

## Article

# Endogenous Political, Institutional, Cultural, and Geographic Determinants of Intermunicipal Cooperation—Evidence from Slovakia

Katarína Melichová \*  and Lukáš Varecha

Department of Regional and Rural Development, Faculty of European Studies and Regional, Slovak University of Agriculture in Nitra, 949 76 Nitra, Slovakia; xvarecha@uniag.sk

\* Correspondence: katarina.melichova@uniag.sk; Tel.: +421-37-641-4565

Received: 31 October 2019; Accepted: 14 January 2020; Published: 18 January 2020



**Abstract:** All over Europe, but especially in post-communist countries, the institutional environment has been undergoing major changes. In Slovakia, regaining their autonomy has led local governments on the path of fragmentation, unsustainably high expenditures for the provision of public services, and an increase in transaction costs. Current policies targeting these issues are heavily focused on intermunicipal cooperation (IMC). Based on four case studies of different institutional arrangements, this paper aims to investigate which endogenous political, institutional, cultural, and geographic factors influence cooperation among Slovak municipalities. Through the application of social network analysis and regression analysis, we reached several relevant conclusions. A number of common assumptions were confirmed, namely that population size and heterogeneity play a major role, but also that the impact of political affiliation as a deciding factor of IMC is not as straightforward as previous evidence suggested. Results also underline the importance of cross-sectoral partnerships such as the EU's LEADER initiative as a viable alternative to more traditional forms of IMC (but with some limitations).

**Keywords:** intermunicipal cooperation; institutional arrangement; LEADER; nodal region; social network analysis; political affiliation; ethnic and religious heterogeneity

## 1. Introduction

In Europe, major changes in the institutional environment can currently be witnessed at regional and local levels. It consists of the transformation of structures, institutions, roles, competencies, boundaries, and scale of governance. The need for higher efficiency at the lower levels leads to the everchanging governance arrangements—hierarchical structures are giving way to both inter-sectoral and intra-sectoral horizontal networks, and frequent territorial reforms aim to reshape municipal structure and their competences [1]. Municipalities have the opportunity to establish relationships that promote social capital, trust, and reciprocal behaviour given by their immobile position and proximity to other municipalities and other actors [2]. It is a key need for municipalities to cooperate and collaborate, as it is necessary to continuously create links creating and improving networks able to cope with the new challenges they face [1,3]. Many governments utilize inter-municipal cooperation (IMC) to deal with the challenges of efficient and effective public service provision, sub-optimal size of municipalities, and their limited planning and policy coordination capacities [4,5]. Municipalities face growing demands to efficiently provide administration and high-quality services as a result of austerity policies [6,7]. Small municipalities struggle to provide services more effectively, lack capacities to provide a wider range of functions, and may be less effective in planning and economic development policies [6,8,9]. An opportunity for success in this complex setting is the creation of multi-sectoral

flexible governance arrangements emerging as a product of a joint action of local actors [6]. In order to ensure not only their long-term development but also to sustain their ability to implement its purpose as a social system [10], municipalities engage in these governance arrangements, out of which the LEADER initiative is one of the most prominent in the EU, and form partnerships not only with other local governments, but also with representatives of private and non-governmental sector [9,11–15]. These forms of arrangements present novel and more sustainable forms of IMC [11,16].

Blaeschke [17] stresses the need for further research to answer the question of what actually makes a municipality a suitable cooperation partner. An approach to address this issue would be to analyse each pair of municipalities separately and examine how the differences in the pairs of potentially cooperating actors affect whether or not they collaborate.

The main aim of the paper is to identify relevant institutional, political, cultural, and geographic factors that significantly determine whether local governments will engage in intermunicipal cooperation through conducting case studies focused on four different types of institutional arrangements at the local level in the Slovak Republic. Although the results are affected by the conditions specific to Slovakia, they may be useful to researchers in other countries with similar background (e.g., other post-communist countries and some EU candidate countries) by raising questions considering under-researched dimensions of IMC and the impact of spatial cross-sectoral partnerships on cooperation between municipalities.

### *Theoretical Background*

Changes in the institutional environment also bring responsibility for sustainability issues for municipalities [11,18]. However, the geographical space in which these are occurring exceeds the boundaries of local governments. Feiock and Coutts [19] claim that networks, organizations, and institutions are needed to address issues related to sustainability. They view modes of governance linking actors in a network as a critical element in the involvement of municipalities in solving these problems. The emerging forms of IMC introduce additional modes of local resource governance. They may also aim to implement sustainable policies and sustainable delivery of public services [11,20]. Finding new forms of cooperation is also one of the features of a ‘smart village’ [21]. Within this concept, Visvizi et al. [22] emphasize the key role is played by local community, represented by local governments, which safeguard its interests. Local governments not only manage the development process in the territories, but European municipalities must operate in an environment influenced by EU policy [23]. This concept stresses the ability to innovate, as it can improve communication between stakeholders in complex socio-economic processes. Decision-making and the ability to innovate are crucial in securing the sustainability of a municipality [24].

Intermunicipal cooperation represents a collective action generalized to governmental institutions [25]. It is an established phenomenon that is widely utilized in European countries with histories of varying length [5,26]. Intermunicipal cooperation can be based on a contractual relationship or an informal cooperation with other municipalities in order to benefit from economies of scale and enhance public service provision and regional coordination [1,5]. IMC efforts in Europe have various legal forms, ranging from voluntary to mandatory, and different forms of intermunicipal cooperation are gaining popularity [7,27–29]. Cooperation can be institutionalized in the form of an organization, of which municipalities are members. In this case, local governments will delegate certain competences to this organization, which will carry out the activities previously carried out by the member municipalities. The decision-making power is in the hands of the board acting as a body within the organization. IMC, on the other hand, may be less formal—in the form of loose policy networks in which local governments work together in different policy areas. However, managing specific tasks remains in the hands of municipalities. They therefore retain decision-making power [5]. Hulst and von Montfort [30] classify cooperation on the basis of the purpose for which the cooperation takes place. They differentiate between service delivery and coordination and planning cooperation. Teles [1] distinguishes between four forms of cooperation based on the nature of cooperation and on

the degree of institutionalization. In the case of institutionalized soft cooperation, a new organization is created, but it is mainly used for policy coordination. Institutionalized hard cooperation involves the emergence of a new organization with specifically given competencies. Non-institutionalized soft cooperation means ad hoc cooperation to solve a particular problem, and it is not expected that cooperation should then continue. Finally, non-institutionalized hard cooperation means contracting between local governments for the purpose of delivering specific services. In some cases, only representatives of municipalities participate in the cooperation, taking part in the decision-making process on supra-municipal level. Other forms of cooperation include non-governmental partners. Gendźwiłł et al. [14] see a clear distinction between IMC and inter-sectoral cooperation. In the case of IMC, a similar type of resources are available to municipalities, and they are guided by the same set of legal obligations. In the case of inter-sectoral cooperation, other types of actors may want to accumulate the resources of other actors.

Since intermunicipal cooperation can take many forms and may arise for different purposes, different authors stress different benefits. Many authors [7,27,28] describe intermunicipal cooperation as a tool for co-creation and co-production of public services and reduction of costs, exploiting economies of scale and internalizing transaction costs. Others claim it fosters planning, policy, and administration coordination [5]. IMC may represent the means of acquiring external resources, because it serves as precondition for funding from grant schemes such as LEADER. Therefore, rather than a bottom-up initiative, IMC may often be a result of aspirations to receive funding from a higher level of government [8,31]. This may be the case when municipality engages in institutionalised IMC (LEADER, national schemes) mainly in order to get access to otherwise inaccessible funds (regardless of whether or not there is an actual cooperation among the actors) [14] or IMC may have the form of mandated networks and agreements where central government contributes to the financing of service provision (delegated from the central government) [31].

IMC is utilized mainly across fragmented local governments, as public officials of a large number of independent local government units may prefer it over amalgamation [8,32]. It plays an important role in many post-communist countries, where after a long period of territorial consolidation, dictated by former communist regimes, a deliberate fragmentation of territorial self-government took place on behalf of decentralization, and the right to self-government [8].

IMC in Slovakia is tied to the problem of highly fragmented structure of local municipal units [9]. Similarly to other Central and Eastern European countries, municipal structure has become highly fragmented after the fall of the communist regime. With the paradigm of decentralization and local autonomy in mind, almost every settlement unit has become an independent municipality [8]. These processes were partly a response to the forced consolidation carried out in the previous regime. As a result, currently, more than two thirds of Slovak municipalities have less than 1000 inhabitants. Fragmentation is most apparent in the rural areas of eastern and southern Slovakia, where some municipalities have only several inhabitants (in the municipality of Príkra with a population of 12 in 2018, three candidates ran for a mayor and seven for a council member [33,34]). These problems are deepened by the fact that according to the Slovak legislation, municipalities have the same competencies, regardless of their size in terms of number of inhabitants or area [35–37]. This represents a significant threat to the sustainability of Slovak municipalities, whether in an economic or social sense. The population structure of many small municipalities is dominated by the elderly and many municipalities face population outflows [35]. The provision of municipal services plays an increasingly important role in the municipal sustainability [38]. Given the constrained finances, some of those municipalities do not even have enough resources to perform their tasks, and they are left with virtually no prospects for their sustainable development [35]. This also limits the innovation potential for public service delivery, as smaller municipalities lack the resources to engage in a broader range of innovations, and it fuels inequality [39]. Destatte et al. [20] claim that municipal fragmentation among other factors influences the utilisation of certain policy tools linked to sustainability. It makes it impossible to use those tools in a way to achieve sustainable development in the delivery of public

services and processes, as small municipalities may lack the capacities to implement, for example, green building and social inclusion tools.

In general, there are three ways to deal with the problems of fragmentation. Governments may opt for amalgamation and create much larger municipalities, giving municipalities an opportunity to engage in various forms of IMC, or they may preserve status quo [40]. In Slovakia, there have been several attempts to amalgamate municipalities, but they were not implemented. After 2002, decentralization process transferred a large number of competencies to the municipalities and it was obvious that for communities with a small number of inhabitants a temporary way to ensure those would be performed. Subsequently, the communal reform was envisaged, which would in some way transform the structure of the municipalities. In 2004, the document calling for communal reform was presented. It proposed that the municipalities should either amalgamate and former municipalities would be abolished, or local unions/associations would be established and thus amalgamated municipalities would be preserved. However, municipal reform was not implemented for several political reasons. Any form of amalgamation was, in principle, seen as undemocratic by the mayors of small municipalities, and these claims were supported by some politicians. In 2006, a new government stopped all official negotiations and discussions on the communal reform. Therefore, IMC in Slovakia partly serves as a substitute for amalgamation. Some authors claim that IMC in fact contributes to fragmentation by maintaining the status quo, because it is an argument in the hands of amalgamation opponents [35,37,41,42].

Different theoretical frameworks deal with the issues of IMC, particularly with the incentives driving municipalities to engage in cooperation. A remarkable contribution was made by the institutional collective action (ICA) framework. It emphasizes the role of transaction costs for establishing and preserving cooperation. ICA empiric studies mainly deal with the impact of transaction costs on the cooperation decisions of American cities in metropolitan areas [43–45]. Barriers to cooperative action imposed by various transaction costs (information, negotiation, control, and enforcement) have to be outweighed by expected benefits in order for cooperation to take place. Feiock [25,46,47] stresses a problem of coordination. With limited resources and information on what are the needs of other municipalities, it might be highly inefficient to find out whom might a suitable partner be. Networks are emphasized in the reduction of transaction costs. By collaborating through a network of voluntary associations, representatives of local governments have an opportunity to interact face-to-face. Through repeated interactions norms of reciprocity and trust are built, leading to reduced costs of bargaining, negotiation, monitoring and enforcement. This results in a higher probability of establishing cooperation and its persistence [1,43,44,46].

