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Does shared service delivery affect cost? A study of the cost-capacity relation in Norwegian local child protection services

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ABSTRACT

Intermunicipal cooperation is often seen as a means to increase capacity and reap economic benefits of scale. Prior research, however, shows that the effects of shared service delivery diverge, leaving scholars and practitioners to question whether, under what conditions and at what expense effects of cooperation manifest. Using a panel dataset on child protection services, we analyze how cooperation affects the cost-capacity relation. The results show that cooperation increases cost. This increase is only partly explained by investments in service capacity, indicating that there are significant transaction costs linked to cooperation as a mode of production.

Introduction

Organizing arrangements for shared service delivery is one of the most common ways to increase operational capacity for municipalities all over the world (Molenveld et al. 2020; Peters 2015; Thomas Elston and Wang 2023; Trein, Meyer, and Maggetti 2019). While scholars identify several reasons for engaging in intermunicipal cooperation (IMC), the most common argument for joining production forces is to increase quality or decrease costs and thus extract some sort of scale benefits (Blåka 2022). Studies of the effects of IMC, however, diverge, leaving scholars with questions of what benefits municipalities can realize through IMC, and thus if it can serve as an up-scaling alternative to full amalgamations. Bel and Sebo (2021, 178) illustrate this divergence in a meta-analysis where they conclude that "*(a)mong the 18 studies included in our meta-regression, nine observations obtain cost savings, seven obtain mixed or insignificant results, and two obtain cost increases*". Aldag and Warner (2018) claim that cost savings rarely seem to be the most important objective when municipalities engage in shared service delivery. Rather, IMCs may just as often be motivated by a search for increased quality, capacity, and accessibility to services. A challenge in the research on effects of IMC is that it often includes data on costs, without having access to indicators that might elucidate the possible trade-offs between costs and quality. It is, for instance, possible that cost savings

due to IMC may be a result of cooperating municipalities' willingness to reduce service capacity, such as decreasing the number of professionals on call, or increasing waiting time for users. Alternatively, cost increases due to IMC might merely be a result of cooperating municipalities' willingness to invest in higher capacity. Municipalities who share service delivery may experience increased cost, but this increase may reflect an intentional choice to invest in different forms of higher service quality. Studies that include non-financial performance of IMC are few, and even fewer of them include both measures of costs and quality (Blåka, Jacobsen, and Morken 2021; Jacobsen 2022).

The question we seek to answer in this study is whether and how IMC affects costs when we control for service capacity, more specifically size and competence of the work force. We examine whether potential differences in spending are due to coordination cost, economies of scale or the notion that municipalities that engage in IMC simply spend more or less money on service capacity. Our empirical case is Norwegian child protection service which is a labor-intensive service that varies substantially from the capital-intensive, more easily gauged services such as utilities and refuse collection that constitute a major part of prior studies (Bel and Sebo 2021; Bel and Warner 2015b). This study thus contributes with broader knowledge to empirically new ground.

Norwegian child protection service

We approach the question of how IMC affects costs empirically by analyzing a 17-year panel dataset on Norwegian child protection services (CPS). This municipal service has undergone a transformation in this period from being almost exclusively produced by single municipalities to being produced today by IMCs in around 60% of all municipalities. Conducting a panel regression with fixed effects we can detect changes in costs and service capacity before and after municipalities enter an IMC.

Nordic countries are decentralized welfare states, and all have universal services for children and families in general, and targeted in-home child protection services for "at-risk" families. The term child protection services describe "*the statutory system that aims to find, investigate and protect children at risk of being abused or neglected, or harming themselves by their asocial behavior, through specific and targeted interventions with or without the consent of the children and families involved*" (Pösö, Skivenes, and Hestbæk 2014, 477). In practice this means that all municipalities are obliged by law to detect all cases where children are being, or are in risk of being, subject to maltreatment. They are also obliged by law (and if necessary, by force) to displace these children from their caretakers and put them in public care. Few public services (if any) receive more criticism from the public than child protection services. The criticism is based both in cases where the professionals fail to protect a child in need and in cases where the CPS has wrongfully removed a child from its biological parents. Either way the CPS can be prosecuted and sentenced by court (Alstad 2022; Follesø 2021). A common denominator for challenges CPS face are the ones of assembling enough high competence personnel to exercise sufficient professional discretion. Central government has pinpointed the lack professional capacity in small municipalities as the main challenges that the service needs to overcome to provide high-quality services (NOU 2023). In literature on service quality measurement, competence and other characteristics of the work force can be labelled

measurements of input quality (Blåka, Jacobsen, and Morken 2021; Kelly and Swindell 2002; Rowley 1998).

