Disclosing the Relational Structure of Institutional Cross-border Cooperation in Two Cross-border Regions in Europe

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Abstract:

Cross-border cooperation (CBC) has evolved as a crucial objective of the European Union and an object of extensive research. As an intrinsically relational process wherein networks, and cooperation are integral to understanding the CBC, social capital and social network analysis offer a complementary perspective. Data were gathered through in-depth interviews with experts and secondary sources. This paper contributes using social network analysis to examine and describe the network structure of institutional CBC and Interreg programmes in two different cross-border regions. The results address the importance of the visualization of less and more integrated areas and the identification of key institutional actors in CBC.

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1. Introduction

Cross-border cooperation is intrinsic to the origin and nature of the European Union, and since the implementation of Interreg programmes, it has been increasingly promoted both internally and externally. A socio-political map of European cross-border regions is juxtaposed with the national borders. This complex and engaging context has received much scholarly and recent attention. (Nadalutti, 2015;Prokkola, Zimmerbauerand Jakola, 2015; Svensson, 2015; Fritsch, et al., 2015, Frątczak-Müller and Mielczarek-Żejmo, 2016). Cross-border cooperation and cross-border regions have together become among the fields most studied by political and social scientists in the European Union. This article situates cross-border cooperation in the sociology of regional studies and that of the European Union by addressing different social aspects of the European integration process and providing a different analytical perspective through social capital and social network analysis.

The objectives of this article are to describe the structure of Interreg cross-border cooperation and to identify the institutional actors with a prominent role in two cross-border areas of Europe.This paper makes a contribution giving value to the analysis of network structure among institutional actors who participate in Interreg projects in the cross-border regions of Southern Finland-Estonia (SFE) and Alentejo-Algarve-Andalucía (AAA) in their respective sub-programmes of the Interreg Central Baltic IV and Poctep programmes 2007-2013; it finds how cross-border cooperation is built differently in Southern and Northern Europe.

2. Research Interest in European Cross-border Cooperation and Cross-border Regions

Cross-border cooperation (hereafter CBC) is one of the three strands of European Territorial Cooperation better known as the Interreg programmes of the Cohesion Policy. It is rooted in its contribution to the European first aims of peace building across sovereign countries, and socio-economic convergence with commitment to a model of liberal democracy backed by a welfare state). And currently, ~~its main goal is~~ is channelled to the development of border regions with common challenges and with untapped growth, surpassing regional disparities and building cooperation on the basis of trust. The relevance of CBC for the European Union obeys to ~~a dual~~ processes of regionalization and European convergence, and also to the re-enactment of the legitimation of the European integration process. On the one hand, the spread of cross-border regions indicates that regional and local actors are expanding their executive role, crossing national boundaries for cooperation (Perkmann, 2002; Perkmann and Sum, 2002), and acknowledging opportunities for multilevel governance. This balanced partnership extends the capacity of decentralization of European Integration and approach the decisions of political elites to the border citizenhip. On the other hand, the European Union has witnessed the need to harmonize socioeconomic standards across different regions in pursuit of European cohesion. Thus, cross-border regions are a starting ground for European Union institutional and procedural innovative arrangements, like working communities, Euroregions or the EGTC (European Group for Territorial Cooperation). They represent a diverse range of institutional entities for promoting cooperation between neighbouring authorities and expected to become in key players but also in exploratory experiments of the European integration (Knippenberg, 2004).

Therefore, CBC has emerged in recent decades as one of the major processes of European integration (Rojo and Varela, 2010) and one of the main topics of interest in Europe (Rojo, 2011). The potentiality or

a-priory function of cross-border regions as territorial, cultural, socio-economic and political regions – where processes of integration presumably take place – awakened research interests in a myriad of cross-border regions in both old and new Europe. The European Union, with its institutional and legislative arrangements (Regional Policy, 2016a) has promoted the study of cross-border regions and the evaluation and impact assessment of regional policy. However, the study of cross-border regions and cross-border cooperation has also taken a prominent place in the scholarship.

European CBC is a cumulative process that crosses different stages and border regions with the increase of the so-called, Working Communities, Euroregions and the more recent European Grouping of Territorial Cooperation (hereafter EGTC) (Morata, 2010; Sousa, 2012; Terlouw, 2012; Gabbe and Ramirez, 2013). This longevity has caused CBC to be targeted through a number of different approaches: as an historical process of progressive convergence between regions with different developmental stages; as European Territorial Cooperation policy with an expected impact over the socioeconomic characteristics of border regions and the population; as the study of drivers and obstacles of CBC in case studies of cross-border regions; or as the study of transnational institutions leading cross-border cooperation.As part of the recentsociological immersion in regional and European studies, we employa social capital and more specifically network approach that, on the one hand, comprehends the study of the dynamic social and cultural aspects of the citizenship living in cross-border regions (anonimized, 2014) and, on the other hand, studiescross-border policies as networking processes, or as a form of governance by networks (Sohn and Giffinger, 2015; Walther and Reithel 2013).

