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Barriers to inter-municipal cooperation

Juraj NEMEC[1], Nikoleta JAKUŠ MUTHOVÁ[2], Beáta MIKUŠOVÁ MERIČKOVÁ[3]

Abstract: This article investigates barriers to inter-municipal cooperation in Slovakia, a country that is essentially formed of small municipalities. In a fragmented municipal structure, inter-municipal cooperation could be the way to achieve lower costs for service provision while maintaining or even increasing a quality service, taking into account economies of scale. The study aimed to identify the barriers to inter-municipal cooperation in Slovak conditions. The study uses a questionnaire and a qualitative expert opinions method. The potential of cost saving in local public services was identified as a motivation for inter-municipal cooperation. The main identified barriers are transaction costs (of different types), non-existent benchmarks (no regular comparisons of best solutions), and limited motivation to select the optimal mode of service provision.

Keywords: Municipality. Inter-municipal cooperation. Local public services. Slovakia

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Introduction

Especially in the current times of crises, the question of an effective way of providing local public services is becoming increasingly urgent. In Slovakia, contracting out (externalization) represents the leading solution to deliver local services, especially in waste management (Mikušová Meričková & Fanta, 2012; Mikušová Meričková, 2020), also because the fragmented territorial structure represents a clear barrier to in-house production. However, current research in the field (Bel & Rosell, 2016; Soukopová & Klimovský, 2016; Petersen, Hjelmar & Vrangbæk, 2018; Schoute, Budding & Gradus, 2018; Albalate, Bel & Reeves, 2019; Clifton, Warner, Gradus &

[1] Prof. Ing. Juraj Nemec, CSc., Faculty of Economics, Matej Bel University, Tajovského 10, 975 90, Banská Bystrica, Slovakia and Faculty of Economics and Administration, Masaryk University Brno, Czech Republic, e-mail: juraj.nemec@umb.sk; ORCID ID: 0000-0002-5881-7422

[2] Ing. Nikoleta Jakuš Muthová, PhD., Faculty of Economics, Matej Bel University, Tajovského 10, 975 90, Banská Bystrica, Slovakia, e-mail: nikoleta.jakusmuthova@umb.sk; ORCID ID: 0000-0001-8700-5055

[3] Prof. Ing. Beáta Mikušová Meričková, PhD. Faculty of Economics, Matej Bel University, Tajovského 10, 975 90, Banská Bystrica, Slovakia, e-mail: beata.mikusovamerickova @umb.sk; ORCID ID: 0000-0002-3187-9201

Bel, 2019; Mikušová Meričková and Jakuš Muthová, 2021) points to the risks of contracting out and the trend towards a repeated return to the internalization of services at the local level, referred to as remunicipalization, is visible in many countries.

Stepping back from externalization towards remunicipalization offers the opportunity to apply the concept of intermunicipal cooperation (IMC) in providing local public services. IMC is a common form of providing local services. It is typically used mainly in smaller territorial units (Warner, 2006) because of its capacity to reduce local public unit production costs (Tavares & Feiock, 2018). Local services jointly provide the contents of IMC. IMC does not necessarily have to be established between geographically adjacent and economically independent municipalities.

Current research provides many arguments related to the advantages of IMC. IMC may help to achieve economies of scale (Agranoff, 2004; Bel et al., 2013; Raudla & Tavares, 2018). Economies of scale reduce the average cost of providing a public service as the volume of production increases (Hefetz, Warner & Vigoda-Gadot, 2012). It also can improve the coordination of processes or increase the quality of services. De Sousa (2013) includes the improvement of the credit rating of municipalities to attract new external investors or funds among the secondary benefits of IMC.

The existence of economies of scale (U-curve) related to the delivery of many local public services in territorially fragmented countries is confirmed, for example, by Matějová et al. (2017). Too small municipalities incur higher direct and indirect costs for the provision of public services. In this context, excessive territorial fragmentation and financially and personally undersized provision of local public services in very small municipalities reduces the scope and quality of services provided. For this reason, it should be beneficial for small municipalities to conclude a partnership agreement related to the provision of local services with other local governments and to create a functional IMC.

