
Community-based outcomes of interlocal cooperation in social services

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Abstract

We investigate the effects of interlocal cooperation in social services. We focus on three poverty-related outcomes: Guaranteed minimum income, housing rental support, and diagnosis of children at risk. We had a rich database on municipalities in Catalonia. First, we apply a quasi-experimental strategy and then perform robustness analyses using panel models. Our most robust results indicate that cooperation has a positive and significant effect on rental assistance, but has no significant effects on guaranteed minimum income. This suggests that cooperation may be effective in improving community-based outcomes where these are determined by services which involve more complex tasks and procedures.

Keywords: Intermunicipal cooperation, community outcomes, social services, complexity.

JEL Classification: H75, H77, H83, I38

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Introduction

The spatial suboptimality of government jurisdictions has long been recognized as a major obstacle to the efficiency and effectiveness of public services. Suboptimality can derive from different factors, among which the most prominent are the scale of operation and its financial implications, and the existence of spill overs -whether positive or negative- for other jurisdictions (Agranoff and McGuire, 2003). Amalgamation has been a policy response to suboptimality; most often it has been a top-down reform, usually imposed to municipalities by higher government jurisdictions, and assessments of amalgamations effects tend to be very sceptical, when not negative, about their effects on both costs and in the quality of government (Andrews, 2015; Blom-Hansen et al., 2016; Swianiewicz, 2018; Galizzi, Rota and Sicilia, 2023; Tavares, 2024).

Intermunicipal cooperation has been a different policy response. It has been usually based on horizontal voluntary cooperation, with drivers that have been widely studied (see Bel and Warner, 2016 for a meta-regression), and so have been their financial effects (see meta-revisions in Bel and Warner, 2015, and Silvestre, Marques and Gomes, 2018; meta-regression in Bel and Sebó, 2021). Theoretical and empirical literature on inter-municipal cooperation has grown in both quality and quantity in recent years, even if empirical findings do not allow for clear patterns to be established regarding effects on types of outcomes such as service costs, service efficiency, or service quality. Yet, other topics are still much less researched, such as the community-level effects of cooperation for public service delivery.

Analysing community-based outcomes implies looking beyond the specific process of providing a singular public service (whether the emphasis is placed either on costs or on the quality of the delivery process) or on the specific effects on the person receiving the service. Public administration and management literature about the impacts on communities originated by intermunicipal cooperative arrangements is still an under-researched area, and more studies are needed in order to explore the generation of final and community-based outcomes (Cristofoli and Macciò, 2017). These outcomes should be associated with the effects of public services on communities, such as generating contextual improvements. In

fact, they are increasingly recognized as relevant indicators of the effectiveness and sustainability of particular service provision programmes such as health and social services.

The existing evidence on the effects of cooperation on community-based outcomes is very scarce, and heavily concentrated in the local development and employment sector. A few interesting examples are worth mentioning. Banaszewska et al (2022) study the effect of intermunicipal cooperation on local development in Poland, and their results indicate no significant effect on creation of local firms, but local unemployment decreased. More recently, Binet, Lebrun and Leprince (2023) found a positive effect of intermunicipal cooperation on creation of local firms in France, suggestion fiscal integration and better provision of market-enhancing public goods as potential drivers. Kwak and Feiock (2024) study the effects of intermunicipal cooperation in Florida, USA, and find a positive and significant effect on the creation of green jobs. Existing evidence on community-based outcomes is scarce and results are divergent; more evidence is needed on the subject, and this is the aim of our research. Interestingly, Tricaud (2024) analyses effects on intermunicipal cooperation in France, using a difference in difference strategy. Tricaud distinguished between municipalities that were forced to cooperate (following national legislation in 2010) and municipalities that entered into cooperation voluntarily and found that forced cooperation increased housing permits (hence housing construction) and decreased the provision of childcare and library services, and no overall effect on economic activity was found.

Empirical evidence on the effects of intermunicipal cooperation on community-based outcomes did not provide systematic results so far. More evidence is needed on the subject, and this what we aim with our research. We contribute to the existing literature by means of an analysis of the effects of interlocal cooperation on community-based outcomes. The specific service area for which the analysis is conducted is the provision and management of social assistance programs. Analysing the direct impact of intermunicipal cooperation on poverty would require detailed data on poverty levels or inequality indexes at the municipal level, and such data are not available. However, we have available detailed data on several social assistance services that are the responsibility of the regional administration, and whose management is delegated to local governments. Being eligible for any of these programs has

a close relationship with individual or family poverty; hence, they are expected to influence poverty, hence an impact on community well-being, based on Rawls's (1971) principles of justice.

Indeed, social transfers have been found to be effective in reducing poverty (Smeedy, 2006; Nolan and Marx, 2011). Several scholars have argued, though, that because poverty is a multidimensional problem and social programs do not capture all relevant policies and potential private arrangements, social spending may not be a good indicator of anti-poverty policies (e.g., Esping-Andersen and Myles, 2011). However, robust multivariate analyses carried out in Caminada, Goudswaard and Koster (2012) show that a significant relationship between social transfers and poverty levels exist, even when controlling for the multidimensionality of poverty and for other social arrangements. Indeed, while it is widely recognized that poverty is a multidimensional problem and the analysis of its multidimensional characteristics has greatly improved (see, for example, Akire et al., 2023), it is also recognized that social transfers have a significant effect on poverty levels (Celikay and Gumus, 2017; Miežienė and Krutulienė, 2019).

