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**ASPECTS INFLUENCING COMPANIES TO LEAVE INTERORGANISATIONAL NETWORKS:  
A Multifactorial Analysis**

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**ABSTRACT:**

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*Interorganisational networks are used by businesspeople as strategies in the market to gain profits and benefits and to generate more value for companies. However, it is possible to empirically verify that a significant number of companies leave the networks of which they used to be a part. Thus, this study aims to explore which factors influence the dissatisfaction of businesspeople who have left networks and the impact of the level of dissatisfaction. To do so, we performed a quantitative study of 140 companies that used to belong to cooperation networks in the state of Rio Grande do Sul, Brazil. A cross-sectional survey was used to obtain data. The results with the exploratory factorial delimited 14 possible factors influencing companies to leave the networks. The influential factors in this study, which were determined through a multiple regression analysis, are as follows: reaching goals, participative management and interorganisational learning.*

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**Keywords:** *interorganisational networks; networks problems; companies leaving networks*

**1. INTRODUCTION**

Although they are not considered a strategy or recent organisational form, interorganisational networks are ratified in much of the literature on the subject as a competitive way for organisations to keep themselves in the market and as an alternative for growing. The formation and structure of interorganisational networks, according to Vasudeva, Zaheer and Hernandez (2013), became an alternative for enterprises seeking greater competitiveness and innovation in the market in which they operate. The importance of interorganisational networks is very apparent with regard to small- and medium-sized companies, which generally have greater difficulty acting alone.

There are several types of networks described and conceptualised in the studies on interorganisational relationships formats. In this paper, a network is defined as a group in which three or more organisations are

working together to achieve a common goal (Popp et al., 2013). These networks enable various actions and provide benefits to their partners, such as economies of scale, greater bargaining power and lower transaction costs, which translate into economic gains (Waarden 1992; Jarillo 1988; Ireland and Webb 2007). Moreover, they allow the member companies to share the risks of joint activities (Ebers 1997; Sadowski and Duysters 2008), share the costs of marketing and commercial activities (Mpoyi 2003; Lamb et al. 2008), engage in knowledge transfers and learning (Kogut 1988; Muthusamy and White 2005), obtain legitimacy and organisational reputation (Pesämaa 2007) and achieve greater innovation possibilities (Fukugawa 2006).

However, it has been found empirically that networks can only achieve some of these advantages if certain characteristics are present during their evolution, such as commitment from entrepreneurs (Chao 2011) and the emergence of trust and the exchange of knowledge (Bachmann et al. 2001; Larson et al. 1998). These findings make the process of managing and governing of network even more complex. In addition, many networks cannot consolidate their structures and their management models because negative aspects and factors such as opportunism (Williamson 1985) may arise to a point where the network does not compensate for the investments made by individual companies. In such circumstances, many companies seek competitive alternatives outside the cooperative environment by disconnecting with the strategy adopted by the networks and, generally, choosing to leave the network.

Considering this information, the notion that networks provide competitive benefits to members and companies can be questioned because there is discontentment and withdrawal from the collaborative process. Some questions that arise include the following: What aspects emerge as barriers to the achievement of the advantages mentioned above? What are problematic factors in networks? Can the dissatisfaction of the businesspeople be explained by these factors? To Pesämaa (2007), many companies do not account for the disadvantages and costs incurred from joining networks, and they are not able to evaluate whether it is worthwhile to enter a network or if such a strategy is really a good deal for them. Given these considerations and questions and taking companies that left interorganisational networks as the unit of analysis, we sought to answer the following research problem: *What factors influence the discontent of entrepreneurs who left the networks and the impact of these factors on the level of satisfaction?* The answer to this question is precisely the object of research that motivates this study.

It is possible to verify that in academic research, there are few studies seeking to understand the reasons that lead entrepreneurs to abandon cooperation and the issues inherent in the level of satisfaction of businesspeople with the network as a whole or as an object of study. Exceptions include studies by Alves et al. (2010) and Klein and Pereira (2012). These studies provide theoretical evidence on what aspects could lead companies to leave a network. By contrast, in this study, we use an empirical survey of companies that left networks in an attempt to contribute to the existing theoretical framework on the subject.

This study is justified because there is little knowledge on the subject and limited knowledge about the various aspects and efforts (as well as when and how likely they are to lead to good performances for collaborative alliances) (Chen 2010). Understanding the origins of dissatisfaction can help alleviate the problems and difficulties that arise from the process of training to strengthen networks, which prevent the achievement of goals and objectives stipulated. It is also believed that this research can contribute to the improvement of network management and the performance of some member companies. From the methodological point of view, this paper is innovative because it proposes and estimates a model able to analyse the influence of various factors on the dissatisfaction of entrepreneurs who participated in networks. Two statistical techniques are used: Exploratory Factor Analysis and Multiple Regression Analysis.

## 2. THEORY

### 2.1 *Interorganisational networks: antecedents, processes and outcomes*

Interest in studying interorganisational networks has grown in the scientific community due to them being a form of organisational performance that can provide different benefits and competitive advantages for the participating companies. To Chassagnon (2013), collaborative relationships between firms, as addressed in this case (networks), represent attempts to reduce the vulnerability of companies that recognise their limitations acting alone. Mariotti and Delbridge (2012) understand that organisational strategy may increase bargaining power and establish a superior position for partner companies on the market in relation to its competitors. Networks, in the view of Somfleth (2011), may lead companies to develop higher parameter development complementarity arising out of differences and thus improve their operations.

However, as introduced earlier, some entrepreneurs do not appear satisfied with performance in interorganisational networks and decide to leave them, jeopardizing discussions about the advantages stemming

from this type of collaboration. As a result, we investigated models and factors that expose problems in collaborative relationships between businesses and could explain the object of study of this work. A number of studies that expose some variables and factors in isolation were found, such as Duysters and Sadowski (2008), Chao (2011), Corsten et al. (2011) and McCutchen Jr. et al. (2008). These studies serve as starting point but are not sufficient for explaining the problem as a whole.