The existing data (Mikušová Meričková, 2020) related to Slovakia suggests that IMC is the least costly form of delivery of selected local public services. However, this form is used in very few cases. Such a fact calls for an explanation. The study aims to identify the barriers and motivations that lead municipalities to use or not to use the concept of IMC in Slovakia, thereby reflecting this gap in the research. The research questions are set as follows: RQ1: What are the main characteristics of municipal waste management delivery in Slovakia? RQ2: What are the main barriers to IMC in delivering local public services in Slovakia? In order to answer our research questions, we use a questionnaire and the expert opinion – Delphi - methods

1. Possible benefits of inter-municipal cooperation at the local level

As stated by Hulst & Van Montfort (2007), the term "cooperation agreement" or "inter-municipal partnership" can be broadly defined as a relationship based on mutual understanding and partnership. Thanks to the partnership, it is possible to

jointly develop the territory and improve the provided public services (Jetmar, 2015). If one of the partners does not fulfill its obligations, it is up to the other partners to compensate for this deficit. For this reason, in the case of municipalities, it is more appropriate to use terms such as cooperation, collaboration, or networking (Koolma, Hulst & Van Montfort, 2017). Cooperation cannot be artificially controlled but must arise as a need from the bottom up, while it should only be lightly guided from above. Naturally, small municipalities have a greater inclination towards inter-municipal cooperation, which, in this way, compensates for the deficit of the municipality's so-called smallness and inability to provide public services in the required scope and quality independently. At the same time, voluntary inter-municipal cooperation represents an alternative to the top-down merger of some municipalities (Hertzog, 2010).

In the case of the USA, inter-municipal cooperation is mainly based on voluntariness (Feiock, 2007), while in the countries of the European Union, it is more formal and regulated (Hulst & Van Montfort, 2007; Lago-Peñas & Martinez-Vazquez, 2013; Mishchuk et al., 2023). Such cooperation aims to increase expertise and, at the same time, the efficiency of the performance of original and transferred competences in local self-government (Silvestre et al., 2020). Agreements within the framework of the IMC may differ, both in terms of content and level of institutionalization, or depending on the European country in which they were applied. Ferreira, Dijkstra, Aniche and Scholten (2020) divide IMC based on: the type of collaboration, the form of commitment, management complexity, representation, and the degree of institutionalization. The multidimensional division of IMC (Table 1) is presented by Swianiewicz and Teles (2019), where this concept is also extended by expediency.

Table 1. Levels defining IMC

Level of IMC	Characteristics
Level of formality	It can be formed by informal agreements of local governments, formal agreements of local governments (contractual agreements), and possibly a permanent structure.
Level of coercion	It can be formed by a voluntary initiative stemming from the lowest levels (bottom-up), a voluntary initiative limited by various kinds of pressures exerted by regional or national governments, in the form of a mandatory network.
Level of expediency	It can be formed by a voluntary initiative starting from the lowest levels (from the bottom up), a voluntary initiative limited by various kinds of pressure exerted by regional or national governments, in the form of a mandatory network.
Partnership level	It is defined based on the number of partners. According to the general definition, the IMC must include at least two partners, while the upper limit of the number of partners is not limited. It can be a bilateral or multilateral partnership.
Membership level	It focuses on the nature of group members. It may be of a purely general nature; it may be a multi-level membership in which state administration institutions are also involved; or it may have the nature

Level of IMC	Characteristics
	of multi-sector cooperation, which also includes entities from the private sector, structural funds, and the like.
Level of cooperation	It is defined based on the area in which the cooperation takes place. The level can also be differentiated based on whether the cooperation focuses on the joint provision of services, investment projects, or the representation of common interests.

Source: own processing according to Swianiewicz, Teles, 2019

According to Bel et al. (2013), it is important to monitor the factors that support the emergence of inter-municipal cooperation. Comparative research in Europe and the USA has shown that while European studies focus on cost-effectiveness, studies in the USA concentrate on organizational factors resulting from the diversity of the responsibility structure of individual local governments and finances, which ultimately affects the diversity of services provided.

In this context, Žárska (2018) identifies several areas in which it is beneficial to develop IMC; these are environmental protection, the fields of tourism, culture, agritourism, education and regional education, social services, technical infrastructure, regional information and advisory centers and their organization, healthcare, wastewater treatment, municipal waste disposal, and the like. The demand for efficient provision of these services is increasing, but fulfilling this demand is costly for municipalities.

In this context, Docherty Gulliver & Drake (2004) state that, unlike a municipality, highly dense cities can benefit from economies of scale. At the same time, territorial units with a lower population density, which are generally not the main social centers, can have a more challenging position in providing an adequate service because they serve a smaller population and have fewer options for scaling in service delivery. Exploiting economies of scale through IMC could therefore contribute to making services more efficient.

Soukopová & Klimovský (2016) researched the IMC concept in waste management on a sample of 670 Czech municipalities through a binary approach. They assume that the municipalities have an effort to cooperate in order to achieve the lowest possible costs. The results show that IMC and population density as variables are highly significant in relation to municipal waste disposal costs (with more than a 99% confidence level). The authors' assumption is confirmed that depending on the size of the population in a village, the total cost of waste disposal increases. It has also been confirmed that IMC contributes to reducing overall waste disposal costs. The authors conclude that the internal provision of waste management services in small municipalities is less effective than other forms of provision of this service, for example, through IMC.