The relation between intermunicipal cooperation and cost

As noted, empirical findings on the relationship between IMC and costs are highly inconclusive. In the following section we will outline two hypotheses to elucidate this ambiguity. The first is based in generic economic theory of production volume, size, and economies of scale. The second considers that most studies that try to link costs and IMC lack measures of service quality. Here, we outline a hypothesis based on transaction costs theory, implying that cooperation may incur extra costs and thus lead to increasing costs even when controlling for service quality.

IMCs can be regarded as a form of network or alliance where "two or more municipalities unite resources to solve a common task" (Jacobsen 2022). It is a widely used way of providing public services, both in Europe (Swianiewicz and Teles 2018; Hulst and van Muntfort 2007 and the US (Aldag, Warner, and Bel 2020). Starting with the premise that organizations are intentionally designed to achieve a set of goals or to solve specific societal problems (Egeberg 2020), cooperation is considered a tool to achieve a public good.

The general argument for why organizations choose to enter inter-organizational relations is that it expects that the benefit with doing so exceeds the cost. Such benefits are often linked to the expectation of economies of scale (Hirsch 1959). The assumption is that small production will result in spare capacity and higher unit costs than larger production. Larger sized production units may exploit capacity of equipment and manpower better than smaller production units. Transferred to the municipal context, shared production is expected to lower costs since production costs decrease as production volume increases (Bel and Warner 2015a; Blåka 2017, 1093; Brown and Potoski 2003).

Engaging in IMCs will, however, first and foremost benefit small municipalities, as larger municipalities will have sufficient capacity to obtain economies of scale on their own (Thomas Elston and Wang 2023). As both large and small municipalities engage in the same IMCs, it is thus necessary to at least control for municipality size to capture the effect of engaging in cooperation. Furthermore, the general cost level of a municipal service will also depend on the general economy of the municipalities. The better the economy, the more money is used on all services. This forms the basis for the first hypothesis:

H1: Controlling for municipality size and economy, municipalities that provide services through IMC will have lower costs than municipalities that provide the service themselves.

Empirical studies, however, show that effects of IMC on costs are mixed (Bel and Sebo 2021), indicating that whether economies of scale occur is more of an open question that needs further empirical scrutiny. A central role for all governments is to develop strategies to improve public services through different types of reform (Walker and Boyne 2006), either by internal reorganizations, different forms of privatization, or the

use of network solutions like shared service delivery (Pierre and Peters 2005, 2020). While the decision to privatize mainly lie in the expectation to save costs, shared service delivery is driven by concerns both about cost, but also service quality (Aldag and Warner 2018; Bel and Warner 2015a; Holzer and Fry 2011; Warner and Hefetz 2002). The goal of engaging in shared service delivery is thus often connected to extracting scale benefits linked to either increasing quality or decreasing costs – preferably both.

Furthermore, some studies even indicate that cost savings in many instances are not the main objective behind cooperation (Aldag and Warner 2018). Rather, quality improvements seem to have a higher priority for many services. Although studies on the effects on service quality show mixed results (Aldag, Warner, and Bel 2020), research shows that quality improvement in many instances is a more important driver for cooperation than economic efficiency. Blåka et al. (2023) for instance, finds that shared service delivery in some cases forces smaller member municipalities to increase spending to accommodate service levels set by larger member municipalities – leading to an overall increase in service quality. Higher service quality may also be associated with lower political transaction costs because it may make reelection more likely (Frant 1996; North 1990). If achieving higher service quality is the main goal with cooperation, we may expect shared service delivery to increase quality, nullifying any potential economic benefits of scale. Any potential cost benefits will be used to increase service quality – leaving the cost level constant.