We study the effect of interlocal cooperation on the performance of two means-tested social assistance programs: guaranteed minimum income and housing rental support. We extend our analysis with a third program of a different nature, pre-intervention diagnosis of children-at-risk. In contrast, we do not evaluate social insurance programs, because they are all centrally managed and there is no intergovernmental cooperation involved (neither regional nor local). In addition to the administrative data for the services we study, we have available a rich and highly representative database of the municipalities of Catalonia for different years in the period 2012-2022, and which allows us to identify the municipalities' cooperative status in relation to social assistance services.

We apply a quasi-experimental strategy to investigate the relationship between cooperation in social services and the three outcome variables, and then perform a robustness analysis using fixed and random effects panel models. While we find no effect for the guaranteed minimum income, we find a significant and positive relation between co-operation housing rental support. Results for diagnosis of children-at-risk are less clear; they tend to be positive,

but very weakly significant. These results suggest a key role for service complexity: When case management requires more specialized workforce and more specialized management, cooperation can improve outcomes, whereas it might be ineffective for simpler services. Next, we provide theoretical and empirical background, both general and specific for social services.

Literature review

Intermunicipal Cooperation

Intermunicipal cooperation is proposed as a mechanism that enables the reconciliation of the guiding principles of local government systems: local autonomy and quality of democracy on the one hand, and efficiency and optimal service provision on the other (Teles and Swianiewicz, 2018; Teles, 2016). Intermunicipal cooperation enables the joint provision of a service without altering the territorial structure, unlike municipal mergers; therefore, it allows more complex and sophisticated services to be offered (Dollery et al., 2020).

Intermunicipal cooperation aims to address one of the most common problems in local governance: the size of the municipality and the potential to benefit from economies of scale (Ostrom, Tiebout and Warren, 1961). Thus, a primary motivation for intermunicipal cooperation has been to improve the efficiency of local service provision, which has been labelled as “collaborative efficiency” (Elston, MacCarthaigh and Verhoest, 2018; Zeemering, 2019). However, Bel and Warner (2015, 2016) highlight that the analysis of cooperation among municipalities requires a theoretical framework that includes factors beyond cost-efficiency classical concerns. Using a meta-regression strategy, their research indicates that intermunicipal cooperation should include major policy challenges related to organizational, structural and spatial concerns. Indeed, their results show that although fiscal constraints may trigger cooperation, this may not always imply benefits in term of efficiency. In this line, in addition to increase efficiency, other relevant objectives have been emphasized for cooperation, such as improving service quality, accessibility and resilience (Aldag and Warner 2018; Warner, Aldag, and Kim, 2020).

Based on the expectations of improved efficiency and also the quality and accessibility of local services, inter-municipal cooperation has expanded in recent decades. In a context of new challenges and transformations of local public services, as well as the incorporation of new responsibilities for local governments, this organisational formula can be advantageous compared to other more politically or institutionally costly options. Local entities, in this transformative situation, may feel pressured to cooperate to avoid losing competencies (Silva, Teles and Ferreira, 2018), to maintain the territorial structure, or due to historical inertia (Teles, 2016).

In this context, the discussion on the relationship between promoting economies of scale and generating transaction costs has also been addressed. In the case of inter-municipal cooperation, transaction costs are likely to be high due to processes such as achieving information, coordination, negotiation and division, enforcement, and monitoring (Feiock 2007). According to Hawkins (2017), the characteristics, specific activities and nature of the collaboration are relevant in terms of impact of transaction costs. The number of members in the agreements or delivery process also seems to be an important factor; having a high number of members or agents in the service delivery process can increase transaction costs as trust is harder to achieve (Bel and Warner, 2015; Tavares and Feiock, 2018), and the costs of coordination and the multiple principal problem increase (Blåka, 2017; Voorn, van Genugten and van Thiel, 2019).

Beyond the reflection and discussion of economies of scale and transaction costs, the effect of cooperation on quality and accessibility to public services has raised increasing attention. Cooperation makes possible the specialization of labour and processes, which may be well beyond the capabilities of small municipalities using single provision. This may be particularly important in services that require complex case management, with small caseloads in small municipalities (Elston, Bel, & Wang, 2023).