Local government structures in many parts of the world exhibit municipal fragmentation making it difficult for both central and federal governments to deal with resource allocation effectively and efficiently, which presents a challenge for the provision of public services at the local level. Collaboration presents an excellent

opportunity for local government authorities to gauge proactive means to create engagement between municipalities to deal with the challenges of the economic crisis and recent financial constraints facing the public sector.
As a territorial policy engrained in structural reformation (Hulst & Van Montfort, 2007), IMC has been used as a propeller of efficiency, as many scholars (Sedmihradská, 2018; Swianiewicz & Teles, 2019) have noted, to the woes of municipal fragmentation to reduce the costs associated with administrative compliance. However, it also ensures significant economies of scale and scope (Niaounakis & Blank, 2017). As discussed by Bel et al. (2013) IMC analysis has centered on waste collection, water, electricity, and gas (Garrone et al., 2013). However, the effect of IMC has contextual connotations and the type of public service the cooperative municipal governance arrangement is oriented towards in the production and provision of services.
A targeted analysis of fiscal effects in the provision of IMC was created by Agrawal, Breuillé & Le Gallo (2021). Using the estimation strategy, the authors find that within the association of municipalities, strategic interactions between municipalities are more intense than in the case where municipalities are located outside the association. Thus, within the framework of IMC, fixed distribution networks of tax revenues are created between municipalities, which are used more purposefully and strategically compared to individual provision of services.

1.1. Barriers to IMC

There exist differences in opinions in the literature on the reasons that municipalities consider when cooperating with each other. Nevertheless, this form of cooperative arrangement has been around for some time, gaining popularity among scholars and morphing into different forms in terms of the shape and level of institutionalization as well as the extent of engagement, as is the case in America (Warner, 2006). In the context of the European Union, West (2007) discussed how French municipalities have coped with and thwarted the lack of scale at the municipal level, where collaborative arrangements have been organized in a voluntary form to perform the function of providing public services. In a similar vein, Fedele & Moini (2007) discussed the different forms of Italian IMCs from an institutional and organizational perspective to show the difficulties and advantages of municipal collaboration, whether voluntary agreements or forced collaboration, as a consequence of local government structural reforms. Elsewhere, in Finland, Haveri & Airaksinen (2007) discussed modern and old IMC arrangements in the context of public administration in Finland.
Despite its advantages, IMC faces several obstacles to its application. According to Bel & Sebő (2021), the factors influencing inter-municipal cooperation can be divided into two main categories, i.e., those that deal with cost (economies of scale) and fiscal factors (the level of wealth of the given region and its willingness to cooperate - Lowery, 2000; Warner & Hefetz, 2002; Shpak et al, 2022) and those that deal with organizational factors and governance characteristics. While in the

countries of Europe, considerable homogeneity of local services prevails, i.e., in most countries, local services such as collection and removal of solid waste maintenance of roads are mandatory for all municipalities, in the case of the USA, local governments are characterized by more significant heterogeneity, fiscal autonomy and a lower level of intergovernmental assistance in providing local services (Lago-Peñas & Martinez-Vazquez, 2013). As Feiock (2007) states, a certain homogeneity in the services provided (e.g., quality, availability, range of services), available resources, and institutional arrangement create the opportunity for the emergence of inter-municipal cooperation. Other factors that can positively influence the duration of the contract, the professionalism of the management and the reduction of risks resulting from the contracting of public services include the length of the contract, and the negative impact on the nature of inter-municipal cooperation (Brown, Potoski & Slyke, 2016). Local governments that decide on inter-municipal cooperation will gain a more significant market position (Bel, Fageda & Mur, 2014).

On the one hand, the importance of inter-municipal cooperation lies precisely in creating a more stable environment for providing services. On the other hand, as Feiock (2007) states, inter-municipal cooperation leads to higher transaction costs related to information acquisition, negotiation and monitoring of the involved partners (Sørensen, 2007; Marvel & Marvel, 2008).

The main determinants (Goodman, 2005 or Bakoš et al., 2021) for creating IMC between municipalities are territorial, financial, personnel and development factors.

2. Materials and methods

Slovakia is a relatively small country with roughly 5.5 million inhabitants. It is a member of the European Union and NATO, and international organizations count Slovakia as a developed country. The level of decentralization is very high; Slovak municipalities independently manage a comprehensive set of own responsibilities. According to existing evaluations, Slovakia complies with all the principles of the European Charter of Local Self-Government (Plaček et al., 2021).

The territorial structure of Slovakia is highly fragmented (together with the Czech Republic and France, Slovakia belongs to the most fragmented countries in Europe). There are roughly 2,900 municipalities in the country, many of them with less than 200 inhabitants.

