

Territories as Collaborative Networks: Concepts and Elements of Commitment

João Alberto Rubim Sarate¹ and Janaina Macke^{1,2}(✉)

¹ Faculty Meridional, IMED,

R. Senador Pinheiro, 304, Passo Fundo 99070-220, Brazil

{joao.sarate, janaina.macke}@imed.edu.br

² University of Caxias do Sul (UCS),

R. Francisco Getúlio Vargas, 1130, Caxias do Sul 95020-972, Brazil

jmacke@ucs.br

Abstract. The present study aims at analyzing a territory according to collaborative network concepts. It highlights the degree of members' commitment with a collaborative project. The research was conducted in a collaborative network in southern Brazil. The quantitative survey highlighted the three dimensions of commitment: continuance, affective and normative. Affective commitment was the most significant for the continuation of the collaborative network project. The research provides practical and academic contributions and demonstrates how collaborative processes can depend on a territory's specific resources.

Keywords: Collaborative networks · Territory · Commitment

1 Introduction

One of the major challenges of current studies on local development is related to the processes of endogenization and construction of new development strategies. If, in one hand, we see the decline of traditional industrial regions, on the other, we have seen the emergence of a new paradigm, such as the service innovation. This dialectical movement has been contributing to significant changes in the theories and practices of territorial development.

This work has focused on emerging forms of cooperation; such forms are called collaborative networks that consist in entities (people and organizations) autonomous, geographically distributed and heterogeneous with respect to its environment of operation, their culture, their goals and their capital [1]. It is precisely because of the capacity to promote collaboration in order to work collectively, that the collaborative networks concept can role a key position in the development of a territory.

The associative capacity depends on the degree that communities, groups and businesses share norms and values and are prepared to subordinate individual interests to those of larger groups. From these shared values trust emerges [2].

Collaborative networks organizations are structured primarily to make a favorable position against the competition. Therefore, internal resources presented in the group should be valued because they can become the source of competitive advantages [3–6].

From the perspective of territorial development, the process of building a competitive territory can be considered dependent on specific features in the territory. Resources should be understood as material assets and relational assets. An activity is territorialized when “its economic viability is rooted in assets (including practices and relations) that are not available elsewhere and that cannot be easily or quickly created or imitated in places that do not have them” [7].

However, working together can be challenging and risky. Often organizations can have a good performance when working alone and show poor performance when they work together. This means that before deciding to join a network, organizations must be prepared to collaborate in order to be ready to react quickly and take advantage of business opportunities [8, 9].

In the case of territories analyzed as collaborative networks, this is especially relevant. It is common to face some difficulties in collaboration processes, in terms of resources, individual’s contributions evaluation and lacks of commitment. In fact, a system of common values development is a significant element for the sustainability of collaboration, for it allows the key elements identification that create value in the network, avoiding misunderstandings and promoting the formalization of a shared understanding [10].

The study objective is to analyze the degree of commitment of a territory with its development project through collaborative networks, so as to identify strategies that can strengthen and sustain the collaborative process.

After a literature review and the presentation of the research context, the method section explains the sample as well as methods for data collection and data analysis. The subsequent findings section provides a descriptive overview on the thematic areas. The final section discusses the findings and concludes on the insights gained from this study.

2 Theoretical Background

The analysis of the territories centred on the concepts of territorial economy. Its fundamental elements concern the collective construction of the territory, based on its population daily lives, their work-related activities and family life. The territories and networks surveyed were considered as socioeconomic and political projects [11–13].

Networks have their own way to structure the relationship between the territory’s cooperative and antagonistic forces. They are instruments that enable to control power and disputes and are likely to function as integration and exclusion tools in differentiation processes [14].

Collaborative networks are organizational forms based on the collaboration between its members, according to a specific shared goal. A collaborative network organization (CNO) is a form of emerging organizational setting that involves mutual engagement of participants to solve a problem together, which implies mutual trust, and therefore takes time, effort and dedication. A CNO can be created from a regional grouping of companies that already have a longstanding relationship and a cultural history [15].

In this sense, organizational commitment refers to identification with the organization, through the belief and acceptance of company’s values and goals and through

the desire to remain a member of the company making efforts for the benefit of the organization [16]. In addition, commitment has three main features: strong belief in the goals and values of the organization, willingness to make an extra effort on behalf of the company and a great desire to join and belong to the company [17].

The most accepted view on organizational commitment refers to the psychological state that characterizes the relationship among employees and the company that implies the decision to continue being part of the company. In this study, we consider three components of organizational commitment: (i) affective commitment: related to peoples' emotional involvement and their identification with the organization, (ii) continuance commitment: related to perceived costs of leaving the organization; (iii) normative commitment: related to the feeling of obligation to remain in the organization [18, 19].