In this paper, the model for the theoretical aspects of the design was taken from Chen (2010) and Klein and Pereira (2012). The first author investigated the determinants of the effectiveness of interorganisational collaboration factors; as he himself mentions, the study can be used as a basis for the study of problems or failure of cooperation. The author formats his study in three distinct stages: (1) the background of the companies collaborating, (2) the collaborative process, and (3) the perceived effectiveness of the collaboration. Klein and Pereira (2012) formulated a framework that can be taken as a reference for analysis regarding why companies leave a network. This study is conducted based on the three dimensions mentioned but with some changes in relation to that observed in the study of Klein and Pereira (2012).

### 2.1.1 Background for collaboration

A number of studies have shown that social bonds purchased by an entrepreneur in particular are important for the formation of a network. When these established ties and relationships are weak, the contribution of this partner to the network is small. Gulati (1995) argues that the ability of an organisation to join an alliance is limited by its social network. For Chen (2010), an organisation that has capacity constraints in the community (defaults to suppliers) and a lack of a social network (previous contacts) will have a resulting partnership unlikely to be associated with positive outcomes. Thus, the economic behaviour of its agents is constrained by social structures that are built over time (Granovetter 1985) and can delineate the presence or departure of the organisation in a cooperative arrangement, namely, the network.

Another inherent issue addressed in the previous paragraph is the difficulty in selecting partners who can really contribute to the growth and development of a network. Chen (2010), for example, mentions that partnerships that are formed only on the basis of the availability of partners, without compliance with appropriate selection criteria, are negatively related to perceived collaboration outcomes. In addition, the different strategic orientations of partners can be a problem when managing a network, in terms of dealing with the different perspectives and capabilities of each partner company.

The difficulty created by the features mentioned is adjusting strategies to companies, aspects relating to the complementary balance of information, mutual benefits and harmony among member companies (Douma et al. 2001). In this sense, Hitt et al. (2000) and Tsang (2002) suggest that the selection of partners is a key determinant for the success of an alliance because of the need for an alignment of specific features and the possibility of exchange among members. The proper selection of partners can be a determining factor for the future success of the network because it is possible to form a group with similar characteristics and objectives and avoid conflicts of interest. Thus, the background for collaboration would be related to the future achievement of the proposed objectives and the satisfaction of entrepreneurs.

### 2.1.2 Collaborative processes

In a collaborative relationship, as in the case of interorganisational networks, there is a set of processes related to the development of these networks that directly helps the flow of information, manages the depth and breadth of interactions, and improves the complex and dynamic exchanges between partners. The set of rules, restrictions, incentives and mechanisms in place to coordinate the participants in a network is crucial to its development and the achievement of the proposed objectives (Wegner and Padula 2010).

In the implementation and coordination of the activities proposed and agreed upon jointly by the partners, the shape and style of network management play a key role. Generally, there are some cultural and managerial misfits with regard to the capabilities of the participants, as discussed in the previous section. Thus, in collaborative relationships, there is a need to specify roles and responsibilities and define and coordinate tasks for each partner, which is seen as critical to achieving effective collaboration (Bardach 1998).

The difficulty inherent to this process, however, is because cooperation demands great efforts in coordinating the alignment of goals and objectives, generating managerial complexity and uncertainty (Park and Ungson 2001). How were the networks that lost some of their members managed? What was the process of decision making in networking that prompted the departure of some members? Did the management of the network influence the departure of some members, or even their bankruptcy? Did all associates have active participation in the decision making?

The answers to the questions above outline two other fundamental processes in collaborative networks: trust and commitment among partners. In the design of Sadowski and Duysters (2008), the failure of the network has its origins in mismanaged partnerships, where there is no trust among the partners involved. Along with trust, commitment is cited in the vision of Isabella (2002) as one of the most important factors for the formation and maintenance of interorganisational relations. For Bachmann et al. (2001), without a minimum of trust and commitment, it is almost impossible to establish and maintain successful interorganisational relationships for a long period. Allied to this, Larson et al. (1998) report that a lack of confidence can be a barrier to the creation of knowledge and the effectiveness of inter-organisational learning processes. Moreover, a lack of confidence creates space for opportunistic behaviour and information asymmetry in the network.

Opportunistic behaviour exists when one of the actors acts strategically, trying to materialise their own interests over the interests of other actors and in disobedience of the rules (Williamson 1985). The assumption of opportunism in a particular opportunity or the circumstances of a negotiation can increase costs or decrease the benefits for the other party, who is unable to monitor or control the actions of the opportunistic agent (Byrns and Stone 1996). One issue inherent to opportunism is decisions that break the agreements, standards and principles that guide the network (Edelman et al. 2004). This opportunistic attitude is generally motivated by the possibility of gains in a shorter period or even immediately, at the expense of future earnings, which increases the difficulty of managing and coordinating activities and uncertainty. Related to this behaviour is the individualism of the members. In view of Doney et al. (1998), subjects with an individualistic orientation tend to interact competitively with low loyalty to each other and with partner organisations hindering the formation of trust.

The environment created by the circumstances set by now inhibits prospect for another relevant factor in the collaborative process, the exchange of resources among partners. In a network where members have an attitude of sharing information and knowledge, the indirect gains from learning and satisfaction will increase, providing innovation and value creation for these companies. As argued by Chen (2010), collaboration is likely to be seen as effective if the partners are committed to exchanging resources with one another for mutual benefit, which creates advantages in comparison with 'working alone'.

Finally, the strategy of participating in a network is seen by many as a process of reduction in organisational autonomy. When inserted into networks, organisations must balance the dualism of individual action and concerns and collective agreements. In the opinion of Cummings (1984), in an effective partnership, a partner must allocate a part of "day to day" control over the activities of their organisation in exchange for gains from cooperation. The problem with this situation is that, often, the network limits the agreements and transactions conducted with providers outside the network, reducing the autonomy of member companies.

### 2.1.3. Perceived outcomes of collaboration

In this last topic, aspects related to the perceived effectiveness of collaboration are presented. A related aspect of the evaluation results is directed towards the measurement of the economic gains made by companies. In studies of networks and collaborative relationships, the relationship between the individual investments made by entrepreneurs (costs to maintain the network) and the gains and benefits achieved is a factor influencing satisfaction and permanence in the network. From the point of view of Jarillo (1998), the basic assumption for the ongoing existence of a network of firms is that the gains from cooperation are higher, in the long run, than the profits that can be obtained outside the network. If this assumption does not materialise, the participants will consider the results of the network poor and seek options outside the network to maintain the same standard of performance at a lower cost.

