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Drivers and barriers of intermunicipal cooperation in local service delivery

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Slovakia, like several other countries, has a highly fragmented system of local self-government. According to theoretical expectations, small municipalities with only a few hundred inhabitants often lack sufficient internal capacity to deliver local public services within their responsibilities (in-house production), especially when the services are complex and require specialised expertise. In cases when externalising service delivery (contracting out) fails, intermunicipal cooperation becomes a logical solution. Existing data suggest that intermunicipal cooperation may represent the lowest-cost delivery method for certain local public services. The goal of this paper is to identify the drivers and barriers of IMC in local public service delivery in Slovakia. Data were collected through a questionnaire survey and are used to document the extent to which intermunicipal cooperation is utilised, to compare associated costs, and to identify the drivers, barriers, and key benefits of intermunicipal cooperation in service delivery. Our findings suggest that economic and political-administrative barriers have a more substantial influence on intermunicipal cooperation decisions than legal-institutional constraints. While municipalities operate under similar external legal and administrative frameworks, it is their internal capacity, local political culture, and transaction cost-related considerations that most significantly distinguish cooperating from non-cooperating municipalities.

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Introduction

Current research in the field of local public service delivery (Petersen, Hjelmar & Vrangbæk, 2018; Schoute, Budding & Gradus, 2018; Mikušová Meričková and Jakub Muthová, 2021) shows contracting out (externalisation) as a frequent solution for delivering local services; however, it also points to the risks associated with contracting out. These risks are considerable, and in response to contracting-out failures, re-municipalisation is evident in many countries (Bel & Rosell, 2016; Soukopová & Klimovský, 2016; Albalate, Bel, & Reeves, 2019; Clifton, Warner, Gradus, & Bel, 2019). However, IMC and contracting out can be combined into a single “hybrid” form. For example, two or more municipalities may collaborate to contract out services to a private provider jointly, thereby combining elements of both IMC and privatisation. (Clifton, Warner, Gradus & Bel, 2019).

Intermunicipal cooperation (IMC) is one form of providing local public services.

Two or more local governments may jointly deliver one or more public services across their respective jurisdictions. It is typically used, mainly by small municipalities (Warner, 2006), because of its capacity to reduce local public unit production costs (Tavares & Feiock, 2018; Bel and Sebő, 2021). IMC may help to achieve economies of scale (Agranoff, 2004; Bel et al., 2013; Raudla & Tavares, 2018; Hefetz, Warner & Vigoda-Gadot, 2012) and improve the credit rating of municipalities (De Sousa, 2013).

The existence of economies of scale (U-curve) related to the delivery of many local public services in territorially fragmented countries has been confirmed, for example, by Soukopová and Vaceková (2018) in the Czech Republic, by Kaczyńska (2020) in Poland, by Bláka, Jacobsen, and Morken (2021) in Norway, Ferraresi et al. (2018) in Italy, Bel and Warner (2015) in Spain, and Wolfschütz (2020) in Germany.

Although most studies confirm the efficiency gains of IMC in terms of economies of scale, the described impacts of IMC on service quality are not entirely clear-cut. Bel and Warner (Bel and Warner, 2015) demonstrate in their study that IMC may improve the coordination of processes or increase the quality of services through risk sharing and expertise pooling (Bel & Warner, 2015). The results of Bel and Fageda's studies are mixed and do not consistently show improved service quality from IMC (Bel & Fageda et al., 2013). Multi-principal governance in institutionalised IMC frequently leads to steering and monitoring breakdowns, reduced efficiency, and weakened accountability, thereby undermining IMC's presumed service quality benefits (Spicer, 2017; Aldag, Warner & Bel, 2020). In cases where multiple municipalities share governance, a principal-agent problem arises, which can dilute accountability and monitoring and decrease service quality (Bláka, 2023, Elston, Bel, & Wang, 2025). Other challenges of IMC include diminishing returns (Giacomini, 2023) and perceived implementation deficits (Hilarion et al., 2024; Elston, Bel, & Wang, 2023).

Overcoming these IMC challenges depends on internal capacity and local political culture, which can act as political-administrative barriers to IMC. The ambiguity in the impact of IMC on service delivery efficiency may therefore be due to the existence of barriers to IMC. Exploring IMC barriers and drivers, therefore, makes an important contribution to explaining this ambiguity.