Much research deals with the modes of delivery of local public services in Slovakia. These studies confirm that, especially in waste management, almost all municipalities use external suppliers to deliver the service (Mikušová Meričková, 2020). The existing data suggest that IMC in Slovakia is delivering excellent results in terms of the efficiency and quality of public services, especially regarding municipal solid waste (MSW) service provision. For example, the of Soukopová et al. (2022) model calculated that the inter-municipal cooperation variable was the second most robust variable in terms of impact on costs of waste management delivery. Despite such positive results, the share of IMC as a form of MSW service

provision has not substantially increased over the 20 years under study in both countries (Soukopová et al., 2022) and is below 10 %.
In this context, the paper aims to identify the main barriers which limit IMC for local public service delivery in Slovakia.
In our research we focused only on one selected local service – waste management, considering the fact that waste management is the most expensive communal service and more than 90% of its delivery is realized by external suppliers. The IMC in delivering this local public service in Slovakia is very rare.
In order to answer our main research questions on municipal waste management delivery and on the main barriers to IMC, we decided to use the method of analysis of primary data gathered by questionnaire and the Delphi methods describing the expert opinions.
The questionnaire we sent out electronically to all local governments in Slovakia and municipal districts between 20 February 2023 and 10 March 2023. A total of 2 927 local authorities from all regions of the Slovak Republic were contacted, and 177 local authorities participated in the questionnaire survey (Table 2). The design of the questionnaire questions was based on a survey conducted by the Association of Towns and Municipalities of Slovakia (ZMOS, 2020), research by Mikušová Meričková et al. (2020, 2021) and research by Steiner (2003), which examined inter-municipal cooperation in Switzerland.
The questionnaire consisted of 27 questions, of which 23 were closed, and four were open-ended. We started by asking about the structure of the municipalities (name of the municipality, number of inhabitants, affiliation by county and status of the municipality). The questions then focused on the ways and forms of provision of collection and disposal of MSW in their municipality. Other questions focused on specific ways of selecting contractors, the type of organization, and the criteria based on which they select an external contractor. In the next part of the questionnaire, questions were directed to the quantity of MSW, the total annual expenditure of local governments related to the collection and disposal of MSW, the method of financing and the method of payment to the service provider.
Furthermore, we were interested in what areas local governments would like to establish inter-municipal cooperation or in what areas they cooperate and based on what legal form this cooperation takes place. We also asked about the obstacles related to inter-municipal cooperation. At the end of the questionnaire, the respondents had the opportunity to indicate why they were not interested in starting inter-municipal cooperation and also to describe their experiences, opinions and insights about inter-municipal cooperation.
We processed the outputs from the questionnaires using relevant mathematical and statistical methods and used them to evaluate the questionnaire results. SPSS is used to analyze the data. When evaluating the results, we consider 0.05 as a statistically significant level. From statistical methods, we used descriptive statistical analysis (for data representation), inferential statistical analysis (to make inferences or draw conclusions about a larger population-based on findings from a sample group within it) and associational statistical analysis (to make predictions and find causation).

We verified the sample's representativeness (Table 2) with the Chi-square test. In our case, the samples are not representative, as the structure of the basic set, i.e., all municipalities of the Slovak Republic, in terms of the number of inhabitants, status and municipality by region, do not correspond to the structure of our sample.

Table 2. Structure of the sample by classifiers in %

Classifier	Answer	% answers
Affiliation by region	Banská Bystrica region	28.2
	Trnava region	6.2
	Trenčín region	6.8
	Nitra region	7.3
	Žilina region	12.4
	Prešov region	22.6
	Košice region	16.4
	Bratislava region	0.0
Statute	Regional town	0.0
	Town	6.2
	Municipality	93.8
Number of inhabitants	< 500	50.3
	< 1 000	19.2
	< 5 000	25.4
	< 10 000	2.3
	< 50 000	2.8
	< 100 000	0.0
	> 100 000	0.0