Another perspective is related to the results gained in the learning that comes from collaborative relationships. Kogut (1988) emphasises that alliances emerge as a strategic response used by organisations in relation to environmental changes that require improvement in skills, knowledge and technological capacity, constituting learning. If the partnership enhances organisational learning, this can effectively increase their capacity in the provision of services and/or the supply of their products to compete within the market.

Intrinsically linked to learning is the innovation generated in the network environment. Innovation can be defined as the introduction of new elements in the production and provision of a service and the operations of an organisation—raw materials, labour, equipment and mechanisms used—with the aim of reducing costs and/or increasing the quality of the product (Damanpour 1991; Reichstein and Salter 2006). Without innovation, there is no value creation within a business network, which would result in organisations leaving the cooperation and/or the network failing (Harrigan 1988).

Without the creation of value for businesses, another difficult aspect to achieve is organisational legitimacy. When collaboration is likely to enhance the reputation and legitimacy of an organisation in the minds of partner companies and stakeholders, it is seen as desirable and motivates firms to cooperate; in these situations, collaboration is often pursued and requested by the owners and financiers of companies (Provan et al. 2008; Bryson et al. 2006). Pesämaa (2007) explains that these activities relate to legal requirements, the features that make services and/or products appealing and, ultimately, the structure surrounding a company that makes potential buyers feel secure and confident in conducting exchanges with the company.

### 2.2 *Satisfaction of companies in interorganisational networks*

Studies on the evaluation of the satisfaction of entrepreneurs participating in networks are related to the performance provided to their companies. Mohr and Spekaman (1994) and Contractor and Lorange (1998) note that studies use objective measures such as profitability, sales growth and earnings as well as reduced costs for such purpose. However, some alternative measures not directly related to economic aspects can be used. Mjoen and Tallman (1997) mentioned that some researchers have used subjective measures related to the perception of partner satisfaction. The effort to prepare this study lies in "shedding a light" on these more subjective aspects that can influence the satisfaction of entrepreneurs involved in networks.

Zand (1972) explains that in collaborative relationships (which also applies to networks), certain actions increase the vulnerability of the set because the individual who is not under the control of others abuses such vulnerability in exchange for personal benefit. When others do the same, disappointment and disagreement occur in the group, causing confidence to fall. Certain partner characteristics that promote trust in a relationship and make collaboration easier must be present (Chile and McMackin 1996).

Some other subjective measures related to the expectation of entrepreneurs likely exist: the exchange of resources, interorganisational learning, the possibility of innovation and value creation (Phan and Peridis 2000; Bryson et al. 2006; Kogut 1988; Hibbert and Huxham 2010; Westerlund and Rajala 2010; Reichstein and Salter 2006; Pyka and Koppers 2002). This article was prepared on a basis set out in previous literature, a framework of reference that could help in the design of studies. Figure 1 illustrates the aforementioned framework.

**Insert Figure 1 here**

## 3. RESEARCH METHOD

To achieve the objective proposed, a quantitative study with the application of a survey was performed. According to Baker (2001), with this strategy, it is possible to discover facts, determine attitudes and opinions and help understand behaviour using an evaluation, analysis and description of a population based on a sample.

The study was conducted in different regions of the state of Rio Grande do Sul, in southern Brazil. A major difficulty was the fact that no one knows for sure the number of companies that have left networks. No studies or references were found that indicate or provide this information. Therefore, the population of firms that went out of networks was considered unknown. The survey sample is characterised as being non-probabilistic, intentionally selected for accessibility.

To collect data, a structured questionnaire was developed based on Figure 1. The questionnaire was sent to three researchers on the topic for the evaluation of its content. Some changes were suggested by them, constituting the internal validation of the instrument. Following the recommendations of Forza (2002), the pre-testing was held through the application of this instrument, which was conducted on five entrepreneurs who left networks. These entrepreneurs made specific comments on certain terms of the questionnaire, which were altered or replaced for the understanding of the issue. The responses of these five respondents were incorporated into the final sample because one of the researchers was present at the pre-test, and all of the doubts and questions presented by the respondents were addressed.

For this study, there was a valid sample of 140 questionnaires. Of this total, 109 (77.86%) were personally applied by researchers in 54 different cities. The other 31 (22.14%) were administered via telephone with entrepreneurs who were willing to participate. The measure used to evaluate the responses of entrepreneurs in the three dimensions investigated was a Likert scale from 1 (strongly disagree) to 6 (strongly agree). To gauge the level of (dis) satisfaction of entrepreneurs, there was a Likert scale of 1 to 10, with lower scores indicating greater dissatisfaction with the network. The data were entered into a Windows Excel spreadsheet for further analysis in SPSS (Statistical Package for Social Sciences).

For data analysis, initially, a descriptive analysis of the sample was performed. Subsequently, the data were explored through exploratory factor analysis, which, according to Hair et al. (2009), allows us to analyse the structure of existing inter-relationships (correlations) between a large number of variables, making it possible to define groups of variables that are strongly interrelated, known as factors. Based on these authors, we first explored the possibility of applying exploratory factor with the test and Bartlett's sphericity index calculation Kaiser-Meyer-Olkin (KMO). Next, the communality of the variables excluding variables with values less than 0.5 was evaluated for this measure. For specifying, the number of factors was adopted as a criterion for the Eigenvalue, and, as the rotational method, we used the Varimax rotation. These procedures were performed separately for each of the dimensions described in the theoretical framework (background, processes and results of collaboration). Then, the indicator of internal consistency Cronbach's Alpha was used for the purpose of verifying the reliability of the factors. At this stage, the observed variables that decreased the internal consistency of the constructs were eliminated, seeking a value greater than 0.7 for each (Hair et al. 2009).