Regarding the country's background, Slovakia was established in 1993 after the amicable split of the former Czechoslovakia. From the perspective of local democracy, Slovakia adheres to all the principles of the European Charter of Local Self-Government (see, for example, Plaček et al., 2020). The country's population is approximately 5.5 million inhabitants, but it has nearly 2900 municipalities, meaning the territorial structure of Slovakia is highly fragmented, and many municipalities have fewer than 200

inhabitants. Despite the high level of fragmentation, the level of functional decentralisation is very high—Slovak municipalities independently manage a comprehensive set of their responsibilities and a large set of delegated responsibilities, executed on behalf of the state administration.

The academic literature (see above) suggests that IMC should be a frequent form of service delivery at the local level in fragmented countries, provided that the IMC challenges described above are effectively managed. However, data from Slovakia do not show such a pattern—IMC is rarely used, despite the fact that many small municipalities cannot deliver local public services via in house production, and that IMC seems to be cost-effective solution (the existing research suggests that IMC is the lowest costs option in Slovakia, as explained in the previous text). Therefore, the comprehensive explanation of the factors and determinants of IMC use is the core focus of our research, as well as the value added by it.

Are the IMC challenges connected with principal-agent problems, diminishing returns, and perceived implementation deficits the reason? Can these IMC challenges be explained by exploring IMC barriers and drivers? Exploring IMC barriers and drivers in Slovakia presents a challenge for academic research, as it aims to explain the ambiguity of IMC's impact on the efficiency of service delivery, which is influenced by IMC challenges. This paper attempts to fill the research gap in this area.

The goal of this paper is to identify the drivers and barriers of IMC in local public service delivery in Slovakia. We focus on selected local services, including the collection and disposal of municipal solid waste, maintenance of local roads, upkeep of public green spaces, maintenance of public lighting, and cemetery services.

Our primary research question is: What are the drivers and barriers of IMC? Before answering this question, we provide the necessary background data related to the scale and efficiency of IMC. The main research method is the analysis of primary data gathered through our questionnaire.

The research builds on our previously published results related to intermunicipal cooperation in Slovakia (Nemec et al., 2023), using a new research sample and aiming to provide a more comprehensive picture.

Our article is important both for the theory and real public policy. In terms of theory, it contextualises knowledge in the field of public policy related to IMC, which has not yet been sufficiently investigated in the Central and Eastern European (CEE) context. We also develop an institutional collective action framework (Tavares and Feiock, 2018) that emphasises the importance of different institutional contexts influencing the adoption and outcomes of intermunicipal cooperation. From a practical public policy perspective, we map the current state of intermunicipal cooperation in Slovakia and identify the main drivers and barriers to cooperation arising from the country's institutional context.

Theoretical background and conceptualisation of research questions

IMC is a flexible model that allows municipalities to efficiently provide various public services. Instead of a full merger, municipalities agree on the joint provision of selected services to achieve economies of scale and streamline processes. Municipalities retain their independence and jointly manage only those areas where it's beneficial (for example, waste collection, public transport, or water supply systems). This form of cooperation serves as a partial amalgamation, where selected responsibilities from several municipalities are merged into a single joint venture.

Table 1 Levels of IMC.

| Level | Description |
|----------------------|---|
| Level of formality | It can be formed through informal agreements between local governments, formal agreements (contractual agreements), or possibly a permanent structure. |
| Level of coercion | It can be formed by a voluntary initiative stemming from the lowest levels (bottom-up) or 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 through a voluntary initiative starting from the lowest levels (from the bottom up), 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, with no upper limit on the number of partners. It can be a bilateral or multilateral partnership. |
| Membership level | It focuses on the nature of group members. It may be purely general; it may involve a multi-level membership in which state administration institutions are also involved; or it may have the nature of multi-sector cooperation, which also includes entities from the private sector, structural funds, and similar entities. |
| 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: authors, based on Swianiewicz and Teles, 2019.

This allows both small and large local governments to provide high-quality services that would be too costly or logically challenging for them to provide on their own (Elston, Bel, & Wang, 2025).

IMC can be broadly defined as a relationship based on mutual understanding and partnership (see, for example, Hulst & Van Montfort, 2007; or Koolma, Hulst & Van Montfort, 2017). IMC has the potential to contribute to territorial development and improve both the cost-efficiency and quality of public services provided (Jetmar, 2015). It is expected that smaller municipalities will show a greater inclination toward intermunicipal cooperation due to their limited human and administrative capacities. Moreover, voluntary intermunicipal cooperation represents a viable alternative to the top-down mergers of municipalities (Hertzog, 2010).