According to theories of social embeddedness, actors are shaped by ties they have with others, as they are embedded in larger social, political, and economic structures [46,48]. LeRoux, Brandenburger, and Pandey [44] proved that, in the context of metropolitan governance in the US, the intermunicipal cooperation activities rise with a high number of interpersonal contacts. Actors share, access, and use resources mainly through socio-political networks [49]. In pursuing their goals, local governments have to take into account the rules embedded in the institutional framework [5]. The nature and quantity of relationships that the municipality has with others plays a key role. Municipalities are usually part of various overlapping networks. The existing ties of an actor in one network type may therefore affect their position in other networks. Stead and Meijers [50] argue that interactions between organizations go through a gradual development that begins with simple communication, exchanging information with each other. Subsequently, communication is transformed into cooperation, where organizations try to achieve common benefits and avoid conflict. In the next stage of coordination, activities become more coherent and less redundant so that other forms of cooperation can gradually be performed. Finally, these processes culminate in integration where activities and policies are identical.

Repeated interactions in social networks cultivate social capital. It represents actual or potential collectively owned resources linked to this network, and members of this network are entitled to use it [51]. Among others, it has a form of reciprocity, information sharing, and more efficient and new actions [52,53]. Policies can affect social capital, whether by enhancing it or destroying it. Suitable

measures are therefore important for network creation and subsequent social capital accumulation. Networks in which municipalities operate are complex. Local governments need appropriate incentives and tools in order to engage in cooperation either with other municipalities or with other actors. Non-governmental actors are often involved and coordinated in the network through a local leader, who acts as a broker in the network [54].

Wiesinger [51] acknowledges the role of LEADER local action groups (LAGs) as innovative local modes of cooperation. In view of achieving development goals, the LEADER program has become dominant in the EU as an example of a cross-sectional partnership based on a territorially embedded network [13]. Local action groups, which are one of the elements of LEADER, are considered by Marquardt et al. [55] as a form of network. They are dynamic structures characterized by the ability of actors to enter or leave them and, over time, change the nature of their ties to other actors [13]. LAGs design and implement community-led local development strategies. Within their competence, they create and implement operations and support for project management. The LAGs also assess applications for funds, monitor the implementation of the community-led local development strategy, and carry out specific evaluation activities related to the strategy, and carry out other activities [56]. Nardone et al. [12] directly mention LEADER as a tool for generating social capital. Furmankiewicz et al. [13] use social network analysis to explore the role of inter-organizational networks in Poland. They confirm that mutual coordination can help to unite the different views of various actors involved. Social network analysis is utilized by Marquardt et al. [55], who explore governance structures and the impact of social capital on capacity building. They claim the success of local action groups in Romania lies in its embeddedness in local power structures and in a network of regional and national importance. They report that, in some countries, municipalities hold an important position within local action groups and, in some cases, may try to limit the position of other actors to maintain power. Klamár et al. [9] perceive LEADER's local action groups as a form of IMC, and according to them, it has the prospect of becoming a platform for consolidating municipalities in the future. However, Bumbalová et al. [57] point out the shortcomings of LEADER implementation in Slovakia. Although the conditions of the partnership were formally met, local governments had a dominant position and the needs of minorities were not sufficiently taken into account in these partnerships. There were 29 LAGs established in Slovakia in the first programming period, and now, there is a total of 110 LAGs. Wang et al. [58] used social network analysis to explore the network structures in rural development at a local level in China. They also show that the village committee held a key position in the network. It played an important role in building the partnership and coordinating actors, serving as a link between local residents and other actors.

Although the LEADER LAGs dominate the European institutional landscape of spatial and cross-sectoral partnerships, other forms are also present. For example, the European Grouping of Territorial Cooperation aims to facilitate and promote cross-border, transnational, and interregional cooperation between its members, with the sole aim of strengthening economic and social cohesion. It is an entity with full legal personality [56]. Currently, there are four of these organisations operating in Slovak territory. On the other hand, Euroregions have no specific rights and obligations from a legislative point of view. In practice, they function as a non-profit organization. According to Dura et al. [59], Euroregions have no single definition, but there have been initiatives from the academic and professional backgrounds to define it. Medeiros [60] defines it as a cross-border region located in the territory of two or more European countries with a common territorial development strategy and regional specificities. Specifically, in Slovakia, we can also find spatial cooperation organisations called microregions, which are voluntary associations of municipalities with the aim of solving problems and finding the means of a joint development of the given area. The activities of these entities are mainly focused on the area of social affairs, environmental care, local transport, education, culture and local tourism [61]. The Slovak government, however, supports territorial cooperation organisations in a specific sector—tourism. Regional and local tourism associations are entities that provide information about the territory and its promotion. They are usually established by actors from both public and



private sectors, are allowed to earn revenue, but are primarily non-profit organisations [62]. Currently, there are 37 local tourism associations and seven regional tourism associations.

Although IMC has been implemented in Europe for a relatively long time, until recently, little attention has been paid to the factors motivating municipalities to engage in it. Relationships between municipalities are asymmetric and they are determined by political networks, and historical and cultural reasons [17]. Gendźwiłł et al. [14] examined IMC in Poland and compared the original motives of municipalities for cooperation with the actual outcomes. Financial motives (service delivery, investment projects) as original motives prevailed. The differences between the original motives of the municipalities and the outcomes were minimal. After the municipalities reached the goal of cooperation, this cooperation often continued with slight changes. One of the widely accepted factors of IMC is fiscal stress. Austerity policies initiated after the economic and fiscal crisis caused increased pressure on more effective and efficient administrative structures. In this situation, many municipalities intensified their cooperation efforts [6,7,17,27,36]. Empirical studies report that municipalities with large populations and therefore with strong fiscal capacity are less likely to cooperate because they are able to self-provide public services. Growing municipalities may also more willing to cooperate [17,43,46]. It is possible that this indicates adaptation to a growing demand for local public services. This is concluded by Blaeschke [17] in the case of small German municipalities. LeRoux and Carr [43] report that in the field of technical infrastructure, rapidly growing municipalities in the US rely on cooperation with local governments that have already made an investment. In their later work, however, this has not been confirmed [44]. On the other hand, some researchers found cooperation to be negatively related to population size [63,64].

Geographic proximity also strongly influences motivation for collaboration [7], as it affects network formation [65]. It also entails territorial identity. It is likely that neighbouring municipalities face similar problems. Awareness of their common position may make it easier for them to establish and maintain cooperation. Brown and Potosky [66] show that, in the case of contracting activities, isolated municipalities with small populations tend to establish cooperation with larger local governments possessing greater managerial capacities. In the case of service provision, a larger city conveniently located in the middle of several smaller municipalities can take advantage of this position and become a service provider for them [47].

Concerning demographic characteristics, many studies utilize indicators depicting population heterogeneity. In the case of internal heterogeneity, Oakerson [67] claims that, in heterogeneous communities, it is harder for public officials to promote project ideas and get support for intermunicipal agreements because of increased costs of accommodating the diverse preferences of citizens. Conflicting interests are more likely to occur in municipalities with heterogeneous population, as politicians simply cannot be fully in agreement with their heterogeneous electorate [17,47]. Heterogeneity among municipalities may also pose a problem. It plays an important role in the concept of an institutional collective action [46,47]. It implies that the more similar the municipalities in terms of the degree of similarity in the composition of their population are, the less costly the decision to cooperate is, represented by lower transaction costs. Feiock [46] claims heterogeneity places municipalities in different bargaining positions, creating political and economic power asymmetries. Studies focused on US metropolitan areas utilize racial heterogeneity (share of non-white population) as a proxy. Feiock and Park [45] show that racially heterogeneous communities are less likely to cooperate on development projects. Economic heterogeneity impacts the likelihood of cooperation negatively. In line with metropolitan governance studies, Blaeschke [17] reports that heterogeneity (share of the non-German population is used as a proxy) negatively affects cooperation decision in a European setting. Arieli [68] points out the importance of interpersonal factors in an ethnically heterogeneous environment. He argues that the struggle for scarce resources can deepen ethnic differences and historical perceptions, and thus affect trust between actors.

Many authors emphasize the effects of organizational arrangements and governance. Possibilities given by legislation can foster or constrain cooperation activities because some institutional

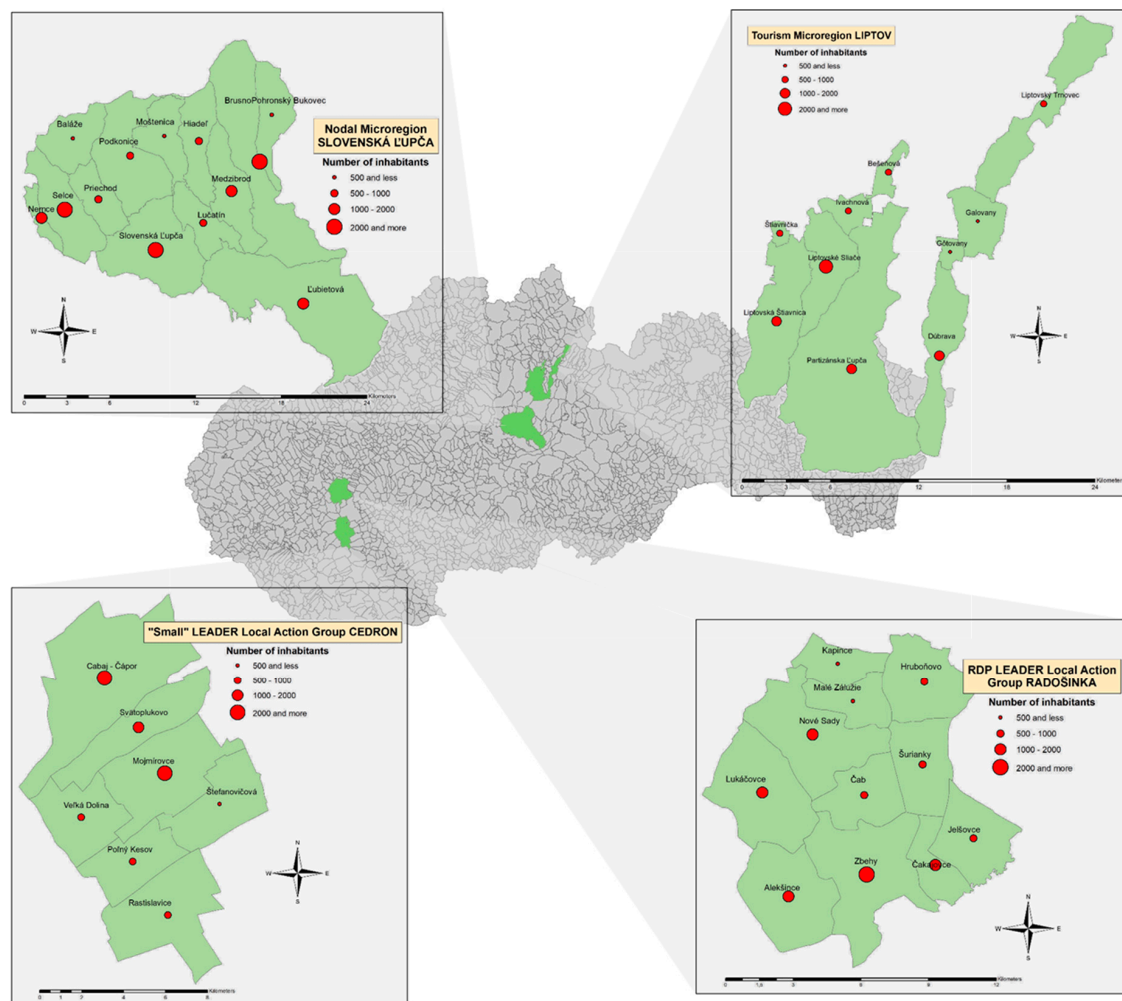
arrangements are simply more interesting than others, meaning that municipalities should be able to choose arrangements that are suitable for their needs [5]. Provisions can be made that explicitly prohibit or endorse specific forms of cooperation. Legal environment can also contain an incentive system motivating municipalities to engage in specific arrangements. [4,69]. The decision to cooperate might be backed by strategic or economic reasons. However, the decision to participate in IMC is ultimately in the hands of local politicians, since local officials are the ones, who were entrusted with instruments and competences that can make the cooperation possible. They are, on the other hand, accountable for their actions [70]. Thus, the personal intentions of many stakeholders such as mayors and council members are also reflected in decisions related to cooperation. Cooperation affects the personal ambitions of leaders, so their incentives play a part in the decision to engage in it. Teles [1] mentions other characteristics of representatives that influence their decision, such as individual styles of leadership, the formal position of local leader, risk-taking attitude, administrative and public management profiles, or organisational culture and norms. Bergholz and Bischoff [71] analysed council members of German rural municipalities and found that local delegates with considerable political power are clearly driven by self-interest and thus are reluctant to engage in IMC if it would endanger their political power. Blaeschke [17] puts the emphasis on the political affiliation of the municipality, given either by the political affiliation of its mayor or by the composition of a local council. He assumes that municipalities are more likely to cooperate if they are politically close. Differences in political affiliation might decrease the likelihood of cooperation because the goals of the potential partner might be unclear (imposing information costs) or simply because they fear losing the support of the electorate in the next election. However, even the differing political affiliations might be mitigated by the existence of political networks and the sufficiently long duration of professional experience of the given politicians [17].