Finally, multiple regression analysis, which addresses the study of the dependence of a variable in relation to one or more accompanying or independent variables, was performed (Gujarati and Porter 2009). According to Malhotra (2006), regression analysis is a powerful and flexible process for checking the associative relationship between a dependent variable metric and one or more independent variables. In the present study, this tool was used to check the influence of the factors identified in the exploratory factor on the level of satisfaction of entrepreneurs who left the network. As verification measures, the following assumptions of the model were used: (1) the Durbin Watson test, as used by Gujarati and Porter (2009), which is appropriate for testing the presence of serial correlation, with the null hypothesis of the test being the absence of autocorrelation; (2) the measure of tolerance TOL (which must be greater than 0.10) and the condition index - FIV (which should be less than 10) to verify the assumption of multicollinearity factor (Hair et al. 2009); (3) the Kolmogorov - Smirnov test – KS, which is used to verify the normality of the residuals under the null hypothesis that the distribution of the test series is normal; and (4) the Pesaran - Pesaran test, which was developed to verify homoscedasticity waste, *i.e.*, if the variance of the residuals remains constant across the spectrum of the independent variables used in the model (Gujarati and Porter 2009).

#### 4. ANALYSIS OF RESULTS

The analysis is divided into three parts. Initially, the various aspects of the research sample were described. In the second part, exploratory factor analysis was applied as Figure 1 demonstrates. Finally, the influence of the values obtained on the satisfaction of the entrepreneurs surveyed was analysed.

##### 4.1 Descriptive analysis

The investigated sample, as previously mentioned, was composed of 140 business owners of companies that left interorganisational networks. Aspects that might specify and briefly describe the study sample were observed. These aspects are presented in Table 1.

#### Insert Table 1 here

Analysing Table 1, it can be seen that, referring to the length of existence of companies, few companies are no more than 5 years old. Most companies have existed for many years, apparently as family businesses, and thus have been in the market for two or three generations. Regarding the number of employees of these companies, it can be seen that most of the companies that formed the sample of this research have no more than 5 employees (38%), followed by companies with 6-10 employees (34%), which means that most of the surveyed companies are micro and small sized.

With regard to the time of participation in the network, the results show that most businesses remained in the network for 2 or 3 years. Generally, it can be noted that the majority of companies, 70%, were associated with a network maximum of 3 years. Finally and startlingly, most of the companies that left a network were not a part of it since the foundation of the network (69%). This issue is linked to the idea of network evolution, where a small set of companies form and, with the development and achievement of joint activities, the group grows, including new companies in the network. Why were entrepreneurs unsatisfied, and why did they eventually leave the network? A network is not designed with a particular period of existence; rather, it is formed to generate benefits and advantages for partners.

##### 4.2 Analysis of the factors of dissatisfaction for entrepreneurs

Our analysis of the aspects influencing the dissatisfaction of entrepreneurs in networks was performed through the application of Exploratory Factor Analysis. This technique was performed separately for the three dimensions of the instrument, as shown in Figure 1. The first step consisted of calculations regarding the

appropriateness of using factor analysis. For all, the tests and Bartlett's sphericity and KMO, characterised by Pestana and Gageiro (2008) as statistical procedures for identifying the quality of the correlations between variables to proceed with the factor analysis, were performed. Chart 1 shows the results obtained for each dimension. Considering these results, one can verify the statement factorability data in the three dimensions.

#### Insert Chart 1 here

After verifying the adequacy of factor analysis, commonalities presented in each of the constituent issues of the research instrument were identified. In the opinion of Hair et al. (2009) variables that have values less than 0.5 for this measure should be removed from the instrument. Therefore, a question (*Network managers struggled to adjust strategies and objectives to the needs of partner companies*) with a commonality equal to 0.415 was withdrawn. All other variables had commonalities greater than 0.5, allowing continuity for the analysis.

Specifically, the extraction step of the scale factors "Background for Collaboration" gave 3 factors with eigenvalues greater than 1.0, altogether explaining 68.83% of all variance. A more detailed view of the results of exploratory factor allows us to evaluate the component variables of each factor, which are reported in Chart 2.

#### Insert Chart 2 here

In Chart 2 it can be seen that Factor 1, named "Partner Selection", is composed of four variables that refer to how the selection of partners was done for the network. Chile and McMackin (1996) mentioned that certain types of partner characteristics promote trust in a relationship and make collaboration easier. In their studies, Graddy and Chen (2006) found that even if organisations are willing to comply with the requirements of funding required to form a network, they are limited by their potential ability. It is possible to notice that the aspects related to the selection of partners may be related to the dissatisfaction of the members of the network.

Factor 2 (Previous Relations), in turn, has 3 variables relating to previous existing relationships between partners as facilitators of network formation. In the studies of Heffren et al. (2003), where the authors reviewed intersectoral collaboration involving education, social services and health, they found that, largely, the pre-existing relationships between the participants of the organisation had no effect on the formation of this type of collaboration. Factor 3 (formed by two variables), called "Previous Social Ties", also refers to the links between partners before the formation of the network, but extolling how these could help in adaptation and organisation of the network since it was formed. Burt (1992), Gulati (1995) and Uzzi (1997) support the idea that social relations between members of a system outline the training arrangements and facilitate its organisation, affecting the economic life of these agents.

Regarding the extraction of factors, "Collaborative Processes" provided 9 factors with eigenvalues greater than 1.0, altogether explaining 70.82% of the total variance. A more detailed view of the factors resulting from exploring this dimension and its corresponding variable components can be seen in Chart 3. However, it is worth noting that one of these factors was excluded from the analyses in this paper because it submitted a Cronbach's Alpha of 0.133, which is not satisfactory in terms of internal consistency (Hair et al. 2009). The analysis also highlighted another factor that showed only one variable (*I thought about the group, even at the expense of my personal interest*), which is why this factor has not received a specific denomination. For the analyses of the next section, the variable itself was used in a direct way.

#### Insert Chart 3 here

Evaluating Chart 3, it can be noted that Factor 4, "Immediacy by Results", is composed of 5 variables that seek to identify the perceptions of entrepreneurs concerning the timing of returns on investments made in the network. Entrepreneurs must understand that many networks need some time to organise activities and thus may not generate immediate returns to their partners. Wegner and Padula (2010) highlight the immediacy of problems as a result of company networks, which is related to the members leaving the network.