Source: Authors' own contribution

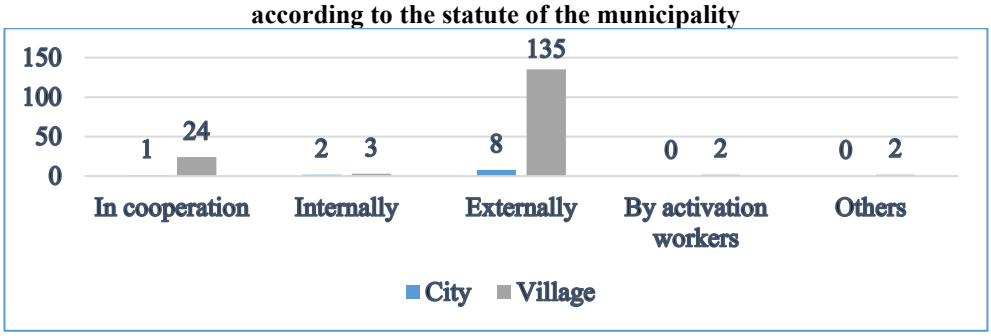
We also used the expert method to reconfirm the results from quantitative research. An indisputable advantage of the Delphi method is the tracking of respondent changes in individual rounds of the implementation process. For research purposes, we implemented the Delphi method in two rounds. The first round was conducted to find out the dispersion of the answers, while the second round was aimed at their weighting and convergence. Magdolenová (2009) points out that with the reach of a group consensus of experts, it is forgotten that the majority opinion is not always the best. In our case, the investigated factors of the attitude towards IMC have a suitable and agreeable character. To obtain the expected information, we approached six well-known experts on the topic – three academic experts oriented to local government finance issues and three municipal representatives.

3. Research results

Participating local authorities responded to a question on how they provide for the collection and disposal of municipal solid waste (MSW) in their municipality. From the results, we know that up to 81.9% of the participating local authorities provide

collection and disposal of MSW independently, and 18.1% provide collection and disposal of MSW in cooperation with another local authority.
In the following question, we investigated how the local government provides the collection and disposal of MSW independently and in cooperation (Figure 1). In those cases where the local authority provides the collection and export of MSW independently, up to 80.8% of respondents chose the option that an external contractor provides the service based on a contract. In cases where the local authority provides the collection and disposal of MSW in cooperation with another local authority, respondents almost unanimously chose the option of an external contractor on a contract basis. The municipality of Lisov is the only one to report that it provides this service internally with its own staff and technical capacities.

Figure 1. Method of providing the service of collection and disposal of MSW according to the statute of the municipality



Source: Authors' contribution

We further investigated how the involved local governments perceive inter-municipal cooperation or whether they perceive the establishment of inter-municipal cooperation in the field of waste management as beneficial, with 57.1% of respondents answering in the affirmative, 18.1% choosing the answer NO and 24.9% of respondents choosing the answer OTHER. Those respondents who chose the answer OTHER reported problems with a lack of information and experience in inter-municipal cooperation and, therefore, could not objectively comment on the question. If local governments considered inter-municipal cooperation to be beneficial, they had the opportunity to choose based on which aspects, with up to 45.8% of respondents mentioning economic aspects, 27.7% managerial aspects, 15.8% chose the option OTHER and 10.7% of local governments mentioning social aspects. Similarly, to the previous case, the majority of respondents who chose the answer OTHER cited a lack of information and knowledge on the issue, with some stating that they did not see the benefits and did not think that inter-municipal cooperation was beneficial. Others stated that local governments are not prepared for such cooperation precisely because of the lack of experts and also pointed to problems with legislation in the field of waste management.

In the subsequent question, those local governments that had started cooperation with another city/municipality were allowed to answer the question whether their total annual expenditure had changed after the start of the cooperation, with 6.2% of respondents indicating the answer YES and 7.3% of respondents indicating the answer NO. At the same time, respondents were also allowed to comment on specific instances of how these expenditures have changed. For example, respondents indicated that their expenses were still increasing, and this was also due to rising inflation; they also indicated that they had better conditions for purchasing collection bins, better overall prices for waste treatment, and better logistics for waste disposal, another respondent indicated that their expenses had partially decreased but on the contrary, the fees to the state had increased, others indicated a reduction in costs, a decrease in expenses.

The next question focused on the amount of MSW produced per year in the municipality, with up to 61.6% of the participating municipalities reporting less than 3 thousand tonnes of MSW. Participating local governments were also allowed to comment on the amount of MSW collected and disposed of if they cooperated with other local governments. Thirty-two municipalities responded to this question. In the following tables (Table 3, Table 4), we can see the structure according to the number of inhabitants and the amount of MSW produced per year in the independent and cooperating municipalities. Based on the participating municipalities, we can conclude that 145 municipalities provide collection and disposal of MSW independently, with more than half of them producing less than 3,000 tonnes of waste per year and 32 municipalities cooperating with another municipality. Of the 32 cooperating municipalities, 41% report less than 500 inhabitants and a quantity of up to 3,000 tonnes of MSW per year. In the case of the municipality of Malé Ludince, which independently disposed of less than 30 thousand tonnes of MSW per year, after the start of cooperation with another municipality, it reports 50 to 100 thousand tonnes of waste per year, while the number of inhabitants has remained unchanged. These numbers show that even a small municipality can establish a stable and functioning cooperation on the basis of which they can provide waste management services efficiently. At the same time, it is clear from the results that a growing population does not automatically imply a growing quantity of MSW, as we can see that some municipalities with a population of 5 to 10 thousand inhabitants provide collection and disposal of MSW for the same amount of waste produced as municipalities with a smaller population. We attribute this fact to better motivation to reduce the amount of MSW in municipalities, households and businesses (Nica et al., 2022).

