



# Asymmetry in inter-municipal cooperation in health services – How does it affect service quality and autonomy?

Bjørnulf Arntsen<sup>a,\*</sup>, Dag Olaf Torjesen<sup>b</sup>, Tor-Ivar Karlsen<sup>c</sup>

<sup>a</sup> Faculty of Health and Sport Science, Center for Care Research – Southern Norway, University of Agder, Jon Lilletuns vei 13, 4879, Grimstad, Norway

<sup>b</sup> Department of Political Science and Management, University of Agder, Universitetsveien 25, 4630, Kristiansand, Norway

<sup>c</sup> Faculty of Health and Sport Science, University of Agder, Jon Lilletuns vei 13, 4879, Grimstad, Norway

## ARTICLE INFO

### Keywords:

Inter municipal cooperation  
Inter-organisational cooperation  
Asymmetry  
Power  
Service delivery agreements  
Relative size  
Service quality  
Autonomy

## ABSTRACT

Throughout Europe, local health services are increasingly being provided through various forms of inter-municipal cooperation (IMC). One of the most common forms of IMC is when small municipalities delegate the operational responsibility for providing health services to a larger host municipality. However, despite the size asymmetry usually inherent in this type of IMC, this aspect has largely been neglected in the existing literature, which mainly focuses on the size of individual municipalities. Based on data from 97 partner municipalities and 25 host municipalities in Norway, this study examines how varying degrees of size asymmetry between them affect the perceived service quality and loss of autonomy resulting from IMC in health services. From the perspective of the relatively smaller partner municipalities, the results suggest that these are likely to benefit greatly from size asymmetry in terms of improved service quality, although this would appear to be at the expense of losing decision-making autonomy to their host. However, from the perspective of the relatively larger hosts municipalities, this type of asymmetry is likely to affect service quality negatively while having no effect on decision-making autonomy.

## 1. Introduction

In recent decades, the increasing demands and requirements of local health care have challenged municipalities across Europe in terms of both efficiency and service quality (Hulst & Montfort, 2007, 2012; Hulst et al., 2009; Teles and Swianiewicz, 2018). In order to address issues of scale and “the eternal problem of scarcity and resource dependence” (Lundqvist, 1998, p. 95), many municipalities have responded to these challenges by establishing various types of inter-municipal cooperation (IMC), defined as “contracts or joint production with other local governments as a means to gain economies of scale, improve service quality, and promote regional service coordination across fragmented local government regions” (Bel and Warner, 2016, p. 91).

Two main types of IMCs appear to have prevailed in Europe (Hulst & Montfort, 2007, 2012; Hulst et al., 2009). The first type, service delivery organisations, are standing organisations comprising a joint ownership structure with all participants taking part in the coordination of the IMC, usually through a joint board. The second type and the focus of this study, service delivery agreements, lacks such a joint ownership structure and is often based on more asymmetrical relationships (Blåka,

2017a; Holum, 2019), usually with the largest municipality being delegated the operational responsibility for coordinating and providing services for the inhabitants of another municipality through a written agreement (Hulst & Montfort, 2007, 2012; Hulst et al., 2009). The main purpose of such agreements is not so much to reduce costs as to give municipalities access to scarce resources and improve service quality (Aldag and Warner, 2018; Hulst and van Montfort, 2007). Although most frequently used in the US (Bel and Warner, 2016), these types of agreements have become increasingly popular in the provision of “softer” health and human services in many European countries (Eythórsson et al., 2018; Hulst et al., 2009; Hulst and van Montfort, 2007). Norway is no exception to these developments. Since the legal establishment of the host municipality model in 2007 (Ministry of Local Government and Regional Development, 1992), these types of agreements have frequently been used in the provision of local health services in acute and emergency care (Arntsen et al., 2020; Blåka et al., 2012; Monkerud et al., 2019; Zeiner and Tjerbo, 2014) and disease prevention and health promotion (Ekornrud and Thonstad, 2016).

Despite their differences, however, IMCs are most often lumped together under the same term “inter municipal cooperation” in the

\* Corresponding author.