3. Cross-border Cooperation Through Social Capital and Social Network Analysis

The use of social capital and social network analysisnotions is not a recent conceptual resource in the study of cross-border regions and cooperation. Looking at definitions or criteria of cross-border cooperation and cross-border regions, one encounters common terms such as relations, networks, cooperation, coordination, capitalization, resources, and integration. They encourage the use of social capital and incorporate both conceptual and methodological frames into the study of cross-border cooperation and cross-border regions; understanding social capital as the "social relations mediated by stratification factors, that permit access to resources possessed by others, that can be measured through social network analysis, studying the nature and structure of the social ties (Burt, 2008; Lin, 2008).

Revisiting different network definitions and models, cross-border cooperation is in large part about networks, the flow of resources such as information, the access to resources between people, organizations, and institutions and cooperation through institutional agreements and structures. Thus, social network analysis might be a new way to understand the European Union's cohesion process. Such an analysis constitutes a dynamic and adaptive response to the new and changeable socioeconomic and geopolitical needs of this cohesion process.

Parallel to the traditional institutional approach to cross-border cooperation, social capital and social network analysisalso employ an innovative perspective and methodology to explain the complexity of cross-border cooperation and socio-economic exchanges (anonimized, 2014). It seeks first to identify new insights and shadow dynamics of cross-border policies that other perspectives have underestimated, such as the role of both formal andinformal relations, the role of certain institutions against others, etc.The regionalization process taking place across European borders is a matter of progressive social and economic integration through the diminishing effect of borders and national barriers. This integration emerged from the flow of people, associations, and organizations that foresee, at the other side of the border, a motivation for or advantage to crossing it. At this crossroad, multiple interactions converge into cross-border networks for which dynamism might offer a distinctive perspective on how European integration takes place. Under the label of bottom-up approaches, there are studies that focus on the human and social constructions of cross-border regions and their alignment with the projected European integration process (Löfgren, 2008; Van Houtum, 2000; anonimized, 2014; anonimized, 2014).

Second, it considers the cross-border cooperation to be a process of governance by networks. In so doing, cross-border cooperation emerges as o form of European governance adapted to the flexibility and de-territorialisation motivated by the European Cohesion and ever closer union criteria. Accordingly, under social capital and social network analysis frames, cross-border projects, initiatives and institutions may be the target of analyses related to policy efficiency, governance, and impact in cross-border areas. In this terrain of flexible governance, cross-border cooperation arises as an exemplary multilevel policy whereby

local and regional institutions use social and institutional relationships as a form of governance. But cross-border cooperation is also considered to be an experiment in European Union democracy-making (Hall, 2008) and, consequently, a laboratory for top-level governance through networks between governmental levels, citizenship and institutions. Thus, trans-boundary networks in the European Union—and even more through cross-border cooperation instruments—are of great interest in the scholarly debate and are of great relevance to policy practice (Church and Reid, 1996; Enokido, 2007;Dörryand Decoville, 2016; Dörry and Walther, 2015; Fricke, 2015; Sohn and Giffinger, 2015; Frątczak-Müller and Mielczarek-Żejmo, 2016).

More specifically, social network analysis aims to identify the relational structure and functioning of groups including cliques and key actors named as brokers, intermediaries or gatekeepers, as well as to link those structural relations to specific outcomes (Hafner-Burton, Khaler and Montgomery, 2009). Using this approach, the efficiency and impact of those cross-border cooperation projects may be related also to network structure forms and networks as a form of governance.

Focusing on the analysis of institutional and formal CBC, the social network analysis expands the explanatory capacity of the complexity of cross-border cooperation. The structure and content of relations between actors reveal significant information and can thus complement an attribute perspective based on actors' profile information. According to this idea, cross-border cooperation should be studied not only through the attributes of projects and institutions but also through relations among institutions promoted by people, experts, and politicians, etc., who engage in projects for common goals. For instance, much of the evaluation of the cross-border cooperation programme Interreg (Directorate General Regional Policy. 2009, 2010a, 2010b and 2010c) is based on the achievement of efficiency; that is, in terms of an equation of cost and outcomes. However, considering that the Interregprogramme is a multi-level cross-border institutional network, the examination of cross-border cooperation and its efficiency should also turn to the analysis of network structure or design, the role of leaders, the nature of networks between different institutions, the timespan necessary for creating and consolidating those networks, and existing opportunities or obstacles related to the mode of governance.

We find previous works in this line of research. Grixand Knowles (2002) assess the role of Euroregions and propose two analytical assets related to social capital (bridging and bonding social capital). In an initial step,Soeters(1993), proposed a network theory for the study of Euroregional networks in the Maas-Rhine Euroregion.The policy network approach is proposed also by Perkmann (1999, 2002) as the most appropriate means of explaining European cross-border cooperation. There are recent case studies applying social network analysis to the study of cross-border cooperation policies using the policy network approach (Brunet-Jailly, 2006; Walther and Reitel, 2013, Sohnand Giffinger, 2015; Dörry and Decoville, 2016; Dörryand Walther, 2015). These case-studies allow for a new perspective wherein cross-border policies – such as national policies – are dynamic processes in which multiple actors interact. What makes it possible to represent the network structure of specific policies or programmes is the study of relational density between institutions involved; identifying key actors, flows of information, and the influential capacity of actors; and conducting an analysis of certain variables in the conformation of cross-border networks with regard to policymaking in cross-border regions.