We used the observed data (Tables 3 and 4) for the quantitative analysis. A moderate dependence was confirmed for how the municipality arranges the collection and disposal of MSW, whether alone or in collaboration, and the amount of MSW collected and disposed of in the municipality (p-value = 0.006; Cramer's V = 0.304), suggesting that it depends on how the municipality arranges the collection and disposal of MSW and the amount of MSW produced annually. At the same time, we can observe a dependence between status affiliation and the amount of MSW

produced annually, where a moderate dependence is confirmed (p-value = 0.005; Cramer's V = 0.309).

Table 3. Structure by the number of inhabitants and quantity of MSW per year in the independent municipalities

	Amount of MSW produced annually in independent municipalities						
Number of inhabitants in the municipality	<3 000 tons	<10 000 tons	<30 000 tons	<50 000 tons	<100 000 tons	>100 000 tons	Total
< 500 inhabitants	40	8	12	8	2	0	70
< 1 000 inhabitants	20	3	1	1	2	1	28
< 5 000 inhabitants	26	4	0	1	3	4	38
< 10 000 inhabitants	**4**	0	0	0	0	0	4
< 50 000 inhabitants	0	5	0	0	0	0	5
Total number of municipalities							145

Source: own processing according to the results of the questionnaire survey, 2023

Table 4. Structure by the number of inhabitants and quantity of MSW per year in the cooperating municipalities

	Amount of MSW produced annually in cooperating municipalities						
Number of inhabitants in the municipality	<3 000 tons	<10 000 tons	<30 000 tons	<50 000 tons	<100 000 tons	>100 000 tons	Total
< 500 inhabitants	13	1	2	0	2	1	19
< 1 000 inhabitants	4	2	0	0	0	0	6
< 5 000 inhabitants	2	2	1	0	0	2	7
< 10 000 inhabitants	0	0	0	0	0	0	0
< 50 000 inhabitants	0	0	0	0	0	0	0
Total number of municipalities							32

Source: own processing according to the results of the questionnaire survey, 2023

When asked whether they thought that establishing inter-municipal cooperation can make it easier for local governments to provide collection and disposal of MSW, respondents answered as follows: 41.2% of respondents indicated the answer YES, 38.4% indicated NO, and 20.3% of respondents chose the answer OTHER, with most of them indicating that they do not have enough experience and information to answer the question, some respondents could not answer, but some indicated that it is beneficial, especially for smaller municipalities and their collection company, beneficial in terms of work efficiency but not in terms of flexibility and they indicated the impact on better-negotiated price.

In the survey, we also asked respondents in which area they would like to cooperate with another city/municipality or are cooperating. Based on the Multiple Response Analysis, we concluded that local governments most frequently selected road maintenance; municipal waste collection, removal, and disposal; joint procurement; and public utility activities. The least selected options were public lighting management and OTHER, indicating the establishment of a joint municipal office, a building office, the operation of sewage and wastewater treatment plants, the construction of cycle paths, and cooperation in other sectors. However, some, on the contrary, showed disinterest in inter-municipal cooperation. Based on the data in Table 5, we can say that statistical significance is confirmed between the cooperation area of collection, removal and disposal of waste and affordability, public utility activities, road maintenance, public lighting management, joint procurement, cooperation based on a joint municipal enterprise, cooperation based on a service contract and expenditure on external contractors. These variables had a p-value of less than 0.05. At the 0.05 significance level, we reject H0 and accept the assumption that the variables are both statistically significant and dependent on the area of cooperation: collection, removal and disposal of MSW.

Table 5. Possible areas of IMC

Answer	Number of answers	% of cases
Public utility activities	50	14.20 %
Road maintenance	65	18.50 %
Public lighting management	25	7.10%
Joint public procurement	52	14.80 %
Collection, removal and disposal of waste	59	16.80 %
Cooperation on the basis of a joint municipal undertaking	42	11.90 %
Cooperation on the basis of a service contract	43	12.20 %
Other	16	4.50 %

Source: own processing according to the results of the questionnaire survey, 2023

Furthermore, we were interested in the legal form based on which inter-municipal cooperation, if any, was established. From the results of the questionnaire survey, we can conclude that the most frequently used cooperation is based on a contractual

basis, associations, joint municipal authorities, special purpose municipal associations, and local action groups. In this case, the link between the legal form of inter-municipal cooperation and the establishment of inter-municipal cooperation facilitates the collection and disposal of municipal waste. At the same time, the weak inverse relationship between the number of inhabitants of the municipality and the legal form of cooperation was confirmed (P-value = 0.018; Spearman's correlation coefficient = -0.178). Furthermore, the dependence between the method of financing and the legal form on which the cooperation is based was confirmed (p-value = 0.169; r = 0.169). Therefore, we can confirm a direct weak relationship between the legal form of inter-municipal cooperation in waste management and how these services are financed.