Factor 5, "Participative Management", presents 5 variables concerning the form of network management and the involvement of entrepreneurs in the managerial process. In this regard, Albers (2005) warns that companies agree to give up their freedom to a certain extent and allow management of cooperation to coordinate certain aspects of their business under the system of rules created by the group. However, individualistic and opportunistic practices in network management refer to dissatisfaction among partners; administrative aspects are seen as key to achieving effective collaboration (Bardach 1998), in addition to delineating gains for all involved (not just for some of them, which, in this case, means those involved in managing the network).

In Factor 6, "Resource Exchange", the congruence of statements related to obtaining improvements in processes and operations for companies from the interaction and exchange of resources among entrepreneurs is noticeable. Studies such as those of Pfeffer and Salancik (1978), Dowling et al. (1996), and Phan and Peridis (2000) emphasise the importance of this aspect in networks and collaborations among companies.

Factor 7, "Trust and Commitment", incorporates variables widely ratified for the maintenance and continuity of business networks. In the understanding of Parast and Digman (2008), trust between partners is certainly one of the factors cited in the literature and is considered a requirement for cooperation. Similarly, Fryxell et al. (2002) also claim that the level of trust between partners is a key condition for the success of the alliance. Commitment is translated into loyalty with partners, which is considered a factor that influences the success of the relationship (Koza and Lewin 2000). These positive expectations and beliefs about the behaviour of agents based on trust will cause partners to be more willing to take risks and may be associated with greater commitment and obligations from the parties (Perry et al. 2004; Uzzi 1996).

The variable composing Factor 8, named "Organisational Autonomy", congregates the question of balance between the dualism of individual action and collective concerns and agreements (Chen 2010). Bryson et al. (2006) argue that, in any alliance collaboration, partners inevitably address tensions about organisational autonomy and the differential power relationship. A negative balance of these aspects, which refers to a reduction in organisational autonomy, is likely to be seen as a threat to the continuity of the network (Chen 2010).

Concerning Factor 9, "Individualism *versus* Collectivism", which consists of 4 variables, one can verify explanatory variables that identify the relationship between individualism and collectivism in members of the network. In studies by Triandis (1995), the author mentions that individuals freely pursue behaviours and attitudes that match their desires, without needing the approval of others, and tend to act autonomously in relation to the group. However, this type of behaviour restricts joint action and group harmony, generating negative conflicts that are difficult to transform into gains for participants.

Factor 10, called "Information Symmetry", refers to questions that assess whether information was transferred equally among all participants of the network. In certain networks, there may be cases where individuals seek to gain advantages by having some inside information in relation to other members. Seeking a better understanding on this topic, the studies of Williamson (1985) find that the use of asymmetric information to promote better performance among the actors involved was harmful and even generated a cost for them. Thus, the cost of this behaviour, which is considered opportunistic, is greater for associated companies in collaborative networks (Gulati et al. 2000).

Finally, from the extraction of the factors of the dimension "Perceived Results of Collaboration", there were 6 factors with eigenvalues greater than 1.0, altogether explaining 72.60% of the total variance. A more detailed view of the factors resulting from exploring this dimension and the component variables can be seen in Chart 4. However, just as in the dimension previously analysed, 2 factors were excluded from the analyses in this work because they presented Cronbach's Alpha values lower than 0.7, which is not satisfactory in terms of internal consistency (Hair et al. 2009).

#### **Insert Chart 4 here**

From Chart 4, it can be noted that Factor 11, entitled "Interorganisational Learning", is composed of 5 variables that evaluate learning acquired by interaction established in the network and how this was stimulated by the network. In relation to this factor it can be said that if the network increases organisations' learning, this can effectively increase their capacity in the provision of its services and/or supply of their products to compete within the market. In the opinion of Gray (2000), the process and mechanism for such learning occur often due to interaction with other organisation, developing a common understanding of the problem and thereby reaching a consensus on how to address the issue.

Factor 12 (Reaching the Goals) has six variables that incorporate the perception of achieving the proposed goals and balancing between investments and returns from the network. According to Wegner and Padula (2010 p. 74), the "continuity of cooperation is conditional on the ability to achieve the proposed goals and make them more competitive members." Therefore, it can be stated that successful collaboration requires an alignment or compatibility of objectives and the achievement of these objective because the measurement of gains made by the joint activities impacts the assessment of how advantageous it is to be inserted into a network. Park and Ungson (2001 p.47) assume that "a network is able to sustain its structure and remain an efficient mechanism



for intercompany transactions, while the economic benefits of the partners outweigh the potential costs of managing the alliance."

The variables of Factor 13, called Legitimacy Creation, are related to organisational motivations that convey legitimacy to partner companies and stakeholders (Chen 2010). According to Haahti and Yavas (2004), companies can gain access to a logo, a shared brand, names and other bases from the network level, which generate legitimacy for these same organisations. The legitimacy summarises the activities of the companies, which can then be recognised by key stakeholders (Lawrence et al. 1997).

Finally, Factor 14, called "Value Generation and Innovation", has 3 variables that congregate propellant aspects of sustainability for these arrangements, involving the creation of new knowledge, the generation of new benefits or differences in relation to companies outside the network. To Westerlund and Rajala (2010) there is a direct relationship between innovation and the collaborative business networking process. Ahola (2009) mentions that the inability to provide new benefits for its members can lead to relationships between firms in the network deteriorating. For Harrigan (1988), the generation of value is linked to the new benefits created by the network, and a failure in this regard can lead to dissatisfaction and a withdrawal of cooperation.

Regarding the variable satisfaction of entrepreneurs, the average of the responses was 5.16, with a standard deviation of 1.65. The median of this variable was equal to 5, and the mode was equal to 4. The percentage of respondents who assigned a score less than or equal to 5 for this measure was 60.10%. With these results, it is plausible to say that these entrepreneurs did not demonstrate a high degree of satisfaction. In an attempt to show an overview of the aspects that may be more positively or negatively related to this measure, we display Chart 5, in which the mean and standard deviation of the factors resulting from the exploratory factor analysis are exposed, demonstrating the perception of entrepreneurs.