IMC aims to enhance expertise while simultaneously increasing the efficiency of the performance of both original and delegated competences within local self-government (Silvestre et al., 2020). The types of IMC agreements may differ significantly, particularly in terms of content and level of institutionalisation, depending on the specific conditions of each country. It is possible to distinguish different types of IMC based on the type of collaboration, form of commitment, management complexity, representation, and the degree of institutionalisation (Ferreira, Dijkstra, Aniche & Scholten, 2020). Swianiewicz and Teles (2019) define several levels of IMC, as shown in Table 1.

As already indicated, IMC is expected to bring about improvements in both the cost-efficiency and quality of the delivery of local public services (as well as administrative services provided as delegated responsibilities), primarily due to economies of scale. Alongside other forms of externalisation, IMC serves as a solution to the limited human and administrative capacities of small municipalities. Territorial units with a smaller population generally serve fewer residents and therefore have fewer opportunities to scale service delivery effectively.

The main economic argument related to IMC—the existence or non-existence of economies of scale in the delivery of local public services—has been investigated by dozens, if not hundreds, of academic articles. Under region-specific conditions, for example, Matějová et al. (2017) found that cost curves have different shapes for different local services and functions, each with different minimum points, and that not all local public services and functions are associated with economies of scale. Another study by Soukopová & Klimovský (2016) found that, in the case of waste management services, IMC and population density are significant independent variables influencing municipal waste disposal costs (with more than 99% confidence), which suggests

that, in their sample, IMC contributed to reducing overall waste disposal costs. Similar results for a broader scope of services were reported by Swianiewicz & Teles (2019). At the global level, related findings are presented in the studies by Niaounakis & Blank (2017), Bel et al. (2013), and Agrawal, Breuilll & Le Gallo (2021).

Many studies also investigate the reasons municipalities choose to cooperate. West (2007) analysed French municipalities (in a fragmented system with potential scale limitations at the municipal level). In France, collaborative arrangements are frequently established voluntarily to deliver public services. Fedele & Moini (2007) examined the situation in Italy and described various forms of IMC, including both voluntary agreements and mandatory cooperation arrangements. Haveri & Airaksinen (2007) evaluated IMC arrangements in Finland.

Numerous authors have explicitly focused on the factors that influence intermunicipal cooperation, both its drivers and barriers. Bel & Sebő (2021), Lowery (2000), and Warner & Hefetz (2002) similarly categorise these factors into two main groups: cost and fiscal factors and willingness to cooperate. Feiock (2007) concludes that homogeneity in services (e.g., quality, availability, and range), availability of resources, and institutional arrangements create favourable conditions for the emergence of IMC. Brown, Potoski & Slyke (2016) identify additional factors, such as the professionalism of municipal management and the quality of risk management. According to Goodman (2015), the main determinants for establishing IMC between municipalities are territorial, financial, personnel, and development-related factors.

We begin our conceptualisation with the approach of, who use historical, cultural, and institutional differences to explain variations in IMC between Eastern and Western Europe, as well as between Northern and Southern European countries. Conclude that Europe is characterised by a more formal, contract-based, and hierarchical approach to IMC compared to, for example, the United States. Additionally, a high degree of heterogeneity in preferences is considered typical for Europe.

Nemec et al. (2024) argue that a more nuanced approach is needed when analysing countries in Central and Eastern Europe. They identify specific differences in the cases of the Czech Republic, Slovakia, and Poland, evaluating all three countries in terms of their institutional environment, collaborative regime, and collaborative action. The authors conclude that Poland is more open to collaboration due to its institutional context and legislative framework, while Slovakia's institutional environment is described as unfriendly, unstable, and corrupt. The collaborative regimes in Slovakia are characterised as formal, rigid, and

non-transparent, and collaborative action is described as constrained, ineffective, and dependent.

Among other barriers to potential collaboration, Nemec et al. (2024) mention a zero-tolerance-for-error condition, in which the public administration system is primarily focused on identifying and punishing mistakes rather than incentivising creative problem-solving. The authors also underline the importance of trust between actors in cooperation processes, noting that such trust is significantly lacking in the Slovak context.

At this point, we begin to conceptualise our assumptions, which we aim to test within the framework of our paper.