Evidence on cooperation in social services

The first empirical analyses on the effects of intermunicipal cooperation, discussed in Bel and Warner (2015), Silvestre, Marques and Gomes (2018), and Bel and Sebó (2021), did not include specific studies on social services. The empirical literature has grown extensively in the current decade. In addition to the studies on community-based outcomes discussed above (Banaszewska et al, 2022; Binet, Lebrun and Leprince, 2023; Kwak and Feiock, 2024; Tricaud, 2024), others have appeared on the effects on global expenditure in the municipality (Luca and Modrego, 2021), costs or efficiency related to specific services (Baba and Asami, 2020; Campos-Alba et al., 2020; Elston and Dixon, 2020; Bel and Belerdas-Castro, 2022; Bel and Elston, 2023; Pérez-López, Thanh Dung Tran and Dollery, 2023; Silvestre et al.; 2023; Notsu, 2024; Arachi et al., 2024); on quality of specific services (Arntsen, Torjesen and Karlsen, 2021; Blåka, Jacobsen and Morken, 2023; Elston and Bel, 2023; Bel and Elston, 2024). Interestingly, studies that study effects both on costs and quality have recently appeared, for tax services in England (Elston, Bel and Wang, 2023), and education services in Sweden (Sandberg, 2024).

Beyond the research we mentioned above, a few recent empirical studies deal directly with social services. Since they are directly related to the sector we are analysing, we provide more details. Silvestre et al (2020) analyse effects of intermunicipal cooperation on the expenditure in four services in Brazil, among them social services, for 2013-2015, and find that cooperation is associated with a lower weight of social service spending on overall expenditure, which is interpreted as cost reduction; but this effect disappears as the municipal population increases. Aldag, Bel and Warner (2020) study the effect of cooperation on 12 services in New York State for 2009-2013, among them elder services, and find that cooperation increases costs in this specific service. Blåka and Jacobsen (2023) analyse costs of child protection services in Norway for (2003-2019) and find that cooperation is associated with higher costs. Vidoli et al (2024) analyse the effect of joining an intermunicipal association in Italy on the unitary costs of providing social services and find that the type of union is key for achieving greater cost efficiency. Finally, Elston, Bel and Wang (2024) analyse the administration of housing assistance programs in England, and find that cooperation did not produce significant cost savings, but it did result in a substantial and statistically significant decrease in service quality.

These five studies deal with different types of social services (sometimes specific services; other times global spending on social services), but all of them have in common that they

analyse financial outcomes (cost or efficiency) or administration of social services. Our research differs from the previous analyses in that we are interested in community-based outcomes, so we analyse the impact of intermunicipal cooperation on the performance of various means-tested social assistance programs and a diagnostic program of children at risk, who have a direct impact in the poverty level.

The services we use to assess the impact of cooperation on service quality, understood as effective service delivery, require varying degrees of complexity in case management, and may be relatively uncommon in small municipalities. Therefore, even if the existing evidence on cooperation and quality is far from conclusive, we expect cooperation to have a positive effect on the effectiveness of provision. Hence, the main hypothesis that we will test with our empirical analysis can be written as follows:

H1: Intermunicipal cooperation has a positive effect on the effectiveness of service provision.

Social services in Catalonia: Regulatory and institutional context

While social assistance programs and social insurance programs are both effective tools to reduce poverty, Smeedy (2006) suggests that social insurance programs contribute more than social assistance to poverty reduction in the countries of the European Union (not so in the United States). However, the fact that social insurance contributes more to poverty reduction could be a consequence of much higher aggregate spending rather than a possible greater anti-poverty effectiveness (compared to social assistance programs). In fact, recent quantitative evidence (Leventi, Sutherland, and Tasseva, 2018; Miežienė and Krutulienė, 2019) shows that social assistance programs targeting social exclusion and family/child spending have the strongest relative anti-poverty effect.

Regulatory context

Social insurance programs (e.g., retirement pensions or unemployment payments) in Spain are managed by *Seguridad Social* (Social Security), which is a central government agency. This agency processes directly (in-house) all program eligibility claims and subsequent monetary transfers to benefit-eligible citizens. Thus, inter-institutional cooperation is not a feature of this system. Unlike social insurance, social assistance programs are the responsibility of the regional governments.¹ Therefore, regions are the provider jurisdiction. In our case, the *Estatut d'Autonomia* of Catalonia -Statute of Autonomy - establishes as exclusive autonomous competence (art. 166) the provision of social services; and among them, the regulation and provision of personal services and primary care services. In addition, the art. 84. of the Statute grants local governments the power to design and implement policies on these same issues.²

Institutional and organizational context.

The local system in Catalonia is marked by pronounced fragmentation and a multitude of local territorial entities, akin to other Franco-Napoleonic systems (Page & Goldsmith, 1987). Specifically, this entails an exceptionally high number of local entities comprising municipalities, counties, and provinces, each with distinct territorial boundaries and corresponding governance structures, alongside non-compulsory cooperative entities such as inter-municipal associations and consortia. Counties (*Comarques*) are the key local institution for the purpose of our research because they are the channel through which most of the inter-municipal cooperation takes place in Catalonia, and this is specifically the case of social

¹ The Spanish country-wide regulation for local governments enables municipalities to provide specific tasks related to Social Services (Local Government Act, Law 7/1985), which have to operate according to regional regulations.