4. The Cross-border Regions Southern Finland-Estonia (SFE) and Alentejo-Algarve-Andalucía (AAA)

The European Territorial Cooperation entails three types of joint programs: transnational cooperation programs, interregional cooperation programs, and cross-border cooperation programmes. This latter type of programme was that of the former Interreg, a community initiative with the fourth programme period 2007-2013. Two of the 60 programmes are the Central Baltic Interreg IV A Programme 2007-2013 (2011) and the Operational Programme for Cross-border Cooperation: Spain – Portugal, 2007-2013 (Poctep, 2011). These programmes (Regional Policy, 2016a), are the operative frame for cooperation in cross-border regions' object of analysis in this paper: the border region between Southern Finland–Estonia (SFE) as one of the three sub-programmes of Central Baltic Interreg IV Programme; and the border region Alentejo-Algarve-Andalucía (AAA) as one of the five areas of cooperation within Poctep.

The interest in analyzing these two cross-border regions lies in the fact that they both have similarities which form solid background for social interaction, and the implementation of cross-border cooperation projects. However, if one represents one of the oldest beneficiaries of the European territorial cooperation

policy and thus, with longer experience in cross-border cooperation, the other represents a recent cross-border region arising after the Eastern enlargement of the European Union. They represent two cross-border regions with significant historical relations, with cultural and linguistic similarities that provide a common basis of civilization and ethnic unity. The regions share a similar mythology and religiosity, close cultural and social traditions, the affinity for social values, and the political elite construction of communities, which form an amalgam of reasons that drink from the Iberism, Balto-Finnic and Nordic ideas of civilization and union.

Despite this, in terms of infrastructure, socioeconomic development, and demographic characteristics, the two cross-border regions are very distant.The cross-border region between the Alentejo, Algarve and Andalucíais fragmented between rural areas, characterized by long-term demographic aging, what explain the lack of cross-border flows beyond the littoral part of the border, andcoastal and urban areas, where tourism is the main economic activity on the Spanish and Portuguese sides. An important obstacle for cooperation is the institutional asymmetry between their political administrative regimes (Covas, 2009; Fernández, 2008). In the Portuguese side the central political administration and local authorities,with important competences in fields such as education, the environment, and health, leaves few competence space to regional institution. On the contrary, the Spanish the Autonomous Communities or regional governments have a high level of autonomy in fields such as education, health, and energy. The region of Southern Finland and Estonia is an important metropolitan area. The population is concentrated in the capital cities and the closest areas of the cross-border region, in contrast to the aging population in other regions of both countries. Their cross-border cooperation is rooted in what could be compared to a big brother-little brother relationship (Suhonen, 1995), where the Finns help their closest kin to integration into the European Union. Although this cooperation has been marked by strong economic disparity between the two countries, this cross-border region forms a highly dynamic and international high-tech cluster within the Baltic Sea Region, with an intense flow of capital and labour mobility.

5. Objectives and Methodology

The objective is to describe the relational structures of cooperation in two different European cross-border regions, identifying the existing groups and institutions with key positions and complementing this information with experts' perception of these relations. With this descriptive analysis different potential analyses can be developed. It is possible to ascertain the flows of information or resources subjacent to these complete network structures, to detect those less connected institutional and territorial areas from those more dynamic ones and to value how this distribution of institutional social capital is related with the socioeconomic development of the regions.

This paper is part of a broader research designed to incorporate a multi-method approach and triangulation criteria between methods (anonimized, 2014). Results discussed in this work are based first on quantitative and visual analysis using social network analysis of objective data obtained from the archives of both sub-programmes SFE and AAA. They are also based, secondly, on a content analysis of semi-structured interviews conducted with expert professionals from public institutions. These expertsare members or beneficiaries of Interreg A projects in most of cases. Table 1 shows the project data sample distribution and identifies experts in both cross-border regions.

Table 1

For the construction and analysis of two complete network structures through Interreg projects, data were collected from all the approved projects that were carried out during the period 2007-2013 in the sub-areas Alentejo-Algarve-Andalucía (AAA) and Southern Finland–Estonia (SFE). The database consists of project profiles that were available electronically in both sub-programmes (Central Baltic Interreg IV A Programme 2007-2013, 2011 and Poctep, 2012). Every approved project contains informationrelating to its participating institutions. The dataset obtained classifies information (see Table 2) by number of projects, institutional members, country of origin of the institution, type of the institution comparable to both cross-border regions (i.e., whether the institution is a local, county, regional or state level public administration; enterprise; nongovernmental organization; foundation or consultancy agency), and whether participating institutions were leader or simple partners. To be the lead partner of the project, an institution must bear the responsibility of the whole project life thus acting as the main actor in a group of participating institutions.

The results of the two complete institutional network structures are triangulatedwith the qualitative analysis of experts' perception of institutional cross-border cooperation. A total of forty-five semi-structured interviews were conducted across the two cross-border regions. Considering the lack of institutional directory of professionals, it was convenient to do a theoretical sample and to apply the snowball technique (Dräganand IsaicManiau, 2012), following different geographical, institutional, relational and experience criteria (Elorie (2009). The researchers' participation in different institutional meetings and the available contact data of Interreg projects were the initial steps in the selection process of interviewees, who later on provided other informants' contacts.The interviews with expertscontained a group of questions regarding the opinion of the institutional relations in terms of intensity and quality, with an answer scale ranging between poor and good institutional relations.

