Intermunicipal Cooperation in the Netherlands: The Costs and the Effectiveness of Polycentric Regional Governance

Abstract: This article examines the effects of the structure of intermunicipal cooperatives (IMCs) on the perceived transaction costs and benefits of IMCs. Hypotheses based on a polycentric theory of regional governance are tested using data from Dutch municipalities. The findings are mixed. In line with polycentric theory, networks characterized by a multiplicity of territorial scales reduce IMC transaction costs. Contrary to polycentric theory, however, if IMCs are organized under a uniform legal regime, lower costs and higher benefits are reported. Structural factors that dominate the debate between polycentrism and monocentrism prove to be of limited importance. On the other hand, the results indicate support for the hypotheses that intermunicipal trust (as a cultural variable) contributes to perceptions of effective and efficient cooperation.

Evidence for Practice

• An undiscriminating reduction of network complexity (by imposing a fixed or limited set of cooperative partners) does not improve the functional performance of regional governance.
• Variety in cooperative partners appears to reduce the costs of cooperation but does not result in higher benefits.
• A consistent uniform regulatory regime that creates a set of rules on how to organize decision making and representation in intermunicipal cooperation increases functional performance of cooperation.
• Structural factors indicating how cooperation is organized play a minor role in explaining functional performance or cooperation. The cooperative climate (indicated by the level of trust) plays a more important role. Trust comes with lower levels of costs and higher levels of regional benefits but does not influence local benefits for individual municipalities.

Over the years, in the United States (e.g., Lyons, Lowery, and DeHoog 1992; Norris 2001; Ostrom 1972) and Europe (e.g., Baldersheim and Rose 2010; Hulst and Van Montfort 2007; Teles 2016), the proper institutional structure for regional governance has been a hotly debated topic, both in academic circles and in political arenas. In this debate, we distinguish two main positions: monocentrism and polycentrism.

Both monocentrists and polycentrists recognize the need for some form of regional governance to avoid problems that will emerge in a system of completely independent municipalities. These problems include possible production inefficiencies (diseconomies of scale), allocation inefficiencies (failure to internalize spatial spillover effects), and effects on regional economic growth, prosperity, and employment. But monocentrists and polycentrists differ in the institutional arrangements they propose for overcoming such problems. As Vincent Ostrom (1989) has argued, these differences pertain to two institutional factors:

1. First, monocentrists have a preference for concentrating regional governance in one authority that is responsible for regional governance. This might be a unitary, single-tier authority created by an amalgamation of all municipalities into a single municipality. However, it could also take the form of a two-tier system in which municipalities retain their responsibility for all local matters but one newly established regional authority takes over all municipal responsibilities for decisions that require regional governance.
2. Second, monocentrists also have a preference for uniformity of institutional design. Clear and consistent (nationally imposed) regulation will reduce uncertainties, lowering transaction costs and increasing the chances for successful collaboration.

Alternatively, polycentrists prefer a “fragmented” system in which independent municipalities are more or less free to enter into collaborative arrangements. Here the main vehicle for regional governance is essentially voluntary intermunicipal
cooperation. Moreover, polycentrism also favors multiformity in institutional arrangements, allowing molding of institutional arrangements to issue-specific contingencies and local circumstances.

The differences in the preferences of the supporters of the two camps are in part normative, based on different value orientations. Monocentrism, more than polycentrism, is, for example, focused on values such as democratic accountability, transparency, and equity (Lewis 2004). But for another part, the dissent also results from different expectations about the effects of governance arrangements. Here advocates of monocentric governance are typically negative about the performance of polycentric governance systems. They fear that the more polycentric a system is, the more likely it is that interjurisdictional competition will stifle cooperation, leading to higher transaction costs and lower effectiveness (Lyons, Lowery, and DeHoog 1992; Rusk 1993; Stephens and Wikstrom 2000; Wood 1961). Concentration of responsibilities for regional governance in one center is expected to result in lower costs and more effectiveness. Contrariwise, proponents of polycentrism are more optimistic about the prospects of low-cost, effective intermunicipal cooperation in polycentric systems of governance (Feiock 2004, 2013; Feiock and Scholz 2010; Oakerson 1999, 2004; Ostrom 1972).

Feiock (2004) rightly observes that such claims about the positive and negative effects of different governance arrangements are testable, empirical propositions. Nonetheless, he notes that rigorous empirical tests of such propositions are rare. It is for this reason that we adopt an empirical approach in this article. We will test the empirical validity of propositions on the costs and the effectiveness of intermunicipal cooperation derived from a polycentric theory of regional governance.³ The Dutch case—which will be described in more detail in the subsequent section—is an appropriate locus for such a test because in the Netherlands intermunicipal cooperation is still the main vehicle for regional governance.

Hence, our main research question is, what is the effect of the structure of intermunicipal cooperation of Dutch municipalities on their perceptions of the transaction costs and the effectiveness of intermunicipal cooperation?

We will answer this question on the basis of the results of a comprehensive study of all 393 Dutch municipalities conducted in 2015.⁴ As the formulation of the question indicates, in our research, we focus on perceptions of the costs and benefits of collaboration. Obviously, the perceptions of costs and benefits may differ from the actual results of cooperation, but getting a comprehensive and reliable estimate of the actual costs and the benefits of all collaboration of 393 municipalities was completely unrealistic. This is all the more true because in regional cooperation, several benefits may lie in the near or more distant future (e.g., in case of investments in economic development or sustainability). Moreover, it can be argued that (positive) perceptions of the costs and benefits of collaboration are a necessary condition for the actual performance of collaborative networks (Bennett 2016; Lubell et al. 2017). Hence, in this article, we rely on perception-based measures for the costs and the effectiveness of cooperation, using the judgment of a well-informed local public official (the municipal chief executive official) as our source of information.