² In addition to the provisions in the Regional Statute, it is worth noting that the regional Law 12/2007 on Social Services, constitutes the fundamental legal framework that regulates the organization, provision, and financing of social services in Catalonia. It defines the rights and duties of citizens regarding social services, establishes the general principles that should govern their provision, and determines the tasks and obligations of the various involved public administrations.

services. Each one of the 947 municipalities in Catalonia is member of one of the 42 counties (plus the specific entity Aran). The counties are governed by an indirectly elected county council: Based on the results of the municipal elections in the county's municipalities, each political party appoints its county councillors. The county council elects the president, who forms the government with several county councillors. Among other functions, the county council provides the services that the municipalities have voluntarily delegated to the county.

Within this institutional context, social services in Catalonia operate as a public social protection system aimed at ensuring the well-being of individuals and families who are in situations of vulnerability or at risk of social exclusion. This system is managed in a decentralised manner, involving municipalities, county councils, and the regional administration. Our research deals with basic social services, which administrative management is carried out based on *Àrees Bàsiques de Serveis Socials* (Basic Areas of Social Services -ABSS-). ABSS can be of different types: i) Municipal ABSS, formed by a single municipality with a population greater than 20,000 inhabitants; ii) County ABSS: Formed by the municipalities that belong to a county and do not meet the population requirement of 20,000 inhabitants to operate alone.³

Due to the extraordinary fragmentation of the municipal structure in Catalonia (as noted above), there is a large number of service units with variable volumes and capacities, and the interaction between the different levels of government is constant and intense. The primary responsibility of small municipalities is on detecting situations of vulnerability risk. In addition to this, many municipalities choose to strengthen the activities carried out by both the county councils and the regional administration. Therefore, given that the joint service provision already constitutes a form of inter-municipal cooperation (interlocal, specifically), the increase in actions along these lines indicates the existence of cooperation. This cooperation allows for

³ There is also the possibility of organizing intermunicipal cooperation by means of *mancomunitats* (mancommunities), which are special purpose voluntary associations formed by municipalities. While this is not uncommon in services such as solid waste collection, it is very exceptional in the case of social services.

the channelling of municipal autonomy and the will to act, adapting to the specificities of each jurisdiction, while maintaining the formal attribution of functions to the designated entity, which in this case is usually the county council.

Variables, Data and Methods

Variables and Data

Our panel includes four dependent variables with which we intend to approach Community-based outcomes. We use administrative data gathered by the Statistical Institute of Catalonia (IDESCAT) at the level of ABSS. We use the following indicators: (1) share of the population receiving the guaranteed minimum income, (2) housing benefits per housing unit; and (3) number of newly opened files for children at risk per 10,000 inhabitants. We have annual data between 2012 and 2021. Two of these three variables (1 and 2) directly measure authorities' capability to transfer resources to the poorest, improving community well-being in the sense of Rawl's theory of justice (making the worst-off better off). The remaining variable (3) measures the capacity to keep children in the community safe. That is to say, this variable allows us to assess the degree of vulnerability within this particular group and develop specific programs to address poverty and other causes of exclusion. Below we provide a more detailed explanation of each of our 'outcome variables':

Guaranteed Citizen Income (RGC): is an economic and social benefit aimed at guaranteeing a minimum income to people and families in a situation of economic vulnerability in Catalonia. This benefit aims to ensure that all people can meet their basic needs while also promoting their social and labour inclusion. The first stages of the administrative procedure to claim the benefit are normally carried out in the ABSS, and the payment is made by the regional government. We use as indicator the share of the population receiving the guaranteed minimum income.

Housing rental assistance (HRA): benefits are financial assistance intended to help individuals and families facing economic difficulties to pay their housing rent. The main purpose of these

benefits is to guarantee access to decent housing and to prevent situations of eviction or residential exclusion. The first stages of the procedure are normally carried out in the ABSS, but the formal task is a responsibility of the regional government. We use as indicator the percentage of households receiving housing benefits.

Diagnosis of risks for children (DRC): Informative and risk reports are tools used by social services and other public agencies to collect and assess information about situations that may pose risks to the safety, health, or well-being of especially vulnerable groups such as children. These reports are usually processed by ABSS, in a joint work with other agencies, to assess and appropriately address situations of risk or vulnerability affecting minors. The indicator used is the number of processed reports weighted for population (ratio per 10,000 inhabitants).

Inter-Municipal Co-operation (IMC). Our main independent variable is the population-weighted share of municipalities engaging in IMC in each Basic Social Service Area (ABSS). We exclude ABSS consisting of a single municipality with more than 20,000 inhabitants, as they are legally obliged to provide the service themselves and lack discretion over IMC engagement. IMC data comes from a bi-annual survey conducted by the Carles Pi i Sunyer Foundation. The population covered in the municipal data within the county-ABSS that we study ranged from a minimum of 70.8% in 2014 to a maximum of 99.8% in 2020. The average population covered with the five waves was 89.8%. We use five waves (2013, 2014, 2016, 2018, 2020) to construct a relatively balanced ABSS panel of 186 observations. It is important to remember that we cannot use the municipal cooperation status (yes=1; no=0) because the data for the dependent variables are available at the ABSS level (not at the municipal level).

