A Policy-Centred Approach to Inter-Municipal Cooperation

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Abstract

In this paper we demonstrate how policy-specific characteristics affect inter-municipal cooperation. We argue that it is not enough to look at local government characteristics - such as a municipality's population size, or its economic situation - for understanding inter-municipal cooperation. Instead, we illustrate that policy-specific characteristics - such as whether a policy is labor- or capital-intensive, whether a policy is salient in public debates, or whether a policy is conflictive - explain why a municipality cooperates in a certain policy area or not. Using data on inter-municipal cooperation schemes from the Swiss canton of Zurich (2013) as well as data from two different surveys of local administrators and officials (2017), we show that the variation in the cooperation intensity is much higher across policies than across municipalities. These findings can make an important contribution to the broader literature on local government behaviour as they indicate that policy attributes, and not only government structures, play a crucial role in explaining inter-municipal cooperation.

Keywords: Inter-Municipal Cooperation, Policy Attributes, Switzerland

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1 Introduction

Governments most important task is to provide services to their citizens. They do not only choose which policies they implement, but also how they deliver them. Besides producing services themselves, they can also decide to cooperate with other political units in order to reduce transaction costs. In particular, inter-municipal cooperation is one of the most widespread phenomenon in modern democracies. Hence, research in public administration has shown a strong interest in the reasons behind that cooperation (Kwon and Feiock, 2010; Bel, Fageda and Mur, 2013; Gerber, Henry and Lubell, 2013; Bel and Warner, 2016), their institutional settings (Hulst and van Montfort, 2007, 2012), and their effects (Steiner, 2003; Bel, Fageda and Mur, 2012; Bel and Warner, 2015). In respect of the former, previous studies have mainly focused on the characteristics of the municipalities and their (perceived) reduction of transaction costs in order to explain the intensity of inter-municipal cooperation. However, municipalities cooperate more intensely in some policy areas than in others (Ladner et al., 2017). Despite that, prior research did not consider policy-specific variation in order to explain inter-municipal cooperation.

In this paper, we propose a policy-centered analysis and demonstrate how policy fields' attributes influence inter-municipal cooperation. We argue that it is not enough to look at local government characteristics — such as a municipality's population size, or its economic situation — for understanding inter-municipal cooperation. Instead, we illustrate that policy-specific characteristics — such as whether a policy is labor- or capital-intensive, whether a policy is salient in public debates, or whether a policy is conflictive — explain why a municipality cooperates in a certain policy area or not. Based on transaction cost theory, we argue that local governments are less likely to cooperate in policy fields that are more relevant, more politicized and more expensive.

Empirically, we rely on data on inter-municipal cooperation schemes from the Swiss canton of Zurich (2013) as well as data from two different surveys of local administrators and officials (2017), we show that the variation in the cooperation intensity is much higher across policies than across municipalities. We explain this policy variation with our policy-specific characteristics. These findings make an important contribution to the broader literature on government service production as they indicate that policy attributes, and not only government structures, play a crucial role in explaining inter-municipal cooperation.

The paper is structured as follows: the second and third section provides a review of the origins of inter-municipal cooperation and develops our policy-centered approach. In the fourth section, we describe the data used for the analysis and how we operationalized the variables. A discussion of our findings is then followed by a discussion of methodological limitations.

2 Origins of Inter-Municipal Cooperation

Why do governments cooperate to provide public services? One of the most cited reasons for intergovernmental cooperation in public service provision are economies of scale (Blom-Hansen et al., 2016). The underlying rationale is that service production becomes more efficient and less costly, the more one can produce of a certain public good at once. With that rationale, one would expect that more populous government units cooperate less, because they already have a sufficiently large constituency to serve. Empirical studies tend to corroborate this assumption. Steiner (2003) finds that smaller Swiss municipalities are more likely to rely on intermunicipal cooperation to provide their services than larger ones. This finding is confirmed by Bel, Fageda and Mur (2013) in a study of Spanish municipalities: small municipalities were more likely to rely on intermunicipal cooperation for public service provision than larger ones.

A second factor that is put forward as an explanation for intermunicipal cooperation is fiscal stress. Governments that face economic problems - e.g. high debt levels - are expected to cooperate more. The rationale is again the idea of scale economies and that cooperation with other municipalities allows to save costs (Kuhlmann and Wollmann, 2014, ch. 4). Evidence for this is again provided by Steiner (2003, 564) for Swiss municipalities: Performance thresholds and economic hardship are among the most frequent reasons mentioned by local officials for engaging in intermunicipal cooperation.

Studies from the US context emphasize the importance of the spatial context. Local governments located in metropolitan areas have more opportunities to cooperate than those in rural areas (Brown and Potoski, 2003; Kwon and Feiock, 2010). Yet, large cities are able to internally produce their services, because they reach the respective critical population thresholds. It is thus mostly suburban municipalities that have many options to cooperate.

This links directly to the role of potential cooperation partners. The decision to cooperate is two- or even multi-sided: it depends on at least two, often more, municipalities and not on one municipality alone, whether joint production of services is deemed feasible or not. A frequently invoked factor in this respect is the homo- or heterogeneity of a potential cooperation coalition. On the one hand, one could expect that governments which are more similar are more likely to cooperate, because their preference are less heterogeneous and hence they more easily reach an agreement (Kwon and Feiock, 2010). On the other hand, differences might be an asset as well, since governments can benefit from complements - each of them has their distinct strengths - and hence cooperation is more beneficial. Existing empirical studies assessing this question find that more (politically) homogeneous municipalities are more likely to cooperate (Gerber, Henry and Lubell, 2013).

How important are these factors compared to one another? In a recent review study, Bel and Warner (2016) conducted a meta-regression analysis of 49 studies assessing the determinants of intermunicipal cooperation. They find that fiscal stress and spatial location (city/suburbs vs. rural areas) are found to be associated with higher propensity to cooperate. By contrast, community wealth, population size or ethnic diversity are not associated with higher propensity to cooperate.