From a scientific perspective, our research is relevant because it fills a gap in the literature on local and regional governance. Our main ambition is to add to a better understanding of the actual effects of different institutional arrangements on the costs and benefits of intermunicipal cooperation. Our focus is empirical: we will concentrate on testing a number of hypotheses in the context of Dutch local government. This adds to the current literature because much of the current publications on regional governance are U.S. centered. In the U.S. literature, much attention has gone toward the explanation of why municipalities do (not) enter into interlocal forms of cooperation and the dynamics of such arrangements (e.g., Chen and Thurmaier 2009; LeRoux and Carr 2010; Matkin and Frederickson 2009; Thurmaier and Wood 2002). In addition, there is increasing attention to particular types of cooperation (see Feiock 2013, table 1) and the explanation of municipal preferences for these mechanisms (e.g., see the contributions in Feiock and Scholz 2010; Mohr, Deller, and Halstead 2010). Moreover, there is increasing attention to the actual performance of various institutional arrangements (for an overview, see Feiock 2013, 414–18).

In Europe, attention to the structure and performance of regional governance and intermunicipal cooperation is more recent, and studies so far have been predominantly descriptive (e.g., Heinelt and Kübler 2005; Hulst and Van Montfort 2007; Swianiewicz 2011) or based on comparative case-studies (e.g., Heinelt, Razin, and Zimmermann 2011). It is only recently that attention has shifted to empirical analysis of the effects of different regional governance arrangements (e.g., Bel and Warner 2015; Holum and Jakobsen 2016; Teles 2016).

From a practical perspective, our research is highly relevant. It provides information on how in an essentially polycentric system (like the Dutch system), variations in intermunicipal cooperation affect the (perceived) costs and effectiveness of collaboration. Based on this, we point to ways in which incremental reforms in polycentric systems might improve (or harm) the performance of intermunicipal cooperation. This is not only relevant for the Dutch case but also for other countries (such as the United States and most European countries), where intermunicipal cooperation is likely to remain the main vehicle for regional governance.

In the next section, we will first discuss the case of Dutch regional governance. Subsequently, the theoretical model and hypotheses are introduced, followed by a discussion of the methods and the data. In the results, the hypotheses are tested. We finalize with conclusions and discuss some implications of our findings.

Regional Governance in the Netherlands

In the Netherlands, the primary units of local government are 393 municipalities (in 2015 when we conducted our research). The main vehicle for regional governance is voluntary cooperation between these municipalities. This cooperation can be based on public law (the so-called Joint Provisions Act, or Wet gemeenschappelijk regelingen [WGR]), on private law, or on informal arrangements. In this article, we focus on the formal
arrangements based on either public or private law. In these forms of intermunicipal cooperatives (IMCs), municipalities have a financial stake in the IMC and participate in its governance. In 2015, Dutch municipalities were involved in 779 of such IMCs (Ministerie BZK 2017, 87). On the basis of the most recent budgetary data available in 2013, on average, Dutch municipalities spent about 16 percent of their expenditures via such intermunicipal bodies (Ministerie BZK 2017, 87). The main areas in which cooperation takes place are physical planning; environmental policies; social policies and care; employment, management, and administration; and culture, sports, and education (Ministerie BZK 2017, 88). These domains include both politically highly salient areas and predominantly apolitical, techno-administrative matters.

Since the 1950s, Regional Reformers, based on a “program theory” (i.e., a set of assumptions of policy makers about the expected effects of a program or reform; see Pawson 2003) that has much in common with monocentrism, have made vain attempts at introducing new regional public authorities, intended to replace intermunicipal cooperation between relatively small municipalities. The dire fate of these efforts is well documented (e.g., Boedeltje and Deters 2010; Deters and Klok 2005; Hendriks and Toonen 1995; Schaap 2005). Because of the continuous failure of these grand-scale regional reforms, the entire weight of the coordination and cooperation in regional affairs until this day rests on a polycentric system of more or less voluntary intermunicipal cooperation. It would be wrong, however, to conclude that the structure of Dutch regional governance over the past 70 years has remained unchanged. After the more radical regional reforms proved politically unfeasible, Regional Reformers resorted to a more incremental reform strategy. Through a series of minor reforms, the structure of Dutch subnational governance gradually changed. All in all, these changes resulted in a reduction of the complexity of the traditional polycentric system. In this context, three types of reforms were particularly important.

First, amalgamation reforms were implemented. Through these reforms, it was hoped that the need for intermunicipal cooperation would be reduced because the larger municipalities would have greater administrative capacity. The amalgamations have drastically reduced the number of municipalities (from 1,015 in 1945 to 388 in 2017). But rather big differences in municipal size remain. Amalgamations were implemented on a regional basis, leading to considerable differences in municipal size across different parts of the country.

Second, efforts were made to harmonize and integrate the system in order to bring order to what many considered a “crazy-quilt” pattern of intermunicipal cooperation. The Dutch national government established 42 cooperation regions. As a rule, intermunicipal cooperation would have to be limited to arrangements between the municipalities inside these regions. This legal requirement should lead to more territorial uniformity (or congruence) in patterns of cooperation. At the same time, the Dutch national government aimed at an integration of different single-purpose intermunicipal boards in these 42 regions in one single multipurpose regional cooperation board. The hope was that a combination of territorial harmonization and integration would lead to a more orderly, better-functioning system of regional governance. In 2006, the legal obligations regarding territorial harmonization and integration were abolished, thereby liberalizing the regime allowing for more flexibility. In some regions, this was followed by a disintegration of regional cooperation, while in other regions the more integrated and harmonized arrangements were retained.