Due to the changing institutional environment, incentives for cooperation need to be explored, as municipalities currently face complex regional issues. Teles [1] emphasizes the need to explore the ability of local governments and inter-municipal structures to participate in policy arenas at the local level. Moving beyond the issues of economic efficiency, it is necessary to explore how spatial and organizational factors affect cooperation and how they differ across governance structures and regions since proximity, historical, cultural, and political factors shape unique institutional environment [7,17]. By examining four different institutional arrangements, we shed light on the effects of these factors and on the impact of spatial cross-sectoral partnerships on cooperation in the Slovak setting. By utilizing SNA, we bring insight into how differences in these factors affect the cooperative tendencies of each specific pair of potential partners.

## 2. Materials and Methods

### 2.1. Case Studies Framework

In the case of Slovakia, microdata on intermunicipal cooperation is almost non-existent, limited only to information on a few of joint offices established by some municipalities. The unavailability of statistical data informed our decision to base our methodology on several case studies, which was carried out in order to acquire relevant primary data. To investigate the significance of different institutional arrangements in terms intermunicipal cooperation, each of the four case studies was conducted within different institutional structure whose boundaries were delimited according to various criteria. Specific geographical areas where case studies were carried out are depicted in Figure 1.



**Figure 1.** Localisation of case studies and interviewed municipal offices. Source: own processing.

The first two case studies were carried out within two local action groups. Local action groups provide an excellent example of institutionalisation of cooperation among the most important stakeholders including municipal offices from different sectors whose cooperation should make a significant contribution to the development of the area concerned. Both LAGs we have chosen are located in the Nitra Region, however LAG Radošinka was awarded the official status of a local action group, while LAG Cedron did not receive funding from the Rural Development Programme initiative LEADER in the programming period of 2007–2013. LAG Cedron, upon being rejected by the Ministry of Agriculture and Rural Development of SR, was funded through “Small LEADER”, a financial support mechanism of the Nitra Self-Governing Region. The volume of these funds, however, was much smaller [72] which also meant that their joint activities were less oriented on investments and more on soft projects. Case studies pertain to the EU programming period of 2007–2013, during which out of 30 members in LAG Cedron, seven were representatives of the municipalities, five members were from the private sector, 14 were NGOs, and four were private citizens. During the current programming period, the membership of the LAG grew, and it currently brings together 80 actors from 19 municipalities. LAG Radošinka, on the other hand, grew only territorially. During the first programming period, it consisted of 67 members, out of which 11 were municipal representatives (four were other public sector organisations, 13 were from the private sector, and the rest were from the non-profit sector). Currently, in the programming period of 2014–2020, this LAG has 63 members, but these cover the area of 30 municipalities. Case studies were carried out toward the end of the 2007–2013 programming period in 2012–2013. LAGs were chosen in order to test Klamár et al.’s [9]



hypothesis that local action groups could serve as a more viable platform for future consolidation efforts. Inclusion of the non-official LAG was motivated by the goal to test whether the size of the funding, as well as the type of joint activities, has any effect on cooperation among municipalities.

The next case study was carried out in a nodal microregion of Slovenská Ľupča in 2014. It belongs to a total of 160 nodal microregions delimited by Slavík et al. [73] based on interconnections and relations between settlement units, mostly of work-home type, as well as commuting for education, healthcare, and other services. This specific regionalisation was prepared in the anticipation of the communal reform and accompanying amalgamation processes that were planned before being rejected in 2006. Carrying out a case study aimed at an analysis of intermunicipal cooperation in one such nodal microregion thus adds an important dimension to the results presented in the paper, since any potential future amalgamation process will probably utilise this approach.

The final case study concerned a tourism region of Liptov, whose borders are not official in any capacity. The area was delimited by the concentration of economic activities in the tourism sector, as well as by the fact that a tourism cluster and a local tourism association operate within one part of the microregion, thus providing another distinctive condition to analyse intermunicipal cooperation. We specifically chose a region that specialized in the tourism sector because, according to the Slovak legislation, these can be institutionalised, funded, and even some competencies can be partially transferred to them from the central government as well as the regional self-government. This case study was carried out in 2016.

The localisation of the case studies was carefully chosen as to reflect several levels of formalisation and institutionalisation of relations between municipal units, as well as underlying motives behind the respective regionalisations. Data gathering via a semi-structured questionnaire was conducted in person with mayors of the municipalities depicted in the Figure 1. In case of LAG Cedron, mayors of all seven municipalities comprising the LAG were interviewed, while in LAG Radošinka, mayors of nine of 11 municipalities were interviewed (we have to note here that a saturated survey is recommended when social network analysis is applied; however, we believe that the omission of the two mayors from the sample will not affect the results in a serious way). During the last two case studies conducted in regions of Slovenská Ľupča and Liptov, mayors of all the municipalities depicted in Figure 1 were interviewed (13 and 10, respectively), resulting in a final sample of 39 interviews. During the data gathering process, the same questionnaire was administered to LAG members from all sectors. As our goal is to map intermunicipal cooperation only, these were excluded from the analyses. Additionally, including other LAG members would make the case studies non-comparable, since there would be no way to approximate the selection of interviewees from private and non-profit sectors in tourism and the nodal region. Table 1 introduces the basic characteristic of compared regions. In terms of population, their size is comparable (aside from the nodal microregion, which has a higher number of inhabitants). In terms of the area of the regions, nodal and tourism regions are approximately twice as large as the LAGs; however, this is due to lower overall population density (since they are located in a more mountainous part of the country).

In terms of intermunicipal cooperation, which is the main object of interest of the paper, we aim to distinguish and compare the relations between municipalities based on the intensity of cooperation. In increasing order of intensity, we analysed informal relations, cooperation based on sharing information, and consulting and cooperation in form of joint activities and projects that represent the IMC of greatest intensity. Logically, there might be an overlap between informal ties and exchange of information, as consultation activities frequently take place during informal meetings. In our case, we differentiate the two by the initial motivating factor. Informal relations can take form of friendship, acquaintanceship, informal meetings etc. Within these, exchange of information may happen, but it is more of a by-product, not the primary motivating factor. On the other hand, mayors enter consulting and information exchange relations solely for the purpose of obtaining information pertaining to their position as municipal officials. With regards to the three different types of IMC, we aim to test whether relations of lesser institutionalisation (informal ties and exchange of information) correlate with existence of more

formalised cooperation on joint activities, an assumption that was suggested by Stead and Meeijers [50] and others [44,46,47].

**Table 1.** Basic characteristics of surveyed regions. Source: own processing based on statistical office of Slovak Republic data.

Characteristics of Surveyed Regions	Local Action Group Radošinka	Local Action Group Cedron	Nodal Microregion Slovenská Ľupča	Tourism Microregion Liptov
Number of municipalities	11	7	13	10
Total population in 2018	10 893	11 169	14 989	10 968
Total area in 2018 (km <sup>2</sup> )	127.01	122.08	287.28	222.98
Population density in 2018 (per km <sup>2</sup> of total area/per km <sup>2</sup> of built area)	85.76/1299.92	91.49/1454.84	52.17/2181.64	49.19/1644.33
Population share of non-Slovak nationality in 2011 (%)	4.13	7.23	5.58	4.20
Population share of non-Roman Catholics in 2011 (%)	17.91	22.97	35.64	26.17

Additionally, we test the following hypotheses concerning the factors determining whether municipalities engage in cooperation or not. We formulate one hypothesis along the lines of Browns and Potoskys [66], who found that smaller municipalities tend to engage in cooperation with larger ones. We also aim to find out if the assumption about political affiliation of local politicians and cooperation supported by empirical evidence from Bergholz [71] and Blaeschke [17] also holds true in Slovak conditions. Finally, by basing our hypothesis on the findings of Feiock and Park [45] and Blaeschke [17], who found that higher degree of population heterogeneity in terms of racial and ethnic composition negatively correlates with cooperation among municipalities in the US and Germany, we also test the effects of ethnic and religious similarity.

## 2.2. Methods

Given that the focus of the research is the identification of specific relations between municipalities as well as their density, as an analytical tool we decided to use the network analysis which according to [74] is derived from graph theory. Graph theory is a mathematical discipline that studies graphs—structures used to model pairwise relationships between entities. The graph in this context represents a structure composed of set of nodes or vertices  $v$  (in our case nodes represent mayors/municipal offices), which are connected by the edges  $h$  (in our case, the individual forms of cooperation between municipalities). This structure in terms of graph theory can be defined as multi-di-graph or directed graph where multiple relations between nodes are allowed [75,76]. Directed graphs differ from undirected by the fact that relations do not need to be symmetrical (e.g., flow of information may be directed from one municipality toward the other, but not vice versa).

During the interviews, mayors reported the existence or absence of individual forms of cooperation, indicated by 1 and 0, respectively, between them and all other municipal offices in a corresponding LAG/region. Based on the interviews, an adjacency matrix was constructed:

$$A = \begin{bmatrix} a_{11} & a_{12} & \cdots & a_{1n} \\ \vdots & \vdots & & \vdots \\ a_{n1} & a_{n2} & \cdots & a_{nn} \end{bmatrix}, \quad (1)$$

where

$$a_{ij} = \begin{cases} 0, & \text{if } i = j \\ 0, & \text{if municipality } i \text{ does not cooperate with municipality } j \\ 1, & \text{if municipality } i \text{ cooperates with municipality } j \end{cases} \quad (2)$$

The first part of the paper focuses on describing the nature of IMC in selected institutional and spatial structures and their subsequent comparison. Visualization of different forms of intermunicipal cooperation was conducted using NetDraw software. There is not one correct way to visualize network structures in network analysis; therefore, the type of visualization should be chosen based on the nature of insight that we want to generate from visual analysis and comparison of network structure as well as the units in which the relations between nodes are given (in our case we have binary relations—the existence or nonexistence of relation—but the edges in the graph could represent flow of resources in monetary units, migration flows in number of migrants, etc.). The most advocated method of visualization is MDS, which stands for multidimensional scaling, a method that assigns nodes to location in  $n$ -dimensional space (in our case two-dimensional) by their ‘similarity’ or distance to each other [77]. In graph theory, distances between vertices are derived from the number of edges that connect them. In our analyses we used non-metric MDS of geodistances to construct the network structures. The identification of specific key actors in the network was based on the indicator of actors’ centrality. The degree centrality of a particular actor is equal to the node degree in the graph, and is calculated as the sum of linkages of actor  $i$  with other  $j$  actors in the network  $j=\{1 \cdots n\}-i$ . Degree centrality was visualized in graphs by the size of the nodes [74].