#### **Insert Chart 5 here**

It can be verified by an analysis of Chart 5 that the factors that stand out with the lowest averages are "Previous Relations" (2.07) and "Reaching of Goals" (2.53), indicating that entrepreneurs disagree that they knew the other members before the formation of the network, that the proposed objectives were achieved by the network and that the cost-benefit ratio was positive. These factors apparently can explain why a low score was given to the measure of satisfaction with the network where entrepreneurs were inserted. Moreover, we can highlight four factors that had averages above 4: "Interorganisational Learning" (4.77), "Symmetry of Information" (4.34), "Individualism *versus* Collectivism" (4.34) and "Previous Social Ties" (4.04). The positive evaluation given to these factors by entrepreneurs shows that they agree that the aspects related to these factors existed in the network in which they participated, and these are probably related to a positive evaluation of the network.

#### *4.3 Influencing factors in satisfaction*

To investigate the influence of the factors found in the exploratory factor analysis on the dissatisfaction of entrepreneurs who left networks, a multiple regression analysis was carried out. The regression model was elaborated by the stepwise method, using as a dependent variable the measure of satisfaction/dissatisfaction of entrepreneurs and as independent variables the factors identified and explained in the previous section of this article. Chart 6 shows the values of the coefficients of the constant and evaluative measures of the resulting model.

#### **Insert Chart 6 here**

It is observed by the analysis of Chart 6 that the F Test was significant for the resulting multiple regression model, indicating that at least one of the independent variables influences the dependent variable. This fact is corroborated when analysing the t test because all variables in the model were significant at 5%.

To measure the quality of fitting of the formed regression (model) line, the adjusted coefficient of multiple determination ( $R^2$ ) was used as an indicator. This factor, in the design of Hair *et al.* (2009), is a measure of the proportion of variance of the dependent variable around its mean that is explained by the independent variables (*i.e.*, a measure of fit of the regression line). In the regression model, 44.4% of the satisfaction of entrepreneurs surveyed in this study can be explained by the following factors: Reaching Goals, Interorganisational Learning and Participative Management. It is worth mentioning that entrepreneurs who left the network were not really satisfied because, on a 10-point scale, the average score was approximately 5, with 60.10% of entrepreneurs giving ratings less than or equal to this value .

Regarding measures to verify the assumptions of the model used in this study, the model found meets all assumptions evaluated. First, it is emphasised that the model meets the suitability criteria on the issue of multicollinearity because the measurements of tolerance and the VIF index showed satisfactory values. Second, the model meets the assumptions of normality because the KS test did not show a significant value at 5% (sig = 0.441). In this case, the null hypothesis of normality of the residuals is accepted. Third, on the issue of residual autocorrelation, the model also presents no problems because the Durbin Watson test showed a value of 1.660, meeting the criteria of Gujarati and Porter (2009). According to this author, to meet the assumption of no autocorrelation, the Durbin Watson test result must present values within the range of 1.52 to 2.48 for a sample of 100 to 150 cases (considering 1 % significance). Fourth, the model has no problems with homoscedasticity because the Pesaran-Pesaran test also did not show a significant result at 5% (sig 0.616), which leads to the acceptance of the null hypothesis that the residuals are homoscedastic.

Moving more specifically towards the analysis of model variables, it appears that the factor "Reaching Goals" has a greater influence on the satisfaction of the entrepreneurs surveyed. The descriptive statistics presented above show that this was one of the factors most negatively rated by the respondents (mean = 2.53), which shows that the objectives proposed by the network have not been achieved and that the cost-benefit ratio was negative in the perception of companies. This result is consistent with the postulates of Jarillo (1998) and Park and Ungson (2001), as presented in this paper. The network should provide potential gains and benefits to its partners that are higher than the costs of maintaining the network. Failing to meet this condition may generate dissatisfaction in the network members.

Similarly, another factor that influences the satisfaction of members of networks is "Interorganisational Learning". As said by Popp et al. (2013), learning is inherent to networks due to the simple fact that they are established to operate differently than traditional forms of organisation and consider problems that cannot be addressed by a single organisation. The results found show the effect of this factor on satisfaction for entrepreneurs. Apparently, the level of satisfaction of a business is not less than that found for this factor, which was highly rated by respondents (see the descriptive statistics presented in Chart 5).

The last factor in the model that affects the dependent variable studied in this paper is "Participative Management". Based on our results, it can be stated that the practice of participative management within the network influences the level of satisfaction of partners. This fact strengthens the conception of Barnard (1938) and McGregor (1960). They mention that, based on the Administration Classical Theory, commitment, cooperation and respect are all parts of human motivation within an organisation (in this case, the network) and that these reasons serve as alternatives to self-regulation of the forces that lead individuals acting individually and in an opportunistic way or in a participative manner.

## 5. FINAL CONSIDERATIONS

Studies on interorganisational networks have covered different lenses of investigation, such as economic relations and social relations related to aspects of management and governance. The present study involved aspects related to these different research approaches with the aim of exploring what factors influence the dissatisfaction of businesspeople who left networks and the impact of these factors on levels of satisfaction.

To achieve this objective, an empirical study was supported by structured and consistent theory regarding the study object. The study found 14 possible explanatory factors for the satisfaction of entrepreneurs. As demonstrated in the analysis of the results, these factors extend from aspects related to the antecedents to collaboration, including collaborative processes and even the perceived collaboration outcomes, approximating the postulates of Chen (2010) and Klein and Pereira (2012).

The results of multiple regression analysis revealed the direct influence of three factors on the satisfaction of entrepreneurs who left the network: "Reaching Goals", "Interorganisational Learning" and "Opportunistic Management". It is worth noting that the values of the coefficient of determination ( $R^2$ ) show a degree of explanation of 44.4% for the observed dependent variable. These results are understandable whereas the formation and development of business networks aim to constitute a complex of relationships that makes it possible to solve problems and questions together, which would otherwise not be possible by an individual company. However, this cannot be achieved with the existence of the problems encountered. In the understanding of Weber and Khademian (2008) and Klijn et al. (2010), networks establish a knowledge base and assignments that can be used by stakeholders to solve complex problems, so a key role for managers is to build this capacity through networks, which involves actively exploring the different opinions of participants and connecting these ideas.