Based on the current state of knowledge, we divide the drivers and barriers of IMC as follows:

- Economic drivers
- Non-economic drivers
- Political-administrative barriers: differing political orientations of municipalities; bureaucratic systems resistant to change (Feiock, 2007; Tavares & Feiock, 2018; Brown, Potoski & Slyke, 2016; Goodman, 2015).
- Legal-institutional barriers: restrictive legislative frameworks; state policies that (do not) support IMC (Goodman, 2015; Feiock, 2007).
- Economic barriers: high transaction costs of cooperation; unequal availability of capital and human resources (Bel & Sebő, 2021; Lowery, 2000; Warner & Hefetz, 2002; Feiock, 2007; Goodman, 2015).

We also formulate the following research questions:

RQ1: What is the scale of the IMC in local public service delivery in Slovakia?

RQ2: What are the main drivers and barriers to the IMC in delivering local public services in Slovakia?

The first research question is answered in the “background” part. The second research question is the core one, and it is answered in the core analytical part of the paper.

Materials and methods

The goal of this paper is to identify the drivers and barriers of IMC in local public service delivery in Slovakia. In our research, we focused on selected local services—specifically, the collection and disposal of municipal solid waste, maintenance of local roads, upkeep of public green spaces, maintenance of public lighting, and cemetery management services. The selection of services was based on two main criteria: first, we aimed to include classic communal services; second, we wanted to cover services with varying cost intensities, ranging from waste management, which is typically the most expensive local service, to cemetery management, which is considered a low-cost service.

To answer our research questions (regarding the scale, drivers, and barriers of IMC in local public service delivery in Slovakia), we used the method of primary data analysis based on our original questionnaire.

The design of the questionnaire was informed by previous surveys and research, particularly those conducted by the Association of Towns and Municipalities of Slovakia (Beresecká et al., 2020), Mikušová Meričková et al. (2021), Nemec et al. (2023), as well as other studies by Bel & Sebő (2021), Lowery (2000), Warner & Hefetz (2002), Feiock (2007), Brown, Potoski & Slyke (2016), and Goodman (2015).

The questionnaire was distributed electronically to all local governments and municipal districts in Slovakia between March and April 2024. In total, 2,927 local authorities from all regions of the Slovak Republic were contacted, and 183 local authorities participated in the survey (see Table 2).

Table 2 Structure of the sample by classifiers in %.

| Classifier | Answer | % answers |
|-----------------------|------------------------|-----------|
| Affiliation by region | Bratislava region | 2.73% |
| | Trnava region | 6.56% |
| | Trenčín region | 9.29% |
| | Nitra region | 13.11% |
| | Žilina region | 15.85% |
| | Banská Bystrica region | 27.32% |
| | Prešov region | 15.85% |
| | Košice region | 9.29% |
| | 1-199 | 18.58% |
| | 200-499 | 29.51% |
| Number of inhabitants | 500-999 | 23.50% |
| | 1000-1999 | 10.93% |
| | 2000-4999 | 6.56% |
| | 5000-9999 | 4.92% |
| | 10,000-19,999 | 3.28% |
| | 20,000-49,999 | 1.64% |
| | 50,000-99,999 | 1.09% |
| | 100,000 a viac | 0.00% |

(Source: Authors' own).

We tested the representativeness of our sample using a Chi-square test (see Table 2). In our case, the sample is not representative, as the structure of the population—i.e. all municipalities in Slovakia—in terms of population size, administrative status, and regional distribution, does not fully correspond to the structure of our sample. However, the results are broadly representative of small municipalities and can therefore be applied analytically only within this segment. In the wider context of IMC, they should be regarded as illustrative rather than as a basis for broader generalization.

In examining the scale of IMC, we use a simple measure, the percentage of local public services delivered through IMC.

To assess the differences between cooperating and non-cooperating municipalities, we applied the Mann-Whitney U test because the Shapiro-Wilk test indicated that not all variables were normally distributed (p -values for some variables were smaller than 0.05, indicating that these variables do not meet the assumption of normality). The Mann-Whitney U test does not require the assumption of normality. It is therefore suitable for comparing two independent groups when the data are unevenly distributed or not normally distributed (Table 3).

The research design employs a comparative cross-sectional approach, contrasting municipalities engaged in IMC with those that are not. The underlying logic of inference is that systematic differences in how these groups perceive specific drivers and barriers can reveal the enabling or constraining factors that influence the adoption of IMC. By statistically assessing these differences, we aim to identify which factors truly distinguish cooperative behaviour, thereby providing explanatory leverage over the uneven uptake of IMC reform.

Results and discussion

Background: the scale of IMC in Slovakia. The first research question addressed the scale of IMC in the delivery of local public services in Slovakia. Table 4 presents the findings related to the scale of IMC.