The qualitative software Atlast.tiwas used to conduct a content analysis of experts' interviews, after a process of codification and categorization of discourses. Experts' quotations are cited in a way that preserves anonymity. Ucinetand Netdrawsoftware/programmeswere used to analyse and visualize the institutional networks (Freeman, 2004). In this article, attention is focused specially on network analysis measures of centrality such as degree and betweenness. The degree centrality represents the degree of power that a certain actor has within a complete network (Scott and Carrington, 2011). Betweenness centrality indicates the degree of connection that an actor has among other actors. The betweenness is related to the capacity of control in the flow of communication and resources among other actors. The actor with highest betweenness in a complete network is named as the gatekeeper or broker (Hanneman and Riddle, 2005). These measures are complementary and will identify the key position of certain institutional actors in the cross-border network structure of both sub-programmes that enabled them to act as the best intermediaries or bridging actors.

6. Results

First, as it shows Table 2, there is a greater institutional participation in SFE cross-border region. It is interesting to note that in the AAA area though there are 155 participant members in projects, a big amount of them have co-membership in different projects, so they are in total 88 institutions. In the SFE the 180 institutions are more than twice than in AAA. So the less co-membership in SFE areamakes greater the range and diversity of institutional participation. The sociopolitical context explains this behavior in participation. The AAA area is characterized by lower population and institutional density, which means that a large part of the institutions participate at the same time in different projects, meaning that certain amount of institutions monopolize the Interreg programme.

We can see also a clear dominance of Spanish and Finnish institutions in their respective cross-border regions, not only having greater presence but dominating the leadership of cross-border projects. Every type of institution has a different weight. While in the AAA area the regional actors have greater prominence, mainly from the Spanish side, in the SFE area, the universities and local actors tend to lead greater number of projects. Like we pointed before, the learning process of the small and big brother nature of the cross-border cooperation between Finland and Estonia is demonstrated in the Finnish dominant leadership. In the case of Spanish and Portuguese cooperation, the better economic conditions of the Spanish side and the bigger centralization of administration in thePortuguese side can explain the Spanish supremacy at leading cross-border cooperation projects. These reasons were stated also by the experts interviewed.

Table 2

"They have this tendency…and the Portuguese do so as well. But it is a natural question. It depends on where it is the main strength. At the economic level we have two countries and one of them is stronger economically than the other. It has also more population, sowe are more dependent. And we are a peripheral country also" (E16, Portugal, Manager, Public Institution, 2011). "I think that Finnish side is much more experienced because of their longer experience doing European projects. They were the project leaders, we were... And that was known from the very beginning but from the other side it was a learning process" (E13, Estonia, Manager, Public Institution, 2010). "And not because of our projects but because they themselves saw a model in Finland about how to develop their country. I think that is even more important" (E20, Finland, Manager, Public Institution, 2011).

Network Substructures

Applying social network analysis, the Figures 1 and 2 show different network substructures of participating institutions in Interreg A 2007-2013 in the cross-border areas SFE and AAA. Every institution was categorised by a number and a letter representing the type of institution (as indicated in Table 2),thenationality of the institutions was coded by node colour; and the distinction between partners and lead partners in one or more projects (Lead partner 1, Lead partner 2, Lead partner 3, Lead partner 4, and Lead partner 5) by node shape. Additionally, the size of the node represents the degree centrality of every institution.

Figure 1
Figure 2

These substructures of connections among different institutions participating in Interreg projectscorrespond to the formal networks promoted underEuropean cross-border cooperation objectives. The purpose here is to describe the relations existing in these networks, identifying the different sub-groups of actors, those key actors that could be better positioned in the flow of communication, and capacity of influence that are underlying to these networksand thosemore isolated institutional actors. In the substructures of connections found in the cross-border areas SFE and AAA, the construction of a cross-border and institutional social capital takes place through different subgroups connected by key actors, represented by those thicker nodes in Figures 1 and 2.

In the case of the cross-border area **SFE** (see Figure 1), its 180 institutions constitute several internally connected sub-groups that are highly disconnected from other substructures.There is a high number ofdyadic and triadicconnections between Estonian and Finnish institutions. They mostly represent small, independent cross-border teamworks among universities, local public institutions, and non-profit organizations that might repeat their cooperation in two projects. The numerous small groups of counterparts at both sides of the border that do not relate to bigger groups or to those actors with the highest centrality. Parallel to these groups, the network is formed also by bigger groups densely connected. The actors with the highest degree of centrality, represented by thicker nodes in the Figure 1, connect different groups forming a block of internally dense groups connected.

In the cross-border region **AAA** (see Figure 2)the lower institutional involvement (88) in cross-border cooperation produce a less complex set of substructures. Although it is alsoformed by internally connected subgroups, thatseem more densely connected than in the Southern Finland-Estonia case.The presence of an autonomous pair of counterparts engaged in cross-border cooperation is significantly less likely with only six dyads and eight triads formed by institutions with a highly specialised field of activities. This finding indicates that though cross-border cooperation is carried out in part by small groups of institutions from specialized fields of activity, there are bigger groups of institutions who form some blocks where certain actors have multiple comembership in different projects.