Once the concept of organizational commitment is extended and applied to the inter-organizational context of collaborative networks, identities are constructed from the interaction between networks and the territory. Given the networks' reciprocal character, the territory has even more relevance. The interaction between them requires intercultural exchange and new communication skills [14]. The key for thinking about the creation of collaborative networks is negotiation and intercultural communication skills, supported by inter-organizational commitment.

3 Method

This study was conducted at an agricultural business network, located in Southern Brazil. The survey was applied to 210 employees from companies that are members of this network. We aimed to correlate the amount of interorganizational commitment with the collaborative network project.

The territory is part of the Serra Gaúcha region, located in the state of Rio Grande do Sul (Southern Brazil). It is a region formed mainly by descendants of Italian immigrants who arrived in Brazil between the years 1875 and 1930. The region is characterized by the presence of small family farms, in part, due to the fact it is the largest wine region of Brazil with about 40,000 hectares of vineyards.

The sample was non-probabilistic, which was chosen for convenience. This work is an exploratory study that used quantitative approach. Exploratory research has the main purpose to develop, modify and clarify concepts and ideas [20]. This study is based on the survey method, using the questionnaire as a technique for data collection.

In order to measure interorganizational commitment we used the 7-item scale developed by Meyer and Allen [18], which was translated and applied in Brazil by Rego et al. [19]. Before formal survey, we ran a pre-test with fifteen members of the network. We used the software PASW statistic 18, to analyze data. The statistics chosen were the descriptive, the factorial and the correlation analysis.

The choice of this referential work was because of the similarity of some features of the context previously discussed by the authors with the reality of companies to be surveyed. The geographical proximity between industries and their integration and relevance in local communities reinforce this choice.

4 Discussion

The data were submitted to factor analysis using PCA (Principal Component Analysis), with varimax rotation and pairwise treatment (considered all valid observations of each variable) for the missing data. The index of Kaiser-Meyer-Olkin (KMO) adequacy of the sample was 0.903 and the Bartlett's Test of Sphericity - (significant to 0.001) indicated the factorability of data.

Results of factor analysis suggested that interorganizational commitment is explained by three factors, with 63.623 % of total variance explained. The Cronbach's Alpha for this scale was 0.922 that represents a satisfactory range for an exploratory study [21]. It is possible to conclude that the items in each dimension of the construct are suitable for measuring the interorganizational commitment into territories (Fig. 1).

Continuance Commitment 0.906*	Affective Commitment 0.862*	Normative Commitment 0.730*
Cost of leaving the network	Emotional attachment to the network	Feeling of obligation to the network
Cost of change	Strong beliefs in the networks' goals and values	Moral and ethical obligations
Previous investment in the network	Readiness to support other members	Cultural values
Result of a cognitive evaluation process	Need to maintain their membership	Degree of professional socialization
	Integration into the network	

* Cronbach's Alpha.

Fig. 1. Elements of interorganizational commitment dimensions and Cronbach's Alphas.

The factorial analysis resulted in three elements. Those adapted from Meyer and Allen [18] and Rego et al. [19] remained within the same concepts, which contributed for the construction of the concept of inter-engagement. The percentage of explained variance was 63.63 %, which means that the variables chosen and the resulting factors can explain 63.63 % of the inter-organizational commitment.

Cronbach's alpha values were calculated in order to test the consistency of the variables in each factor. The ideal alpha value in social sciences exploratory researches should be higher than 0.6 [22].

The first factor identified was instrumental commitment, with an alpha value (0.906) considered excellent [23]. Its variables obtained the lowest average (from 1.74 to 2.31), which means that in the context studied the degree of instrumental commitment was notably low. The cost of leaving the network was relatively low in the analysis of the degree of commitment.

Instrumental connection is linked to proximity to or the availability of resources and territorial assets that interest or benefit the individuals [13]. These resources and assets are employed in the context of collaborative network. When the relationship is

predominantly instrumental, the cost of moving can be high because it would imply in the loss of some advantage that the territory can provide to the individual [18]. In this particular case, the costs of an eventual departure from the collaborative network were low.

Affective commitment derives from identity bonds built over time. Its variables obtained the highest average (2.64 to 4.25), suggesting that links with the territory are essentially affective, the result of experience and acquired knowledge. The relationship between individuals and the area of the collaborative network includes objective and subjective aspects, which tend to increase over time [11, 24]. In the case studied, the strong emotional bonds indicate that members tend to remain in the collaborative territory even in dire situations.

The third factor, normative commitment, concerns the links established by reciprocal ties, the normative sense of duty of living in the territory in order to repay what might have been gained from it [11]. Its variables presented averages between 2.40 and 3.60, indicating that the development achieved through the collaborative network generated a moral sense of obligation to remain in it [18].

One aspect that was appeared relevant was the difference between the levels of network commitment of people who work with the family and other employees who have no family ties to the owners of the companies associated with the network.

