the Cooperation/Collaboration in relation to the Coopetition in the planned and unplanned clusters.

4.4.1.2 Theoretical analysis about the results of the cooperation construct

Thus, based on the results of the Table 6, despite the Cooperation influence more in the JA and EJI in the unplanned clusters and the Cooperation influence on the Coopetition in the planned clusters, these results were not statistically significant.

Corroborating these findings with the theory of authors Oliver (2004); Lado; Boyd & Hanlon (1997); Luo (2005); Ho (2006); Zaccarelli *et al.* (2008); Bengtsson & Kock (2000, 2014); Kim *et al.* (2013) and Silva (2012), we can say that in both *clusters*, automobiles and furniture, the cooperation influences on joint actions of the actors, as well as in the exchanges of joint information. These authors state that this type of phenomenon is a common occurrence in the inter-organizational relationships.

What we can highlight as important is that the organizations inserted in these planned and unplanned *clusters*, despite being competitors, they also cooperate with other companies inserted there (Silva, 2012). Thus, we can state that the Competition and Cooperation are inducers of beneficial results for the companies involved in the inter-organizational relationships (Lado; Boyd & Hanlon, 1997; Leão, 2005; Luo 2005; Loureiro, 2007; Zaccarelli *et al.* 2008; Amato Neto, 2009; Bengtsson & Kock, 2000, 2014; Kim *et al.* 2013; Silva, 2012).



4.4.2 Multigroup analysis of the competition construct

The results of the relation of the construct of the first-order, Competition, in the Table 07 show that the CPT occurs more in the planned clusters whose factor load was 0.754, being significant in both clusters with sig < 0.05. Unlike the relationship of the Competition with the CI (0.401), which prevailed in unplanned clusters, showing significance only in the unplanned clusters (Sig < 0.05), what did not occur in the planned clusters, because the significance presented sig>0.05. As the Competition in relation to the SC, the highest factor load occurred in the unplanned and planned clusters, with the value of 0.765, being significant in two clusters. The same occurred in the outcome of the Competition with the construct IF, with highest factor load in unplanned clusters, with the value of 0.868, as well as significance in two clusters (Sig < 0.05).

Competition	Factor Loads No/PLN	p-V "t" No/PL N	Factor Loads PLN	p-V "t" PLN
Compet. → CPT	0.694	0,000	0.754	0,000
Compet. → CI	0.401	0,000	0.098	0.576
Compet. → SC	0.765	0,000	0.603	0,000
Compet. → IF	0.868	0,000	0.859	0,000
Compet. → Coopetition	0.382	0,000	0.112	0.138

Table 07- Bootstrapping of the Competition Construct.

Source: Prepared by the authors.

The Competition in relation to the Coopetition prevailed in the unplanned Competition with factor load of 0.382, which proved to be significant. However, in relation to the planned clusters, the factorial load of 0.112 was not significant (sig>0.05). We can observe in these results that the Competition in relation to the constructs, CI, SC and IF and Coopetition occurs more in the unplanned clusters and the Competition with respect to the construct CPT occurs more in the planned *clusters*.

The Table 8, by means of the *Student* "t" test and the test MGA, shows the difference of the factor loads in the planned and unplanned clusters.



Competition	Difference between factor loads No/PLN vs	p-V "t" No/PLN vs PLN	p-V "t" MGA No/PLN
Compet> CPT	PLN 0.060	0.389	vs PLN 0.815
Compet. \rightarrow CI I	0.303	0.098	0.013
1	-		-
Compet. → SC	0.162	0.071	0.032
Compet. → IF	0.009	0.795	0.387
Compet. → Coopetition	0.270	0.006	0.003

Table 8- Difference between the PLN/NPLN clusters - Competition.

Source: Prepared by the authors.

The results of the differences of the factor loads of the planned and unplanned clusters were: concerning the construct Competition with CPT (0.060), CI (0.303), SC (0.162), IF (0.009) and the Coopetition (0.270), being that the relationship of the Competition with the CPT is not statistically significant in both clusters, because the *Student* "t" and the MGA were greater than 0.05.

As for the Competition with the CI and SC, there was not convergence between the *Student* "t" and the MGA, because the "t" test shows there is a statistically significant difference, while the MGA indicates to be statistically significant (Sig < 0.05). As we did earlier, it was decided by the test AGM (Veríssimo, 2011; Prearo, 2013). In relation to the Competition and IF, there is no statistically significant difference, because the "t" and MGA tests showed a statistically greater significance than 0.05. With regard to the relationship of the Competition with the Coopetition, it is possible to state that there is a significant difference in the unplanned clusters, because the tests "t" and MGA were smaller than 0.05, in other words (sig<0.05).