Quantitative results of network analysis were evaluated using UCINET 6 software (Borgatti, S.P., Everett, M.G. and Freeman, L.C., Analytic Technologies, Harvard, MA). At this stage, several network metrics were analysed and compared. We calculated and compared overall network densities, which are calculated as a ratio of existing linkages between municipalities to all possible linkages between the same set of municipalities. Since the IMC network structure is based on directed graph type, in such a case, researchers commonly focus on reciprocity of the linkages as well. As Hanneman and Riddle [78] point out, the interest in analysing reciprocity stems from hypothesis that the predominance of reciprocated linkages (or relations that “flow” in both directions) leads to a greater stability of the network and equality between actors, while the predominance of asymmetric connections indicates more of a hierarchical structure of the network and that in some cases asymmetric linkages may be unstable. We calculated and compared both dyad reciprocity (calculated as a proportion of dyads or connected pairs that have a reciprocated tie) and arc reciprocity (calculated as the number of reciprocated arcs ties in directed graph divided by the total number of arcs). Some authors [79] argue that most real word networks are usually fragmented and advocate identifying and analysing local subgroups of the network, usually referred to as ‘cliques’. The tendency to form local cliques or to locally cluster is generally measured using the clustering coefficient. The overall graph clustering coefficient is calculated as an average of densities of the neighbourhoods of all actors (a neighbourhood of a node is comprised of all nodes which are incident with it). We also calculated the weighted graph clustering coefficient taking into account the size of those neighbourhoods as a weight.

In the case of an analysis of multiple relations among the same set of actors, we can also analyse whether the probability of existence of one type of linkage is related to the probability of existence of another type [78]. To estimate the correlation between different ties/networks, researchers usually refer to QAP or quadratic assignment procedure [79]. In our case, the existence of informal relations between municipal officials may lead to more frequent exchange of information and greater probability that these municipalities will end up cooperating formally on joint projects. To test this hypothesis, we calculated the Jaccard coefficient, which is an alternative to Pearson correlation coefficient in case when relations are binary.

Final part of the paper focuses on the identification of endogenous factors of IMC. Given that the network structure of analysed relations is based on a directed graph, where asymmetric ties are possible, and the incidence of various types of ICM must be quantified for every pair of municipalities where there is a need for symmetrisation of the adjacency matrix. Using simple matrix algebra, we can decide either to use the minimize procedure, which for binary data records the tie as present only if it is reciprocated, or the maximize procedure, which returns the value of 1 if the tie is present in either direction. We opted for a positive bias, basing our decision on the assumption that the mayors were

more likely to understate the relationship than to lie, i.e., the latter option. Matrix elements of the new symmetric adjacency matrix  $A^s$  were calculated as follows:

$$s_{ij} = \max\{a_{ij}, a_{ji}\}, \quad \forall i \neq j. \quad (3)$$

These elements of matrix  $A^s$  were used to generate binary variable of pairwise relations  $T_p$  that acquires a value of 1 if there is a tie identified between pair of municipalities  $p$  (within defined forms of cooperation) which becomes the dependent variable for further regression analysis. 180 unique pairs/observations  $p$  were generated after a formula for the number of combinations of  $r=2$  elements from a set of  $n$  actors from each case study:

$$p = \sum_{i=1}^4 \binom{n_i}{2}. \quad (4)$$

As the dependent variable is binary, we use logistic regression to identify the factors that determine whether two municipalities will engage in various forms of cooperation. The general regression logit model used in the analysis has the following notation:

$$P\left(T_p = \frac{1}{X_p}\right) = \frac{1}{1 + e^{-(b_0 + b_1 x_{1p} + b_2 x_{2p} + \dots + b_j x_{jp})}}. \quad (5)$$

In our case,  $X_p$  represents a vector of independent explanatory variables  $(x_1, x_2, \dots, x_{jp})$ ,  $e$  is the base of the natural logarithm,  $b_0$  is the intercept and  $(b_1, b_2, \dots, b_j)$  is a vector of regression coefficients.

The choice of explanatory variables that reflect institutional, political, cultural, and geographic factors potentially affecting the probability of two municipalities engaging in intermunicipal cooperation was informed by the previous theoretical works and empirical studies analysed in the first chapter of the paper but was also limited by the availability of information and statistical data. Relevant institutional characteristics were analysed via comparing the already described different institutional arrangements employing the network analysis. One of the major political factors that could have an effect on IMC is the political affiliation of municipal officials. This factor entered the model as binary variables ally, rival, and nonpartisan (having a value of 1 if mayors representing a specific pair of municipalities are from the same or an associated political party, if they are affiliated with the opposing parties or if at least one of the pair or both are independent candidates not associated with political parties, respectively). Due to the perfect collinearity issue, each of the models was estimated separately.

To study the effect of population heterogeneity on engagement in IMC, we decided to analyse the population composition in terms of ethnic and religious structure, which represent one of the key aspects of cultural differentiation in Slovakia. Since we are estimating the probability that a unique pair of municipalities will engage in IMC, we need to conceptualize an indicator that would quantify ethnic and religious heterogeneity bilaterally. For this purpose, we calculated a degree of ethnic structure similarity ( $DoESS_{ij}$ ) and a degree of religious structure similarity ( $DoRSS_{ij}$ ) that measure the rate of cultural similarity/dissimilarity between municipalities  $i$  and  $j$ .

Degree of ethnic structure similarity is calculated as a sum of all positive values of differences in shares of population of all ethnic groups as follows:

$$DoESS_{ij} = 1 - \sum_{k=1}^{16} \sum_{d_{ij}>0} d_{ij}, \quad (6)$$

where

$$d_{ij} = \left( \frac{g_{ki}}{P_i} - \frac{g_{kj}}{P_j} \right), \quad (7)$$

while  $g_{ki}$  is the number of inhabitants of municipality  $i$  belonging to the ethnic group  $k$ ,  $g_{kj}$  is the number of inhabitants of municipality  $j$  belonging to the same ethnic group  $k$ , and  $P_i$  and  $P_j$  is the total size of the population of municipalities  $i$  and  $j$ , respectively.

Degree of religious structure similarity is analogously calculated as a sum of all positive values of differences in shares of population of all religious groups as follows:

$$DoRSS_{ij} = 1 - \sum_{k=1}^{21} \sum_{d_{ij}>0} d_{ij}, \quad (8)$$

where

$$d_{ij} = \left( \frac{g_{ki}}{P_i} - \frac{g_{kj}}{P_j} \right), \quad (9)$$

while  $g_{ki}$  is the number of inhabitants of municipality  $i$  belonging to the religious group  $k$ ,  $g_{kj}$  is the number of inhabitants of municipality  $j$  belonging to the same religious group  $k$ , and  $P_i$  and  $P_j$  is the total size of the population of municipalities  $i$  and  $j$ , respectively.

Both indicators can reach values between 0 and 1, while the value of 1 would mean that the ethnic or religious structure of given municipalities is identical.

Very similarly, we calculated an index of size difference ( $SIZEdiff_{ij}$ ) to account for the size of the population effect,

$$SIZEdiff_{ij} = 1 - \frac{|P_i - P_j|}{P_i + P_j}. \quad (10)$$

The last of the explanatory variables to enter the model is distance which serves mostly as a control variable for geographic proximity of municipalities. It was calculated as minimal distance over transport connections between each pair of municipalities.

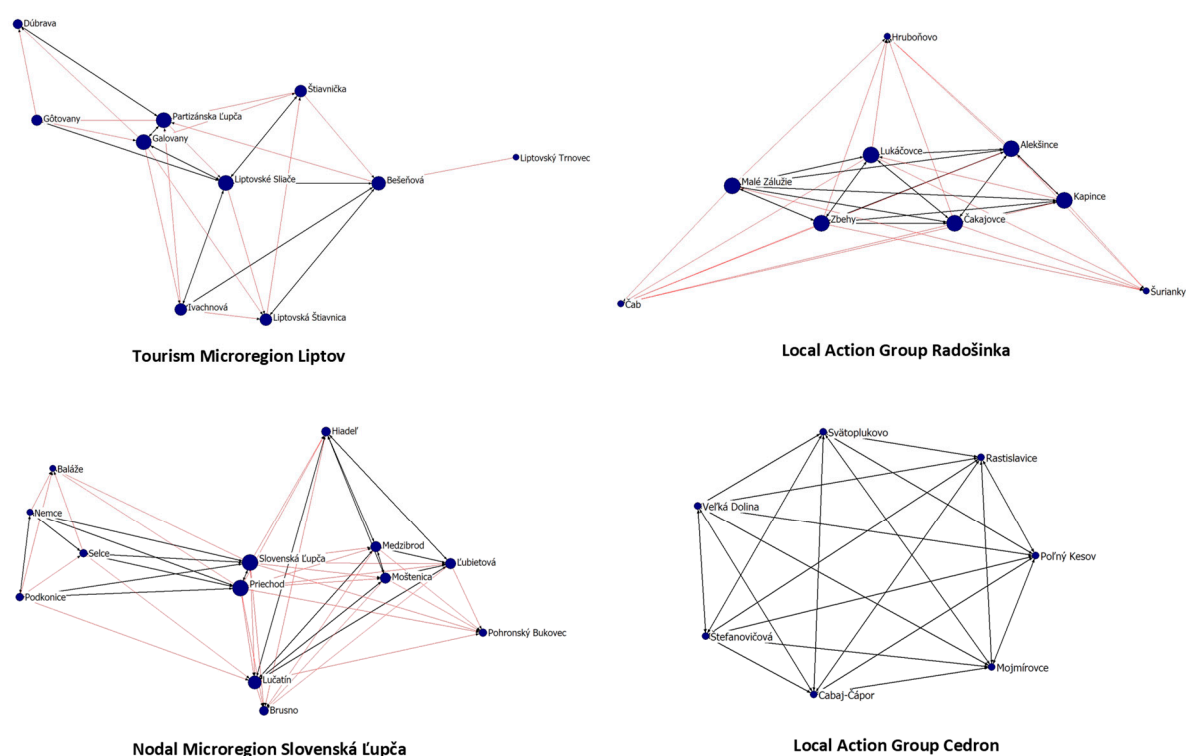
### 3. Results

In this section, we present and confront the results of the analyses, focusing first on describing, analysing and comparing various aspects of different types of ICM network structures in four defined institutional arrangements. As presented in the methodology, we use the network graphs and relevant descriptive measures of a network structure to compare the density as well as the 'configuration' of intermunicipal cooperation. In the network graphs below, the size of the node representing municipalities reflects their degree centrality while blue edges of the graph represent reciprocal ties, and red edges represent non-reciprocal ties.