Third, the reforms also aimed at providing more order (uniformity) and transparency in regional governance agreements by urging municipalities to adopt the organizational principles of the national WGR as the default model for IMC. The idea was that thrusting this uniform national model on municipalities would reduce the multitude of different formal arrangements and would increase transparency. The impact of this effort on harmonizing the terms for intermunicipal cooperation across the country, however, was limited because municipalities could still resort to informal arrangements or organizational forms and contracts based on private law. In principle, here, too, there could be rather big differences between municipalities in the degree to which their intermunicipal cooperation was implemented under the regime of the WGR or not.

The basic postulates of the Dutch Regional Reformers were rather similar to the assumptions of monocentrism. The basic idea was that such reforms would simplify the structure of regional governance while increasing transparency, thereby reducing the system’s transaction costs and increasing its effectiveness.

As we indicated before, the degree to which these institutional reforms were implemented varied across Dutch municipalities and regions, and this allows an evaluation of the “monocentric” program theory of Dutch policy makers. But the Dutch case is also appropriate for testing hypotheses derived from a polycentric model of regional governance.

A Polycentric Perspective on Intermunicipal Cooperation

As our research question implies, we are interested in the effects of structural factors on the transaction costs and benefits of cooperation as perceived by the municipalities. The transaction costs of collaboration pertain to all costs that municipalities incur in negotiating agreements and in coordinating, monitoring, and controlling intermunicipal cooperation (Boogers 2013, 14–17; Feiock 2007, 51). The benefits of cooperation are essentially twofold. First, municipalities can benefit when collaboration enhances their capacity to (efficiently) provide facilities and services for the local community and its members or to solve the locality’s problems. The benefits of this type of collaboration are selective: they will only become available if the municipality contributes to the cooperation (no contribution = no provision!). The joint collection of garbage and the establishment of an intermunicipal purchasing consortium are examples of this type of collaboration. But there may also be regional benefits of collaboration. This is the case when, for example, municipalities invest in regional infrastructure (roads, canals, or a regional business and science park) or develop joint regional policies in domains such as the environment, planning, housing, and economic development. The effects of such regional policies will inevitably affect all residents that live in their catchment area. Hence, there is no way to retaliate against regional municipalities that do not contribute to such regional provisions and policies. In other words, in the case of such regional benefits,
a free-ridership problem—which impedes effective collaboration between the region’s municipalities—might occur (see Olson 1971). Because of this, it is important to differentiate between local and regional benefits of cooperation.

When we consider the impact of governance arrangements, we focus on three structural factors:

1. The population size of the municipalities
2. The complexity of the governance network, as indicated, for example, by the number of cooperative arrangements (number of IMCs), the number of participating municipalities, and so on
3. The regulatory regime of collaboration: the degree to which municipalities have adopted the uniform national regulatory regime under public law (WGR)

The size of municipalities (1) has an effect on the expected costs and benefits because it indicates the resources that municipalities command. Small municipalities command less extensive financial and human resources than larger municipalities. The system capacity increases with the size of municipalities (Dahl and Tufte 1973; Denters et al. 2014). On the one hand, this is likely to affect the (perceived) costs of intermunicipal cooperation because smaller municipalities, from these more limited resources, are likely to find it more difficult to cover the costs of intermunicipal cooperation. Therefore, we expect a negative relationship between municipal size and transaction costs (hypothesis 1, see table 1).

On the other hand, these more limited resources also have implications for the perceived benefits of cooperation. Here the distinction between local and regional benefits is relevant. As for local benefits, less resourceful smaller municipalities depend on successful intermunicipal cooperation for providing various local facilities. Larger municipalities, however, are normally able to provide these benefits on their own. In this way, cooperation provides selective and tangible benefits for smaller municipalities. Moreover, because cooperation aimed at such local benefits is not impeded by freeridership problems, the prospects of successful cooperation are generally good (Denters 1987). Hence, we expect that smaller municipalities are more likely to be positive about the local benefits than larger municipalities. This implies a negative relation between size and local benefits (hypothesis 2). For regional benefits, matters are different. For these benefits, smaller municipalities are more likely to be less convinced about the value of cooperation. Most of these regional benefits are likely to accrue to the larger municipalities—where the majority of the population and most of the economic activities in the region are concentrated. Hence, larger municipalities are somewhat more likely than smaller municipalities to be convinced about successful collaboration with regard to such regional infrastructures, services and policies. Hence, we expect a positive relation between size and regional benefits (hypothesis 3).^6

With regard to complexity (2), the general presumption of polycentrism is that institutional complexity may be an asset rather than a setback. The general presumption is that a complex system, characterized by a multitude of incongruent, overlapping, single-purpose regional units, works (Oakerson 1999, 106–30). The main reason for expecting an effect of such a system is that it allows for requisite variety, which is necessary for providing and producing a multitude of public services and implementing a wide variety of policies. In such a context, low transaction costs are the result of competition among alternative producers and the options provided by a differentiated production structure to benefit optimally from diverse economies of scale (Oakerson 1999, 112). Moreover, the flexibility of the system allows gearing local and regional public provisions to variations in the demands of communities of interest of different service-catchment areas (Oakerson 1999, 112). Finally, a fragmented system of weak ties provides “greater and more diversified connectivity” and allows “local governments to solve collective action dilemmas using horizontal networks” (Tavares and Feiock 2014, 12; Feiock 2007, 57). On the other hand, in a system with a limited number of actors that sustain close and enduring, strong, multiple relationships, the partners are locked in and “unable to mobilize effectively for collective action across multiple municipal boundaries.” All in all, to the extent that the complexity of the intermunicipal network is higher, polycentric theorists expect that transaction costs will be lower, and the benefits of cooperation will be higher. Hence, we formulate hypothesis 4.7