Thus, we can say that the Competition influences the Coopetition in the conflicts of interests (CI) and in the strength of cluster (SC) in the unplanned clusters. Regarding to the constructs CPT and IF, there is no difference between them in the analyzed clusters.

4.4.2.1 Theoretical analysis about the results of the competition construct

In relation to the Competition, it was possible to identify that it occurs with more intensity in the unplanned clusters, what can be seen in the Table 8. In other words, in the businesses of the unplanned clusters the Coopetition presents a higher dose of Competition than in the planned clusters and there is also a large influence of Competition in the first-order constructs CI and SC in these clusters.

The Competition, occurring with more intensity in the unplanned clusters, is in line with the outlined in the theory of the non-cooperative games of Baumol (1977 *apud* Katz, 2003), because according to him, as the companies in the unplanned retailer clusters are interdependent and there is not a governance among them, it is common that the competition is further exacerbated because

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there is not a standardization of the products or services and the establishment of balanced prices between the companies. So, the pursuit of achieving individual earnings prevails more than the mutual gains, i.e., a pattern of action-reaction arises between competitors and they follows each other; if one of the competitors launches a new product line, the other one immediately follows him. Thus, the relationships end up being dominant in competition, where the formation of Coopetition consists in more Competition than Cooperation (Porter, 1998; Bengtsson & Kock, 2000; Williamson, 2005; Zaccarelli *et al.* 2008; Teller, 2008; Ferreira, 2012; Silva, 2012; Kim *et al.* 2013; Bengtsson & Kock, 2014),

In relation to the conflicts of interests (CI), for Morgan & Hunter (1994) they are directly linked to the trust. This leads the actors involved in the relationships to realize that conflicts can be functional and, therefore, the increase of the functionality of the conflict is the result of the increase or decrease of the confidence, because the market in which the companies operate is made of environmental uncertainties, especially the retail, which currently lives in the context of fierce competition between its agents, especially in the unplanned clusters where the companies first try to survive.

As to the strength of the cluster, according to Teller (2008) and Zaccarelli *et al.*, (2008) to be inserted in a large concentration of shops in the same segment, acting in the same place, ends up attracting more consumers because they may visit a greater number of shops and make a comparison of prices in less time.

4.4.3 Multigroup analysis of the coopetition construct

The Table 9 illustrates the relationship of the Coopetition in the planned and unplanned clusters in relation to the first-order constructs COOP, PF, CR and VL. It is possible to check a predominance of the constructs COOP (0.768), PF (0.890) and CR (0.830) in the planned clusters, because the factor loads were higher. Only the relation of the Coopetition with the VL was greater in the unplanned Coopetition, with the factor load of 0.873, being the results significant for all constructs in both clusters (Sig < 0.05).

	Factor		Factor	
Coopetition	Loads	p-V "t"	Loads	p-V "t"
	No/PLN	No/PLN	PLN	PLN
Coopet. →COOP	0.691	0,000	0.768	0,000
Coopet. →PF	0.844	0,000	0.890	0,000
Coopet. →CR	0.656	0,000	0.830	0,000
Coopet. →VL	0.873	0,000	0.840	0,000

Table 9- Bootstrapping of the Coopetition Construct.

Source: Prepared by the authors.

In the Table 9, although the results show that there is a difference in the relation with the constructs with COOP, PF, CR and VL, the difference of the factor loads, illustrated in the Table 10 and analyzed by the "t" *Student* and MGA, shows that these results are not statistically significant,



because the difference of the factor loads of the Coopetition comparing with the constructs COOP (0.076), PF (0.045) and VL (0.033), showed a significance greater than 0.05 (sig > 0.05).

Coopetition	Differences between factor loads No/PLN vs PLN	p-V "t" No/PLN vs PLN	p-V "t" MGA No/PLN vs PLN
Coopet. →COOP	0.076	0.215	0.911
Coopet. →PF	0.045	0.106	0.956
Coopet. →CR	0.174	0.002	1,000
Coopet. →VL	0.033	0.236	0.119

Table 10- Difference between the PLN/NPLN clusters - Coopetition.

Source: Prepared by the authors.