Table 1 below depicts the descriptive statistics for our data set. The mean (median) share of population receiving guaranteed citizen income was 0.76% (0.7%), while almost twice as big a share of the households received the housing rental assistance. In the average ABSS, there were around 64 files for minors at risk per 10,000 inhabitants being filed. About 74% of the population is typically covered by additional cooperation in social services, but there are both some ABSS with no coverage at all, and some with complete coverage. ABSS per capita gross

family incomes range from a bit below 11,000 to about 20,000 Euros, with a mean around 14,500.

(Insert table 1 here)

Correlational motivation

To motivate our analysis, we want to establish for our specific context also the finding that has been documented comprehensively in the previous literature: Social assistance is targeted at poorer individuals in order to improve their income or conditions of living. Figure 1 illustrates the correlation between lagged (one year) income and the three variables of interest: the share of the population receiving guaranteed income, the share of the population receiving rental support, and the share of files for minors at risk. We find a significant relationship for all three outcome variables, with correlation coefficients of 0.29 (guaranteed minimal income, significant at 10% level), -0.30 (rental support, significant at 10% level), and -0.57 (minors at risk, significant at 0.1% level). Therefore, improving the coverage of these social assistance programs (in our case, through enhanced horizontal cooperation) is likely to increase well-being on the community level.

(Insert Figure 1 here)

Empirical Strategy

To identify the effect of IMC on the extent of provision of social services, we apply a newly developed Difference-in-Differences estimator by De Chaisemartin et al. (2024). This estimator is tailored to a setting where all treatments are continuously distributed (such as in our measurement of the population-weighted share of co-operating municipalities), even in the first period. That is, in contrast to the other main continuous DiD estimator (Callaway, Goodman-Bacon, and Sant'Anna, 2024), which does require that all units be untreated in the first period -as usual in DiD-. The De Chaisemartin et al. (2024) method can estimate two target parameters, based on a testable parallel trends assumption:

Average of Switchers' Slopes (AOS):

In the two-period case, this parameter is defined as follows:

$$\delta_1 := E \left(\frac{E(Y_2(D_2) - Y_2(D_1))}{D_2 - D_1} \mid S = 1 \right)$$

namely, it measures the change in potential period-2 outcomes of switchers ($S = 1$), given the treatment dose D changes from D_1 to D_2 . While this is a local effect, it would be possible to impose shape restrictions on the potential outcomes function to gain broader insights. The untreated potential outcome for switchers ($\hat{E}(\Delta Y \mid D_1 = D_{i,1}, S = 0)$) is unobserved and is predicted using non-parametric regression among stayers. Thus, the effect is estimated using:

$$\hat{\delta}_1 := \frac{1}{n} \sum_{i:S_i=1} \frac{\Delta Y_i - \hat{E}(\Delta Y \mid D_1 = D_{i,1}, S = 0)}{\Delta D_i}$$

Weighted Average of Switchers' Slopes (WAS):

The second parameter weights the switchers' slopes by the absolute change in the doses, $D_2 - D_1$.

$$\begin{aligned} \delta_2 &:= E \left(\frac{|D_2 - D_1|}{E(|D_2 - D_1| \mid S = 1)} \times \frac{Y_2(D_2) - Y_2(D_1)}{D_2 - D_1} \mid S = 1 \right) \\ &= \frac{\mathbb{E} \left(\text{sgn}(D_2 - D_1) (Y_2(D_2) - Y_2(D_1)) \right)}{\mathbb{E}(|D_2 - D_1|)} \end{aligned}$$

These two parameters fulfill slightly different real-world roles: The AS can be used to identify or bound actual effects of switchers under shape restrictions, while the WAS is more useful for cost-benefit analysis of the changes which actually happened (De Chaisemartin et al. 2024). In our case, this would be the case -for example- if a higher-level government authority wanted to estimate what incentive to engage in IMC may have been justified for a given (estimated) increase in social service provision. In our case, we argue that both estimators are interesting.

Panel models with controls

As a robustness check and to include additional time-varying controls, we turn to traditional panel model. Depending on the analytic results of Lagrange Multiplier tests, we apply Pooled OLS or Fixed / Random Effects models. We will also use the Hausman test to decide between the latter two. When panel effects are present and the Hausman tests reject the null that fixed and random effects model are consistent, we estimate the following TWFE model (and its random effects equivalent if the Hausmann test does not reject the null hypothesis):

$$Y_{it} = \beta_1 cooperation_{it} + \beta_2 income_{it-1} + \alpha_i + \gamma_t + \epsilon_{it}$$

where Y_{it} is the dependent variable for ABSS i at time t and $cooperation_{it}$ is the share of the population in an ABSS residing in a municipality which engages in cooperation in social services. We include α_i as a abss-fixed effect to control for unobserved time-invariant heterogeneity at the ABSS level, and γ_t as a time fixed effect to control for shocks common to all ABSS in a given year. These ABSS fixed-effects (that is, location-related fixed effects), included in all models if warranted, already absorb time-invariant unobserved differences in factors such as capacity of the municipalities to provide citizens with information on the eligibility for social services, citizens' capability to deal with the forms for application, the general level of poverty or cultural norms regarding claims to social benefits.