This taps into issues of how shared versus single municipal production affects the quality-cost relation. In the case of Norwegian child care services a main argument for engaging in IMC is to increase service capacity by establishing larger production units that will make it easier to attract highly specialized and professional staff. Establishing an IMC in this field can thus be regarded as a willingness to prioritize the service area. Jacobsen and Kiland (2017) studied several cases of intermunicipal cooperation on child protection services and found that none of the cooperations were initiated with arguments to save costs. Rather, the main argument was reaching a necessary capacity to secure a minimum level of qualified staff in the services. In addition, they found that moving the service from each municipality to a common service increased the political "visibility" of the service. This, in turn put a stronger pressure on all participating municipalities to devote more money to the service to secure that the cooperation would be successful. As a result, child protection services received higher priority in all participating municipalities, resulting in more capacity (more staff) and higher educational level of the staff. The potential cost saving through up-scaling where in these cases used to increase service quality – nullifying IMCs effect on costs.

One may also argue that cooperation may increase cost. Economic organizational theory is often used to validate an argument that cooperation itself may lead to higher costs (se for instance Bel and Sebo 2021; Bel, Fageda, and Mur 2014; Blåka 2017). Prior studies show that cost savings through economies of scale vary substantially between different public services (Aldag, Warner, and Bel 2020). Blåka (2022) argues that cost reductions from cooperation will be more feasible in capital intensive services where outputs can be monitored and measured. In addition, a service's feasibility for being shared depends on its potential for being centralized. Services not directly depend on physical proximity to users are more suited for being provided through IMC. Examples of such services are central administrative services such as municipal auditing or ICT.

Many, if not most, public services are not of this kind. Rather, they are labor intensive, with rather modest fixed costs, as exemplified by schools, kindergartens, home based care, and primary health services (Jacobsen 2022). Economy of scale in such services will be linked to exploiting the capacity of their workforce. By holding these production factors constant, we may examine whether cooperation as a form of governance entails cost that the hierarchy (in-house production) are not exposed to.

Furthermore, cooperation between autonomous actors will most likely activate some costs. New organizational structures must be established, monitoring systems and control routines must be designed, and collaborating partners will have to use time and resources on bargaining and negotiating to reach collective agreements. Depending on academic tradition these costs are framed as transaction costs (Williamson 1996, 1999), agency costs (Fama and Jensen 1983), collective action costs (Feiock 2007), governance costs (Luo et al. 2015), or coordination costs (Brown and Potoski 2003; Jacobsen 2017; Lowery 2000). The argument is that cooperative arrangements will activate costs connected to "planning, adapting, and monitoring task completion" (Williamson, 1981:552–553). Kim et al. (2022, 14–15) divide these costs into decision costs associated with mechanisms arranged for "searching for information, negotiating, and bargaining", and autonomy costs or the costs of "monitoring and enforcing agreements" (see also Dahlstrom & Nygaard 1999). Other activities that might demand resources are possible defection costs associated with members possibly withdrawing from the collaboration, activating costs associating with redrawing and renegotiating contracts and organizational arrangements (McQuestin & Drew 2019). While all the costs discussed above may occur both in collaborative arrangements and in-house (municipal) production, the core argument from the transaction costs tradition is that these costs occur to smaller extent and may be easier to handle more efficiently in the latter (Brown and Potoski 2003; Williamson 1979).The main argument here is thus that cooperation entails some costs that are linked to this form of governance. This leads us to the second hypothesis:

H2: Controlling for municipality size and economy, as well as service capacity, municipalities that provide services through IMC will have higher costs than municipalities that provide the service themselves.