3   A Policy-Centred Approach to Cooperation

Apart from these municipal-level factors, several studies show that cooperation intensity varies a great deal across different policy areas (Steiner, 2003, 558). Attempts to explain this variance have been made early on. Williams (1967) suggests a distinction between "system maintenance" and "life-style" services to explain policy variation in intermunicipal cooperation in metropolitan areas.[1] He argues that municipalities are more likely to cooperate in system-maintenance than in life-style services, since the former connect municipalities in a metropolitan area, while the latter differ across municipalities in a metropolitan area - and hence allow municipalities to establish a distinct profile. In a similar vein, Post (2002, 19) distinguishes between capital- and labor-intensive municipal services.[2] Her argument is that potential gains in terms of scale economies are bigger in capital intensive policies, local governments will more often cooperate in these than in labor-intensive ones.

Other studies have approached policy variation in intermunicipal cooperation from the public opinion angle. Holum and Jakobsen (2016) show that Norwegian citizens' satisfaction with a service does not depend on whether or not their municipality cooperates in garbage collection. Yet, they find that citizens are less satisfied with fire brigades, when the latter are run jointly with other municipalities. The authors explain this difference with the characteristics of the service: the more negative evaluation of fire brigades under intermunicipal cooperation is explained by a lower sense of security on the part of the citizens – since fire brigades might be more remote under cooperation – and at the same time the potential benefits and cost savings are not experienced, because the service is funded through taxes. With garbage collection, things are different. Here, citizens

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[1]Williams (1967, 304-306) considers the system-maintenance vs. life-style services distinction to be a continuum. On the system-maintenance side, there are services concerning communication networks (public transport, telecommunication) and utility networks (power supply, water, and waste-disposal). In addition, central facilities (universities, hospitals, museums, stadiums, and libraries). On the life-style end of the continuum, policies such as land-use regulation, education, housing and urban renewal, and recreation.

[2]Capital-intensive services: airports, highways, housing, libraries, natural resources, parking, parks, sewerage, and water transportation; labor-intensive services: administration, corrections, education, fire, health, hospitals, police, protective inspections, welfare, solid waste management and general control

experience potential cost efficiency through lower fees. Moreover, people in the domain of garbage collection, citizens "simply want to things to run as smoothly and unnoticed as possible, at a reasonable cost" Holum and Jakobsen (2016, 606). In a similar vein, Elling, Krawczyk and Carr (2014) find that US citizens' attitudes on how to confront fiscal stress[3] in a certain policy area differs across policy areas. In public safety areas (fire and police), tax increases are accepted, and employee lay-offs and wage lowering are not. For other services considered (garbage collection, parks and recreation, street and road maintenance) these forms of dealing with fiscal stress are more easily accepted.

A problem with these studies is that they do not rely on empirical indicators to differentiate different service areas, but the authors classify these services themselves (Williams, 1967; Post, 2002). While the two public opinion studies provide empirical evidence for different service perceptions, the amount of policy areas considered is very small and does not allow for a quantification of policy area differences (Elling, Krawczyk and Carr, 2014; Holum and Jakobsen, 2016).

In this paper, we propose a policy-centered approach in order to explain inter-municipal cooperation. In doing so, we build on transaction cost theory by arguing that transaction risks than are inherent in the service shape the government's production mechanism decision (Brown and Potoski, 2003, 443). In general, organizations have the dilemma whether they internalize production (make it itself) or to externalize (buy it through contracting). Transaction scholars argue that this choice reflects the relative costs of traditional production factors (fixed assets, labor, and capital) and the transaction costs. According to (**?**), transaction costs are essentially the management costs associated with either internally producing the service or buying through a third actor and are determined by limited information and uncertainty. In the case of contracting another actor with the service, an organization cannot fully predict all possible outcomes, which is why an information asymmetry occurs. In this case vendors have more information about their activities and performance than the organization, which has delegated the service. Hence, when the risk of vendor opportunism is high, the contracting organization must engage in post contract oversight, which results in high transaction costs and might be finally more expensive than producing the good itself. If policy domains are regarded as in particular important, the chances are higher than politicians avoid to delegate services to third-party actors in order to reduce transaction costs.

In this paper, we propose three different policy aspects: perceived relevance, perceived politicization, and policy-specific spending. Hence, we are formulating the following hypothesis:

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[3]The options given to respondents are tax increases, aid-seeking from state/federal government, employee lay-off, lowering wages, contracting out, purchasing from neighbor, inter-municipal cooperation, and vertical authority transfer

H_1: The higher the perceived relevance of a policy field, the lower the number of inter-municipal cooperations in this very field policy field.

H_2: The more politicized a policy field, the lower the number of inter-municipal cooperations in this very field policy field.

H_3: The more money is spent in a policy field, the less the number of inter-municipal cooperations in this very field policy field.

4   Research Design

4.1   Case Selection

We focus our analysis on the Swiss canton of Zurich. Municipalities constitute the lowest level of government in the Swiss federalist system and they account for roughly a third of total government spending (Linder and Mueller, 2017, 152). Municipalities in Switzerland are important entities – both for political participation and for public service provision (Ladner, 2011). Inter-municipal cooperation is a very widespread phenomenon in Switzerland and it exists in all local policy areas (Steiner, 2003, 558-559). In the biggest canton of Switzerland, the canton of Zurich, intermunicipal cooperation is particularly common. A possible reason for this is that municipal mergers – often presented as an alternative to inter-municipal cooperation – has just started to become a local governance reform strategy in recent years. In 2017, the canton of Zurich consisted of 168 municipalities which provides us with sufficient data to analyze municipal as well as policy area differences in inter-municipal cooperation. The canton of Zurich thus presents ideal conditions for our endeavor. It can generally be considered as a most likely case for inter-municipal cooperation - both in national and international comparison.