In some specifications, we control for $income_{it-1}$, the average gross family income in the municipality in the previous year to account for potentially different trends in poverty rates. If the FEs already absorb differences in initial poverty rate levels between counties and if income distribution stays constant, a lower income would imply more poverty.⁴ This implies that our evaluation of the effects does not arise only from having more beneficiaries of a

⁴ The available data does not capture the income distribution of the local community, while such distribution is typically non-normal. We do not have median income available, either.

specific policy, but from having more beneficiaries of that policy for similar poverty levels.⁵ We use a one-period lag because eligibility for social benefits is evaluated mainly on the previous year's tax declaration. In addition, we take into account that one of the three services we analysed, the diagnosis of children at risk, is not intended for the general population, but only for children. Therefore, we also control for the share of minors in the population of each ABSS.

Results

We first estimate the static effects of IMC on our three variables of interest. The results are shown in Table 2 below.

(Insert table 2 here)

The Average Slope of IMC on all three variables is insignificant. In contrast, the Weighted Average Slope is significant for rental assistance. Note that these effects are contemporaneous changes from one period to the next, and not averages over longer periods such as those in many staggered DiD estimators.

It is important to be aware that the low number of used observations is a consequence of the quasi-experimental design. This imposes stark restrictions, called the common support condition. It ensures that we do not compare stayers at a very high dose with switchers at a very low dose, which is particularly important when investigating dynamic effects as we do

⁵ Still from the 'demand side', Lu and Carter (2024) have found relevant differences in demand for services (e.g., willingness to apply for the benefit) in their study on food assistance in the Upper Peninsula of Michigan, USA, where they find that in rural areas living far from food services has a negative effect. We do not believe that this is a relevant issue in our case, because the population of Catalan municipalities (whether cities or towns) is highly concentrated in urban centres, and therefore administrative services are spatially close to citizens.

below (de Chaisemartin and D’Haultfœuille 2024).

To check for indications of a violation of parallel trends, we estimate the dynamic (event-study) version of the setup above, following de Chaisemartin and D’Haultfœuille (2024). The results are displayed in Table 2 below. We find that single placebo / pre-treatment trends are statistically significant only for the guaranteed citizen income and the housing rental assistance. However, a test for joint significance of the placebos / pre-trends indicates that they are statistically different from zero also for the files for children at risk. Thus, parallel trends (for more than just one pre-treatment placebo period) might not be a plausible assumption. We therefore test the robustness of our results using traditional panel models further below.

As for the Weighted Average Slope coefficient before, cooperation is positive and significant for housing rental assistance in the first and the second period (at 1% and 5%, respectively). The average total effect, which accumulates the changes of a treatment increment over time, is also positive and significant ($p=0.051$; $t=1.94$) for housing rental assistance. For the guaranteed citizen income, neither the average total effect nor any of the period effects are significant. Finally, in the case of the files for children at risk, the average total effect is insignificant, while the two first period effects are significant and positive at 5% level.

(Insert table 3 here)

Robustness Check

Guaranteed citizen income

Table 4 presents the results of the two models for the guaranteed minimum income. In the first column, we estimated a Fixed Effects model without controls, regressing guaranteed income on the share of population in municipalities with cooperation in social services. Our main variable of interest is not significant and slightly positive. We add lagged gross family income in order to account for the fact that poverty trends may have been different across ABSS. The panel tests suggest to estimate a Fixed Effects model. As expected, the coefficient on income is negative and significant. The coefficient on the share of population covered by

cooperation increases slightly, but is still insignificant. The coefficient is statistically insignificant, but we cannot rule out quite large effects in either direction, ranging from a -0.17 or a decrease of about 25% compared to the mean, to an increase by 0.28 or 40% compared to the mean.

(Insert table 4 here)

Rental assistance

We now turn to the results on rental assistance displayed in Table 5 below. When estimating the model without controls, the panel tests suggest to go for a Random Effects Model. We estimate a coefficient of 0.50 without controls, which is statistically significant at the 5% level. This coefficient slightly increases to 0.54 when adding an income control variable and switching to a Fixed Effects model as suggested by the panel tests. However, the standard error increases slightly and the coefficient is now significant at the 10% level. As for the guaranteed citizen income, the coefficient on income is negative. These models suggest that an increase in cooperation (measured as the population share in municipalities with cooperation) is associated with increases in rental assistance by about .50 to .54, which is about 37% of the mean value in rental assistance eligibility.

(Insert table 5 here)

Files for minors at risk

The last outcome we investigate is the number of files for minors at risk. When estimating the equation without controls, the panel tests suggest to go for a Fixed Effects model. The effect of the population-weighted share of cooperating municipalities is positive, but insignificant. When adding the income control variable, we are advised to estimate a Random Effects model. The coefficient on cooperation becomes positive and significant at the 5% level, with income statistically significant and negative, as for the previous variables. Since this social service is only targeted to a specific part of the population (minors), we also add the share of minors in every ABSS as a control. We are advised to estimate a Fixed Effects Model. Once we do so (third column of Table 6). For cooperation, it yields an insignificant and much smaller

coefficient than before. The coefficient on the share of minors is positive and significant, as we would expect.