Feiock (2013) has also argued that higher-level rules and regulations imposed on local governments may have major effects on intermunicipal cooperation. As for the effects of the prevalence of a well-ordered, uniform, national legal regime (3), polycentric theorists contend that rigidity and uniformity of a legal regime imposed from above will lead to higher transaction costs and lower local and regional benefits (Feiock 2007; Tavares and Feiock 2014). The main argument for this is that in the context of diversity, a uniform legal regime will turn out to be a Procrustean bed. Polycentric theorists prefer a legal system that allows for multiforality and flexibility in gearing legal provisions to the specific demands of particular tasks. Hence, we formulate hypothesis 5, indicating that the more an IMC network relies on a uniform legal regime the higher transaction costs and the lower the benefits of cooperation.8

So far, we have focused on structural effects of complexity (2) and the legal regime (3). In the domain of intermunicipal cooperation, however, Visser (2002) has argued for the need to move beyond an analysis of structural variables. In the recent literature, the degree of intermunicipal trust is considered a crucial factor. In line with most of the literature, trust between (regional) partners is hypothesized to provide the basis for successful cooperation (e.g., Ansell and Gash 2008; Ostrom 1998; Provan and Kenis 2008; Putnam, Leonard, and Nanetti 1993). Hence,

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Table 1  Overview of Hypotheses Based on a Polycentric Model of Regional Governance

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Effect on Transaction Costs</th>
<th>Effect on Local Benefits</th>
<th>Effect on Regional Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Municipal size</td>
<td>Negative</td>
<td>Negative</td>
<td>Positive</td>
</tr>
<tr>
<td>2. Complexity of the governance network</td>
<td>Negative</td>
<td>Negative</td>
<td>Negative</td>
</tr>
<tr>
<td>3. Reliance of an IMC network on a uniform legal regime</td>
<td>Negative</td>
<td>Negative</td>
<td>Negative</td>
</tr>
<tr>
<td>4. Trust between member of the network</td>
<td>Positive</td>
<td>Positive</td>
<td>Positive</td>
</tr>
<tr>
<td>5. Complexity of the IMC network</td>
<td>Positive</td>
<td>Positive</td>
<td>Positive</td>
</tr>
</tbody>
</table>

*For these hypotheses, monocentrism predicts a reverse effect.*
we expect a negative effect of trust on transaction costs and a positive effect on the benefits of cooperation (hypothesis 6).

In studying the effects of institutional mechanisms (e.g., the embeddedness of actors in complex networks; cf. Feiock 2013), we should also be aware that for a variety of reasons network complexity might affect the level of trust among network partners. Complex systems provide a combination of “strong tie networks of frequent interaction among cities” and “weak tie associational networks.” Such complex systems may combine the best of both worlds.

On the one hand, in close networks based on strong ties, there is likely to be strong social control and information to monitor noncooperative behavior is easily available. This facilitates the development of mutual trust because reputations of participants are at stake (e.g., Feiock 2007, 57). Various aspects of complexity are likely to affect the “trust that individuals have in others, the investment others make in trustworthy reputations, and the probability that participants will use reciprocity” (Ostrom 1998, 12; Feiock 2007, 57; cf. Dahl and Tufte 1973, 92). Network embeddedness also fosters “norms of trust that help identify partners where defection is less likely” (Feiock 2013, 402) and provides for “multiple relationships that signify more trust and, therefore, greater chances for future exchanges” (Feiock 2013, 403).

On the other hand, complex systems also comprise looser networks that are more open, making it easier for dissenters to opt out (Feiock 2009, 372). This provides a safety valve that prevents the escalation of conflicts and makes it less likely that conflicts will be disruptive (Black 1974; Dahl and Tufte 1973). If we integrate both arguments, these complex networks may “provide venues for local government and other organizations to interact build networks and social capital that contribute to the emergence of self-organizing solutions to metropolitan problems” (Feiock 2009, 373). Hence, we formulate hypothesis 7, indicating a positive relation between complexity and trust.9

In addition to complexity (2), we also expect that that a legal structure that allows for flexibility (3) may have positive effects on the generation of trust in complex networks. In polycentric theory it is expected that a uniform, rigid regional governance structure “locks in” municipalities and forces them into a straitjacket. In a more flexible system, municipalities adopt rules that are specific for a particular collaboration context. In this way, it is easier to develop harmonious relationships based on trust. In accordance with this argument we expect a negative effect of a more uniform, inflexible legal regime on trust (hypothesis 8).10,11

We do not expect the size of the municipality (1) to have an effect on the trust between members of the network.12

**Methods and Data**

In this study, we describe the transaction costs, benefits, structure, and trust in the context of intermunicipal cooperatives from a municipal perspective. In order to estimate the transaction costs and benefits of IMCs and the trust among partners, an email survey was conducted among the chief executive officials (CEOs) of all 393 Dutch municipalities. In all, 228 CEOs responded (58 percent). Nonresponse is not related to municipal size and does not show a clear regional pattern.13

**Dependent Variables: Perceived Costs and Benefits of IMC Networks**

In the introduction, we explained why in this study we have used data about the perceived costs and benefits of cooperation. A similar approach to measuring benefits from collaborative governance was adopted in a recent U.S. study published in this journal (Lubell et al. 2017). The questions used are reported in the appendix. The municipal CEO, who is an appointed administrative official, is the highest local civil servant. This official attends all meetings of the Board of Mayor and Aldermen—the political executive, whose members are also representing the municipality in most IMCs—and countersigns all official correspondence of this board, including the annual municipal budget plan. On the basis of national accounts legislation, each municipality budget plan contains a compulsory section on the costs of its participation in IMCs and IMC contributions to the various local program goals. On this basis, the CEO may be expected to have a reasonable insight in the costs and benefits of the IMCs network of his or her municipality. For each of the three dependent variables, we asked three questions (see the appendix).