As evident from Figure 2, one institutional arrangement significantly stands out in terms of informal relations networks. Local Action Group Cedron is remarkable because all the nodes are connected, and all ties are reciprocal. The network of informal ties between seven municipalities in this LAG is an extreme example of a clique. We must note, however, that this LAG represents the institutional arrangement with fewest number of municipal members. Out of the remaining three, another LAG, the Local Action Group Radošinka, exhibited the highest value of density of informal networks between municipal officials (Table 2), while tourism region and nodal microregion have relatively lower but similar degree of density. This finding is not surprising, since not only are the municipalities in Radošinka and Cedron localised over a smaller area, but they also belong to a highly formalised institutional arrangement. LAGs operate as an association with numerous bodies that are responsible for formulation and implementation of integrated territorial strategy. Hence, the dense informal networks within local action groups could either be a result of them being smaller in size, or a result of frequent contact between members, but most likely both. Within analysed LAGs we cannot identify specific municipalities that would constitute a periphery in the true sense of the concept, although three municipalities in Radošinka are not connected as well, namely Čab, Hruboňovo, and Šurianky. These municipalities are not the smallest (it is evident from Figures 1 and 2 that the two smallest municipalities have a stronger position in the network), and not all of



them are peripheral in geographical sense. Although it is too early to draw conclusions, we could speculate that some type of hierarchical relationships is starting to form because ties between the core municipalities and the periphery are not reciprocated and flow outward. The other two institutional arrangements that are less formalized exhibit different network structures in informal relations. Based on centrality of municipalities and their position in the network, we can conclude that their roles and interactions are much more diverse. On the basis of graph clustering coefficient values in Table 2 it is clear that LAGs exhibit a more pronounced clustering behaviour; however, based on networks of informal relations illustrated in Figure 2, the tourism region and nodal microregion have a tendency to form subgroups of cliques, especially the nodal microregion of Slovenská Ľupča. The westernmost municipalities of nodal microregion form a clique that is somewhat isolated from the rest of the microregions. The most central municipality in informal network is Slovenská Ľupča, which is the largest and central municipality of the microregion. Although not geographically central, along with its neighbouring smaller municipalities Priečhod and Lučatin, it serves as a bridging element in this institutional arrangement. In a nodal microregion, the position and role of municipalities in informal intermunicipal cooperation does not seem to be dependent on their size (aside from the largest municipality) but rather on their closeness to this central node. Localization does not seem to matter in informal networks of tourism region of Liptov. Although the largest municipalities Liptovské Sliače and Partizánska Ľupča do hold an integrating position in the network, they are joined by the municipality of Galovany, with less than 500 inhabitants (Figure 1). This municipality is also an important bridging element, even though it is not geographically close to the central place. In general, the position of municipalities within informal intermunicipal cooperation in the tourism region is significantly more ‘egalitarian’, which is the case in the nodal region, where a hierarchical structure is evident.

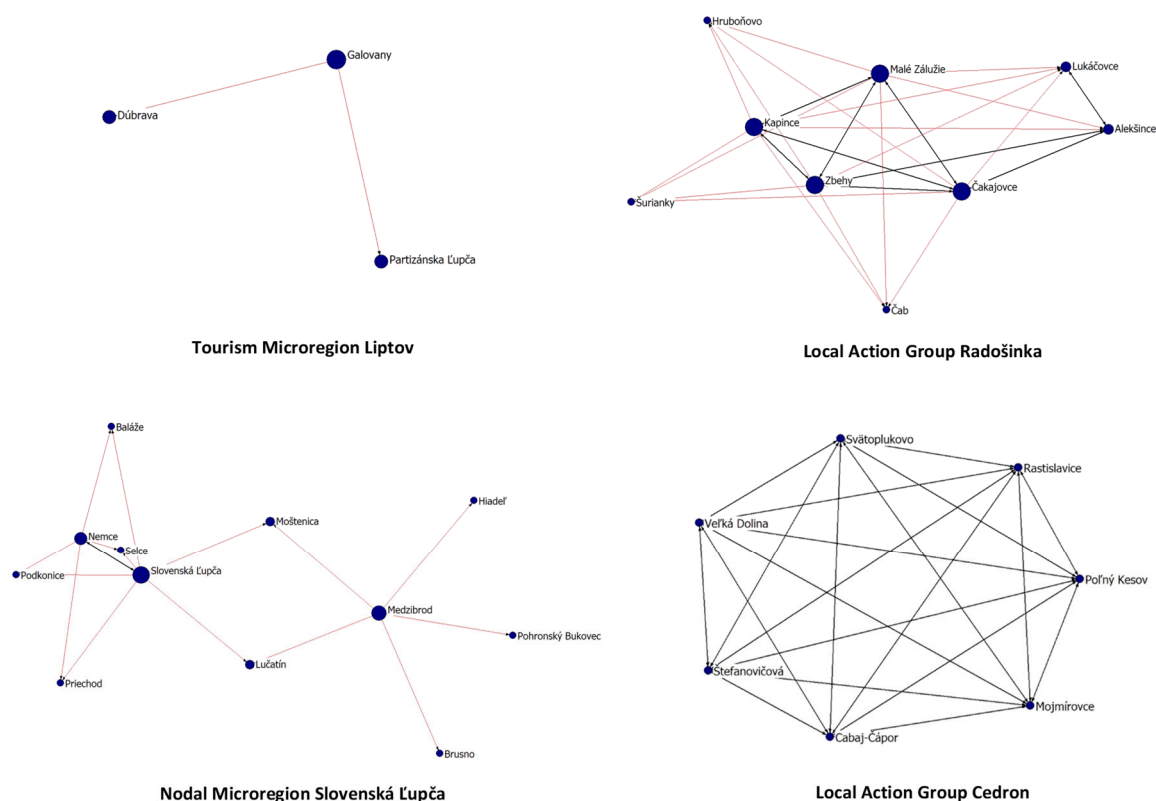


**Figure 2.** Network structures of informal relations between municipalities in different institutional arrangements. Source: own processing.

**Table 2.** Descriptive measures of network structures in different institutional arrangements and forms of intermunicipal cooperation (ICM). Source: own calculations.

	Network Metric	Density	Arc Reciprocity	Dyad Reciprocity	Overall Graph Clustering Coefficient	Weighted Overall Graph Clustering Coefficient
Tourism Microregion Liptov	Informal relation	0.378	0.529	0.360	0.526	0.470
	Information exchange	0.022	0	0	0.633	0.547
	Joint activities/projects	0.089	0.500	0.333	0.535	0.483
Nodal Microregion Slovenská Ľupča	Informal relation	0.442	0.551	0.380	0.628	0.545
	Information exchange	0.154	0.167	0.091	0.648	0.569
	Projects	0.301	0.426	0.27	0.648	0.569
Local Action Group Radošinka	Informal relation	0.653	0.596	0.424	0.731	0.688
	Information exchange	0.500	0.599	0.333	0.712	0.671
	Joint activities/projects	0.078	0.400	0.250	0.655	0.622
Local Action Group Cedron	Informal relation	1	1	1	1	1
	Information exchange	1	1	1	1	1
	Joint activities/projects	0.262	0.182	0.100	0.722	0.276

Based on the network graphs depicted in Figure 3, we can conclude that, overall, the information exchange and consultation is less frequent than basic informal relations. This is supported by the values of network metrics in Table 2 as well. LAG Cedron, however, is an outlier once again, forming a single cohesive clique of information flows. The second local action group, LAG Radošinka, exhibits a decrease in network density but only by a small fraction, while the density of information flows in less formalized institutional arrangements is considerably lower than the network of informal relations. In LAG Radošinka, two additional municipalities are relegated to a peripheral position (Lukáčovce and Alekšince, which are of average size but geographically also constitute a periphery). It seems, however, that geography is not the only relevant aspect in terms of information exchange, since the municipalities comprising the core of the network in LAG Radošinka are localized on the opposite sides of the delimited territory and include two smallest municipalities. The same cannot be said for nodal microregion Slovenská Ľupča. We can clearly distinguish the formation of two cliques of municipalities localized in the western and eastern part of the nodal microregion, while two small municipalities (Moštenica and Lučatín) located in geographical centre of the microregion serve as middlemen. In both cliques, we can find municipalities that hold central positions as a source of information being exchanged. The largest municipality Slovenská Ľupča is one, along with Nemce and Medzibrod. The latter are neither the largest nor geographically central, indicating that their position as a source of information is driven by other factors. The most limited flow of information was identified in the tourism microregion. Only three municipalities engage in information exchange and consulting while the source of information is a municipality with less than 500 inhabitants (Galovany). Comparing the network structures of informal ties with more formalized information exchange, we can conclude that in the less formalized institutional arrangements, intermunicipal cooperation is not only significantly lower overall all but also exhibits higher tendency to form cliques (Table 2) and much lower frequency of reciprocal ties, while only a couple of local actors serve as a source of information and decide to share it with a limited number of cooperating municipalities. This does not seem to be the case in more formalized local action groups.

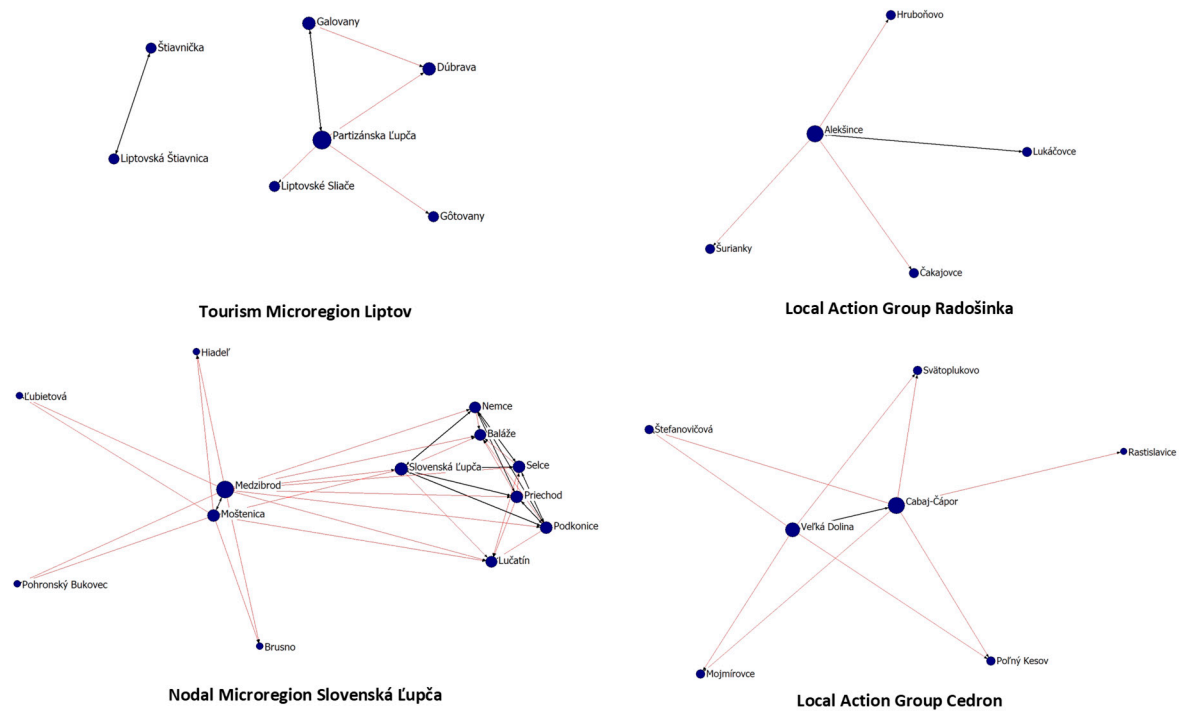


**Figure 3.** Network structures of information exchange and consulting between municipalities in different institutional arrangements. Source: own processing.