The data show that the IMC option for service delivery is not frequently utilised. Considering the near non-existence of IMC in the delivery of most local services, we decided to conduct efficiency comparisons only for waste management services. Waste management is one of the most commonly managed

Table 3 IMC in local public services delivery (in %).

| Service | IMC | Other forms | Missing value ^a |
|--|-------|-------------|----------------------------|
| Collection and disposal of municipal solid waste | 8.20% | 90.16% | 1.64% |
| Maintenance of public lighting | 0.00% | 99.45% | 0.55% |
| Maintenance of local roads | 1.64% | 95.08% | 3.28% |
| Maintenance of public green spaces | 0.00% | 97.27% | 2.73% |
| Cemetery services | 1.09% | 95.63% | 3.28% |

Source: Own primary research.

^aMissing value—some municipalities did not provide the needed information.**Table 4 Perceived economic drivers of IMC.**

| Economic driver | Perception on the scale |
|--|-------------------------|
| Delegating competences to another municipality or joint unit can generate economies of scale | 1.80 |
| Technical efficiency | 1.87 |
| Allocative efficiency | 1.87 |
| Lower contracting costs with external providers | 1.93 |
| Stronger bargaining position | 2.00 |
| Lower costs of supplier control | 2.07 |
| Lower management costs | 2.27 |
| Ability to obtain additional funding | 4.73 |

Source: Authors.

services within IMC, as confirmed by several studies (Bereseká et al., 2020; Aldag, Warner, & Bel, 2020; Bel & Sebő, 2021; Soukopová & Klimovský, 2016) (Table 5).

Drivers and barriers to IMC in delivering local public services in Slovakia. The level of IMC among the surveyed municipalities is relatively low. In the questionnaire on barriers and drivers, municipalities assessed each driver on a five-point scale, where 1 represented a very strong driver of IMC and 5 represented a very weak one. In the questionnaire, the drivers and barriers were not pre-categorised in order to avoid guiding the respondents' answers. In the following tables, the drivers are categorised—based on the findings of the literature review—into economic drivers (Table 6) and non-economic drivers (Table 7). The results were processed only for the service of municipal solid waste collection and disposal, where the number of responses was sufficient to allow further analysis.

Overall, the results indicate that while non-economic factors may not be the primary motivators for engaging in IMC, they are non-negligible supporting elements that can reinforce or enable cooperation, particularly in services such as waste management. Tables 6–8 present the opinions of municipalities regarding the main barriers limiting the use of IMC in the delivery of local public services. To assess the differences between cooperating and non-cooperating municipalities, we applied the Mann–Whitney U test.

The results of the Mann–Whitney U test indicate that several economic barriers to IMC are perceived significantly differently by cooperating and non-cooperating municipalities in the area of municipal waste collection and disposal. Municipalities that do not engage in cooperation reported higher perceived severity for most economic barriers. In particular:

- Lack of finance (transaction costs related to IMC management) was rated significantly higher by non-cooperating municipalities (Mean Rank = 53.83) than by cooperating ones (Mean Rank = 89.97), $U = 285.500$, $p < 0.001$.

- Similarly, Lack of willingness to cooperate with smaller municipalities ($U = 339.500$, $p = 0.003$) and management and coordination costs ($U = 423.500$, $p = 0.026$) were perceived as more limiting by the non-cooperating group.

Significant differences were also observed for barriers, including decreased flexibility in service delivery ($p < 0.001$), Information asymmetry ($p = 0.030$), Difficulty in sharing responsibilities ($p < 0.001$), Difficulty in coordination ($p < 0.001$), and Losing control over services ($p = 0.002$).

On the contrary, Lack of personnel was not perceived significantly differently between the two groups ($p = 0.207$), suggesting that human resource limitations may be a universal issue. Although decreased transparency showed a significant p-value ($p < 0.001$), the mean ranks were very close between the two groups (54.21 vs. 56.46), indicating a minimal practical difference.

The Mann–Whitney U test revealed statistically significant differences in how legal-administrative barriers are perceived by cooperating and non-cooperating municipalities. Given the response scale, where lower values indicate stronger agreement that a factor is a barrier, lower mean ranks correspond to a higher perceived severity. Non-cooperating municipalities consistently assigned lower ranks to several political barriers, suggesting they view these factors as more significant obstacles to cooperation. Specifically:

- General lack of willingness to cooperate—linked to bureaucratic functioning was perceived more strongly by non-cooperating municipalities (Mean Rank = 51.56) than by cooperating ones (Mean Rank = 80.43), $U = 338.500$, $p = 0.001$.
- Efforts to protect municipal autonomy also differed significantly ($U = 290.000$, $p < 0.001$).