**Explanatory Variables: Structure of IMC Networks**

In the absence of a national register of IMCs, it was necessary to obtain an inventory of IMCs from the 393 municipalities. Using the budget plans, a comprehensive database was developed of all IMCs with information on the municipalities that partake, the legal regime of the organizations, and the policy area(s) in which they operate. On the basis of this, variables for each municipality were constructed that indicate three main aspects of the structure of their IMC network.

**Municipal size** refers to the population size of the municipality. In order to avoid the results for a few of the largest cities having undue leverage, we applied a log-normal transformation to the size variable.

**Network complexity** was measured using four separate indicators:

1. **Number of IMCs**: The total number of IMCs in which a municipality participates
2. **Net number of unique partners**: The number of all different partners with which a municipality is collaborating in all IMCs
3. **Incongruence**: Incongruence was based on a comparison of IMCs and defined as the percentage of overlapping members. Congruence of two IMCs was calculated by dividing the number of overlapping members (municipalities that participate in both IMCs) by the total (unique) number of members of the two IMCs. In the first step, we calculated the congruence of all pairs of IMCs in the database. In the second step, the overall average congruence score for a municipality is calculated by taking the mean score of all combinations of a municipality’s IMCs. This results in an overall congruence score between 0 and 1 for all municipalities. An IMC is more complex to the extent that the IMCs are less congruent; therefore, we subtracted the congruence score from 1 in order to construct incongruence as a measure of complexity.
4. **Singularity**: An IMC is defined as singular if its activities are limited to one task or one policy area. If cooperation is spread over many single-purpose IMCs, the entire system is more complex than in case of a few multipurpose IMCs. As the
number of IMCs is large, a distinction was made of 11 general policy domains that are commonly used in the Netherlands. For each IMC, it was indicated on which of these fields they are active, resulting in a variable that has a theoretical range of 1 to 11 (active in only 1 domain or active in all 11 domains, indicating a general purpose IMC). In order to calculate singularity as a characteristic of a municipality, the mean score of the number of policy domains of all the IMCs that they are member of is taken as an indicator of the average number of domains of their IMCs. This variable was subtracted from 11 in order to construct a measure of complexity that has high values for municipalities with singular IMCs (value of 10) and low values for municipalities with multipurpose IMCs that are active in many policy domains.\textsuperscript{14}

For each IMC, information was collected on its legal regime: based on private law (company, foundation, etc.) or on the uniform regime of Dutch national public law (WGR). On the basis of this information, we computed the percentage of its IMCs that a municipality has brought under the uniform regime of the WGR (Dutch public law).

This variable trust was measured with two items in the CEO questionnaire (see appendix). They refer to trust between the participating municipalities and between the IMC board and the participating municipalities.

In table 2, we present the descriptive statistics for all the variables in our analyses.

### Results

In this section, we test our hypotheses using ordinary least squares (OLS) regression.\textsuperscript{15} We subsequently present the findings for our three dependent variables: transaction costs, local benefits, and regional benefits. For all three dependent variables, we tested a linear-additive model (with municipal size, network complexity, legal structure, and intermunicipal trust as explanatory variables) and an interactive model in which we conceived of intermunicipal trust as a moderator variable affecting the impact of network complexity and legal structure on the dependent variables. Our results show no evidence whatsoever pointing in the direction of any such interaction effects; therefore, we report the results of the linear additive models only.\textsuperscript{16}

#### Transaction Costs

Table 3 contains the results for two models explaining perceived transaction costs of IMCs. The first model only comprises the effects of municipal size, network complexity (in four dimensions), and legal structure (reliance on WGR-based IMCs). The second model combines the effects of these structural factors with the trust variable included. On the basis of the first model, we can assess the causal effects of the structural factors, allowing for a preliminary assessment of hypotheses 1, 4, and 5. By adding the trust factor, we get additional information on the extent to which the effects of the structural factors are indirect or run via trust.

If we consider the results in the table (columns 2 and 3), we first can conclude that in their own right, the structural variables account for only a small amount of the variations in transaction costs (merely 5 percent). Moreover, the results for model 1, different from what was expected (hypothesis 1), show that there is no statistically significant effect municipal size on transaction costs. Likewise, we can see that three of the four aspects of the complexity of municipal collaborative networks also fail to have statistically significant effects on transaction costs. This is the case for the number of collaborations, the number of net partners, and network singularity. This implies that for these dimensions of complexity, there is no evidence in support of hypothesis 4. The incongruence of municipal networks, on the contrary, has a statistically significant negative effect on transaction costs (beta = –.25). This lends weak preliminary support for hypothesis 4. Apparently, a network characterized by a multiplicity of different territorial scales (incongruence) reduces transaction costs for collaboration. Finally, the results also show that the legal regime—WGR-based IMCs—has a statistically significant but weak negative effect on transaction costs. This contradicts the expectations of the polycentric model: reliance on regulated IMCs reduces rather than boosts the transaction costs. This finding supports the monocentric assumptions underlying the program theory of Dutch Regional Reformers.

When we look at the next column (model 2), we observe that introducing trust considerably improves the explanatory power of