It is worth noting that among the factors that have direct relations with the satisfaction of entrepreneurs who left a network, the greater impact (Reaching Goals) is precisely the one that had one of the lowest averages (2.53) among the factors evaluated. This finding indicates that, in the perception of entrepreneurs surveyed, networks failing to generate benefits and achieving goals and objectives that would provide greater gains than costs and investments for entrepreneurs directly impacts levels of satisfaction. This problem may be associated with fundamental aspects observed since the formation of the network, such as the selection of partners, goal setting and alignment of goals.

Considering these results, it is important to develop reviews on these aspects to construct a path of understanding for overall network efficiency. Some possible evaluation questions include the following: Does the network have a vision and goals that are understood and supported by all members? Does the network have the resources needed to achieve the proposed objectives? Is the leadership style suitable given what is known about effective network leadership? By contrast, how many and which resources are companies willing to invest in networks? These questions could give validity to the results and complement/support the conclusions reached for the advancement of the theory. It is suggested that the pattern found, the final result of the study, be replicated with other samples because this sample is not necessarily the only representation of reality.

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Figures, Tables and Charts

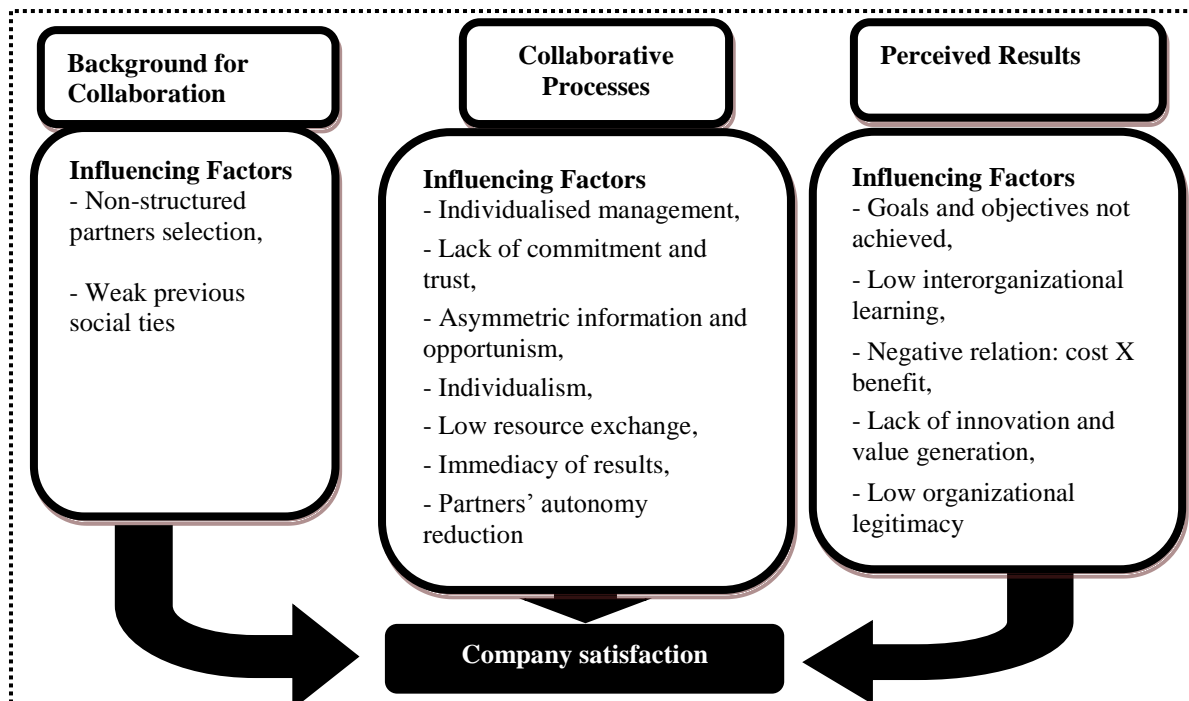


Figure 1: Framework of factors influencing company partners' satisfaction

Source: elaborated by the authors based in Chen (2010) and Klein and Pereira (2012).

Table 1: Characteristics of the companies that went out of networks

Age of company	Up to 5 years	10%
	From 5 to 10 years	16%
	From 10 to 15 years	23%
	From 15 to 20 years	20%
	More than 20 anos	31%
Number of employees	Up to 5 employees	38%
	From 6 to 10 employees	34%
	From 11 to 20 employees	16%
	More than 20 employees	12%
Time participating in the network	Up to 1 years	24%
	From 2 to 3 years	46%
	More than 3 years	30%
Participating in the network since the foundation	Yes	31%
	No	69%

Source: Research data

Chart 1: KMO and Bartlett's sphericity test for each dimension investigated

DIMENSIONS								
Background for Collaboration			Collaborative Processes			Perceived Results		
KMO		0,642	KMO		,743	KMO		,870
Bartlett's Test	Approx. Chi-Square	419,180	Bartlett's Test	Approx. Chi-Square	2924,970	Bartlett's Test	Approx. Chi-Square	2273,609
	Sig.	,000		Sig.	,000		Sig.	,000

Source: Research data

**Chart 2: Factor Analysis - Background for collaboration**

Factors description	Factorial
<b>FACTOR 1 – Partners Selection - Cronbach's Alpha (0,735)</b>	
There were criteria for selection, which were very clear and well defined when the network was created or when I entered the network.	,856
I knew all of the selection criteria when I decided to participate in the network.	,855
My company had reasons and objectives that were the same as the other companies with regard to entering the network.	,632
I consider partner selection a relevant factor for the network success.	,593
<b>FACTOR 2 – Previous Relations - Cronbach's Alpha (0,740)</b>	
Previously knowing the network members influenced my decision to join it.	,867
I knew the network members before it was created or before I decided to enter the network.	,809
Knowing the network members previously gave my company more benefits inside the network.	,695
<b>FACTOR 3 – Previous Social Ties - Cronbach's Alpha (0,874)</b>	
Knowing the network members before its formation eases the organisation and management of the network.	,932
Knowing most of the members facilitates the companies' adaptation to the network.	,908