As we can see in Fig. 2, the commitment levels are higher for those working in the family business. The analysis of variance (ANOVA test) was significant for the three factors ($p = 0.000$ for continuance; $p = 0.002$ for affective; $p = 0.000$ for normative), which indicates that the family ties are significant important for the network commitment.

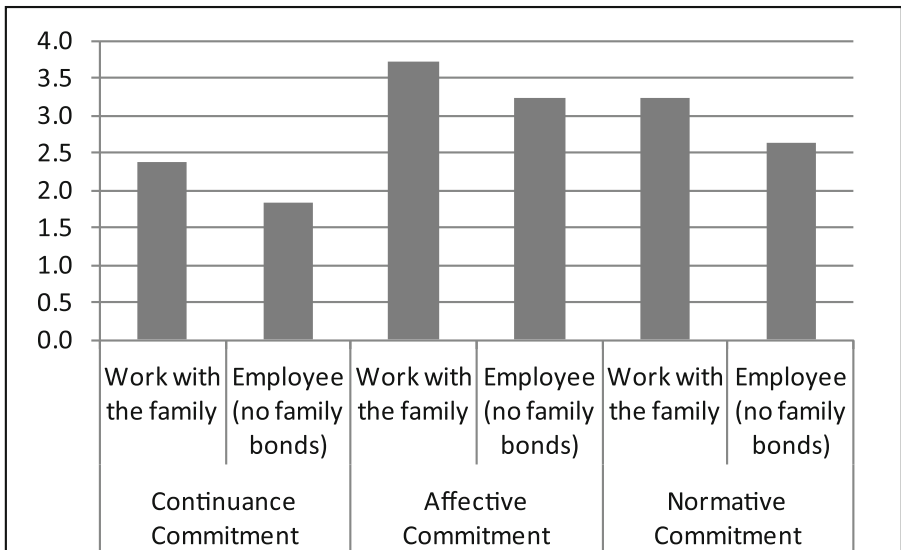


Fig. 2. Commitment levels according types of workplace relationships.

This explains the high level of affective commitment, because it mixes family with labor relationships, while sharing common life projects. On the other hand, this result points to a challenge: as the collaborative project matures, the need for more professional relationships increases and consequently, the need to achieve the commitment of new members without family ties.

In the region, dominates a workaholic behavior, cultural heritage of immigrants who believed that with work, everything is achieved. The obstinacy combined with an entrepreneurial vein, has become an unmistakable mark of the immigrant. This cultural aspect is predominant in the region and overlaps with other cultural differences.

Linear regression was applied in order to analyze how each group of variables was related to the general perception of commitment: the variable number 41 of the data collection tool - “Overall, I feel committed to the territory”.

Variables were considered significant when $p < 0.05$ (probability of error of 5 %). Beta is the relative significance of each variable and determines their order of importance in the same factor [22]. Value R^2 indicates the degree of explanation of the set of variables in relation to the general perception of the degree of territorial commitment. In order to perform linear regression, the stepwise regression was used. Such method considers as entry criterion of the variables in the model, their significance level [21] (Table 1).

Table 1. Linear regression model

Model	R	R ²	R ² adjusted	Error	Durbin-Watson
1	0.784	0.615	0.612	0.838	2.198

Regression analysis produced a single factor with R^2 at 0.615. This indicates that affective commitment explains 61.5 % of the variation in the dependent variable territorial commitment (removing sample size and data dispersion, the R^2 is 61.2 %).

The fact that only affective commitment is statistically significant indicates that in the case studied emotional attachment determines the degree of commitment.

This strong emotional link with the area can encourage collective movements opposed to merely rational practices and policies of territorial development. The area resulting from a collaborative network project becomes a collective construction that respects the different links with the territory and promotes multi-territoriality [24].

5 Final Remarks

The relationship between the territory and its collaborative networks can be contradictory: networks can act as a cohesion element or they can transgress territories. In this respect, even though the degree of commitment is not a determining element, the analysis of collaborative networks and the degree of the individuals’ commitment with their projects can demonstrate that participation is essential for the construction of new territorial scales.

This study maintains that engaging practices happen on an instrumental, normative and affective level, and configure an “ideal way of living” in an area. Residents depend on local resources and believe in remaining in the territory. The way of living is, in this case, the attitude of the individuals in relation with the space they inhabit.

Through which mechanisms the process of building a collaborative network can be understood? Being the territory something “alive”, how the sharing of resources should be considered? Such questions can lead to the identification of elements and methods able to encourage the establishment of new collaborative networks. Firstly, it is necessary to recognize that networks are not homogeneous; they function as connectivity spaces, a reticular formation that can preside over some kind of sociability that minds specially the level of affective commitment.