4.2   Data

For our analysis, we combine data from three different sources.[4] For the dependent variable intermunicipal cooperation we rely on a survey of local top-level bureaucrats (Gemeindeschreiber) conducted in 2017 (Ladner et al., 2017). For this survey, all Swiss municipalities were contacted and asked to fill in the survey. In the canton of Zurich, 130 out of 168 municipalities participated in the survey. One question in the survey asks participants to indicate in which ones out of 32 policy areas their municipality cooperated with other municipalities or with private enterprises to provide the respective services

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[4]Descriptive statistics are presented in Table A.3.

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Table 1: Dependent Variable

Type of Provision	N	%
Internal production	2286	55.4
IMC (public)	564	13.7
Outsourcing	491	11.9
IMC (contract)	339	8.2
IMC (private)	183	4.4
NA	265	6.4
Total	4128	100.0

and fulfill the associated tasks.[5] Respondents had six different answer options: internal production, intermunicipal cooperation by contract (i.e. buying services from other municipalities), intermunicipal cooperation under public law, intermunicipal cooperation under private law, cooperation with a private provider (i.e. outsourcing), and does not apply (e.g. because the policy is not a local task). Table 1 presents an overview of the responses of the 130 local bureaucrats.

Not surprisingly, internal production is still the most frequent way of providing a service. Yet, 38.2 % of the services are provided in cooperation with other municipalities or with private enterprises among the municipalities represented in the survey. For the empirical analysis, we collapse all forms of cooperation into one category, since we are interested in whether a municipality cooperates or not and not in what type of cooperation it chooses. However, we will also discuss the results when distinguishing types of provision.

Figure 1 and 2 show the univariate distribution of this binary variable across policy fields and across municipalities. We can see that there is substantive variation in the amount of cooperation both across policy fields and across municipalities – an additional empirical motivation for our analysis.

The data on perceptions of policy characteristics comes from a survey of local office holders conducted in 75 Swiss municipalities that was conducted between October 2017 and January 2018 (Freitag, Bundi and Witzig, 2019).[6] A total of 1,792 local office holders took part in the survey, which corresponds to a response rate of 47.5%. The respondents were asked to indicate one out of 21 policy fields with which they most frequently deal with. In a subsequent step, they were asked to evaluate five characteristics of that policy

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[5]Question wording and policy areas in Tables A.1 and A.2 in Appendix A.

[6]60 municipalities were selected on the basis of the Swiss Volunteer Monitor Communities 2012. Traunmüller et al. (2012) selected a proportionally stratified sample from 1,217 municipalities that had taken part in a survey as part of the study "local structures and voluntary commitment in Switzerland 2010" (Stadelmann and Freitag, 2011). The 60 municipalities were supplemented by 20 municipalities with a municipal parliament, as this type was underrepresented in the sample. The municipalities Biasca, Birsfelden, Rothenturm and Savosa and Thal (SG) decided not to take part in the survey despite being invited, so that 75 municipalities were ultimately included in the survey.

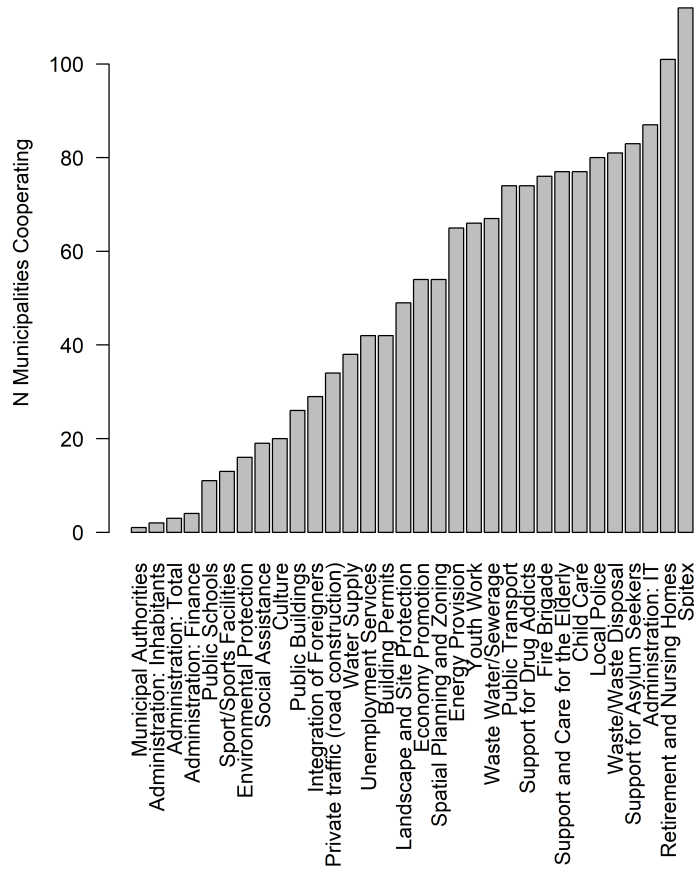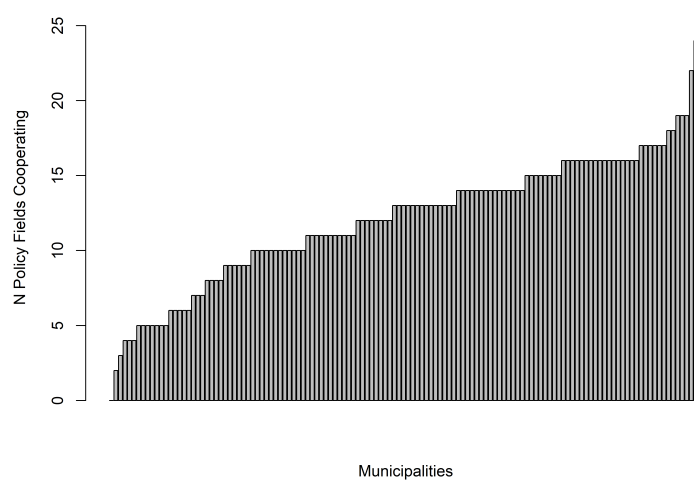**Figure 1:** Cooperation Intensity by Policy Field