When analysing the density of cooperation on joint activities and projects between municipalities (Figure 4), the first interesting and surprising finding is the lower overall reciprocity in all institutional arrangements under investigation. We expected higher degree of reciprocal ties, since the cooperation on joint project should inherently be bidirectional. Additionally, in LAG Cedron, which showed very dense interactions in informal ties as well as information exchange cooperates on joint projects less frequently. The same is true for the second local action group—LAG Radošinka. On the contrary, in less formalized institutional arrangements of nodal and tourism microregions, cooperation on joint activities and projects between municipalities is markedly more frequent than information exchange. In the tourism microregion, we can see two disjunct cliques of municipalities cooperating on joint activities, both forming geographically continuous territory (Figure 1), indicating that physical proximity is key in determining whether two municipalities will engage in joint projects. The same conclusion can be drawn from two cliques formed in nodal microregion Slovenská Ľupča, where the same groups of municipalities that exchanged information frequently also cooperated on joint projects. In this case, however, two cliques are not disjunct but are connected via municipalities that represent a physical ‘bridge’ between the western and eastern parts of the delimited territory (Figure 1).

To test whether the existence of social capital measured in informal relations density will lead to more frequent exchange of information and subsequently more frequent cooperation on joint activities, we turn our attention to the Jaccard coefficient (Table 3). In case of LAG Cedron, there is not enough variability in the data to test the correlation between different forms of intermunicipal cooperation. On the other hand, the results of correlation analysis within the three remaining institutional arrangements are quite telling. In LAG Radošinka, we identified a strong statistically significant correlation between informal relations and information flows among its member municipalities. These, however, do not seem to translate into more formal cooperation on joint projects and activities. In tourism microregion Liptov, the situation is the opposite: informal relation between municipal officials do not statistically significantly affect the information flows between them. They do, however,

even if weakly, determine which municipalities will engage in joint projects. Information exchange and consulting among municipalities also predicts network of formal cooperation on joint activities. In nodal microregion Slovenská Ľupča, the network of informal ties determines both information flows and, to a greater extent, cooperation on joint projects.



**Figure 4.** Network structures of cooperation on joint activities and projects between municipalities in different institutional arrangements. Source: own processing.

In the final part of this section of the paper, we discuss the results of logit regression models (Table 4) capturing effects of various municipality attributes on the chance of cooperation occurrence. Instead of regression coefficients, we report odds ratios. All of the resulting models in the table below are statistically significant as a whole, but their performance varies slightly. Based on the AUC (area under the ROC curve) metric, which is one of the most important evaluation parameters, our models are quite accurate in predicting the occurrence of informal relations but with more formal cooperation forms distinguishing accuracy of these models decreases.

Statistical significance as well as the strength of impact of variables of interest also varies depending on the level of cooperation formalisation. Physical distance between municipalities has a constant effect on the chance of intermunicipal cooperation occurrence; with increasing distance between municipalities, the odds of cooperation decreases. Although this variable serves mostly as a control, differences in odds ratios in respective models provide some valuable insights. In more formalised forms of cooperation, with increasing distance, the decrease in the likelihood of cooperation activities is lower. This may indicate that municipalities enter joint projects and activities based on a need to cover larger geographical area (due to the settlement fragmentation issues), rather than a mere physical proximity. Similarly, difference/similarity in terms of population size does not seem to impact cooperation on joint project or activities. It does, however, impact the odds of information sharing and informal relations. Since the variable can reach values between 0 and 1, while the value of 1 would mean that the pair of municipalities has identical populations, we can conclude that more similar the municipalities are in terms of their population size, the less likely they are to share information or have informal relations.

**Table 3.** Correlation between different forms of IMC in selected institutional arrangements (Jaccard coefficient). Source: own calculations.

Tourism Microregion Liptov	Informal relation		Information exchange	Joint activit./projects
	Informal relation	1	1	1
Nodal Microregion Slovenská Ľupča	Information exchange	0.059	0.250 **	
	Joint activities/projects	0.200 **		
Local Action Group Radošinka	Informal relation		Information exchange	Joint activit./projects
	Informal relation	1	1	1
Local Action Group Cedron	Information exchange	0.348 ***	0.340 **	
	Joint activities/projects	0.526 ***		
Local Action Group Radošinka	Informal relation		Information exchange	Joint activit./projects
	Informal relation	1	1	1
Local Action Group Cedron	Information exchange	0.766 **	0.086	
	Joint activities/projects	0.116		
Local Action Group Cedron	Informal relation		Information exchange	Joint activit./projects
	Informal relation	1	1	1
Local Action Group Cedron	Information exchange	1	0.262	
	Joint activities/projects	0.262		

Note: \* indicates significance level  $\alpha < 0.05$ , \*\*  $\alpha < 0.02$ , and \*\*\*  $\alpha < 0.001$ .

**Table 4.** Results of logit regression models estimating the impact of various factors on intermunicipal cooperation. Source: own calculations.

	Informal Relations			Information Sharing and Consulting			Joint Projects and Activities		
	Model I	Model II	Model III	Model IV	Model V	Model VI	Model VII	Model VIII	Model IX
ally	1.2956 (0.6481)			1.4150 (0.5241)			2.4366* (0.9619)		
rival		0.6490 (0.4142)			0.8327 (0.3867)			1.0518 (0.4559)	
non-partisan			1.0145 (0.4889)			0.8468 (0.3249)			0.4441 * (0.1606)
DoRSS	0.4468 (0.4994)	0.5233 (0.6187)	0.4470 (0.5057)	0.3849 (0.3819)	0.3932 (0.3976)	0.3423 (0.3435)	1.7573 (1.7213)	1.4496 (1.4051)	1.1494 (1.1173)
DoESS	22.2602 (66.0890)	34.7689 (103.799)	26.8163 (81.3307)	65343 *** (199105)	67710 *** (201247)	57808 *** (174956)	2.35 × 10 <sup>7</sup> * (1.90 × 10 <sup>8</sup> )	2534380 * (1.65 × 10 <sup>7</sup> )	2.54 × 10 <sup>7</sup> * (2.18 × 10 <sup>8</sup> )
SIZEdiff	0.0710 ** (0.0654)	0.0696 ** (0.0638)	0.0709 ** (0.0648)	0.1302 ** (0.1025)	0.1312 ** (0.1034)	0.1298 ** (0.1012)	0.5231 (0.3796)	0.5321 (0.3847)	0.5024 (0.3663)
distance	0.7609 *** (0.0342)	0.7536 *** (0.0353)	0.7596 *** (0.0364)	0.8045 *** (0.0283)	0.8006 *** (0.0292)	0.8059 *** (0.0294)	0.8904 *** (0.0258)	0.8883 *** (0.0262)	0.9018 ** (0.0272)
Intercept	42.9839 (124.684)	32.9967 (96.2647)	38.7850 (116.949)	0.0011 ** (0.0029)	0.0012 ** (0.0033)	0.0015 * (0.0043)	9.43 × 10 <sup>-8</sup> * (7.30 × 10 <sup>-7</sup> )	1.23 × 10 <sup>-6</sup> * (7.64 × 10 <sup>-6</sup> )	2.06 × 10 <sup>-7</sup> (1.69 × 10 <sup>-6</sup> )
№ of observations	180	180	180	180	180	180	180	180	180
Wald $\chi^2$	42.96 ***	40.88 ***	41.84 ***	48.82 ***	45.58 ***	48.89 ***	27.56 ***	21.64 ***	26.82 ***
McFadden's Adj R <sup>2</sup>	0.263	0.264	0.262	0.184	0.182	0.182	0.081	0.058	0.080
Log-Likelihood	-73.087	-72.979	-73.219	-92.844	-93.126	-93.109	-97.256	-99.894	-97.396
Area under ROC curve	0.8585	0.8603	0.8562	0.8017	0.8002	0.7973	0.7318	0.7135	0.7323

Notes: robust standard errors are given in brackets; \* indicates significance level  $\alpha < 0.05$ , \*\*  $\alpha < 0.02$ , and \*\*\*  $\alpha < 0.001$ .



We did not find evidence that religious structure determines whether two municipalities will cooperate. On the other hand, ethnic structure significantly impacts the likelihood of intermunicipal cooperation. In terms of increasing odds, its impact is the largest among all analysed characteristics (although it is important to note that standard errors are significantly large as well). Furthermore, it significantly increases the likelihood of cooperation on joint projects and slightly lessens the likelihood of information sharing and consulting. Interestingly, according to our analysis, ethnic structure similarity does not affect informal relations in any measurable way.

The most surprising relationship between municipality characteristics and IMC was observed when we took into account the political affiliation of their mayors. While informal relations and information sharing does not seem to be dependent on political affiliation, the same political party (or coalition) affiliation increases the chance of entering joint projects or activities by 2.4 times. In cases where the mayors are members of rival political parties, it has no influence on this type of IMC, but if one or both of them are unaffiliated with any political party, the odds that they will enter joint projects and activities decreases by more than 50%. Although further analysis is needed to find the underlying causes of this phenomenon, we speculate that the lower odds of cooperation between non-partisan mayors (even compared to political rivals) is caused by different “rules of doing business” between politicians that are members of (any) party and those that are not restricted/guided by partisan culture. Another explanation is that although these unaffiliated mayors were non-partisan at the moment we conducted the research, they could have been members of rival political parties in the past. However, this hypothesis is to an extent negated by the apparent non-significance of political rivalry on any type of analysed IMC.

#### 4. Discussion

First, it needs to be stressed that the presented results are based on case studies and thus cannot be generalised to the entire population. On the other hand, this approach enabled us to compare various institutional arrangements, with valuable results. Less formalised institutional arrangements (as compared to the local action groups) have lower informal relations density and less hierarchical configuration of information flows. Additionally, the tourism region and nodal microregion exhibit a tendency of ‘cliquish behaviour’ in all types of IMCs. Although the networks are comparable in terms of number of member municipalities, it is important to keep in mind that with increasing number of members in the network density tends to naturally decrease, since it is much harder for an actor in a large network to form ties with a high quantity of other actors [80]. Additionally, although networks without pronounced hierarchical structure are sometimes lauded as more egalitarian, they also have disadvantages. As Giuliani and Pietrobelli [79] state, too many connections can be time-consuming, running the risk of overloading the actors and thus increasing transaction costs. Institutional arrangements such as LAG Cedron, with all actors interconnected, may be detrimental in the end, since they can result in a lock-in. As the authors claim, a hierarchical structure (that in our case was present in tourism and nodal regions), although carrying risk of exclusion of peripheral actors, tends to be more efficient. This aspect is of special importance in case of Slovakia, since IMC is the leading policy alternative to amalgamation in an effort to reduce the cost of public service procurement at the local level. However, even in hierarchical institutional structures, reciprocity is important, in light of which it is important to note that aside from the LAG Cedron, information exchange between municipalities was typically unilateral.

The results of network analysis show that, even in the most hierarchical institutional arrangements, the relative position of a municipality in the network is not always tied to its geographical centrality or to its size. Looking for an explanation, we circle back to the theories of social embeddedness, according to which actors are shaped by their embeddedness in a larger social, political, and economic structure [46,48] and since municipal officials are usually a part of many overlapping networks not only on local but also regional and national levels these ties may be a more determining factor of their position in the networks that we studied than their size and geographical position. This assumption is

further supported by the fact that the hypothesis about more frequent cooperation between larger and smaller municipalities (we measured it as a size difference) was only confirmed for informal ties and exchange of information, but not for joint projects.