Table 3 represents degree and betweenness indicators relating to network centrality and centralization. Network Centralization is a macro measure of the entire network that expresses the degree to which the connections in a network are concentrated around a small group of actors (Hanneman and Riddle, 2005). If the network centralization is high, it indicates thatcertain actors are central, and other actors are peripheral. Both set of networks have very low network centralization, with17.72 in AAA and 17.61 in SFE. This means that, with the exception of certain institutional actors, the remaining institutions have a similar hierarchical position as both networks lack a high degree of inequality. Among those with a high degree of centrality, certain actors who have co-membership in different groups play a more important role in the whole network.

Table 3

Institutional Actors Centrality

Examining the institutional actors with the highest centrality in the cross-border region of Southern Finland-Estonia, universities seem to be hoarding the leadership of cross-border cooperation. Turku

University of Applied Sciences (52U) in Finland; and Estonian University of Applied Sciences (1U); are the most central actors. Both institutions collaborate to serve as leaders and partners, respectively, of different projects within the Interreg sub-programme Southern Finland-Estonia. These two universities represent those with a greater number of relations. In Figure 1, they are the thicker nodesthat connect the biggest group within the whole network connecting very dense groups with one another. This finding confers upon both universities a greater bridging social capital in the future with a strong potential for connecting other institutions and promoting greater cooperation. After these two actors and the group formed by University of Turku-Centre for Extension Studies (163U) to Foundation Saaremaa University Centre (177F), other remaining institutional actors do not have a central role in the whole network. This is the case of the Euregio Helsinki-Tallinn. Surprisingly, this multilevel network structure for cooperation has not a high centrality in Interregprogramme.

In the cross-border region of Alentejo-Algarve-Andalucía, power is distributed across a large number of actors. Among those with higher centrality are Portuguese institutions operating at the local level. The Association for the Development of Low Guadiana, Odiana (11O) is the most central actor in the network, and in so doing, follows the University of Algarve (33U), the City Councils of Mértola (10 L), Castro Marim (8 L), and Vila Real do Santo António (9 L). On the Spanish side, the Province Council of Huelva (4C) is the most central actor, followed by the regional administration of Andalucía as represented by the General Secretary of Foreign Action (1R). In Figure 2, actors (11O), (1R) and (4C) are within the largest group of the whole network as they are partners in different projects, especially Odiana (11O) which is the project leader of five different projects. Though local actors on the Portuguese and Spanish sides have higher centrality than the General Secretary of Foreign Action, this actor (1R) is a leader of three projects. However, it is important to remark that this regional government is operating through other regional entities suchas public enterprises, specific ministries, institutes of research, etc., which belong to the regional Government of Andalucía. The second largest group is led by the University of Huelva (40U) and the University of Algarve (33U). Both actors have created an intensive capacity for cooperation, building a community with dense, small groups of connected institutions.

Looking also at betweenness indicators we highlight that the institutional cross-border cooperation is developed by isolated small groups from two to five institutions, or by medium size groups of more than six partners. Among them, there are always certain actors who have co-membership in different projects. In these networks substructures, few institutions (twelve in the border region AAA and eighteen in the border region SFE) play the role of intermediaries and take greater control in the flow of communication and resources in a network for the development of cross-border projects. In both cross-border regions the actors with high Nrm degrees are also those with highest betweenness: Estonian University of Applied Sciences (1U) and Turku University of Applied Sciences (52U) are the best intermediaries and/or brokers in the network. In the cross-border region of AAA, Odiana (11O) is the best positioned in the network, and the University of Algarve (33U) is the second best broker in the network as this institution is the bridging actor of the second largest block of the network. Other important brokers on the Spanish side are the Province Government of Huelva (4C) and the Regional Government of Andalucía (1R). They are the most prominent actors who have not only more practice and knowledge at promoting cross-border cooperation, but also have more knowledge of the complete network as viewed through a global perspective on the whole set of institutional actors in cross-border regions. These same actors might also connect more effectively both within and outside of their regions, as they are capable of finding partners for the projects at stake and recommending suitable partners for cooperation.

Actors Perceived as Central

And what the experts interviewed said regarding the nature and content of the institutional relations and even valuing the role of certain institutions?In addition to results from network analysis, this study has also produced complementary results from qualitative content analysis. Experts were asked about their perception of those actors who were the most active and important in the official cross-border cooperation. It is very interesting to report that what the experts commented in these interviews supports what social network analysis has also detected. In the cross-border region of SFE, experts identified several types of actors as the most relevant to their cross-border regions: universities, local municipalities, and non-profit organizations. The universities of both countries were identified as very important and dynamic actors both in the formal and informal relations of collaboration. The University of Applied Sciences in Tartu (1U), and Turku University (52U) were identified also as very important actors. Municipalities represent also the 20% of lead partners in both countries. In this case, those cities most repeated by experts were the

capital cities of each country, Helsinki and Tallinn. Logically, the economic activity concentrated in the metropolitan areas of Estonia and Uusimaa, Finland makes these cities the most capable of carrying out projects.

"I mean the most actives are definitely the universities, and then municipalities and after that NGOs" (F20, Finland, Manager, Public Institution, 2011). "I think Governments but also Universities are very important" (F22, Finland, Professor, University, 2011).