Figure 2: Cooperation Intensity by Municipality

area in their municipality:[7] (1) its importance, (2) the autonomy a municipality has in it, (3) its public salience, (4) its conflictivity, and (5) legitimacy pressures coming from outside actors. For our analysis, we aggregate respondents' perceptions by policy area for each of the five indicators for the canton of Zurich.[8] In addition, we assess, whether the five indicators cluster on latent dimensions. A principal component analysis of the five indicators yields two components (see Table 2). The first one encompasses salience, conflictivity, and legitimacy pressures and is thus termed 'politicization'. The second component consists of of a policy field's importance and a municipality's decision-making autonomy in it and is thus termed 'relevance'. We run our subsequent regression analyses with these two components as independent variables. As a robustness check, we provide results with the disaggregated indicators in Appendix B.

Table 2: Principal Component Analysis: Policy Perceptions

	Politicization	Relevance
Importance	0.340	**0.771**
Autonomy	−0.314	**0.767**
Salience	**0.971**	0.065
Conflictivity	**0.933**	−0.224
Legitimacy Pressure	**0.942**	0.151
Eigenvalues	2.916	1.258
% Variance	0.583	0.252

Note: Data from Freitag, Bundi and Witzig (2019): Perceptions of local militia politicians on 20 different policy areas in 9 municipalities from Zurich.

An additional, objective, measure of a policy characteristic stems from the statistical office of the canton of Zurich, namely the amount of money spent in a certain policy area (**?**, see Table A.1 for the policy areas covered). We use the expenditures in a policy area as a share of total local government expenditures as an alternative indicator of the local relevance of a policy area. In addition to this policy-specific indicator, we incorporate additional indicators at the level of the municipality in the analysis. Bigger and more urbanized municipalities might be better equipped to provide local services for themselves. The same applies for municipalities with higher assets and higher tax incomes per capita.

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[7] For question wording and policy fields see Tables A.1 and A.2 in Appendix A.

[8] Henggart (12) + Kloten (31) + Langnau am Albis (22) + Neftenbach (14) + Rickenbach (13) + Rüti (14) + Zumikon (9) + Dürnten (18) + Rafz (12) = 145 respondents.

4.3 Estimation Strategy

The structure of our data set is quite complex due to the hierarchies we have in our data. On the one hand, we have policies that are nested in municipalities. On the other hand, we also have municipalities that are nested in policies. Unlike in an analysis of municipalities nested in provinces or individuals nested in countries, the hierarchy between policy and municipality in our data is not a priori clear. In addition, we have predictor variables at the level of the policy-municipality (i.e. policy spending/total spending), at the level of the policy (i.e. invariant across municipalities: relevance and politicization), and at the level of the municipality (i.e. invariant across policies: population size, urbanization, net assets/capita, and taxes/capita). This poses challenges for regression analysis. While a non-ideal solution, we rely on multilevel logistic regression models with policies as level-1 and municipalities as level-2. The choice of the levels is somewhat arbitrary. We decided to use municipalities as level-2, because we have 130 municipalities (compared to only 32 policy fields), which gives us more leverage in the estimation. We estimate the following model:

$$y_{ij} = \alpha + \beta_{ij} X_{ij} + \gamma_j X_j + \lambda_i X_i + \epsilon_{ij}$$

where

$$\alpha = \delta_{ij} + \eta_i$$

y_{ij} depicts the binary dependent variable (intermunicipal cooperation=1), β_{ij}, γ_j, and λ_i are coefficient vectors for policy- and municipality-variant (X_{ij}), policy-variant (X_j), and municipality-variant (X_i) predictors. δ_{ij} designates the grand mean of the dependent variable, and η_i the municipality-level variation around that grand mean. We thus estimate a random intercept regression model with municipalities as level-2.

To assess the robustness of our findings, we run several alternative specifications. First, and foremost, we estimate multinomial regression models with a nominal dependent variable. This allows to see whether the correlations between our predictor and our dependent variable operate in the same way across different forms of cooperation, or whether there are differences depending on the type of cooperation. Second, we also report results for the individual indicators of the two policy perception dimensions that we identified in subsection 4.2.

5 Results

5.1 Internal Production vs. Cooperation

Table 3 shows the results of several multilevel logistic regression model. All continuous variables are standardized to a mean of 0 and a standard deviation of 1. Model (1)

displays the coefficients for a model in which the spending in a certain policy area as a share of total spending is not included.

In this model, the relevance of a policy area as perceived by local militia politicians is positively linked to the probability of joint service provision, whereas the perceived politicization of a policy area is negatively linked to cooperation probability. When the perceived relevance increases by one standard deviation, the probability of intermunicipal cooperation is 1.5 times higher.[9] The same change in perceived politicization is associated with a 1.2 times lower cooperation probability.[10] Hence, the more relevant and the less politicized a policy at the local level, the more likely it is that municipalities cooperate with one another or with private actors to provide it.

These results remain robust to the inclusion of policy spending in the regression equation (model (2)). Policy spending itself is negatively linked to the probability of cooperation. When it increases by one standard deviation, intermunicipal cooperation becomes 1.3 times less likely.[11]

Models (3) to (5) include interaction effects between the three policy area indicators. We find positive and significant interaction effect between relevance and policy spending and between politicization and policy spending. This suggests that the higher the perceived relevance of a policy for the municipality, the less strong is the negative link between policy spending and inter-municipal cooperation. The same is true for politicization. The more politicized a policy field, the lower the negative relationship between policy spending and cooperation.

Indicators at the level of the municipality are not significantly linked to the probability of intermunicipal cooperation – except for population size. Larger municipalities are significantly less likely to cooperate than smaller ones.