Data and methods

The organizations studied are Norwegian municipalities. Norway is a country with large responsibilities decentralized to municipalities (Ladner et al. 2019), combined with a basic principle of "generalist municipalities" – i.e. that all municipalities have the same responsibilities. Municipalities are multifunctional organizations delivering public services such as basic primary and secondary education (6 to 16 years), primary health care including institutional care for elderly, childcare, and kindergartens, as well as services connected to culture (libraries, youth clubs, etc.), emergency (fire services, emergency care), and technical services like water, road and park construction and maintenance. Municipalities vary significantly in size (number of inhabitants), from just below

300 to more than half a million inhabitants, with a median of approximate 6000. IMCs are not mandated in law, but still extensively used, mainly due to the large variation in municipal size (Jacobsen 2022). Child protection services is one of the fields where IMCs are most common. In 2021 more than half of the 356 municipalities participated in a cooperation with one or more other municipalities. It is thus a case with statistical dispersion enough for studying differences between in-house and intermunicipal production.

Economy of scale in child protection is, as noted in the theory section, hard to gauge directly. It will not be sufficient to only include children that already are in the system, since a large part of the CPS task is to detect and work on reaching out to children in need. A much-debated challenge is the cases where child protection services fail to detect children who need measures (Baklien 2009; Christiansen 2012). Each CPS has responsibility for all children in their jurisdiction. The child protection services at the municipal level have the main responsibility for detecting possible cases of concern about children's care situation, investigating submitted reports of concern, providing homebased assistance like parental guidance and family counselling services, and – in the most serious cases – to suggest that a child should be removed from its family. When a child is placed in a childcare institution, the responsibility is moved to the regional level. Municipal child protection service costs are thus highly dependent on the total number of children in the municipality, not only on the children receiving the service. Thus, we use costs per child (0–18) in each jurisdiction and not only children that have received the service.

The discussion on quality in child protection in Norway has revolved around the lack of numerical and professional capacity in small municipalities. Numerical capacity refers to the number for employees or full-time equivalents (FTEs). This is a measure of the organization's ability to meet challenges related to redundancy, or its "robustness". The Norwegian national authorities have gone to the extent of suggesting that the minimum numerical capacity in the municipal child protection services should be at the least five full time employed (Bufdir 2020), although these standards have not been formalized in national laws. In this study we measure this as the ratio of full-time equivalents (FTE) including professionals, assistants/trainees, and administrative/technical staff, to the number of children (in 1000s) in the age between 0 and 18 years in the municipality.

Professional capacity refers to the formal education of employees. In 2017, Norwegian authorities forwarded a "competence reform", stating that to obtain higher quality in the child protection services, the amount of formally qualified personnel (social workers, child protection worker) should be increased (Barne- og likestillingdepartementet 2017). Although specific demands on formal qualifications are not legally regulated, it has become a norm that most employees in the child protection services should have formal qualifications (at least a bachelor's degree) as either social workers or child protection workers (Bufdir, 2022). The formal educational background of employees is thus regarded as input quality necessary to provide child protection services of good quality (see for instance Blåka, Jacobsen, and Morken 2021 for a broader discussion on the term input-quality). The educational quality of staff is a common measure of service quality in person processing services like hospitals, schools, and care-services (Baker & Dickerson 2006; Chen et al. 2019; Scannapieco et al. 2012). In this study we measure professional capacity as the ratio of child protection professionals consisting of social workers and child protection

workers to the number of full-time equivalents in the service. Both types of qualifications are based on formal education in scientifically based institutions leading to bachelor and/or master's degrees.

Data on costs, capacity and education of staff was retrieved from the Norwegian National Bureau of Statistics (SSB). As the units in this analysis are municipalities, not cooperative arrangements, information on the employees (FTEs) in an intermunicipal arrangement is distributed on partner municipalities based on the cooperation contract specifying how much the municipality is paying for the partnership. This reporting is done either by the IMC or by the individual partner municipality. The Norwegian National Bureau of Statistics (SSB) conducts yearly quality controls on these data.

Data on cooperative arrangements was collected by the authors and based on previous studies of IMC in child protection services, a national register with information on all IMCs in 2019, and was checked against municipal webpages, cooperation contracts, minutes of municipal council meetings, and in some instances from e-mail and telephone requests to municipalities and IMCs. Municipalities providing child protection services organized in-house were coded 0, while those being members in an IMC were coded 1.