Source: Research data

**Chart 3: Factor Analysis - Collaborative Processes**

Factor description	Factorial
<b>FACTOR 4 – Immediacy by Results - Cronbach's Alpha (0,927)</b>	
My expectation was to obtain faster results from participating in the network.	,912
I think the networks should generate benefits faster.	,895
The network generated few benefits in a short period of time, which discouraged me.	,862
My company had no profits in the short term, which is related to my decision to leave the network.	,804
The immediate benefits gained by my participation in the network were small and did not justify my staying in the network.	,792
<b>FACTOR 5 – Participative Management - Cronbach's Alpha (0,858)</b>	
Our company was always asked before any decision was made.	,819
All members were asked about strategic decisions, which were not daily things.	,812
My company and the other member companies had the same decision voice in the network business.	,804
The members worked as a group to plan services and decide goals.	,698
The member worked as group to solve network problems.	,643
<b>FACTOR 6 – Resources Exchange - Cronbach's Alpha (0,885)</b>	
My company adapted procedures or processes from other members.	,876
The other members in the network had some differences that I could bring into my company as value added.	,863
I started using other companies' practices, as I intended.	,863
There were some improvements in programs and operations in my company due to interactions with others, and the interactions were satisfactory.	,761
The exchange of resources was encouraged by the network.	,581
<b>FACTOR 7 – Trust and Commitment – Cronbach's Alpha (0,822)</b>	
Other members' behaviour strengthened my trust in them.	,747
The members in the network were committed to the activities and agreements in the network.	,683

I trusted the representative of the network and the owners of other member companies.	,590
I talked openly about any issue with other member companies in the network.	,575
The transparency was a strong characteristic of the network.	,524
<b>FACTOR 8 – Organisational Independency – Cronbach’s Alpha (0,798)</b>	
I had to diminish my time and attention employed in my company because of the network.	,783
Participating in group activities in the network was a large waste of time.	,758
I loosened strict control over some activities in my company because of the network.	,746
Our company had some difficulties balancing time for its own activities and time for network activities.	,702
<b>FACTOR 9 – Individualism versus Collectivism – Cronbach’s Alpha (0,735)</b>	
Member companies in the network used to prioritise their own interests over the others’ interest.	,836
Many times, the individualism of members (thinking only about themselves) was clearly visible.	,720
I believe in collaboration as a way for companies to keep up with the market.	,651
Being part of a network generates various advantages to its members..	,638
<b>FACTOR 10 – Information Symmetry - Cronbach's Alpha (0,913)</b>	
The information generated by the network was passed through among the members equally.	,834
All of the information was passed to all of the members in the network.	,806

Source: Research data

**Chart 4: Factor Analysis – Perceived Results of Collaboration**

Factors Description	Factor
<b>FACTOR 11 – Interorganisational Learning - Cronbach's Alpha (0,906)</b>	
The network encouraged knowledge exchange among the members.	,866
My company acquired new knowledge, practices or abilities from participating in the network.	,850
It was common for the network members to exchange information and knowledge and information.	,787
The knowledge acquired in the network was very valuable.	,784
In the network, there were many opportunities for managers to get to know each other and discuss business.	,757
<b>FACTOR 12 – Reaching the Goals - Cronbach's Alpha (0,893)</b>	
I proposed goals and objectives that were accomplished by the network.	,778
My organisation goals were accomplished in the network.	,761
The network was efficient in reaching the goals and objectives proposed.	,738
The cost X benefit relation was positive for my company.	,694
The services offered by the network (negotiations with suppliers, marketing, trainings, etc.) were satisfactory for my company.	,650
During the time I was in the network, I had some results that justified all that was invested in the network.	,632
<b>FACTOR 13 – Legitimacy Creation - Cronbach's Alpha (0,914)</b>	
My company gained more market credibility (clients, suppliers, govern, banks, etc.) after joining the network.	,851
The member companies have a good image in the market for being part of the network.	,844
The suppliers were more confident in my company after it had joined the network.	,827
My organisation improved its image for its suppliers and clients because of the network.	,824
The services and/or products of my company became more attractive for the clients because of the network.	,751



<b>FACTOR 14 – Value Generation and Innovation - Cronbach's Alpha (0,870)</b>	
There was value generation to my company because of the network.	,770
By participating in the network, we were able to introduce some product, service or work practice innovations.	,716
By participating in the network, we introduced new practices that improved company functioning.	,585

Source: Research data

**Chart 5: Median and standard deviation of factors**

DIMENSIONS	FACTORS	MEAN	STD. DEVIATION
<b>Collaboration background</b>	<b>Partner Selection</b>	3.93	1.04
	<b>Previous Relations</b>	2.07	1.05
	<b>Previous Social Ties</b>	4.04	1.31
<b>Collaborative processes</b>	<b>Immediacy by Results</b>	3.83	1.35
	<b>Participative Management</b>	3.87	1.13
	<b>Resource Exchange</b>	3.39	1.15
	<b>Trust and Commitment</b>	3.63	1.00
	<b>Organisational Autonomy</b>	3.61	1.09
	<b>Individualism versus Collectivism</b>	4.34	1.14
	<b>Information Symmetry</b>	4.34	1.14
<b>Perceived results of collaboration</b>	<b>Interorganisational Learning</b>	4.77	0.99
	<b>Reaching Goals</b>	2.53	1.09
	<b>Legitimacy Creation</b>	3.23	1.34
	<b>Value Generation and Innovation</b>	3.51	1.16

Source: Research data

**Chart 6: Multiple Regression Results**

Factors	Standardised Coefficients	t	Sig.	R Square (R <sup>2</sup> )	F Test		Collinearity Statistics	
	Beta				Value	Sig.	Tolerance	VIF
<b>Reaching Goals</b>	0,499	6,812	0	0,444	36,163	,000	0,762	1,312
<b>Interorganisational Learning</b>	0,188	2,716	0,007				0,85	1,176
<b>Participative Management</b>	0,142	2,019	0,045				0,831	1,203

Source: Research data

Note: Dependent Variable - satisfaction of entrepreneurs