These results are largely robust when we look at the individual indicators that constitute the factors 'relevance' and 'politicization' (see Table B.2 in Appendix B). Two differences are noteworthy, however. First, one of the three indicators for politicization – legitimacy pressure – is positively and not negatively linked to the probability of intermunicipal cooperation. Second, the perceived autonomy a municipality enjoys in a certain policy area is negatively linked to intermunicipal cooperation probability *when policy spending/total spending is included in the model*. At the same time, the effect of the perceived importance of a policy is much stronger, when policy spending is included in the model.

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[9] $e^{0.381} = 1.46$.

[10] $e^{-0.206} = 0.81 \mid \frac{1}{0.81} = 1.2$.

[11] $e^{-0.260} = 0.77 \mid \frac{1}{0.77} = 1.3$.

Table 3: Intermunicipal Cooperation: Multilevel Logistic Regression Models

	(1)	(2)	(3)	(4)	(5)
Relevance	0.381***	0.507***	0.744***	0.535***	0.363***
	(0.035)	(0.052)	(0.067)	(0.056)	(0.040)
Politicization	−0.206***	−0.266***	−0.129**	−0.054	−0.191***
	(0.034)	(0.052)	(0.055)	(0.057)	(0.038)
Spending		−0.260***	−0.866***	−0.564***	
		(0.048)	(0.081)	(0.067)	
Population Size	−0.367***	−0.390***	−0.443***	−0.480***	−0.367***
	(0.080)	(0.078)	(0.085)	(0.081)	(0.080)
Urbanization High	−0.002	−0.198	−0.165	−0.243	−0.002
	(0.189)	(0.188)	(0.204)	(0.192)	(0.190)
Urbanization Low	−0.195	−0.131	−0.170	−0.139	−0.195
	(0.151)	(0.145)	(0.158)	(0.150)	(0.151)
Net Assets/Capita	−0.045	−0.038	−0.022	−0.034	−0.045
	(0.065)	(0.063)	(0.069)	(0.066)	(0.066)
Taxes/Capita	0.018	0.007	0.007	0.022	0.018
	(0.061)	(0.060)	(0.066)	(0.061)	(0.061)
Relevance × Spending			1.553***		
			(0.165)		
Politicization × Spending				0.983***	
				(0.114)	
Relevance × Politicization					−0.030
					(0.034)
Constant	−0.482***	−0.402***	−0.344***	−0.538***	−0.482***
	(0.068)	(0.066)	(0.072)	(0.071)	(0.068)
Observations	4,128	2,455	2,455	2,455	4,128
Level-2	130	130	130	130	130
Log Likelihood	−2,598.885	−1,515.858	−1,458.085	−1,478.739	−2,598.490
Akaike Inf. Crit.	5,215.770	3,051.717	2,938.170	2,979.479	5,216.980
Bayesian Inf. Crit.	5,272.700	3,109.776	3,002.035	3,043.343	5,280.236

Note. Coefficients are log odds from multilevel logistic regression models; *p<0.1; **p<0.05; ***p<0.01.

5.2 Types of Intermunicipal Cooperation

Do we find the same results if we disentangle intermunicipal cooperation into its different components? Table 4 provides answers to this question. It contains the results of a multinomial regression model, with internal production as a baseline category. Overall, the results remain largely the same. The perceived relevance of a policy area for the municipality is positively linked to the probability of different forms of intermunicipal cooperation and outsourcing as compared to internal production. Moreover, perceived politicization and policy spending are negatively linked to different forms of cooperation as compared to internal production. Finally, larger municipalities are generally less likely to cooperate than produce their services themselves – independently of the type of cooperation.

However, there are also some nuances worth pointing out. First, the coefficient of perceived relevance is weaker for some cooperation types than for others. When perceived relevance increases by one standard deviation in the model without policy spending, buying services instead of internally providing them is 1.2 times more likely, whereas cooperating with other municipalities in a public scheme or in a private scheme is 1.4 and 1.8 times more likely than providing the services autonomously. Second, politicization is not linked to lower cooperation probability for intermunicipal cooperation schemes under private law – when policy spending is not included in the model. When policy spending *is* included in the model, politicization is positively linked to the probability of outsourcing. Under these conditions, municipalities are 1.4 times more likely to cooperate with a private enterprise instead of internal production when politicization increases by one standard deviation. Third, changes in policy spending are least linked to the probability of intermunicipal cooperation under public law compared to internal production and most strongly linked to outsourcing as compared to internal production. Finally, at the level of the municipality, we also witness some interesting variation. Population size is not linked to the probability of jointly providing services with other municipalities under private law, rural municipalities are less likely to buy services from other municipalities or to outsource services to private enterprises compared to suburban ones. Last, but not least, rich municipalities (in terms of net assets/capita) are less likely to engage in public intermunicipal cooperation schemes and in outsourcing. By contrast, municipalities with higher tax revenues per capita are more likely to participate in public intermunicipal cooperation schemes.

Again, these results are generally robust to a specification of the model including the individual indicators instead of the factors 'relevance' and 'politicization' (see Table B.3 in Appendix B). While the sign and the significance of five indicators vary across the different types of cooperation in the model that does not include policy spending, they exhibit the same pattern across all types of cooperation in the model that includes

policy spending. The pattern is the same as above for the binary dependent variable: the perceived autonomy a municipality has in a policy area is negatively linked to cooperation probability when policy spending is included, whereas perceived legitimacy pressures are positively linked to cooperation probability.