We also include the number of inhabitants in the municipality, to account for potential scale benefits linked to being a large municipal organization (see Thomas Elston and Wang 2023). As this variable is positively skewed due to many small municipalities, it has been log-transformed (natural logarithm). Even though panel data analysis with fixed municipality effects accounts for individual variation between units, we also include one possible confounder variable known to affect both quality and costs in intermunicipal cooperations: the general economy of the municipality. This was measured by using the amount of free income per capita measured in Norwegian kroner (NOK).

The analysis is based on a balanced panel of Norwegian municipalities covering the period 2003 to 2019. In 2020, a wave of municipal amalgamations was conducted, reducing the number from 428 to 356. As organizational amalgamation affects intermunicipal cooperation by incorporating previous partners into one organization, we decided to not include municipalities after 2019. Some amalgamations took place in the period between 2014 and 2019. These municipalities have been removed from the analysis. As the capital – Oslo – is both a municipality and a county (and extremely larger than the other municipalities in Norway), it has also been removed. The total number of municipalities in the current analysis is 366, covering the whole 17-year period. There are some variations on what exactly municipalities are cooperating on. The most common type is full cooperation, where municipalities share both the day-to-day work, emergency situations occurring outside office time, and emergency preparedness during weekends and holidays. In some instances, municipalities only cooperate on the two latter activities. In our analysis we do not include municipalities cooperating only on the two emergency types. This may thus represent an under-reporting of the number of municipalities that are cooperating. A typical challenge when measuring effects of organizational form is the potential problems of endogeneity. Does cooperation affect spending or does municipalities that use more money in the first place to greater extent choose to engage in IMC. We argue that the timespan in this study, where we capture both before and after the

Table 1. Univariate statistics and bivariate correlations. Pooled data for 17 years. Number of observations = 6168 – 6515. Correlations > .03 significant at the 1%-level.

	Mean (std)	Min-max	Y1	Z1	Z2	X1	X2
Y Net costs (NOK) per child between 0–18[a]	7132 (5383)	0–101103	1				
Z1 Numerical capacity (FTEs per 1000 between 0–17)[a]	4.1 (2.2)	.3–28.2	.66	1			
Z2 Professional capacity (professional FTEs to all FTEs)[a]	.78 (0.21)	0–100	−.06	−.09	1		
X1 IMC (1 = yes)[b]	.30 (0.46)	0–1	.28	.30	−.03	1	
X2 Municipal size (log)[a]	8.5 (1.2)	5.3–13.4	−.06	−.20	.01	−.28	1
X3 Free income per capita (1000NOK)[a]	47468 (16235)	20563 – 171434	.47	.55	−.07	.42	−.43

[a]Datasets publicly available at Norwegian National Bureau of Statistics (SSB) (ssb.bo).
[b]Data collected by Berge, S. L. R. (2022): Interkommunalt samarbeid i barnevernstjenesten (thesis available at: https://uia.brage.unit.no/uia-xmlui/handle/11250/3007958).

transition from single- to intermunicipal service delivery, encompasses these potential challenges. In 2003, which is the first year, 6 municipalities (1,6%) engaged in IMC, while as in 2019, which is the last year in the panel 210 municipalities (57,4%) shared provision of this service.

Table 1 display the univariate statistics as well as bivariate correlations between the variables (pooled).

The analytic strategy is built on estimating two different equations. The first Equation (1) tests the first hypothesis and employs net costs per child between 0–18 in the municipality as dependent variable and intermunicipal cooperation (X1), municipal size (X2) and municipal economy (X3)) as independent variables.

$$Y_{it} = \beta_0 + \beta_1 X1_{it} + \beta_2 X2_{it} + \beta_3 X3_{it} + \alpha_i + \mu_{it} \tag{1}$$

Where:

Y = Cost per child 0–18, cost per child registered in child protection services, numerical capacity, professional capacity

X1 – X3 = Independent variables (IMC, municipality size, free income per capita)

i = each municipality (1–366)

t = year (1–17)

α = municipality specific intercepts

μ = error term

The second Equation (2) is used for testing hypothesis 2, including the two measures of service capacity; numerical capacity (X4) and professional capacity (X5) as independent variables as well as the same controls as in (1).