### Table 2: Descriptive Statistics for the Variables in the Analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>Minimum</th>
<th>Maximum</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipal size (log)</td>
<td>10.3</td>
<td>0.84</td>
<td>6.83</td>
<td>13.62</td>
<td>393</td>
</tr>
<tr>
<td>Number of IMCs</td>
<td>16</td>
<td>3.53</td>
<td>9</td>
<td>18</td>
<td>393</td>
</tr>
<tr>
<td>Net partners</td>
<td>47</td>
<td>21</td>
<td>12</td>
<td>114</td>
<td>393</td>
</tr>
<tr>
<td>Incongruence (0–1)</td>
<td>0.35</td>
<td>0.11</td>
<td>0.29</td>
<td>0.81</td>
<td>393</td>
</tr>
<tr>
<td>Singularity (1–10)</td>
<td>9.6</td>
<td>0.23</td>
<td>8.7</td>
<td>10</td>
<td>393</td>
</tr>
<tr>
<td>WGR-based IMC (0–1)</td>
<td>0.59</td>
<td>0.12</td>
<td>0.31</td>
<td>0.90</td>
<td>393</td>
</tr>
<tr>
<td>Trust (1–10)</td>
<td>6.1</td>
<td>1.83</td>
<td>1.5</td>
<td>10</td>
<td>211</td>
</tr>
<tr>
<td>Transaction costs (1–10)</td>
<td>5.5</td>
<td>1.74</td>
<td>1.3</td>
<td>10</td>
<td>210</td>
</tr>
<tr>
<td>Local benefits (1–10)</td>
<td>6.0</td>
<td>1.68</td>
<td>1</td>
<td>9</td>
<td>222</td>
</tr>
<tr>
<td>Regional benefits (1–10)</td>
<td>6.5</td>
<td>1.33</td>
<td>1.7</td>
<td>9.2</td>
<td>222</td>
</tr>
</tbody>
</table>

### Table 3: Results of the Multivariate Regression Analyses (Standardized Beta Coefficients), N = 209–10

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Transaction Costs</th>
<th>Local Benefits</th>
<th>Regional Benefits</th>
<th>Trust</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1</td>
<td>Model 2</td>
<td>Model 1</td>
<td>Model 2</td>
</tr>
<tr>
<td>Municipal size</td>
<td>.10</td>
<td>.20***</td>
<td>–.23***</td>
<td>–.11</td>
</tr>
<tr>
<td>Number of IMCs</td>
<td>.04</td>
<td>–.08</td>
<td>.08</td>
<td>–.02</td>
</tr>
<tr>
<td>Net partners</td>
<td>–.04</td>
<td>–.08</td>
<td>.08</td>
<td>–.02</td>
</tr>
<tr>
<td>Incongruence</td>
<td>–.25***</td>
<td>–.18***</td>
<td>.01</td>
<td>–.04</td>
</tr>
<tr>
<td>Singularity</td>
<td>–.00</td>
<td>.01</td>
<td>.02</td>
<td>.04</td>
</tr>
<tr>
<td>WGR-based IMC</td>
<td>–.13*</td>
<td>–.14***</td>
<td>.20***</td>
<td>–.01</td>
</tr>
<tr>
<td>Trust</td>
<td>–.51***</td>
<td>–.08</td>
<td>.09</td>
<td>.19***</td>
</tr>
<tr>
<td>Adjusted R\textsuperscript{2}</td>
<td>.05</td>
<td>.36</td>
<td>.08</td>
<td>.01</td>
</tr>
</tbody>
</table>

Note: All models have been checked on multicollinearity issues, indicating no such issues are present.

*Significant at .10; **at .05; ***at .01.
the model (from 5 percent to 39 percent). This is also evidenced by the theoretically expected (see hypothesis 6), relatively strong significant negative effects of trust (beta = −0.51). The table shows that introducing the trust factor does not affect the overall pattern of results. As before, with model 1, we find a negative effect of incongruence (as was expected by polycentric theory) and a positive effect of reliance on a uniform legal regime (as was expected by Dutch Regional Reformers). There is only one instance in which the results for models 1 and 2 provide different results. Municipal size is positively related to transaction costs, in contradiction to our expectation that IMC transaction costs would be perceived as relatively low in large municipalities.

**Local benefits.** The main results for local benefits are summarized in table 3 (columns 4 and 5). If we consider the results for model 1, we see that in accordance with our expectations (hypothesis 2), there is a statistically significant negative effect of municipal size on local benefits (beta = −0.23). Different from our expectations, we find that none of the four complexity indicators affects local benefits. We do not find any evidence in support of hypothesis 4. Finally, the results also show that contrary to hypothesis 5, a uniform, nationally imposed legal regime has a weak statistically significant positive effect on local benefits.

If we consider column 5, table 3, it is evident that the introduction of trust does not add to the explained variance of the model. The coefficient of this variable—different from what was expected (hypothesis 6)—is not statistically significant. Moreover, the introduction of this factor does not have a large impact on the coefficients for the structural variables in model 2 either. The direct effects of municipal size and the legal regime remain.

**Regional benefits.** Finally, table 3 (columns 6 and 7) presents the results for the third dependent variable. If we consider the results of model 1 (and model 2, for that matter), we see that only the legal regime has some impact. Contrary to hypothesis 5, organizing IMCs under the legal regulation of IMCs has a positive effect on the regional benefits. Contrary to hypotheses 3 and 4, neither municipal size nor any of the four aspects of network complexity has any statistically significant effect.

When we compare the results of the two models, we can also observe that as a consequence of the statistically significant positive effect of trust the explanatory power of the model substantially increases (from a mere 1 percent to 13 percent). These results provide support for hypothesis 6.

Finally, table 3 (column 8) provides evidence relevant for testing the empirical validity of hypotheses 7 and 8. The theoretical model implied that part of the effects of the structural factors would run via trust. We already saw that high levels of trust went hand in hand with low costs and high regional benefits. The results in the final column of table 3 indicate that only one structural factor (incongruence)—in keeping with hypothesis 7—is (weakly) positive related to trust. In addition to its direct effect on transaction costs, incongruity, therefore—via trust—also has an indirect effect on costs. This effect, however, is very small and can safely be ignored. Furthermore, we can also conclude that the legal regime factor is not related to trust, different from what hypothesis 8 predicted.

**Conclusions and Discussion**

The aim of this article was to answer the following research question: *what is the effect of the structure of intermunicipal cooperation of Dutch municipalities on their perceptions of the transaction costs and the effectiveness of intermunicipal cooperation?*

We answered this question on the basis of an analysis of data collected in 2015 for 393 Dutch municipalities. We considered the effects of three structural factors: (1) municipal size, (2) the complexity of municipal IMC networks, and (3) the dominant legal regime in this network. On the basis of a polycentric model of regional governance, we developed eight hypotheses.