National policies for territorial development prioritize rational aspects much to the detriment of emotional and affective elements. Collective movements opposed to purely rational policies of territorial development are possible. The present study argues that divergent perceptions on territorial development projects should be considered, given that the concept of territory encompasses collective construction and respect for the different relationships within it.

Acknowledgments. This work is being supported by the Faculty Meridional (Faculdade IMED), University of Caxias do Sul (Universidade de Caxias do Sul - UCS), the Coordination for the Improvement of Higher Education Personnel (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior - CAPES), and the National Counsel for Scientific and Technological Development (Conselho Nacional de Desenvolvimento Científico e Tecnológico - CNPq).

References

1. Camarinha-Matos, L.M., Afsarmanesh, H.: Collaborative networks: a new scientific discipline. *J. Intell. Manuf.* **16**, 439–452 (2005)
2. Fukuyama, F.: *Trust: the Social Creation Virtues and the Creation of Prosperity*. Free Press, New York (1995)
3. Wernerfelt, B.: A resource-based view of the firm. *Strateg. Manag. J.* **5**, 171–180 (1984)
4. Prahalad, C.K., Hamel, G.: The core competence of the corporation. *Harvard Bus. Rev.* **68**, 79–91 (1990)
5. Barney, J.: Firm resources and sustained competitive advantage. *J. Manag.*, Greenwich. **17** (1), 99–120 (1991)
6. Penrose, E.T.: *The Theory of the Growth of the Firm*. Oxford University Press, New York (1995)
7. Cassiolato, J.E., Szapiro, M.: Arranjos e Sistemas Produtivos e Inovativos Locais no Brasil. In: Lastres, et. al. (eds.). *Promoção de sistemas produtivos locais de micro, pequenas e médias empresas*. UFRRJ/IE/REDESIST, Rio de Janeiro (2002)
8. Camarinha-Matos, L.M., et al.: Collaborative networked organizations: concepts and practice in manufacturing enterprises. *Comput. Ind. Eng.* **57**(1), 46–60 (2009)
9. Rosas, J., Camarinha-Matos, L.M.: An approach to assess collaboration readiness. *Int. J. Prod. Res.* **47**(17), 471–4735 (2009)
10. Camarinha-Matos, L.M., Macedo, P.: A conceptual model of value systems in collaborative networks. *J. Intell. Manuf.* **21**(3), 287–299 (2010)

11. Pecqueur, B.: A guinada territorial da economia global. *Política & Sociedade: Revista de Sociologia Política*. **8**(4), 79–105 (2009)
12. Mollard, A., Pecqueur, B., Hirczak, M., Rambonilaza, M., Vollet, D.: Le modèle du panier de biens: grille d'analyse et observations de terrain. *Économie Rurale* **308**, 55–70 (2008)
13. Bolba-Olga, O., Grossetti, M.: Socio-économie de proximité. Cinquièmes Journées de la Proximité. Bordeaux, juin (2006)
14. Silva, R.H.A.: *Sociedade em Rede: cultura, globalização e formas colaborativas* (2004). <http://www.bocc.ubi.pt/pag/silva-regina-sociedade-em-rede.pdf>
15. Camarinha-Matos, L.M., Afsarmanesh, H.: *The Virtual Enterprise Concept. Infrastructures for Virtual Enterprises: Networking Industrial Enterprises*. Kluwer Academic Publishers, Boston (1999)
16. Mowday, R.T., Porter, L.W., Steers, R.M.: *Employee-Organizational Linkages: the Psychology of Commitment, Absenteeism, and Turnover*. Academic Press, New York (1986)
17. Fiorito, J., Bozeman, D.P., Young, A., Meurs, J.A.: Organizational commitment, human resource practices, and organizational characteristics. *J. Manag. Issues*. **19**(2), 186–207 (2007)
18. Meyer, J.P., Allen, N.J.: A three-component conceptualization of organizational commitment. *Hum. Resour. Manag. Rev.* **1**(1), 61–89 (1991)
19. Rego, A., Cunha, M.P., Souto, S.: Espiritualidade nas organizações e comprometimento organizacional. *RAE eletrônica* **6**(2), 1–27 (2007)
20. Yin, R.K.: *Case Study Research: Design and Methods*. Sage Publications, Thousand Oaks (1994)
21. Hair, J.F., Babin, B., Money, A.H., Samoul, P.: *Essentials of Business Research Methods*. Leyh Publishing, LLC (2003)
22. Malhotra, N.: *Pesquisa de marketing: uma orientação aplicada*, 4th edn. Bookman, Porto Alegre (2007)
23. Pestana, M.H., Gageiro, J.N.: *Análise de Dados para Ciências Sociais: A Complementaridade do SPSS*, 4ª edn. Sílabo, Lisboa (2005)
24. Haesbaert, R.: *O mito da desterritorialização: do “fim dos territórios” à multiterritorialidade*. Bertrand Brasil, Rio de Janeiro (2009)