We found differences between both cross-border regions regarding how experts valuated the nature of the institutional relations. Briefly, the most important remark is the greater presence of assessments of"poor intensity" and "poor quality"among the Spanish and Portuguese experts, with regard to the internal Spanish institutional relations between local and regional level. The experts' perception focuses on the dichotomous role of local and regional actors; that is, municipalities and regional governmental institutions, especially on the Spanish side. For experts who work for local administrations, inter-municipal associations or county and provincial institutions; should have a greater presence in leading cross-border projects. This reclaiming role does not correspond with the share of local actors in the network structure. Local actors do not represent more than 10% of Spanish institutions, though on the Portuguese side, they constitute 25.6% of participating institutions. Considering how many of them are project leaders, no local actors yet lead a project. All participate as partners or are represented by institutions at a higher level like the association of municipalities at the county level and provincial administrations. Among the local municipalities identified by experts as very active and important are the City Council of Mértola (10L), Figure 2 shows the largest group connected to Odiana (11O) and Regional Government of Andalucía (1R). This local administration is mentioned by Spanish and Portuguese experts as a very important actor in the region of Low Alentejo (BaixoAlentejo). Vila Real do Santo António (7L) and Ayamonte (22L) are located face to face on the border and are reported as an important pair of actors in cross-border cooperation.

"*In this type of cross-border cooperation we are the real protagonist, we are the Nuts III. However, we are losing every time more this role to the benefit of the Nuts II. Here the Nuts II is the Autonomous Community and all its regional ministries. That furthermore they are getting involved in more projects*" (E6, Spain, Manager, Public Institution, 2011).

Local inter-municipal or provincial actors are very relevant such as Odiana (11O) a reference for the experts in this cross-border region, Beturia (24C), and the Province Council of Huelva. Concretely, Beturia (24C) was created in response to initial cooperation between some Spanish municipalities and Portuguese city councils. This fact reflects the role of the formers for the maximization of Spanish municipalities' bonding and bridging social capital. The Province Council of Huelva (4C) is considered to be a social capital maximizer of the small municipalities that otherwise could not participate in projects individually.

"*To some extent the Portuguese institutions influenced in the formation of this Beturia grouping"*(E2, Spain, Manager, Public Institution, 2011). "*At least the Province Council of Huelva channels many times our voice and is the representative institution with this attitude*" (E3, Spain, Manager, Public Institution, 2011).

7. DISCUSSION AND CONCLUSIONS

All in all, network analysis reflects a more complex and fragmented network structure in the cross-border region SFE. It is dominated by the multi-presence and intermediary role of specific universities from each country. They form the centre of a big group comprised of multiple subgroups. At the same time, there are multiple independent groups of cooperation. The network structure of the cross-border region AAA appears with significantly fewer groups of institutions working independently. On the contrary, most cross-border cooperation takes place around some important institutions; mainly supra-municipal and regional public administrations institutions.

Undoubtedly, the national political-administrative structure of each country, the socio-economic context, geography, and spatial conditions of each cross-border region influence the network structure. Larger bridging structures present in a cross-border network of AAA are associated with higher institutional co-membership in a cross-border region that lack institutions capable of participating in the Interregprojects.

The greater weight of regional government on the Spanish side hampers the cross-border cooperation capacity of the majority of small local actors, located in the Spanish territory closest to the border which is underrepresented in Interreg cross-border cooperation, compared to the more autonomous Portuguese local actors. The lack of border permeability, summed to the low density of institutions close to the border, and the minor capacity of local actors for leading cross-border projects lead to a smaller institutional community where everybody knows each other. In such a community, there are very well-connected long-known and larger partners.

The cross-border region SFE is a metropolitan area with intensive economic activity and cooperation between both countries. The fluidity of communication enabled by transport, the percentage of people residing in these neighbour countries, student and professor exchanges, etc., are all relevant factors that boast the myriad of possible partnerships that later crystallized into formal projects to be funded in both sub-programmes. The greater intensity of cross-border relations leads to bigger amount of institutions eager to participate in cross-border cooperation sub-programmes. This cross-border cooperation is more fragmented and more democraetic due to the multiple subgroups of cross-border cooperation in specific fields of activity, though there are a number of key actors from the scientific and university terrain exceeding a great part of Interreg cross-border cooperation.

Here to fore, this article describes the types of cross-border cooperation extracted with social network analysis and complemented with content analysis. More relevant institutional actors and the dynamic of information and influence flows within network structure were identified. In these specific cases, the analysis has underlined problems related to local-regional governance in the cross-border region AAA, emphasising autonomous small groups of cooperation in the cross-border region SFE. From here on, this analysis suggests new questions that could open new lines of inquiry. For example, one might wonder about the implications that these types of network structures could have with certain expected patterns of socio-economic development and regional cohesion.

The results of this explorative analysis are astep forward for the immersion of social network analysis and social capital frameworks in the field of cross-border cooperation. They introduce a new perspective and systematic evaluations of institutional cross-border network analysis and the multi-level governance nature of cross-border cooperation. This consists of the perception of CBC as a process wherein a different arrow of actors with different types of relations are implicated in project development and as a form of governance based on the coordination of political decisions across different institutional levels (i.e., local, regional and national).

In light of cross-border cooperation as a structure of cross-border and cross-level institutional networks, this article has contributed significant findings. First, results spanning two different cross-border regions reveal different cross-border network structure shaped by the important socio-political and economic factors varying across contexts and regions. To continue research approaching other cross-border regions would lead to the visualization and understanding of the way and modes by which European institutional and cross-border integration take place. Second, this work permits the identification of those institutional actors more capable not only of participating in the complex arrangement of cross-border projects, but also leading a great part of the cross-border cooperation in cross-border regions. In addition, the secondary data from this project has mapped the forms of governance guiding Interreg cross-border cooperation, revealed as cross-field and cross-level networks. Qualitative data added significant value to this analysis regarding information flows, decision making processes, and the nature of relations. These findings enablefuture research using primary data to examine the formation of institutional networks and the development of cross-border governance.