Table 4: Types of Cooperation: Multinomial Logistic Regression Models

	Model without Policy Spending				Model with Policy Spending			
	Intermunicipal Cooperation Form			Outsourcing	Intermunicipal Cooperation Form			Outsourcing
	Public	Private	Contract		Public	Private	Contract	
Relevance	0.327***	0.580***	0.158***	0.500***	0.481***	0.764***	0.244***	0.734***
	(0.049)	(0.090)	(0.057)	(0.056)	(0.071)	(0.126)	(0.081)	(0.103)
Politicization	−0.184***	−0.091	−0.321***	−0.153***	−0.523***	−0.239**	−0.549***	0.314***
	(0.046)	(0.074)	(0.056)	(0.048)	(0.075)	(0.113)	(0.091)	(0.087)
Spending/					−0.150**	−0.202*	−0.310***	−0.368***
					(0.065)	(0.106)	(0.105)	(0.093)
Population Size	−0.401***	0.036	−0.481***	−0.307***	−0.498***	−0.077	−0.577***	−0.236**
	(0.072)	(0.120)	(0.089)	(0.075)	(0.096)	(0.147)	(0.116)	(0.100)
Urbanization High	0.176	0.552**	−0.507*	−0.277	−0.321	0.280	−0.234	−0.346
	(0.171)	(0.244)	(0.292)	(0.189)	(0.261)	(0.318)	(0.340)	(0.251)
Urbanization Low	0.221*	0.100	−0.312**	−0.769***	0.212	0.171	−0.378*	−0.585***
	(0.131)	(0.226)	(0.158)	(0.154)	(0.171)	(0.271)	(0.204)	(0.203)
Net Assets/Capita	−0.145***	0.231**	0.116	−0.151**	−0.129*	0.157	0.180*	−0.147*
	(0.056)	(0.099)	(0.075)	(0.064)	(0.076)	(0.120)	(0.097)	(0.085)
Taxes/Capita	0.184***	−0.164	−0.161*	−0.055	0.148**	−0.097	−0.118	−0.057
	(0.048)	(0.101)	(0.087)	(0.066)	(0.068)	(0.118)	(0.103)	(0.087)
Constant	−1.639***	−2.831***	−1.994***	−1.501***	−1.537***	−2.631***	−1.914***	−1.769***
	(0.065)	(0.111)	(0.076)	(0.062)	(0.084)	(0.137)	(0.100)	(0.099)
Observations	4,128				2,455			
Akaike Inf. Crit.	9,300.332				5,434.233			

Note. Coefficients are log odds from multinomial logistic regression models; *p<0.1; **p<0.05; ***p<0.01

6 Limitations

Like any scientific enquiry, our study has several limitations and methodological problems. First, we have to rely on different data sources to measure the different concepts in our study. While this is not a problem in itself, it poses challenges in the case at hand: each of the data sources has a different classification and number of policy areas. For some policy areas, the assignment was clear and simple, for others it was quite a stretch and for still others, there was no appropriate correspondence. An overview of the policy areas in the three different data sources and our assignment can be found in Table A.1 in Appendix A.

A second problem concerns causal inference. A problem of our analysis is that we do not know *when* municipality i started to cooperate in policy area j. Moreover, our data only allows cross-sectional and not longitudinal analysis. This means that many decisions to cooperate were made before the measurement of our independent variables. This has several consequences. First, we cannot make any statements about causal relationships, only about correlations. If we find, for example, that municipalities with higher expenditure shares in a certain policy area have a lower propensity to cooperate in that area, this can mean different things: (1) more spending in an area prevents cooperation in that area (our argument from above), (2) cooperation lowers municipal spending in a policy area (e.g. because of cost savings through economies of scale), (3) a third factor not accounted for in the analysis explains both policy expenditures and intermunicipal cooperation. Based on our analysis, we cannot know which of the three applies in our case. Second, the fact that we only have a cross-sectional snapshot of the situation means that we – strictly speaking – cannot make any statements about other time points, unless we make a rather strong assumption. The assumption is that the relationships between different indicators and the differences of the indicators across municipalities and policy areas remain constant over time. If this does not apply, our analysis just provides a snapshot of the year 2017 in the canton of Zurich.

A third problem concerns potential omitted variable bias. Municipalities are not alone in taking their decision to cooperate in a certain policy area. They also need partners that want to cooperate with them. Intermunicipal cooperation is thus a result of an at least two- and frequently multi-sided decision. We do not have any information with which other municipalities the municipalities in our analysis cooperate and we do not know whether some municipalities would like to cooperate, but cannot because they do not find a partner. Again, we thus have to make a strong assumption, namely that all municipalities face equally favorable environments for cooperation.

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Appendix

A   Data Sources, Questions, Descriptive Statistics

Table A.1: Policy Fields: Assignment

ID	Expenses Canton of Zurich (2016)	Local Militia Survey (?)	Local Bureaucrats Survey (?)
1	Net expenditure Authorities/administration	State order (people, fundamental rights, institutions and people's rights, elections)	Municipal administration: total; Municipal administration: population services; Municipal authorities
2		Civil rights (minorities, equality, data protection)	
3	Net expenditure Budget/Taxes	Public finances (taxes, subsidies, austerity measures)	Municipal administration: Financial administration
4	Net expenditure Public economy	Economy (industry, trade, commerce)	Economic promotion
5		Work (occupational safety, trade unions, unemployment)	Support and assistance for the unemployed
6		Energy (electricity, water, nuclear and renewable energy)	Energy supply
7		Migration (naturalization, integration, refugees, asylum)	Care for asylum seekers; Integration of foreigners
8		Crime (prisons, juvenile delinquency)	
9	Net expenditure Environment and spatial planning	Construction/real estate (spatial planning, urban development, housing)	Spatial planning and zoning; Public buildings; Approval of planning applications
10	Net expenditure Education	Education (schools, universities, kindergartens)	Public schools
11		Forestry/Agriculture	Landscape and site protection
12	Net expenditure Health	Health (health care, food, veterinary, health promotion and prevention)	Support and care for the elderly; Spitex; Retirement and nursing homes;
13	Net expenditure Environment and Spatial planning	Environment (drinking water, air pollution, waste, recycling)	Environmental protection; Water supply
14		Sports/Recreation	Sport/Sports Facilities
15	Net expenditures Culture and Recreation	Culture	Culture
16		Infrastructure (disposal, recycling, roads, water supply)	Waste water/sewage system; Waste/disposal
17	Net expenditures Legal protection and security	Security (military, defence, civil protection, police)	Fire brigade; Municipal police tasks