As for the effects of **municipal size** (1), we found that, as was theoretically expected, smaller municipalities are more positive about the local benefits from IMC than larger municipalities. This is probably the result of two factors: (a) the fact that because of the limited system capacity, collaboration is more important for small municipalities in providing their citizens with local public goods and services, and (b) the fact that in case of these local benefits, free-rider problems are less likely to stifle effective collaboration. Municipal size, however, did not have its expected negative effect on perceived transaction costs and its expected positive effect on regional benefits.

With regard to complexity (2), our results provide some weak corroborations for the polycentric perspective. For three dimensions of complexity (number of IMCs, net partners, and singularity), we did not find evidence for any of the expected effects on the costs and benefits of IMCs. The weak support for the polycentric perspective therefore pertains to only one aspect of institutional complexity of IMCs: the incongruence of networks. Here we found evidence that more incongruence (complexity) leads to lower transaction costs of collaboration. In this respect, imposing one territorial scale for all types of collaboration appears to be counterproductive. But even here the support for the polycentric view is limited because for the local and regional benefits incongruence did not have any of its expected effects.

The difference in effects of incongruence on costs and benefits begs for an explanation. Perhaps the measurement of costs and benefits in terms of perceptions of CEOs plays a role here. In case of incongruent networks, the participants could very well interpret the many different networks they are involved in as an adequate response to the variety of tasks performed by these networks. As the optimal scale of cooperation would vary by task, so would the network membership. In case of high congruence, things are different: more or less the same group of municipalities, once and again, is engaged in the provision of a wide range of services. This is likely to raise the question of why these different single-purpose networks are not integrated in a single or a few multipurpose networks with a broader scope. Meeting the same partners over and over again in different single-purpose networks might well give participants the impression of unnecessary high transaction costs. In perceiving benefits, there is no similar mechanism.

Moreover, transaction costs are directly linked to the consultations and decision making in the networks and, therefore, more visible to the network participants. The benefits of cooperation are much less immediately visible because they depend on policy implementation and service delivery.
All in all, we must conclude that the empirical support for the polycentric model is rather poor at best. On the other hand—to be fair—the results also do not point in an opposite direction. The hopes of Dutch Regional Reformers that larger municipalities (1) and less institutional complexity (2) will lead to lower transaction costs and more benefits of IMCs appear vain.

For the third factor—the dominant legal regime (3)—however, this is different. Here we find weak but consistent support that Dutch Regional Reformers—operating on assumptions that are similar to monocentrism—may be right. To the extent that IMC networks are essentially based on uniform, national legislation, the transaction costs tend to be lower and the local and regional benefits of collaboration higher. This is at odds with the predictions based on a polycentric model.

From a scientific perspective, our research provides rare empirical evidence in the controversy between monocentric and polycentric views on regional governance. Our findings may sober up fervent advocates in either of the two camps. Perhaps the most valid conclusion we can draw form this research is in the negative: our results clearly point in the direction that the structural factors that have been central in the debate are not nearly as important as has been suggested in the literature so far.

In a more “positive” vein, we might want to point to the fact that we did find rather clear support for the hypotheses that—consistent with second-generation rational choice theories of collective action—trust in IMC networks appears to be more relevant than traditional institutional variables (Ostrom 1998). High levels of trust show a particularly strong association with low levels of perceived transaction costs. This might be because both these variables are closely related to the network interactions in which the municipalities are engaged. It is also noteworthy that trust plays an important role in the case of securing regional benefits, whereas trust is unrelated to the perceived local benefits. Apparently trust is more important for producing common benefits where a regional collective action problem (with the risk of free-ridership) exists than for producing the selective individual benefits where opportunistic behavior is less of a problem.

In addition to these findings, we also found evidence pointing to that the relevance of the structure of networks for the development of intermunicipal trust. As Feiock (2013, 402–4; also see the theoretical discussion of hypothesis 7) has argued, the embeddedness of actors in complex networks—one of the institutional mechanisms for solving institutional collective action dilemmas—might result in the development of network trust. Our findings indicate that there is a significant positive effect of incongruence on trust. This is in line with the polycentric argument that open networks that reflect variation in tasks to be performed enable selection of those participants that can be trusted (and perhaps remove participants with a bad reputation).

Before we recommend future researchers to focus more on trust and similar “cultural” factors, as Visser (2002) has advocated, a note of caution is due. Although conceptually we tried to keep our dependent variables (perceived costs and benefits) and the trust variable as clearly apart as possible, we cannot rule out the possibility that the correlations we found here are not causal effects but a methodological artifact as a result of a common methods bias as both variables are measured by perceptions of the same respondents (Kamakura 2010). Nor can we be certain of the direction of causality, as trust might also be the result of adequate performance.

Our main conclusions—regarding the causal effects of the institutional structure on the perceived benefits and costs of IMC—are not affected by a possible common methods bias, since these variables were measured using different methods. But if future studies shift their focus from structural variables to the theoretically plausible relations between variables like trust and perceptions of successful collaboration, it is essential to think of methods to avoid the common methods problem.

In subsequent research, it would also be interesting to develop more differentiated tests of polycentric theory in which we can see whether the performance effects of structural variables differ for different types of goods and different types of cooperation (e.g., voluntary collaboration versus collaboration imposed by national or provincial government). Likewise, future research might want to consider whether relations between costs/benefits and explanatory factors, for example, the size variable and the complexity indicators, are linear or nonlinear.