The forms of intermunicipal cooperation in order of increasing intensity that were analysed in this paper can also be viewed as the stages of building local communities with a more stable institutional arrangement. Analysis of correlation between different forms of IMC, specifically the correlation of informal ties with other types of cooperation, provides important insights into this issue. The formulation of this hypothesis was guided by the assumptions that social capital is an important factor of building sustainable communities [51–53] and that higher number of interpersonal contacts seem to be especially important for higher rate of IMC activities in socioeconomically heterogeneous peripheral regions [68] under which we can include the regions where our case studies were conducted. Our results, however, indicate that strong social capital and existence of informal relationships does not always translate into more concrete types of intermunicipal cooperation (informal relations correlated with both information exchange and joint projects only in the nodal microregion, while in the local action group, they appear to be a precursor only for the information exchange between municipalities). In the specific setting of our case studies, however, this finding supports the assumption of Stead and Meijers [50] about the evolutionary progression of cooperation networks from simple informal ties through increased exchange of information into a more coordinated cooperation. Since a nodal region has ‘natural’ borders, and ties between entities residing within its limits developed over time, it is not surprising that more organised cooperation seems to be based on less formalised networks. On the contrary, as Bumbalová et al. [57] state, many local action groups in Slovakia were established with a primary goal of obtaining additional funds in mind. Additionally, in Slovakia, when we analyse LAGs from any aspect, we need to take into account that the range of activities and projects that they could implement through integrated strategies in the previous programming period was very limited by the central government. Thus, it may be the case that they were able to focus only on projects that did not require spatial coordination.

Although, while analysing the impact of population heterogeneity we did not find any evidence that religious structure affects cooperation in any way, we did confirm the hypothesis that ethnic composition plays a significant role, thus reaffirming the findings of Feiock and Park [45] and Blaeschke [17]. These are of great importance, since ethnic divides within competition over limited resources can affect dialogue and cooperation with regards to the fair distribution of governance, resources, and benefits [68]. Blaeschke’s [17] findings also inspired formulation of the hypothesis regarding the political factors that might explain why some municipalities cooperate and others do not. The hypothesis that politically close municipalities, represented by similar political affiliation of mayors, have a higher chance of initiating and performing IMC is supported by the evidence presented in this paper, with one caveat: although affiliation of the mayors with the same political party is significant, it seems that whether the mayors are affiliated with any political party or not at all is almost as equally important.

The insights presented in this paper could guide policy makers in Slovakia in their efforts to foster intermunicipal cooperation by suggesting which aspects (e.g., informal networks, policy initiatives like the LEADER programme) could lead to the rise in IMC activities. The potential of territorial cross-sectoral partnerships as an alternative to mono-sectoral forms of IMC comprised only of public entities, were shown to yield more sustainable and integrated forms of territorial governance in case of Poland as well [11]. This position is only partially reinforced by our findings. The municipal networks in LAGs exhibited an overall higher density than that of less formalised nodal and tourism regions and had a less hierarchical structure, but we must take into account that stages of that cooperation network do not seem to be formed gradually. We base this statement on the results of correlation analysis, but longitudinal studies would need to be conducted to find an unequivocal answer to this issue.

## 5. Conclusions

In the process of identifying institutional, political, cultural, and geographic factors that either help, hinder, or affect the initiation of intermunicipal cooperation in other ways in the specific conditions of Slovakia, we confirmed some theoretical expectations and refuted others, while a number of questions remain unanswered and call for further research. We based our methodology on case studies of four different types of institutional arrangements (two local action groups, one financed through RDP initiative LEADER, the second by regional self-government, a nodal microregion, and a tourism region), while analysing informal relations, cooperation based on sharing information, and consulting and cooperation in the form of joint activities and projects, in increasing the order of IMC intensity. Based on our findings, we can conclude that local action groups have overall more dense cooperation networks among local governments than other regions as well as a less hierarchical structure. However, nodal region, whose structure is more hierarchical in nature, displays a more cohesive network structure in terms of various levels of IMC analysed. Based on this, we suggest that multi-sectoral flexible governance arrangements such as LEADER LAGs could be seen as a suitable alternative to amalgamation, but focus needs to be kept on natural hierarchy of settlement structure when they are established. Recent developments have proved to be a step in the right direction, as in the current programming period, smaller cities are also eligible to be members of the LAGs, taking natural nodality of space into account.

**Author Contributions:** Conceptualization, K.M.; methodology, K.M.; formal analysis, K.M.; investigation, K.M.; resources, K.M. and L.V.; data curation, K.M.; writing—original draft preparation, K.M. and L.V.; writing—review and editing, K.M. and L.V.; visualization, K.M.; supervision, K.M.; project administration, K.M.; funding acquisition, K.M. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research was funded by the Scientific Grant Agency of the Ministry of Education, Science, Research and Sport of the Slovak Republic and the Slovak Academy of Sciences under the project “Institutional environment as a vehicle of development policies in least developed districts”, No. 1/0789/18.

**Conflicts of Interest:** The authors declare no conflict of interest. The sponsors had no role in the design, execution, interpretation, or writing of the study.

## References

1. Teles, F. *Local Governance and Inter-Municipal Cooperation*; Palgrave Macmillan: New York, NY, USA, 2016; pp. 1–31.
2. Berardo, R.; Scholz, J.T. Self-Organizing Policy Networks: Risk, Partner Selection, and Cooperation in Estuaries. *Am. J. Political Sci.* **2010**, *54*, 632–649. [\[CrossRef\]](#)
3. Stoker, G. Public value management: A new narrative for networked governance. *Am. Rev. Public Adm.* **2006**, *36*, 1–57. [\[CrossRef\]](#)
4. Giacomini, D.; Sancino, A.; Simonetto, A. The introduction of mandatory inter-municipal cooperation in small municipalities: Preliminary lessons from Italy. *Int. J. Public Sect. Manag.* **2018**, *31*, 331–346. [\[CrossRef\]](#)
5. Hulst, R.; van Montfort, A. Inter-Municipal Cooperation: A Widespread Phenomenon. In *Inter-Municipal Cooperation in Europe*; Hulst, R., van Montfort, A., Eds.; Springer: Dordrecht, The Netherlands, 2007; pp. 1–22.
6. Schwab, C.; Bouckaert, G.; Kuhlmann, S. (Eds.) *The Future of Local Government in Europe: Lessons from Research and Practice in 31 Countries*; Sigma: Berlin, Germany, 2017.
7. Bel, G.; Warner, M.E. Factors explaining inter-municipal cooperation in service delivery: A meta-regression analysis. *J. Econ. Policy Reform* **2015**, *19*, 91–115. [\[CrossRef\]](#)
8. Swianiewicz, P. If Territorial Fragmentation is a Problem, is Amalgamation a Solution? An East European Perspective. *Local Gov. Stud.* **2010**, *36*, 183–203. [\[CrossRef\]](#)
9. Klamár, R.; Matlovič, R.; Ivanová, M.; Ištók, R.; Kozoň, J. Local Action Group as a Tool of Inter-Municipal Cooperation: Case Study of Slovakia. *Folia Geogr.* **2019**, *61*, 36–67.
10. Türke, R.E. Sustainable Governance. In *Systemic Management for Intelligent Organizations*; Grösser, S.N., Zeier, R., Eds.; Springer: Berlin, Germany, 2012; pp. 237–248.

11. Furmankiewicz, M.; Campbell, A. From Single-Use Community Facilities Support to Integrated Sustainable Development: The Aims of Inter-Municipal Cooperation in Poland, 1990–2018. *Sustainability* **2019**, *11*, 5890. [CrossRef]
12. Nardone, G.; Sisto, R.; Lopolito, B. Social Capital in the LEADER Initiative: A methodological approach. *J. Rural. Stu.* **2010**, *26*, 63–72. [CrossRef]
13. Furmankiewicz, M.; Macken-Walsh, Á.; Stefańska, J. Territorial governance, networks and power: Cross-sectoral partnerships in rural Poland. *Geogr. Ann. Ser. B Hum. Geogr.* **2014**, *96*, 345–361. [CrossRef]
14. Gendźwiłł, A.; Krukowska, J.; Lackowska, M. Disappointment or unexpected gain? A survey-based study of the motives and outcomes of inter-municipal cooperation in Poland. *Misc. Geogr.* **2019**, *23*, 235–241. [CrossRef]
15. Pappalardo, G.; Sisto, R.; Pecorino, B. Is the Partnership Governance Able to Promote Endogenous Rural Development? A Preliminary Assessment Under the Adaptive Co-Management Approach. *Eur. Countrys.* **2019**, *10*, 543–565. [CrossRef]
16. Kis, K.; Gal, J.; Veba, A. Effectiveness, efficiency and sustainability in local rural development partnerships. *Appl. Stud. Agribus. Commer.* **2012**, *6*, 27–31. [CrossRef] [PubMed]
17. Blaeschke, F. What drives small municipalities to cooperate? Evidence from Hessian municipalities. *Jt. Discuss. Pap. Ser. Econ.* **2014**, *14*, 1–51.
18. Gorlach, K.; Adamski, T.M. Poland: Designing Nature and Resource Management Strategies. In *Rural Sustainable Development in the Knowledge Society*; Bruckmeier, K., Tovey, H., Eds.; Ashgate: Surrey, UK, 2009; pp. 187–202.
19. Feiock, R.C.; Coutts, C. Guest Editors' Introduction: Governing the Sustainable City. *Cityscape J. Policy Dev. Res.* **2013**, *15*, 1–7. [CrossRef]
20. Destatte, A.; Feiock, R.C.; Wassel, K. Urban Pressures and Innovations: Sustainability Commitment in the Face of Fragmentation and Inequality. *Rev. Policy Res.* **2017**, *34*, 700–724. [CrossRef]
21. European Network for Rural Development. EU Rural Review 26 'Smart Villages: Revitalising Rural Services'. Available online: [https://enrd.ec.europa.eu/sites/enrd/files/enrd\\_publications/publi-enrd-rr-26-2018-en.pdf](https://enrd.ec.europa.eu/sites/enrd/files/enrd_publications/publi-enrd-rr-26-2018-en.pdf) (accessed on 20 December 2019).
22. Visvizi, A.; Lytras, M.D.; Mudri, G. Smart Villages: Relevance, Approaches, Policymaking Implications. In *Smart Villages in the EU and Beyond*; Visvizi, A., Lytras, M.D., Mudri, G., Eds.; Emerald Publishing Limited: Bingley, UK, 2019; pp. 1–12.
23. Wolski, O.; Wójcik, M. Smart Villages Revisited: Conceptual Background and New Challenges at the Local Level. In *Smart Villages in the EU and Beyond*; Visvizi, A., Lytras, M.D., Mudri, G., Eds.; Emerald Publishing Limited: Bingley, UK, 2019; pp. 29–48.
24. Visvizi, A.; Lytras, M.D. Rescaling and refocusing smart cities research: From mega cities to smart villages. *J. Sci. Technol. Policy Manag.* **2018**, *9*, 134–145. [CrossRef]
25. Feiock, R.C. (Ed.) *Metropolitan Governance: Conflict, Competition, and Cooperation*; Georgetown University Press: Washington, DC, USA, 2004.
26. Jacobsen, D.I.; Kiland, C. Success with a Bitter Aftertaste: Success Factors in Inter-Municipal Cooperation. *Scand. J. Public Adm.* **2017**, *21*, 53–76.
27. Bel, G.; Warner, M.E. Inter-Municipal Cooperation and Costs: Expectations and Evidence. *Public Adm.* **2014**, *93*, 52–67. [CrossRef]
28. Soukopová, J.; Vaceková, G. Internal factors of intermunicipal cooperation: What matters most and why? *Local Gov. Stud.* **2018**, *44*, 105–126. [CrossRef]
29. Raudla, R.; Tavares, A.F. Inter-Municipal Cooperation and Austerity Policies: Obstacles or Opportunities? In *Inter-Municipal Cooperation in Europe: Institutions and Governance*; Teles, F., Swianiewicz, P., Eds.; Palgrave Macmillan: Cham, Switzerland, 2018; pp. 17–42.
30. Hulst, R.; van Montfort, A. Institutional Features of Inter-Municipal Cooperation: Cooperative Arrangements and their National Contexts. *Public Policy Adm.* **2011**, *27*, 121–144. [CrossRef]
31. Sedmíhradská, L. Inter-Municipal Cooperation in the Czech Republic: A Public Finance Perspective. *NISPAcee J. Public Adm. Policy.* **2018**, *11*, 153–170. [CrossRef]
32. Agranoff, R.; McGuire, M. *Collaborative Public Management: New Strategies for Local Governments*; Georgetown University Press: Washington, DC, USA, 2003.