$$Y_{it} = \beta_0 + \beta_1 X1_{it} + \beta_2 X2_{it} + \beta_3 X3_{it} + \beta_4 X4_{it} + \beta_5 X5_{it} + \alpha_i + \mu_{it} \tag{2}$$

Results

To find the optimal model for estimating the effect of IMC, we first conducted the LM test (Breusch-Pagan Lagrange multiplier) to see whether ordinary least square (OLS) models on the pooled dataset would fit the data better than a random effects models with panel data. The tests for all four equations were highly significant ($p < .000$), indicating that random effects

models are preferable to OLS models. Next, we compared a model with municipality fixed effects with a random effects model for all four models. A fixed effect model is primarily aimed at estimating changes that occur over time while controlling for time invariant differences between municipalities, thus controlling for non-observed differences between units and reducing the danger of model misspecification due to omitted variables. However, it also assumes that the main independent variables – here: IMC – change significantly over time. To test whether a random effect model was preferable to the fixed model, we conducted a Hausman test for all four models. These were all significant ($p < .000$), leading us to reject the null hypotheses that random effects models were preferrable. Using the Wald test, we also tested whether the coefficients for each year were jointly equal to zero. These tests were also significant ($p < .000$), indicating that fixed time effects should be included in the model. Finally, we tested for heteroscedasticity using the modified Wald statistic for groupwise heteroscedasticity, again yielding highly significant results ($p < .000$) indicating heteroscedasticity, so we chose a model with robust standard errors.

Table 2 shows the results of the final models.

To test the robustness of the results in Table 2, we conducted both a random effects model on the panel data and an ordinary OLS model on the pooled dataset. The random effect models yielded highly similar results to the fixed effects model, with the difference that IMC had a slightly stronger positive and more significant effect on net costs (NOK) per child between 0–18 and Net costs per child in child protection care. Random effects models also yielded almost identical effects both in size and significance. Ordinary pooled regression models resulted in reinforced effects of IMC on net costs. The alternative analyses thus reinforce the findings from the fixed effects models.

Although our focus is whether costs associated with IMC can be explained by either cooperation itself or changes in input quality, we also conducted some extra analyses with the two quality measures (X4 and X5) as dependent variables controlling for costs per child. Even when controlling for costs per child, IMC had significant positive effects on both professional capacity (coefficient = 6.09, sig < .05) and numerical capacity (coefficient = .58, sig < .01).

The analysis does not support hypothesis 1 stating that engaging in cooperation will reduce costs in child protection services. On the contrary, the first analysis shows that engaging in a cooperation increases costs significantly. The second analysis show that the positive effect (cost increase) of IMC is reduced when we include input quality as controls. Some of the cost increase is thus explained by an increase in the number of

Table 2. Panel regressions with fixed effects (municipality, year). Dependent variable = net costs (NOK) per child between 0–18 years in the jurisdiction. Robust standard errors in (). Coefficients for individual years not displayed. * $p < .05$, ** = $p < .01$. Groups = 366, full panel, no of observations: = 6164.

	Equation (1)	Equation (2)
X1 IMC (1 = yes)	768.06* (332.27)	623.29* (297.27)
X2 Municipal size (log)	−7731.22** (2627.23)	−4428.37* (2069.61)
X3 Free income per capita (1000NOK)	0162053 (.027272)	.0263431 (.029242)
Z1 Numerical capacity (FTEs per 1000 between 0–17)		666.84** (164.13)
Z2 Professional capacity (professional FTEs to all FTEs)		6.69 (5.11)
Constant	68352.03 (22319.25)	37773.34** (17922.30)
R^2 within	0.49	0.53
F-value	61.74**	71.74**

employees, while the effect of the staffs' level of education is not significant. These results indicate that some of the costs cooperating municipalities experiences are used to cover expenses for a higher number of professionals than non-cooperating municipalities have. Interestingly, municipalities that share child protection services experience both higher costs and higher service quality. Thus, some of the increase in spending we see from the first analysis is because municipalities who cooperate invest in more professionals. However, there is still a significant cost increasing effect of cooperation. The results support hypothesis 2, stating that cooperation entails extra costs.