Significant differences were also found for Different political orientations among neighbouring municipalities ($p < 0.001$), Personal aversion of the mayor ($p < 0.001$), General political reasons ($p = 0.006$), Low level of social capital of the mayor ($p < 0.001$), Diverging stakeholder values ($p = 0.021$).

One barrier, resistance from employees, approached significance ($p = 0.052$) and may warrant further investigation.

These results suggest that political leadership, ideological alignment, and personal or stakeholder-level dynamics play a substantial role in shaping the willingness or ability of municipalities to engage in IMC.

Compared to the two previous tables, no statistically significant differences were found between cooperating and non-cooperating municipalities in their perception of legal-institutional barriers: Limited state support ($p = 0.794$) and Political instability ($p = 0.673$) were rated similarly by both groups, with very close mean ranks. The above suggests that these systemic issues are perceived uniformly, regardless of whether a municipality is engaged in cooperation or not. It may indicate that administrative and legal conditions are considered external and equally limiting

Table 5 Perceived non-economic drivers of IMC.

| Non-economic driver | Perception on the scale |
|--|-------------------------|
| Social aspects (job creation) | 1.93 |
| Homogeneity of preferences across municipalities | 2.13 |
| Geographical proximity | 2.20 |
| Shared values among actors operating in the municipality or region | 2.20 |
| Heterogeneity of preferences across municipalities | 2.36 |
| Existing legal framework for inter-municipal cooperation | 2.33 |
| Degree of functional and territorial decentralisation | 2.27 |
| Shared interests and goals | 2.40 |
| Social capital level of the mayor | 2.40 |

Source: Authors.

for all municipalities, without necessarily affecting the decision to cooperate.

Discussion and conclusions

Our results indicate that IMC is rarely used as the form of delivery of local public services in Slovakia; it is somehow visible in the service collection and disposal of MSW in Slovakia in the area of waste management (all existing studies, like Bel et al., 2013 or Soukopová and Klimovský, 2016 on the regional level delivered similar results). Bel et al. (2013) also found that IMC is most often adopted in high-cost, high-volume services, such as solid waste collection.

The primary focus of our paper was to identify the factors and barriers associated with the IMC. The comparative analysis reveals distinct patterns in how municipalities perceive various categories of factors that influence IMC. Our research identified key economic drivers, including economies of scale, technical efficiency, and lower production costs for services. These findings are also consistent with Ferraresi et al. (2018) and Struk and Bakoš (2021). Additionally, non-economic factors, including social aspects such as job creation and shared municipal values, were identified, like those in the research of Arntsen, Torjesen, and Karlsen (2018).

Economic factors are considered the most advantageous. However, they simultaneously emerge as the primary obstacles for non-cooperating municipalities, revealing a notable paradox: what serves as a strong motivator for some is perceived as a limitation by others, particularly in terms of transaction costs, coordination difficulties, and disparities in available resources. The above aligns directly with Bel & Warner (2015), who argue that while economies of scale are attractive, transaction costs, asymmetric capacities, and governance complexity often negate efficiency gains. These results suggest that municipalities, in their responses (barriers), focused on direct, immediate IMC costs and did not take into account future savings.

Our research outcomes, which address IMC barriers, particularly economic constraints such as a lack of finance and coordination costs, align with the analysis by Bel and Warner (2015). They emphasised that fiscal stress and organisational factors are significant barriers to IMC. The paradoxical role of economic factors as both drivers and barriers also reflects fragmented trust and asymmetric resource capacity, which hinders the collaborative cycle.

Non-economic factors, such as social capital, shared values, and trust, are generally seen as beneficial, as emphasised by Ansell and Gash (2008), albeit to a slightly lesser extent than economic factors, as confirmed by our outcomes. Nevertheless, certain non-economic elements—particularly those involving unwillingness to cooperate, local leadership, and value alignment—also appear as barriers, especially in contexts marked by political tensions or

interpersonal conflicts. This reluctance to cooperate is a barrier that aligns with Bel's broader European findings, especially in contexts where local leadership and trust are fragmented (Clifton et al., 2019).

Legal-institutional barriers, including the current legal framework and decentralisation arrangements, are perceived as neutral to moderately positive. Notably, no statistically significant differences were found between cooperating and non-cooperating municipalities in their assessment of these factors, suggesting they are not decisive in shaping the choice to pursue IMC.