33. Statistical Office of the Slovak Republic. Number of the Population by Sex—Municipalities. Available online: [http://datacube.statistics.sk/#!/view/en/VBD\\_DEM/om7101rr/v\\_om7101rr\\_00\\_00\\_00\\_en](http://datacube.statistics.sk/#!/view/en/VBD_DEM/om7101rr/v_om7101rr_00_00_00_en) (accessed on 27 November 2019).
34. Statistical Office of the Slovak Republic. THE ELECTIONS TO THE BODIES OF COMMUNAL SELF-GOVERNMENT. Available online: <http://volby.statistics.sk/oso/oso2018/en/>. (accessed on 27 November 2019).
35. Klimovský, D.; Mejere, O.; Mikolaityte, J.; Pinterič, U.; Saparniene, D. Inter-Municipal Cooperation in Lithuania and Slovakia: Does Size Structure Matter? *LEX LOCALIS*. **2014**, *12*, 643–658. [[CrossRef](#)]
36. Franzke, J.; Klimovský, D.; Pinterič, U. Does Inter-Municipal Cooperation Lead to Territorial Consolidation? A Comparative Analysis of Selected European Cases in Times of Crisis. In *Local Public Sector Reforms in Times of Crisis*; Huhlmann, S., Bouckaert, G., Eds.; Palgrave Macmillan: London, UK, 2016; pp. 81–98.
37. Klimovský, D. Territorial Consolidation and Intercommunal Cooperation. In *Territorial Consolidation Reforms in Europe*; Swianiewicz, P., Ed.; Local Government and Public Service Reform Initiative: Budapest, Hungary, 2010; pp. 237–354.
38. Hughes, S.; Peterson, J. Transforming Municipal Services to Transform Cities: Understanding the Role and Influence of the Private Sector. *Sustainability* **2018**, *10*, 108. [[CrossRef](#)]
39. Hunady, J.; Pisar, P.; Musa, H.; Musová, Z. Innovation support and economic development at the regional level: Panel data evidence from Visegrad countries. *J. Int. Stu.* **2017**, *10*, 147–160. [[CrossRef](#)] [[PubMed](#)]
40. Hertzog, R. Intermunicipal Cooperation: A Viable Alternative to Territorial Amalgamation. In *Territorial Consolidation Reforms in Europe*; Swianiewicz, P., Ed.; Local Government and Public Service Reform Initiative: Budapest, Hungary, 2010; pp. 285–308.
41. Nižňanský, V. Stratégie Decentralizácie Štátu—Šanca pre Regionálny a miestny Rozvoj. In Proceedings of the Regional Policy and Regional Development in the Slovak Republic, Poprad, Slovakia, 30 September–1 October 2005.
42. Žárska, E. Medziobecná Spolupráca ako Efektívny Nástroj Správy Obcí. In *XXI. mezinárodní kolokvium o regionálních vědách*; Klímová, V., Žítek, V., Eds.; Masarykova univerzita: Brno, Czech Republic, 2018; pp. 398–403. [[CrossRef](#)]
43. LeRoux, K.; Carr, J.B. Explaining Local Government Cooperation on Public Works: Evidence from Michigan. *Public Work. Manag. Policy*. **2007**, *12*, 344–358. [[CrossRef](#)]
44. LeRoux, K.; Brandenburger, P.W.; Pandey, S.K. Interlocal Service Cooperation in U.S. Cities: A Social Network Explanation. *Public Adm. Rev.* **2010**, *70*, 268–278. [[CrossRef](#)]
45. Feiock, R.C.; Park, H.J. Bargaining, Networks and Institutional Collective Action In Local Economic Development. In Proceedings of the Annual Meeting Paper for ASPA, Milwaukee, WI, USA, 2–5 April 2005.
46. Feiock, R.C. Rational Choice and Regional Governance. *J. Urban Aff.* **2007**, *29*, 47–63. [[CrossRef](#)]
47. Feiock, R.C.; Scholz, J. (Eds.) *Self-Organizing Federalism: Collaborative Mechanisms to Mitigate Institutional Collective Action Dilemmas*; Cambridge University Press: New York, NY, USA, 2010.
48. Wasserman, S.; Faust, K. *Social Network Analysis: Methods and Applications*; Cambridge University Press: New York, NY, USA, 1994; pp. 1–825.
49. Lin, N. *Social Capital. A Theory of Social Structure and Action*; Cambridge University Press: Cambridge, MA, USA, 2001; pp. 1–278.
50. Stead, D.; Meijers, E. Spatial planning and policy integration: Concepts, facilitators, and inhibitors. *Plan. Theory Pract.* **2009**, *10*, 317–332. [[CrossRef](#)]
51. Wiesinger, G. The importance of social capital in rural development, networking and decision-making in rural areas. *J. Alp. Res.* **2007**, *95*, 43–56. [[CrossRef](#)]
52. Putnam, R.D.; Leonardi, R.; Nanetti, R.Y. *Democracy Work: Civic Traditions in Modern Italy*; Princeton University Press: Princeton, NJ, USA, 1994; pp. 1–258.
53. Coleman, J.S. Social Capital in the Creation of Human Capital. *Am. J. Sociol.* **1988**, *94*, 95–120. [[CrossRef](#)]
54. Macken-Walsh, Á.; Curtin, C. Governance and rural development: The case of the Rural Partnership Programme (RPP) in post-socialist Lithuania. *Sociol. Rural.* **2013**, *53*, 246–264. [[CrossRef](#)]
55. Marquardt, D.; Möllers, J.; Buchenrieder, G. Social Networks and Rural Development: LEADER in Romania. *Sociol. Rural.* **2012**, *52*, 398–431. [[CrossRef](#)]



56. Regulation (EU) No 1303/2013 of the European Parliament and of the Council of 17 December 2013 Laying down common Provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund and laying down General Provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund and the European Maritime and Fisheries Fund and Repealing Council Regulation (EC) No 1083/2006. Available online: <http://data.europa.eu/eli/reg/2013/1303/oj> (accessed on 27 November 2019).
57. Bumbalová, M.; Takáč, I.; Tvrdňová, J.; Valach, M. Are Stakeholders in Slovakia Ready for Community-Led Local Development? Case Study Findings. *Eur. Countrys.* **2016**, *8*, 160–174. [\[CrossRef\]](#)
58. Wang, X.; Wang, X.; Wu, J.; Zhao, G. Social Network Analysis of Actors in Rural Development: A Case Study of Yanhe Village, Hubei Province, China. *Growth Chang.* **2017**, *48*, 869–882. [\[CrossRef\]](#)
59. Dura, A.; Camonita, F.; Berzi, M.; Moferini, A. *Euroregions, Excellence and Innovation across EU Borders. A Catalogue of Good Practices*; Department of Geography, UAB: Barcelona, Spain, 2018; pp. 1–254.
60. Medeiros, E. (Re)defining the Euroregion Concept. *Eur. Plan. Stu.* **2011**, *19*, 141–158. [\[CrossRef\]](#)
61. Act No. 369/1990 Coll. on Municipal Establishment. Available online: <https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/1990/369/20190201> (accessed on 27 November 2019).
62. Act No. 91/2010 Coll. on Support of Tourism. Available online: <https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/2010/91/20190101> (accessed on 27 November 2019).
63. Hefetz, A.; Warner, M.E.; Vigoda-Gadot, E. Privatization and Inter-Municipal Contracting: US Local Government Experience 1992–2007. *Environ. Plan. C Gov. Policy.* **2012**, *30*, 675–692. [\[CrossRef\]](#)
64. Kwon, S.W.; Feiock, R.C. Overcoming the Barriers to Cooperation: Intergovernmental Service Agreements. *Public Adm. Rev.* **2010**, *70*, 876–884. [\[CrossRef\]](#)
65. Glückler, J. Economic geography and the evolution of networks. *J. Econ. Geogr.* **2007**, *7*, 619–634. [\[CrossRef\]](#)
66. Brown, T.L.; Potoski, M. Contract–Management Capacity in Municipal and County Governments. *Public Adm. Rev.* **2003**, *63*, 153–164. [\[CrossRef\]](#)
67. Oakerson, R.J. The Study of Metropolitan Governance. In *Metropolitan Governance: Conflict, Competition, and Cooperation*; Feiock, R.C., Ed.; Georgetown University Press: Washington, DC, USA, 2004; pp. 20–57.
68. Arieli, T. Intermunicipal cooperation and ethno-social disparity in peripheral regions. *Reg. Stud.* **2018**, *53*, 183–194. [\[CrossRef\]](#)
69. Osterrieder, H.; Bahloul, H.; Wright, G.; Shaffner, K.; Mozur, M. *Joining Forces and Resources for Sustainable Development: Cooperation among Municipalities—A Guide for Practitioners*; United Nations Development Programme: Bratislava, Slovakia, 2006; pp. 1–81.
70. Hunady, J. Individual and institutional determinants of corruption in the EU countries: The problem of its tolerance. *Econ. Politica* **2017**, *34*, 139–157. [\[CrossRef\]](#)
71. Bergholz, C.; Bischoff, I. Local council members' view on intermunicipal cooperation: Does office-related self-interest matter? *Reg. Stu.* **2018**, *52*, 1624–1635. [\[CrossRef\]](#)
72. Vidiecka nadácia pre komunitné aktivity. *Stratégia Rozvoja Vidieka Nitrianskeho Samosprávneho Kraja 2009–2015*; Úrad nitrianskeho samosprávneho kraja: Nitra, Slovakia, 2009; pp. 1–100.
73. Slavík, V.; Kožuch, M.; Bačík, V.; Ragačová, M. *Analýza Mikroregiónov Slovenskej Republiky, Projekt Riešený pre Splnomocnenca Vlády sr pre Decentralizáciu Verejnej Správy*; Univerzita Komenského: Bratislava, Slovakia, 2005; pp. 1–40.
74. Melichová, K.; Fáziková, M. Creative clusters in rural areas—A case study from Slovakia. In *XVII. Mezinárodní Kolokvium o Regionálních Vědách, Proceedings of the XVII. Mezinárodní Kolokvium o Regionálních Vědách, Hustopeče, Czech Republic, 18–20 June 2014*; Klímová, V., Žitek, V., Eds.; Masarykova univerzita: Brno, Czech Republic, 2014. [\[CrossRef\]](#)
75. Abas, M.; Híc, P. *Diskrétna Matematika*; STU: Bratislava, Slovakia, 2006; pp. 1–145.
76. Nystuen, J.D.; Dacey, M.F. A graph theory interpretation of nodal regions. *Pap. Proc. Reg. Sci. Assoc.* **1961**, *7*, 29–42. [\[CrossRef\]](#)
77. Jones, P.J.; Mair, P.; McNally, R.J. Visualizing Psychological Networks: A tutorial in R. *Front. Psychol.* **2018**, *9*, 1–12. [\[CrossRef\]](#)
78. Hanneman, R.A.; Riddle, M. *Introduction to Social Network Methods*; University of California: Riverside, CA, USA, 2005.

79. Giuliani, E.; Pietrobelli, C. *Social Network Analysis Methodologies for the Evaluation of Cluster Development Programs*; Inter-American Development Bank: Washington, DC, USA, 2011; pp. 1–53.
80. Borgatti, S.P.; Everett, M.G.; Johnson, J.C. *Analyzing Social Networks*; SAGE Publications: London, UK, 2013; pp. 1–304.



© 2020 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).