(Insert table 6 here)

Discussion and conclusion

Intermunicipal cooperation has been often analysed for public services of local character. The empirical studies have most frequently assessed the effects of IMC on financial costs or efficiency, but recently a growing body of evidence has been collected on the effects on service quality. A contribution to the literature is that our empirical analysis on the effects of intermunicipal cooperation is conducted for a specific type of services that is directly linked to poverty: social services. More particularly, we have analysed the effectiveness of the management of claims for guaranteed minimum income and housing rental subsidies (and also for the detection of situations of child risk). All three services have clear community-based effects, given their powerful impact in addressing the effects of poverty on community well-being.

Our empirical analysis studied the effect of local cooperation -between municipalities and counties-, measured by the percentage of the population of the specific county management area -ABSS- included in the cooperation. Regarding our main hypothesis (cooperation has a positive impact on the effectiveness of service provision), we find somewhat divergent results. We do not find any significant effect of strengthened interlocal cooperation on the effectiveness of the guaranteed minimum income, but we do find a positive and statistically significant impact of cooperation for housing rental subsidies. Results for diagnosis of children-at-risk are less clear; they tend to be positive, but very weakly significant.

The difference between the null effect on the guaranteed minimum income and the positive effect on housing rental support and the detection of minors at risk can be related to the different type of complexity of case management in these services. Our hypothesis was mainly

based on the view that cooperation can make possible a more specialized workforce and processes for the management of complex services, especially if the frequency of cases is very low in small municipalities. Although all the services that we study have low caseloads in small municipalities, management complexity is much lower for guaranteed minimum income than for housing rental support. The documentation required for guaranteed minimum income claims is based only on income tax returns and the number of household members, data that are already available in official records. In contrast, housing benefit processing requires more information than just income and family characteristics (e.g., rental housing contracts, rent receipts, etc.), which is not as readily available. Therefore, the more complex the management of service delivery, the more significant (and positive) the effect of intermunicipal cooperation will be.

In addition to management complexity, differences in discretionary decisions may also play a role in the functioning of cooperation. The procedure for guaranteed minimum income is simpler and allows less room for street-level bureaucratic discretion. Therefore, the impact of unburdening actions by street-level bureaucrats may be lower. Administrative burdens have a direct effect on citizens' experiences with public programs and services and on their ability to effectively overcome the costs of these procedures (Fox, Stazyk, and Feng, 2020; Heinrich, 2016; Moynihan, Herd, and Harvey, 2015). Thus, more complex processes that involve higher levels of discretion may be more affected by the unburdening capacity of actors in a context of cooperation, which implies closer relationships between bureaucrats and potential welfare beneficiaries.

Our study is not without limitations. First, although we can confidently state that we find no negative effect of cooperation on service effectiveness, our evidence for positive effects is only mixed, and rather weak - when it exists. Second, our analysis would have been more robust if we could use municipalities as the unit of observation. Although we have cooperation data at the municipal level, we cannot use the municipalities as a unit of observation because the service effectiveness data are only available at the level of the Basic Area of Social Services -ABSS-, so that we are required to use ABSS as the unit of observation. Future research should benefit from having service effectiveness data at the municipal level, and this should encourage the relevant governments (regional in our case) to provide disaggregated data.

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Figure

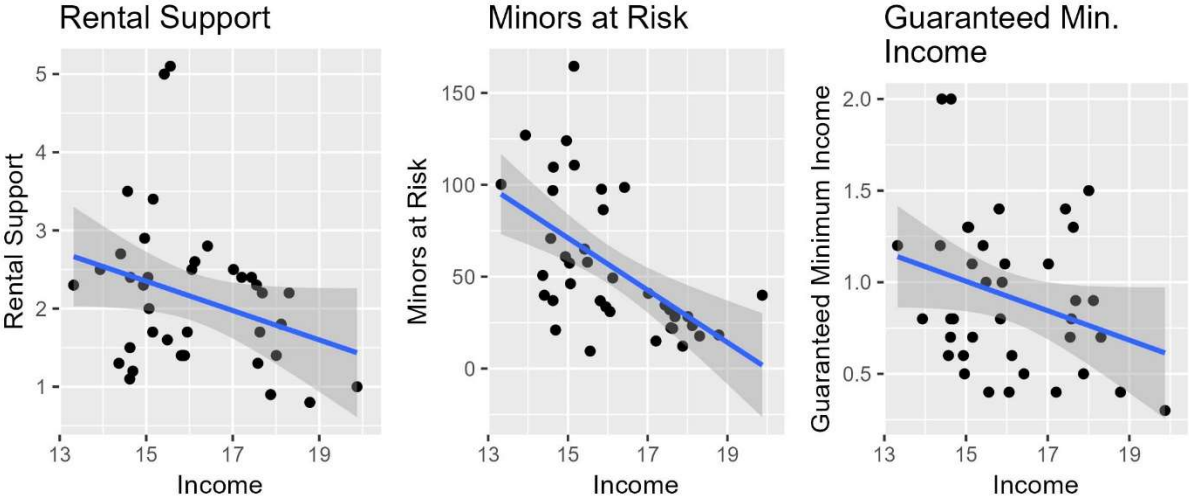


Figure 1: Correlation of average income as a proxy for poverty and the three outcome variables (2020)