Discussion

The general argument for why organizations choose to enter inter-organizational relations is that it expects that the benefit of doing so exceeds the costs (Powell 1990). These benefits have traditionally been linked to the expectation of economies of scale (Hirsch 1959). Many scholars have through the past decade raised the question of whether these benefits really exceed the costs of cooperation (Blåka 2022; Thomas Elston and Wang 2023). The findings in this study contribute to a further nuancing a field of research already containing quite varied results (Bel and Sebo 2021; Bel et al. 2022).

One of the main problems associated with empirical studies on costs associated with IMC is that data on service quality often is hard to obtain and thus is only seldomly included as a control (Bel and Sebo 2021; Bel & Warner 2015b). Our findings indicate that municipalities sharing service production display higher relative costs compared with municipalities providing the service on their own, supporting the first hypothesis. One important explanation for this increase in costs is improved capacity in the child protection service. However, not all the cost increase can be explained by increased service capacity. Engaging in cooperation seems also to activate costs associated with the cooperation itself, be it costs linked to coordination, transactions, or some form of collective action that the hierarchical production mode is less exposed to. The study supports the second hypothesis that IMC significantly increases costs in the field of child protection services. Some of the increase in costs cooperating municipalities experience is caused by their investments in more personnel, but not all.

These findings can be utilized to shed new light on two important aspects concerning the relations between IMC and costs. The first aspect concerns the relationship between IMC, costs, and capacity in a field with the characteristics of child protection services. The main objectives for adapting new organizational solutions like inter-municipal arrangements may differ between policy fields (Pollitt 2000; Pollitt and Hupe 2011). Much of policymakers' argumentation for engaging in cooperation on child protection services in Norway has been framed within the need to increase quality, which in this case means service capacity. As noted in the study of Jacobsen and Kiland (2017), entering a cooperative arrangement on child protection was in most instances also an indication of a political willingness in the participating municipalities to prioritize this specific service area. Increased costs following cooperation were accepted as the only solution to a problem related to giving services of acceptable quality to this particularly vulnerable group of citizens. The finding in the present study thus provides a broader validity to the case studies conducted by Jacobsen and Kiland (2017) and to the theoretical notion of how service quality may be associated with lower political transaction costs because it may make

reelection more likely (Frant 1996; North 1990). It also coincides with Blåka et al. (2023), who show that cooperation may set the service in question firmly on both political and administrative agendas – forcing cooperating municipalities to heighten their economic prioritization of the service. This again points to economist's questions of where the optimal trade-off between quality and costs lies. In our case – what makes local governments decide when a service is good enough? As pointed out by White (2001, 499): "*Resources are limited and society's goods and services not boundless*". It is thus often up to policymakers to determine what service level is sufficient, given the price. The results from our analyses can in this sense be interpreted as a tendency where cooperations drives municipalities to prioritize the service and thus heightening the level of capacity that is considered optimal, all else being equal.

The second aspect is to nuance the type of service that is studied. As noted, this finding partly contradicts comparable studies of refuse collection (Sørensen 2007) and fire services (Blåka 2017) in the Norwegian context, and comparable studies in other national (mostly European) contexts (Bel and Sebo 2021). Rather than reducing costs or not having any effect on costs, the study shows a cost increase even when controlling for possible improvements in capacity. Even though these studies, of course, to some degree differ in parameters used, the divergence in effects of IMC makes it relevant to discuss whether different characteristics of the task at hand makes them more or less feasible for extracting cost benefits from co-production. In the meta-study conducted by Bel and Sebo (2021), eleven of the eighteen studies examined were studies of solid waste management, one was of fire services, and one were of tax collection. Solid waste management and fire services are clearly capital-intensive services with substantial fixed costs, and thus could be more likely candidates for extracting economies of scale. They are also services that are easier to gauge and monitor than human processing services, a characteristic associated with lower transaction costs. Tax collection is, on the other hand, a labor-intensive service but also characterized by low geographical dependence. This makes this service, and services like municipal auditing, more feasible for centralization and thus less prone for transaction costs (Blåka 2022).