Political-administrative challenges were identified as hindering cooperation in our research, including efforts to safeguard municipal autonomy and the varying political orientations of municipal officials. The above aligns with Allers and de Greef (2018), who noted that while IMC is often pursued for efficiency gains, it does not always result in reduced public spending, suggesting that political dynamics and governance structures play a crucial role. Our results suggest that the most significant barrier to IMC is the reluctance to cooperate, stemming from various institutional and subjective reasons. Our study illustrates a breakdown in the collaborative dynamics outlined by Emerson, Nabatchi & Balogh (2012). Even though drivers exist, the capacity for joint action is constrained by poor engagement and low shared motivation. Moreover, political-administrative fragmentation undermines the emergence of sustainable collaborative governance. This opinion aligns with the findings of similar research in Slovakia, as presented by Solej (2023). Bel et al. (2024) explicitly discuss how IMC effectiveness depends on structural incentives and shared motivation, trust, and leadership.

A potentially positive fact is that we have noted the expressed interest in initiating inter-municipal cooperation on the part of the municipalities. In response to one of our questions, 64.3% of municipalities expressed interest in initiating inter-municipal cooperation, particularly in areas such as road maintenance, waste collection, removal, and disposal, as well as joint public procurement and public utility activities. Based on this, we may argue that there is an interest in inter-municipal cooperation in the field of waste management in the Slovak Republic, at least in a formal sense, reflecting the advantages of this approach.

Research limitations. The policy lesson is obvious—both top-down (from the central level) and horizontal interests for the IMC should be promoted by any means. On the state's side, continuous and orderly assistance to local governments in inter-municipal cooperation, coordination, legal support, and technical support is needed. The systemic solution is to enhance the quality of democracy, specifically local democracy, which should lead to a significantly higher level of accountability and responsibility (Veselý, 2013). The institutional structures and economic incentives are necessary, but they are not sufficient. The key enablers of

Table 6 Economic barriers identified by municipalities.

| Economic barriers | Number (non-cooperating municipalities) | Mean rank (non-cooperating municipalities) | Number (cooperating municipalities) | Mean rank (cooperating municipalities) | Mann-Whitney U | p-value |
|---|--|---|--|---|-----------------------|----------------|
| Lack of finance | 101 | 53.83 | 15 | 89.97 | 285.500 | 0.000 |
| Management and coordination reasons-coordination costs | 94 | 52.01 | 14 | 71.25 | 423.500 | 0.026 |
| Lack of personnel | 97 | 51.13 | 14 | 89.71 | 525.000 | 0.207 |
| Decreased flexibility in service delivery | 94 | 49.52 | 14 | 87.93 | 207.000 | 0.000 |
| Decreased transparency | 94 | 54.21 | 14 | 56.46 | 190.000 | 0.000 |
| Information asymmetry | 93 | 49.10 | 14 | 86.57 | 419.000 | 0.030 |
| Increasing transaction costs | | | | | | |
| Difficulty in sharing responsibilities-resource differences | 91 | 47.90 | 14 | 86.14 | 195.000 | 0.000 |
| Difficulty to coordinate | 93 | 50.88 | 14 | 74.71 | 173.000 | 0.000 |
| Losing control over the service | 94 | 49.36 | 14 | 89.00 | 327.000 | 0.002 |

Source: authors.

Table 7 Political-administrative barriers identified by municipalities.

| Political-administrative barriers | N (non-cooperating municipalities) | Mean rank (non-cooperating municipalities) | N (cooperating municipalities) | Mean rank (cooperating municipalities) | Mann-Whitney U | p-value |
|---|---|---|---------------------------------------|---|-----------------------|----------------|
| Lack of willingness to cooperate with smaller municipalities | 93 | 50.65 | 14 | 76.25 | 339.500 | 0.003 |
| General lack of willingness to cooperate—linked to bureaucratic functioning | 95 | 51.56 | 15 | 80.43 | 338.500 | 0.001 |
| Efforts to protect municipal autonomy | 96 | 51.52 | 14 | 82.79 | 290.000 | 0.000 |
| Resistance from employees | 93 | 51.44 | 13 | 68.27 | 412.500 | 0.052 |
| Different political orientations among neighbouring municipalities | 94 | 49.61 | 14 | 87.32 | 198.500 | 0.000 |
| Personal aversion to the mayor | 92 | 50.75 | 14 | 71.57 | 160.000 | 0.000 |
| General political reasons | 91 | 53 | 14 | 56 | 361.000 | 0.006 |
| Low level of social capital of the mayor | 91 | 50.44 | 14 | 69.64 | 175.000 | 0.000 |
| Diverging stakeholder values | 91 | 49.37 | 14 | 76.57 | 404.000 | 0.021 |
| Conflicting goals among relevant municipalities | 92 | 52.44 | 15 | 63.57 | 307.000 | 0.001 |