3.1. Barriers to IMC

Local governments were also allowed to comment on 15 potential obstacles they may have encountered in inter-municipal cooperation in local government. In the following table (Table 6), we can see how the participating local governments responded, with a clear perception of low state support or lack of funding as a barrier. Instead, they perceived varying willingness to invest in cooperation and lack of staff as a barrier. Instead, they do not perceive as an obstacle the unwillingness to cooperate with smaller municipalities, poor management and coordination, disagreement of citizens, and the like. What the respondents do not perceive as an obstacle is the resistance of employees to inter-municipal cooperation, personal problems and conflicts, and the resulting mistrust between municipalities. The dependence between the obstacles mentioned above was confirmed using Spearman's correlation coefficient, which shows that the existing obstacles to inter-municipal cooperation are interrelated and influence each other.

Table 6. Barriers to inter-municipal cooperation in % of selections

Barriers	Not perceived as an obstacle at all	More likely not perceived as an obstacle	More likely perceived as an obstacle	Definitely perceived as an obstacle
Lack of finance	18.6	20.3	27.7	33.3
Reluctance among municipalities	28.8	31.1	26.0	14.1
Reluctance to cooperate with smaller municipalities	27.1	31.6	20.9	20.3
Preservation of autonomy	34.5	34.5	20.9	10.2
Staff resistance	47.5	31.1	14.7	6.8
Poor management and coordination	29.4	37.3	23.7	9.6

Barriers	Not perceived as an obstacle at all	More likely not perceived as an obstacle	More likely perceived as an obstacle	Definitely perceived as an obstacle
Different willingness to invest in cooperation	21.5	27.1	35.6	15.8
Citizen opposition	37.9	37.3	16.9	7.9
Lack of staff	25.4	22.0	32.2	20.3
Fear of loss of flexibility	32.2	32.2	23.2	12.4
Less transparency	33.9	30.5	25.4	10.2
Low state support	10.7	10.2	29.9	49.2
Personal problems and conflicts	41.8	30.5	20.3	7.3
Mistrust between municipalities	41.8	29.4	18.6	10.2
Information asymmetry	34.5	31.6	21.5	12.4

Source: own processing according to the results of the questionnaire survey, 2023

If local authorities were not and were not interested in starting inter-municipal cooperation, they were allowed to give their reasons. However, the most frequently mentioned reasons were lack of legal advisory services, lack of interest of neighboring municipalities, and administrative reasons. In terms of interdependence, they also cited the lack of support through various economic instruments, which causes staff resistance to starting inter-municipal cooperation. We assume that the employee resistance mentioned above is related to the lack of financial resources or the loss of jobs. Another dependency relationship was confirmed by the lack of interest from the municipality and the fear of loss of flexibility, which we attribute to the absence of knowledge and experience in inter-municipal cooperation, which could ultimately lead to an inability to respond to any problems that may arise. The dependency relationship was also confirmed by the municipality's lack of interest and unwillingness to cooperate with smaller municipalities, which we attribute to the fact that larger municipalities do not want to cooperate with smaller ones, mainly due to the loss of autonomy and independence. The last dependency relationship confirmed was a lack of interest on the part of the municipality and reluctance between municipalities, which we attribute to an inevitable rivalry between municipalities, and a lack of interest to cooperate, make joint decisions, and adapt.

3.2. Experts' opinions

The six experts involved in the qualitative part of our research delivered a somewhat different view of the main barriers to IMC compared to the responses from municipalities (also because they did not receive such concrete navigation as municipal representatives). According to them, three critical purposes exist: transaction costs of different types, non-existent benchmarks (no regular

comparisons of best solutions), and limited motivation to select the optimal mode of service provision.