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Table 1: Interviews to experts in the border regions SFE and AAA

Subprogrammes 2007-2013 / Cross-border regions	Number of projects	Institutions	Experts interviewed
Southern Finland-Estonia	35	180	23
Alentejo-Algarve-Andalucía	34	88	22
Total	69	268	45

Source: Authors' compilation from Poctep 2007-2013 (2011) and Central Baltic Interreg IV A Programme 2007-2013 (2011).

Table 2: Type of institutions participating in projects and leaders

Cross-border regions	Alentejo-Algarve-Andalucía				Southern Finland-Estonia			
	Spanish		Portugal		Estonian		Finland	
Number of member projects	**155**				**194**			
Number of institutions	**88**				**180**			
Type of institution	N	Leader	N	Leader	N	Leader	N	Leader
Universities (U)	3	2	1	0	22	4	25	7
Foundations (F)	5	2	0	0	6	0	6	1
County (C)	2	1	0	0	4	0	1	0
Region (R)	13	5	7	1	0	0	1	0
Local (L)	5	0	10	0	21	2	10	4
Business (B)	4	0	3	0	8	0	2	0
Non Profit Organizations (O)	1	1	4	1	9	1	4	1
Agencies (A)	3	1	4	0	2	0	5	1
Public independent entities (P)	12	4	7	1	20	3	34	6
Trade Unions (W)	2	0	2	0	0	0	0	0
Total	**50**	**16**	**38**	**3**	**92**	**10**	**88**	**20**

Source: Authors' compilation from Poctep 2007-2013 (2011) and Central Baltic Interreg IV A Programme 2007-2013 (2011).

Table 3: Indicators of centrality in institutional networks

Complete Network		Alentejo-Algarve-Andalucía	Southern Finland-Estonia
Network Centralization		17.72	17.61
Nrm Degree	**Mean**	6.81	4.37
	Desv. St.	4.35	3.03
Institutions with Nrm ≥ Mean Nrm Degree	**N**	36	77
	%	40.90	42.54
Betweeness	**Mean**	0.13	0.24
	Desv. St.	0.55	1.33
Institutions with Betweeness ≥ Mean Betweeness	**N**	12	18
	%	13.48	10

Source: Authors.

Figure 1: Networks of the cross-border cooperation in Southern Finland-Estonia subprogramme 2007-2013 representing Nrm degree