The same meta-analysis (Bel and Sebo 2021) detected a significant difference of IMC on costs between studies of single services (mostly solid waste), "multiservice" and "several services". The latter category includes capital-intensive services, but also other services like administration, schooling, social benefits, and childcare. When this distinction is entered in the meta-analysis as a dummy variable (op.cit., Table S4) where single services are coded as zero, they report a highly significant positive effect of IMC. This finding indicates that when other services are included, IMC tends to result in *increasing* costs. To our knowledge, this study is the first to report on any effects of IMC on costs in the field of child protection services. We have argued that this is a task with a somewhat limited potential for actualizing economic benefits of scale. It is labor intensive, with rather modest fixed costs. It is also difficult to gauge, making it hard to determine unit prices (Brown and Potoski 2003, 2005). Finally, it is a service that is at least partly geographically dependent in the sense that it requires physical callouts and good knowledge about local conditions, again making it less prone to benefits of centralization (Blåka 2022). In general, it shows that one should be careful with considering effects of IMC as universal, independent of task characteristics (Aldag, Warner, and Bel 2020; Shrestha and Feiock 2011).

Finally, this study show that increased costs associated with IMC cannot be explained fully by an increase in service capacity. IMC seems *in itself* to be a source of extra costs when

increase in quality in the form of numerical capacity is controlled for. There is still an extra cost applying to those municipalities engaging in a collaborative endeavor. Although it is possible that this cost difference may be caused by non-measured quality gains like speed, accuracy, and care quality, it is also likely that these costs can be attributed to transaction or coordination costs (Bel et al. 2022; Williamson 1996). Either way the cost of IMC still appears, both in this and other studies, somewhat as a black box.

Even though this study has several strong points; it combines panel data over a long period in time (capturing the transition before and after engaging in IMC) with objective data on indicators of both service costs and capacity in a service field seldom studied in the context of intermunicipal cooperation, there are also several limitations that should be addressed. The results are confined to one national context characterized by an affluent economy, a homogenous and small population scattered over large geographical areas, and a political situation with little or no dramatic political polarization (Baldersheim and Rose 2010; Ladner et al. 2019). Only similar studies from other national contexts in the same service field will provide more knowledge on whether findings from this national context can be generalized to other contexts. Furthermore, future studies should look for other measures of quality. Although objective quality measures are difficult to establish in services like child protection, scholars should in future studies pursue quality measures beyond input, to measure how processes and outputs affect public services ability to reach societal goals. In the case of child protection this could mean how governance structures in last instances enable or hinder children's safety and well-being.

Moreover, the study is limited to one specific organizational form of IMC. As pointed out by for instance Bel et al. (2022), cooperation comes in different shapes. In the case of child protection services in Norway, the only legal form of IMC is the "host municipality" (see Blåka 2022 for a more detailed description of forms of IMC in the Norwegian context) which can be characterized as a cooperation "without own organization" (Bel et al. 2022). This is an organizational form that in principle may lower transaction costs as partners delegate responsibility to one authority with responsibility for all practical, day-to-day operations instead of creating a new joint organization (Blåka 2017). The partner municipalities are not participating actively in the day-to-day work (Jacobsen and Kiland 2017), but only in specific instances concerning children and families being citizens in the respective munici-pality. Moreover, as only one legal form exists and has existed for the whole time period, it is also possible that a standardization of the organizational structure and processes has emerged. As this may lower the need for a new cooperation to find out "how to do it" by themselves, it may also lower the introductory costs of establishing the cooperative arrangement. Still, the findings in this study indicate that this organizational form of collaboration comes with an "extra cost". Future studies should investigate if different organizational forms are linked to different costs and quality effects by comparing cooperative forms in the same service field (see Voorn et al. 2019). Studies should also, by comparing practice across countries, compare nations with diverse models with nations – like Norway – having one, standardized form to investigate if there are efficiency and quality gains through standardization of organizational forms. If the answer to this question is "yes", it would provide important information for national authorities on the most efficient way of regulating IMC across different service fields.

Although the production and provision of child protection services have several characteristics in common with services that are hard to gauge and in need for redun-dancy, the conclusion that cooperation in itself drives up costs for such services should

undergo further empirical investigation using more refined measures to uncover what costs constitute cooperation costs, as well as spanning other institutional and sectoral contexts.

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