Transaction costs in all their different forms were the most frequently cited factor. The experts mentioned several barriers related to this dimension. One response directly linked this problem to the limited reliability of any efficiency calculation, as also noted in the methodology section of this paper:

- "Without including full transaction costs in the calculations, any comparison of the efficiency of internal and external forms of provision is misleading." (Academic expert)

All experts mentioned that financial and non-financial transaction costs limit cooperation. The following responses are representative concerning transaction costs:

- "IMC requires complicated coordination and acceptance by management and leaders. Some municipalities are not ready to cooperate simply because of the relationships between their mayors." (Academic expert)
- "Municipalities do not trust each other. Smaller municipalities do not trust the larger ones. Municipal leaders may prefer to tender the service, negotiating with a legally tendered organization to provide the service to avoid having to defend their own solutions." (Academic expert)

The fact that there are no existing benchmarks and municipalities do not routinely conduct any in-depth investigations of the most effective solutions for local public service delivery is confirmed, for example, by the following statement:

- "Most municipalities never approach this topic in any systemic way and do not conduct or commission the analysis of the efficiency of different provision options." (Academic expert

The third critical limit – lack of motivation to select the "best" option – was confirmed in several responses, for example:

- "Municipal leaders are interested in whether the MSW management system is working; they do not want to deal with details or to search for possible improvements. Lobbying and other activities of private waste management companies, who protect their business as best they can, also play a role." (Municipal representative)
- "If citizens do not show visible dissatisfaction, municipal managers do not see the need to change existing solutions. Political motivation, will, shared information, local capacities – all these elements to push for change are lacking." (Municipal representative)

If we compare the responses obtained by our questionnaire and the opinion of experts, it is visible that both sources overlap for all institutional barriers. However, because of the methodology used, the experts' responses are more condensed (the transaction costs barrier includes most factors proposed by participating municipalities). The critical issue of the lack of financial resources was part of the experts' responses, and the following quotation may explain how it is understood:

- "Creating a new inter-municipal authority for the waste management services requires significant starting costs and guarantees." (Municipal representative)

It is evident that we did not expect (and we also did not want to ask this directly to ensure the needed response level) that municipalities would deal with the second and third group of barriers, as suggested by the experts. The experts' responses related to behavioral barriers are critical value added.

4. Conclusions

According to the municipalities that participated in the questionnaire survey, we can say that we register a relatively low percentage of municipalities (18.1%) cooperating in the collection and disposal of MSW in Slovakia. However, despite the low number of currently cooperating municipalities, we have noted the expressed interest in the initiation of inter-municipal cooperation on the part of the municipalities. Up to 64.3% of municipalities expressed interest in starting inter-municipal cooperation, especially in road maintenance, collection, removal and disposal of municipal waste, joint public procurement and public utility activities. Therefore, based on the questionnaire survey results, we can say with certainty that there is an interest in inter-municipal cooperation in the field of waste management in the Slovak Republic. In the area of waste management, this interest is linked to the fact that IMC helps to reduce costs, with only 15.8% of municipalities stating that they do not see the benefits or need more information to make an objective judgment.

In these conditions (potential interest, acceptance of the benefits but low percentage of use), it is essential to know in detail the limitations of inter-municipal cooperation in waste management. Our research has identified significant institutional and behavioral barriers to IMC. An interesting fact is the high percentage of responses related to the lack of financial resources to implement such cooperation. This opinion of municipalities is somewhat paradoxical at first glance because, based on several researches (Valach et al., 2019., Struk, Bakoš, 2021), inter-municipal cooperation in the field of waste management brings cost savings, especially for smaller municipalities. However, the above answer of the expert suggests how to understand this factor. Other noted, mainly institutional constraints and barriers, were reluctance to cooperate with smaller municipalities, lack of staff, varying willingness to invest in cooperation, poor management and coordination, less transparency, poor management setup, lack of legal service, relatively complex waste management legislation, poor accessibility of landfills, and absence of professional staff. Experts have also pointed to significant behavioral barriers associated with the relatively low quality of democracy in post-socialist countries (Vesely, 2013).

The results from one small country add to the existing state of knowledge and may motivate a broader investigation. Our data suggest, similarly to other existing studies from similar conditions (such as Soukopová et al., 2017), that (at least in the waste management area) the IMC can be a suitable form of cooperation for smaller municipalities with a population of up to 5,000.

The data also confirm the premise of Hertzog (2010) that voluntariness plays an important factor in creating IMC. As many as 83% of municipalities expressed that

it is not appropriate for IMC to be mandated by the state. This result is in agreement with the research of Tricaud (2021).
Because the data indicate that IMC has considerable potential from the point of costs and quality of service, the need to overcome the given barriers is evident, considering that top-down forced amalgamation is impossible in Slovakia (Plaček et al., 2020). The possibility to solve these barriers is to create a dialogue and set precise goals and tasks within the framework of IMC and the financial plan. A state solution is also needed, which should include continuous and orderly assistance to local governments in inter-municipal cooperation, coordination, legal support and technical support. The systemic solution is to improve the quality of democracy, specifically local democracy, which should result in a significantly higher level of accountability and responsibility.

Conflict of Interest Statement

The authors have no conflicts of interest to declare. All co-authors have seen and agree with the contents of the manuscript and there is no financial interest to report. We certify that the submission is original work and is not under review at any other publication.

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