In relation to the Coopetition with the CR construct (0.174), there is no convergence in the results of the "t" *Student*, which indicates that there is a significant difference with sig < 0.05 and the MGA, which indicates no statistically significant difference, with sig > 0.05. Thus, we chose the MGA, which showed that there is no statistically significant difference in the Coopetition in relation to the CR construct.

Therefore, the Coopetition does not influence the first-order constructs COOP, PF, CR and VL in the analyzed clusters and it is possible to say that there is no significant difference in the Coopetition in the planned and unplanned clusters.

4.4.3.1 Theoretical analysis about the results of the coopetition construct

Making a corroboration of the results of the Coopetition second-order construct and the first-order constructs CPT, CI, SC and IF in relation to the theory studied, it is possible to affirm that the relationships between the companies of both clusters are balanced, and the Coopetition proved to be distributed equally (Bengtsson and Kock, 2000), as it can be seen in the Table 10, where the differences were not statistically significant.

These results also corroborate with the studies of Dagnimo & Padula (2002 p.18) by stating that "the coopetition is important in competitive markets, in this case the retail, because part of the success often depends on how fast the companies can transform an invention into innovation and innovation into products ready for the market".

5 CONCLUSION

The objective of this research was to verify if there are significant differences between planned and unplanned retailer *clusters* in relation to the competition, cooperation and coopetition. By means of the Multigroup Analysis it was possible to identify that there is no difference between the clusters in the Cooperation/Collaboration (low or high), in both *clusters* surveyed. Unlike the Competition that presented greater predominance in the unplanned *clusters*. Thus, in these clusters the relationships end up being dominant in the Competition, mainly in the factors Conflicts of Inter-



est and Strength of the Cluster.

Nevertheless, it is important to consider that this research is exploratory and its results may be related to the recent theory on coopetition, considering that Bengtsson and Kock (2014) affirm that there is not yet a very clear definition about the coopetition. The authors Nalebuff & Brandenburger (1996); Lado; Boyd & Hanlon (1997); Bengtsson & Kock (2000); Dagnio & Padula (2002); Oliver (2004); Chen (2008); Gnyawali et al. (2012); Raza-Ullah & Bengtsson (2013) and Raza-Ullah; Bengtsson & Kock (2014) as well have attempted to conceptualize it and there are still differences between the definitions constructed by the authors.

So, it is possible to consider two distinctive contributions resulting from this research. The first lies in the study of the theory of coopetition, once such a theory is still recent in the Academy and its concept is still under construction by the authors Brandenburger & Nalebuff (1996), Lado, Boyd & Hanlon (1997), Luo (2007), Bengtsson, Ericsson & Wincent (2010), Bengtsson & Ckok (2000, 2013, 2014), Daul & Kock (2013).

The second refers specifically to the study of the coopetition in retailer *clusters*, because the research on this topic have been focused on the analyses whose objects of study are manufacturing companies, industrial clusters, business networking and cooperation networks. Thus, the results of this research can bring useful contributions to a field of studies to be expanded, both in theoretical terms, as well as in practical terms.

For the practitioners of Business Administration acting in companies at multiple markets, as well as in other retail segments in both planned and unplanned *clusters*, the results may indicate benchmarks to be followed by companies that wish to better manage the cooperative relationships.

Finally, this study had limitations regarding the evaluation of the coopetition in the planned and unplanned clusters, only through the cooperation/collaboration and competition. Such a clipping of the analysis can make the evaluation as superficial, i.e., there may be other variables that influence the coopetition and were not worked in this research. The selection of the retailer clusters geared to trade in automobiles and furniture is also a limitation of this research, since these market segments may present specific characteristics that are not applicable to other retail segments. It is important to consider, as well, the recent theory of the coopetition, as it is still very new and needs further consolidation of its main concepts by means of the authors who are researching about it.

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Contribution of authors.

Every author should account for at least one component of the work. Paper approved for publication need to specify the contribution of every single author.

Contribution	[Author 1]	[Author 2]	[Author 3]
1. Definition of research problem	V	V	√ V
2. Development of hypotheses or research questions (empirical studies)	V	V	V
3. Development of theoretical propositions (theoretical work)	V	V	V
4. Theoretical foundation / Literature review	V	V	√ v
5. Definition of methodological procedures	V	V	√ V
6. Data collection	V		
7. Statistical analysis	V		
8. Analysis and interpretation of data	V	V	√ V
9. Critical revision of the manuscript	V	V	V
10. Manuscript writing	V	V	V
11. Other (please specify)			

Conflict of Interest

The authors have stated that there is no conflict of interest.

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