Source: Authors.

| Table 8 Legal-institutional barriers identified by municipalities. | | N (non-cooperating municipalities) | Mean rank (non-cooperating municipalities) | N (cooperating municipalities) | Mean rank (cooperating municipalities) | Mann-Whitney U | p-value |
|--|------------------|------------------------------------|--|--------------------------------|--|----------------|---------|
| Barriers | Source: Authors. | | | | | | |
| Limited state support | 94 | 54.21 | 14 | 56.46 | 630.500 | 0.794 | |
| Political instability | 90 | 51.45 | 14 | 59.25 | 594.000 | 0.673 | |

successful IMC—trust, shared leadership, political alignment, and joint capacity—are often absent or fragmented (Emerson, Nabatchi & Balog, 2012; Ansell & Gash, 2008). The above underscores the centrality of collaborative readiness and normative alignment in making IMC viable.

The study reveals that while IMC in Slovakia is rarely used, it is usually implemented in the case of waste management, as confirmed by previous international findings. Economic drivers, such as economies of scale and technical efficiency, are strong motivators; yet paradoxically, they also emerge as key barriers due to concerns over coordination, transaction costs, and unequal resource allocation. Political-administrative challenges, including reluctance to cooperate and political misalignment, further hinder collaboration. These findings support collaborative governance theories, highlighting that trust, shared motivation, and leadership are critical for successful IMC—factors currently lacking in the Slovak context.

Future research should broaden its scope beyond waste services to assess IMC effectiveness across various service areas and adopt longitudinal or case study methods to understand cooperation dynamics over time better. There is also a need to explore the role of facilitative leadership, social capital, and behavioural factors in shaping IMC outcomes. Comparative studies across Central and Eastern Europe could reveal institutional best practices. At the same time, closer examination of legal frameworks and targeted policy tools could help activate the expressed interest in cooperation among municipalities.

Data availability

The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

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Author contributions

Beata Mikusová Meričková: Writing—review & editing, Writing—original draft, Visualization, Validation, Supervision, Resources, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. Nikoleta Jakub Muthová: Writing—review & editing, Writing—original draft, Visualization, Validation, Supervision, Resources, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. Juraj Nemec: Writing—review & editing, Writing—original draft, Visualization, Validation, Supervision, Resources, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. Michal Plaček: Writing—review & editing,

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Competing interests

The authors declare no competing interests.

Ethical approval

This study received retrospective ethical approval from the Ethics Committee of Matej Bel University (ID number: 314/2025; approved in April 2025). At the time when the original research was conducted, and still today, there has been no national legal requirement in Slovakia for ethical approval of anonymous, voluntary, and non-sensitive surveys in the social sciences that do not involve medical or psychological interventions. According to Act No. 576/2004 Coll. on Health Care, ethical approval is required only for clinical trials and biomedical research on humans. Nevertheless, the study adhered to the ethical standards outlined in the Ethical Code of Matej Bel University (revised in 2023) and complied with the principles of the Declaration of Helsinki (2013 revision) and the General Data Protection Regulation (GDPR). Retrospective ethical approval was obtained from the Ethics Committee of Matej Bel University (ID number: 314/2025; approved in April 2025).

Informed consent

All participants provided informed consent prior to taking part in the study. Participation was entirely voluntary, anonymous, and could be withdrawn at any time without any consequences. The informed consent statement was included as part of the questionnaire completed by respondents. Informed consent was obtained from the respondents at the time of completing the questionnaire, between March and April 2024. By submitting the questionnaire, participants confirmed their consent to participate in the study and to the processing of their data for scientific and academic research purposes only. Respondents were informed about the purpose of the research, the expected duration of participation, and the intended use of the data. No personal or identifying information was collected, and all responses were treated confidentially in accordance

with the General Data Protection Regulation (GDPR) and applicable national data protection legislation. As the research involved a non-interventional, non-sensitive organizational survey with adult participants, no additional consent from legal guardians or proxies was required.

Additional information

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