Another direction for future research would be an analysis in which we would use the region rather than the municipality as the unit of analysis. In such analyses, one should also consider to study the effects of the homogeneity of the regional partners (in terms of size, political culture, and social and economic interests). Moreover, in such more differentiated analyses, researchers might also use objective rather than subjective measures of costs and benefits. In the introduction, we indicated that from the comprehensive approach (focusing on the entire set of collaborations of a municipality), a subjective measurement of performance was unavoidable. We think that such an approach to measuring the performance of collaboration networks is useful. On the one hand, we are convinced that our respondents are well placed to assess the costs and benefits of cooperation for their municipality. On the other hand, we obviously cannot claim that such subjective assessments are always accurate. But even then, it is interesting to study these perceptions of costs and benefits. After all, even when these perceptions are wrong, they will be real in their consequences for the prospects of future collaborations.

Notes
1. In the literature, different terms are used to characterize basically two positions. For example, Ostrom (1972) distinguishes between the “metropolitan reform” and the “political economist’s” tradition; Lyons, Lowery, and DeHoog (1992) refer to the “civic reform” and the “public choice” perspective, whereas Norris (2001) juxtaposes “metropolitan reformers” and “new regionalists,” and Visser (2002) makes a distinction between the reform-consolidation model and the market–public choice model. The two positions identified by these authors are rather similar, but they differ in their more detailed characterization. To avoid confusion, we use the terms “monocentric” and “polycentric” to bring out the main institutional difference between the two positions.
2. The debate on regional governance also concerns problems of democratic accountability and the representation of affected interests and of equity. In this article, we do not consider such democratic and equity concerns.
3. In many respects, the propositions derived from a monocentric theory would be exact negatives of those that can be deduced from polycentrism. For the sake of
conciseness in this article, we have concentrated on a polycentric theory of regional governance.

4. Since our data are from 2015, the number of municipalities is 393. In 2017, the number was reduced to 388 because of amalgamations.

5. This system is in several respects similar to practices adopted elsewhere, for example, in British Columbia, Spain, France, and Belgium (cf. Wolman 2017).

6. With regard to the expected size effects, there is no need to differentiate between a mononcentric and a polycentric perspective.

7. In this respect, the implications of a polycentric “program theory” would emphasize the positive effects of reduced complexity on both transaction costs and effectiveness of cooperation.

8. Here, too, advocates of mononcentric “program theory” would disagree, pointing to assumed benefits of a transparent and uniform regulatory regime.

9. In combination, hypotheses 6 and 7 provide for a theoretically expected indirect effect of complexity in addition to its direct effect (as formulated in hypothesis 4). On the basis of the literature, we expect that trust acts as an intervening (or mediator) variable that links complexity and the costs and benefits of cooperation. In our analyses, we also tested an alternative model specification in which trust was used as a moderating factor in an interactive model.

10. Again, for hypotheses 7 and 8, the presumptions of mononcentrists are reversed. In the empirical tests, we also used an alternative model specification in which trust was used as a moderating factor in an interactive model (with the flexibility of the legal regime as the other variable in the interaction).

11. In combination, hypotheses 6 and 8 provide for a theoretically expected indirect effect of legal regime in addition to its direct effect (as formulated in hypothesis 5). On the basis of the literature, we expect that trust acts as an intervening (or mediator) variable that links legal regime and the costs and benefits of cooperation. In our analyses, we also tested an alternative model specification in which trust was used as a moderating factor in an interactive model.

12. We will, however, include size as a control variable when explaining trust as a dependent variable.

13. Response percentages by municipal size and region (chi-square not significant at .05 level):

<table>
<thead>
<tr>
<th>Size</th>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>North</td>
</tr>
<tr>
<td>Medium small</td>
<td>East</td>
</tr>
<tr>
<td>Medium large</td>
<td>South</td>
</tr>
<tr>
<td>Large</td>
<td>West</td>
</tr>
<tr>
<td>All</td>
<td></td>
</tr>
<tr>
<td>Chi-square</td>
<td></td>
</tr>
</tbody>
</table>

14. As the vast majority of IMCs are single purpose, most municipalities score high on singularity (see table 2).

15. Our dependent variables all are based on multi-item scales based on minimally three items with 10-point scales. Therefore, we treated the resulting scales as quasi-interval data that can be analyzed using OLS regression. We inspected the frequency distributions of the main variables in the analysis and found no major deviations form normality, except for singularity, which is heavily tilted toward the maximum level of 10. Only in the case of the municipal size variable did we decide to use a log-normal transformation to avoid undue leverage from a few large municipalities.

16. We used D. Soper’s Interaction application (http://www.danielsoper.com) to test the interaction models. Results of the interaction models are available from the corresponding author upon request.

References


Huls, Rudle, and André van Montfort, eds. 2007. Inter-municipal Cooperation in Europe. Dordrecht: Springer.


**Appendix**

**Dependent Variables**

Transaction costs (Cronbach's alpha = 0.85): To what extent is the intermunicipal cooperation of your municipality characterized by:

a. Unnecessary administrative costs
b. Lengthy and needless consultations
c. High costs of decision making and adaptation

Local benefits (Cronbach's alpha = 0.82): If you consider all IMCs in which your municipality participates, to what extent has this cooperation contributed in the past years to:

a. The ability of your municipality to effectively solve local problems
b. A high quality of service delivery to citizens in your own municipality
c. An adequate availability of facilities in your own municipality

Regional benefits (Cronbach's alpha = 0.77): If you consider all IMCs in which your municipality participates, to what extent has this cooperation contributed in the past years to:

a. An effective treatment of regional problems
b. A high quality of service delivery in the region
c. An adequate availability of facilities in the region

**Independent Variables**

Trust (Cronbach's alpha = 0.71): To what extent is the intermunicipal cooperation of your municipality characterized by:

a. Lack of trust between participating municipalities
b. Lack of trust between IMC boards and participating municipalities

All these items were measured on scales ranging between 1 (low) and 10 (high); scales were constructed as mean scores for the relevant items.