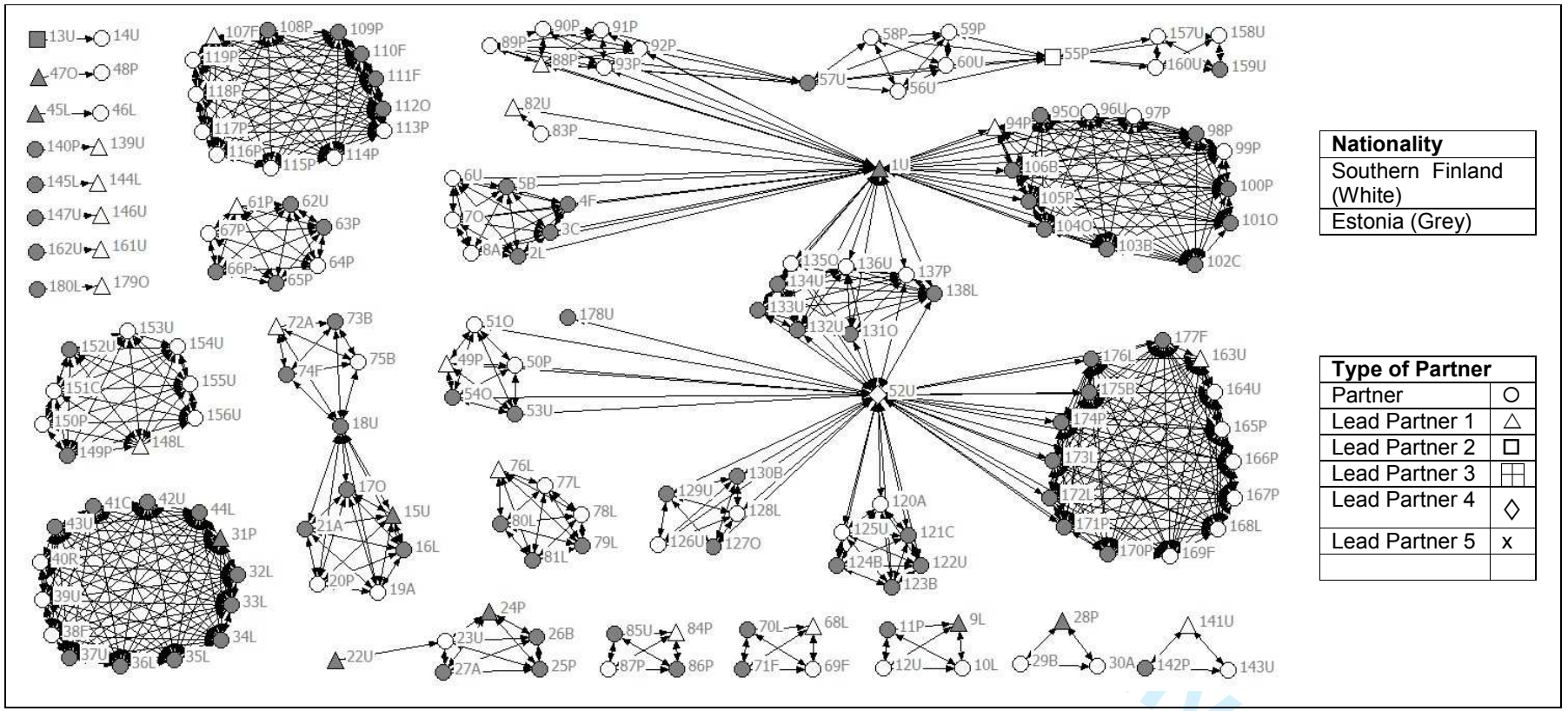
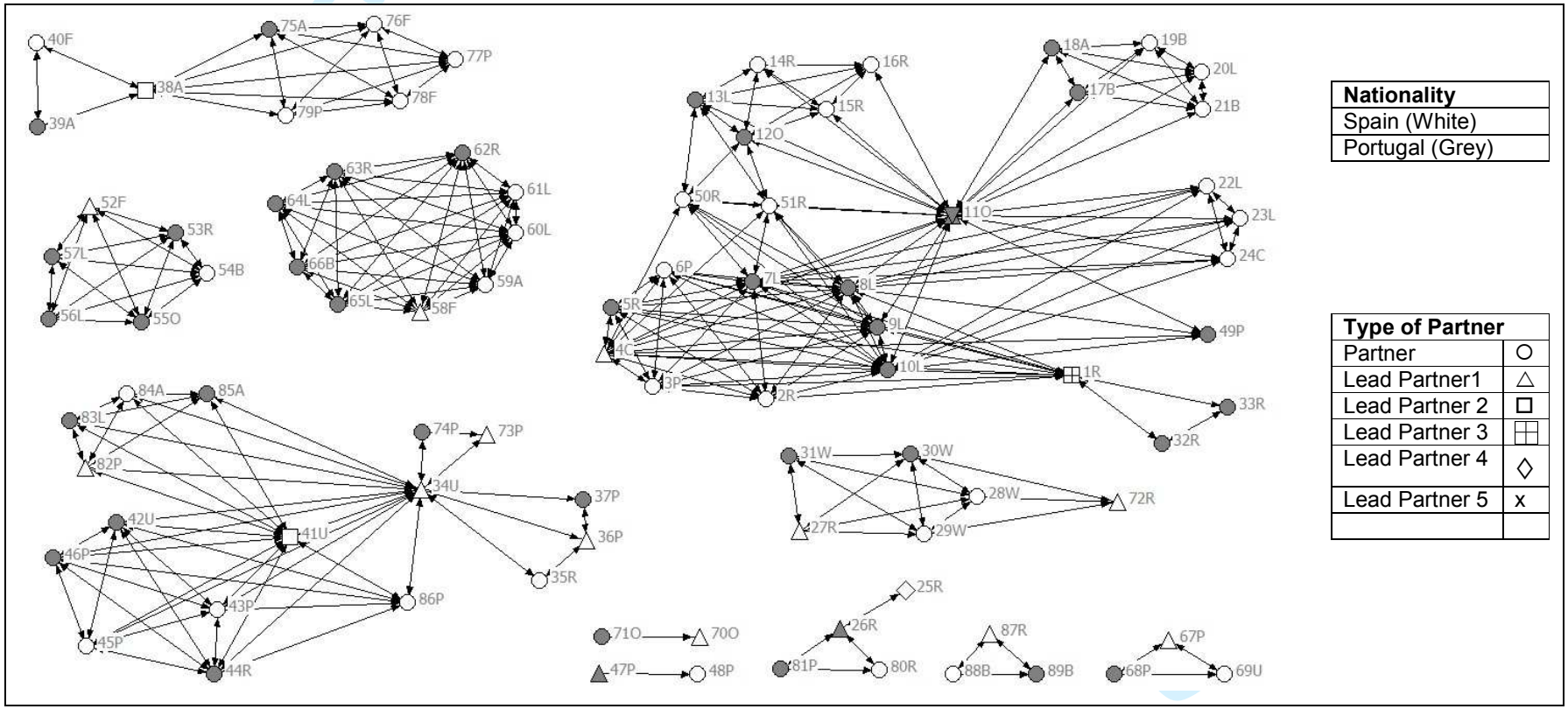


Figure 2: Networks of the cross-border cooperation in Alentejo-Algarve-Andalucía subprogramme 2007-2013 representing Nrm degree



Huelva, August, 27th, 2017

Dear Editor,

On behalf of my co-author, I am submitting the enclosed material for the publication in the *Journal of Borderland Studies.* It has not been submitted for publication nor has it been published in whole or in part elsewhere. I attest to the fact that all authors listed on the title page have read the revised manuscript, attest to the validity and legitimacy of the data and its interpretation, and agree to the final document.

Best Regards,

Teresa González-Gómez & Estrella Gualda.

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