Continued on next page

Table A.1 – *Continued*

ID	Expenses Canton of Zurich (2016)	Local Militia Survey (**?**)	Local Bureaucrats Survey (**?**)
18	Net expenditures Transport	Transport (private and public transport)	Public transport; Private transport (road construction/traffic calming)
19	Net expenditures Social welfare	Social policy (family policy, social insurance, social assistance, social services, external child care)	Youth work; Social assistance; Supplementary childcare for families; Care for drug addicts;
20		Technology (science, telecommunications, broadcasting, meteorology)	Municipal Administration: IT
21		External relations of the municipality	

Note. The basis for the assignment of policy areas is column 3 (two policy areas have no correspondence in the other two data sources: ID 2 and 21). ";" separates individual policies in column 4. Data on local expenditures is not available for all policy areas. For two policy areas (ID 9 and 13), the same expenditure indicator is assigned.

Table A.2: Question Wording: Surveys

Variable	Question	Source
Inter-Municipal Cooperation	Do you perform the following tasks yourself, in intercommunal cooperation schemes (IMC) or with private providers? [List of 32 tasks from Table A.1, column 4] Internal Production (=0) IMC (buying services from other municipality) (=1) IMC (scheme under public law) (=1) IMC (scheme under private law) (=1) Private Provider (=1) No Local Task/Does Not Apply (=0)	(Ladner et al., 2017)
Independent Variables	Which policy area do you most frequently deal with in your militia work? [List of 21 policy areas from Table A.1, column 3] Please tick the box to indicate the extent to which you agree with the individual statements on your priority area [Don't agree at all–Totally agree]	(Freitag, Bundi and Witzig, 2019)
Importance	This area is relevant for my municipality	
Autonomy	In this area, there is a lot of room for manoeuvre at the municipal level (in comparison to other areas)	
Salience	The area is often discussed in the media/public	
Conflictivity	The area is often the subject of political conflicts	
Legitimacy Pressure	The tasks performed in this area are often challenged by other actors (political actors, population)	

Table A.3: Descriptive Statistics

	N	Mean	SD	Min	P25	P75	Max
Intermunicipal Cooperation	4,128	0.382	–	0	0	1	1
Relevance	4,128	3.146	0.178	2.795	3.070	3.285	3.500
Importance	4,128	3.666	0.201	3.000	3.567	3.810	4.000
Autonomy	4,128	2.626	0.258	2.140	2.500	2.760	3.270
Politicization	4,128	2.791	0.348	1.667	2.610	3.060	3.227
Salience	4,128	2.941	0.327	2.000	2.750	3.200	3.420
Conflictivity	4,128	2.768	0.465	1.000	2.570	3.100	3.480
Legitimacy Pressure	4,128	2.663	0.299	2.000	2.465	2.910	3.120
Policy Spending/Total Spending	2,455	0.102	0.114	−0.021	0.039	0.119	0.712
Log. Population Size	4,128	8.310	1.152	5.820	7.533	8.978	12.918
Population Size	4,128	10,209	36,857	337	1,869	7,929	407,447
Urbanization							
Low	4,128	0.253	–	0	0	1	1
Medium	4,128	0.623	–	0	0	1	1
High	4,128	0.123	–	0	0	0	1
Net Assets/Capita (1,000 CHF)	4,128	1.926	3.138	−11.102	0.090	3.620	10.128
Taxes/Capita (1,000 CHF)	4,128	3.266	1.848	1.634	2.274	3.561	15.069

B   Policy Perceptions as Individual Indicators

Main results: Differences to policy perceptions as factors

1. The perceived autonomy in a policy has a negative association with cooperation, but only when policy spending is controlled for

2. The perceived legitimacy pressure/outside interference in a policy area is positively associated with cooperation probability, particularly so when policy spending is included in the model

3. The results of the individual indicators vary by category in the multinomial logit model as long as policy spending is not included. When included, they display the same pattern across all the different ways of cooperation (see Table B.3)

Table B.1: Inter-Municipal Cooperation (=1): Logistic Regression Models

Importance	1.356***	10.982***	14.585***	12.032***	16.499***
	(0.218)	(0.858)	(1.420)	(0.905)	(1.497)
Autonomy	0.577***	−3.722***	−2.350***	−4.137***	−2.597***
	(0.153)	(0.362)	(0.482)	(0.384)	(0.515)
Salience	−0.911**	−3.969***	−5.681***	−4.441***	−6.525***
	(0.382)	(0.519)	(1.056)	(0.553)	(1.153)
Conflictivity	−0.524**	−7.180***	−4.930***	−7.757***	−5.275***
	(0.230)	(0.723)	(1.347)	(0.753)	(1.405)
Legitimacy Pressure	1.003***	9.879***	8.287***	10.706***	9.004***
	(0.270)	(0.766)	(1.262)	(0.802)	(1.310)
Policy Spending/Total Spending		−6.112***	−0.548	−6.768***	−0.101
		(0.534)	(1.573)	(0.570)	(1.757)
Log. Population Size	−0.255***	−0.338***	−0.437***	$4.011 * 10^{11}$	$-1.158 * 10^{12}$
	(0.034)	(0.051)	(0.056)	$(2.075 * 10^{12})$	$(3.445 * 10^{12})$
Net Assets/Capita (1,000 CHF)	−0.015	−0.013	−0.012	$4.514 * 10^{10}$	$-1.303 * 10^{11}$
	(0.013)	(0.019)	(0.020)	$(2.336 * 10^{11})$	$(3.876 * 10^{11})$
Taxes/Capita (1,000 CHF)	0.016	−0.002	−0.002	$7.799 * 10^{10}$	$-2.252 * 10^{11}$
	(0.020)	(0.029)	(0.031)	$(4.036 * 10^{11})$	$(6.698 * 10^{11})$
Constant	−3.441***	−23.034***	−35.966***	$-4.371 * 10^{12}$	$1.262 * 10^{13}$
	(0.791)	(2.822)	(4.725)	$(2.261 * 10^{13})$	$(3.754 * 10^{13})$
Policy FEs	No	No	Yes	No	Yes
Municipality FEs	No	No	No	Yes	Yes
Observations	4,128	2,455	2,455	2,455	2,455
Log Likelihood	−2,613.069	−1,266.826	−1,170.712	−1,154.568	−1,045.832
Akaike Inf. Crit.	5,244.139	2,553.652	2,387.424	2,583.136	2,391.665