Tables

Table 1: Descriptive Statistics

	n	min	max	median	mean	sd
<i>Dependent variables</i>						
Guaranteed Citizen Income (% of population receiving the benefit)	186	0.100	2.000	0.700	0.755	0.402
Housing rental assistance (% of households receiving the assistance)	186	0.000	5.100	1.300	1.465	1.009
Diagnosis of risks for minors (number of processed reports x 10,000 inhabitants)	186	2.500	476.200	51.000	63.577	52.830
<i>Independent variables</i>						
Share of population covered by cooperation (in %)	186	0.000	1.000	0.884	0.743	0.324
Per capita gross family income (€)	186	10,804	20,153	14,455	14,691	1,657
Share of minors in population (in %)	186	0.134	0.288	0.182	0.183	0.028

Table 2: Results of static DID models

effect	Guaranteed citizen income	Housing rental assistance	Diagnosis of risks for children
AS	0.106 (0.182)	0.173 (0.109)	5.479 (46.590)
WAS	0.115 (0.213)	0.209*** (0.068)	19.102 (42.821)
N	16	16	16

*: $p < 0.10$; **: $p < 0.05$; ***: $p < 0.01$

Table 3: Results of dynamic DID models

effect	Guaranteed citizen income	Housing rental assistance	Diagnosis of risks for children
1 st period	0.007 (0.036)	0.426*** (0.079)	37.173** (18.795)
2 nd period	-0.076 (0.075)	0.476** (0.196)	44.779** (22.719)
3 rd period	-0.143 (0.125)	0.439 (0.286)	20.58 (13.425)
4 th period	-0.131 (0.159)	0.619 (0.380)	-17.759 (11.356)
5 th period	0.014 (0.205)	0.176 (0.448)	-28.729** (13.540)
1 st pre-trend / placebo	-0.064** (0.028)	0.008 (0.043)	0.479 (13.515)
2 nd pre-trend / placebo	-0.314*** (0.083)	0.514*** (0.145)	-71.857 (66.407)
Average total effect	-0.508 (0.687)	3.173* (1.628)	128.232 (87.704)

*: $p < 0.10$; **: $p < 0.05$; ***: $p < 0.01$

Table 4: Results of models for guaranteed minimum income

Term	No controls	Income control
Share co-operating	0.0750 (0.123)	0.0486 (0.1202)
Lagged income per capita		-0.1639** (0.0637)
time dummies	Yes	Yes
Num. observations	186	186
F-statistic	0.3718	5.0928
p.value	0.5458	0.0111
p-value BP test	0.446	0.2859
p-value Lagr. multiplier test	0.0000	0.0000
p-value Hausman test	0.0001	0.0000
model suggested	FE	FE

*: $p < 0.10$; **: $p < 0.05$; ***: $p < 0.01$

Table 5: Results of models for housing rental support (robust SE clustered by ABSS in parentheses)

Term	No controls	Income control
Share co-operating	0.4979** (0.2338)	0.5448* (0.3274)
Lagged income per capita		-0.3198*** (0.1067)
(Intercept)	1.0820 (0.6665)	
time dummies	Yes	Yes
Num. observations	186	186
F-statistic	4.536	4.6591
p.value	0.0332	0.0157
p-value BP test	0.0003	0.0008
p-value Lagr. multiplier test	0.0062	0.0000
p-value Hausman test	0.5164	0.0073
model suggested	RE	FE

*: $p < 0.10$; **: $p < 0.05$; ***: $p < 0.01$

Table 6: Results of models for files for minors at risk (robust SE clustered by ABSS in parentheses)

term	No controls	Income control	Income & minor control
Share co-operating	7.7577 (14.6235)	30.2756* (15.931)	4.9158 (11.7706)
Lagged income per capita		-7.0269** (2.7582)	-4.7932 (9.2423)
Share of minors			384.5684*** (101.3535)
(Intercept)		144.1795*** (46.9782)	
time dummies	Yes	Yes	Yes
Num. obs.	186	186	186
F-statistic	0.2814	34.3686	6.5274
p.value	0.5989	0.0000	0.0012
p-value Lagr. multiplier test	0.0000	0.0000	0.0000
p-value Hausman test	0.0376	0.408	0.0001
model suggested	FE	RE	FE

*: $p < 0.10$; **: $p < 0.05$; ***: $p < 0.01$

The logo for UBIREA, featuring the text "UBIREA" in a bold, sans-serif font. The letters "UB" are white and set against a dark blue rounded rectangle, while "IREA" is dark blue and set against a white rounded rectangle.

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