Note. Coefficients are log odds from logistic regression models (glm(,family="binomial") in R); *p<0.1; **p<0.05; ***p<0.01.

Table B.2: Intermunicipal Cooperation: Multilevel Logistic Regression Models

	(1)	(2)
Importance	0.286***	2.282***
	(0.045)	(0.176)
Autonomy	0.156***	−0.996***
	(0.040)	(0.095)
Salience	−0.310**	−1.354***
	(0.128)	(0.174)
Conflictivity	−0.255**	−3.426***
	(0.109)	(0.341)
Legitimacy Pressure	0.313***	3.043***
	(0.083)	(0.233)
Policy Spending/Total Spending		−0.723***
		(0.063)
Log. Population Size	−0.371***	−0.429***
	(0.081)	(0.097)
Urbanization (B=Medium)		
High	−0.001	−0.204
	(0.191)	(0.230)
Low	−0.197	−0.151
	(0.152)	(0.183)
Net Assets/Capita (1,000 CHF)	−0.045	−0.052
	(0.066)	(0.079)
Taxes/Capita (1,000 CHF)	0.018	0.005
	(0.062)	(0.074)
Constant	−0.484***	−1.216***
	(0.068)	(0.119)
Observations	4,128	2,455
Level-2	130	130
Log Likelihood	−2,578.865	−1,256.611
Akaike Inf. Crit.	5,181.730	2,539.223
Bayesian Inf. Crit.	5,257.637	2,614.699

Note. Coefficients are log odds from multilevel regression models (glmer(,family="binomial") in R); *p<0.1; **p<0.05; ***p<0.01.

Table B.3: Types of Cooperation: Multinomial Logistic Regression Models

	Model without Policy Spending				Model with Policy Spending			
	Intermunicipal Cooperation Form				Intermunicipal Cooperation Form			
	Public	Private	Contract	Outsourcing	Public	Private	Contract	Outsourcing
Importance	0.337***	0.459***	0.008	0.379***	4.081***	8.391***	2.142***	1.668***
	(0.062)	(0.114)	(0.078)	(0.072)	(0.407)	(1.556)	(0.539)	(0.221)
Autonomy	0.229***	0.532***	−0.070	0.083	−2.745***	−0.450**	−1.777***	−0.208
	(0.055)	(0.109)	(0.071)	(0.066)	(0.384)	(0.200)	(0.295)	(0.132)
Salience	−0.279	−1.850***	−0.056	0.025	−2.300***	−1.851***	−1.748***	−1.325***
	(0.176)	(0.321)	(0.241)	(0.190)	(0.348)	(0.385)	(0.400)	(0.245)
Conflictivity	0.198	0.609**	−0.826***	−0.691***	−4.428***	−14.834***	−5.797***	−0.896*
	(0.152)	(0.245)	(0.192)	(0.166)	(0.575)	(3.125)	(1.065)	(0.459)
Legitimacy Pressure	−0.195	1.191***	0.554***	0.484***	3.854***	11.946***	5.164***	1.716***
	(0.119)	(0.226)	(0.149)	(0.126)	(0.417)	(2.177)	(0.711)	(0.299)
Policy Spending/ Total Spending					−0.859***	−1.335***	−0.757***	−0.623***
					(0.096)	(0.246)	(0.160)	(0.108)
Log. Population Size	−0.400***	0.034	−0.487***	−0.312***	−0.559***	−0.034	−0.659***	−0.261**
	(0.072)	(0.121)	(0.090)	(0.075)	(0.106)	(0.154)	(0.129)	(0.103)
Urbanization (B=Medium)								
High	0.177	0.557**	−0.511*	−0.281	−0.315	0.314	−0.210	−0.327
	(0.172)	(0.246)	(0.293)	(0.191)	(0.275)	(0.331)	(0.357)	(0.253)
Low	0.223*	0.100	−0.323**	−0.780***	0.230	0.189	−0.372*	−0.578***
	(0.131)	(0.227)	(0.159)	(0.155)	(0.189)	(0.279)	(0.226)	(0.207)
Net Assets/Capita (1,000 CHF)	−0.146***	0.232**	0.116	−0.152**	−0.136	0.141	0.183*	−0.154*
	(0.056)	(0.099)	(0.075)	(0.064)	(0.084)	(0.123)	(0.106)	(0.087)
Taxes/Capita (1,000 CHF)	0.185***	−0.167*	−0.165*	−0.059	0.153**	−0.090	−0.122	−0.058
	(0.048)	(0.101)	(0.088)	(0.066)	(0.074)	(0.121)	(0.110)	(0.088)
Constant	−1.649***	−2.969***	−2.023***	−1.534***	−3.378***	−7.376***	−3.248***	−2.148***
	(0.065)	(0.121)	(0.077)	(0.064)	(0.259)	(1.005)	(0.318)	(0.139)
Observations	4,128				2,455			
Akaike Inf. Crit.	9,188.875				4,759.400			

Note. Coefficients are log odds from multinomial logistic regression models (multinom() from -nnet- package in R); *p<0.1; **p<0.05; ***p<0.01. Baseline=Internal Production.