E-mail address: [bjornulf.arntsen@uia.no](mailto:bjornulf.arntsen@uia.no) (B. Arntsen).

research literature (Blåka, 2017a). To the extent that specific types of IMC's outcomes and services have been investigated, the European literature tends to focus on service delivery organisations and their potential for reducing costs through economies of scale in "hard" and technical services such as waste management, water supply, fire brigades, etc. (Bel & Warner, 2015, 2016; Blåka, 2017a; Dollery et al., 2020; Jacobsen, 2017). Although important, we argue that the existing research literature on IMC offers little relevant insight into the many service delivery agreements that have become such an important part of local health services throughout Europe. There are several reasons for this: First, by empirically lumping together different types of IMC and services, the literature runs the risk of comparing "apples and oranges" and leaves us with an undifferentiated picture of IMC that neglects considering the implications of the size asymmetry inherent in most service delivery agreements. Second, it tends to ignore the non-economic benefits that usually motivate municipalities to establish these types of agreements in "softer" health and human services, of which improved service quality (not cost savings) appears to be the primary goal (Aldag et al., 2020; Arntsen et al., 2020; Bel and Warner, 2015; Høverstad, 2019; Tjerbo, 2010; Warner, 2006; Zeiner and Tjerbo, 2014). Finally, the current literature usually disregards the autonomy costs that are likely to result from IMC, including the potential loss of decision-making autonomy (Tavares and Feiock, 2014).

This study aims to address some of the above limitations and hopefully provide local managers, practitioners and policy makers with a better understanding of some of the implications of the size asymmetry inherent in service delivery agreements set up to provide local health-care services. More specifically, this study addresses the following research question:

To what extent and in what way does size asymmetry between host municipalities and their partners affect the perceived service quality and autonomy costs resulting from IMC?

## 2. Theory and hypotheses

Theoretical arguments about the effects of organizational size can be divided into two types, of which relative size effects will depend on the size of other partner organisations whereas an absolute size effect will not (Belgraver and Verwaal, 2018; Dobrev and Carroll, 2003; Hannan et al., 1998). Arguments about absolute size effects have formed the basis of most of our thinking on IMC, emphasising that due to small individual size, municipalities need to cooperate in order to address issues of scale and internal resource constraints (Hulst and Montfort, 2007; Teles and Swianiewicz, 2018). Arguments about relative size effects of IMC, emphasising the implications of being small or large relative to other municipalities taking part in the IMC, has received little attention in the research literature.

Arguments about the effects of the relative size of organisations forms the very basis of resource dependence theory (Pfeffer and Salancik, 1978, p. 39), arguing that "organizational activities and outcomes are accounted for by the context in which the organization is embedded" because scarce resources create a need for developing relationships with other organisations in its environment that have access to such resources. As a consequence, these types of relationships are often characterized by asymmetry in terms of size and resources, an asymmetry that may provide both resource opportunities and power constraints for the organisations involved (Das et al., 1998; Gulati, 1998; Pfeffer and Salancik, 1978). On the opportunity side, asymmetry in size may give small and less resourceful organisations the ability to acquire scarce and critical resources from relatively larger and more resourceful organisations in their external environment (Guo and Acar, 2005; Kwon and Feiock, 2010; Teng, 2007). On the constraint side, this very same type of asymmetry may also result in power imbalances that makes the relatively smaller organisations "vulnerable to influence and lack of autonomy" (Pfeffer and Salancik, 1978, p. 126). Similarly, our point of departure is that the varying degrees of size asymmetry inherent in IMC

organised according to a host municipality model will have the potential to affect the opportunity to gain access to the resources needed to improve service quality, while also creating autonomy costs for the municipalities involved.

### 2.1. Size asymmetry and service quality

Improved service quality would appear to be the single most important goal for providing public services through IMC both in Norway (Frisvoll et al., 2017; Høverstad, 2019; Leknes et al., 2013; Tjerbo, 2010) and elsewhere (Aldag and Warner, 2018; Bel and Warner, 2015; Warner, 2006). Small municipalities with limited capacity and access to internal resources have traditionally been expected to benefit greatly from the resource opportunities offered by IMC. There are several reasons for this. IMC may help small municipalities make large and specialised investments needed to provide high-quality services (i.e. equipment, technology, personnel, infrastructure, etc.); it may ease the process of recruiting qualified and specialised personnel in full-time positions, as well as building a sufficiently large and stable professional environment (Graddy, 2008; Hulst and Montfort, 2007; Jacobsen, 2014, 2015; Leknes et al., 2013).

However, building on resource dependence theory (Pfeffer and Salancik, 1978) we argue that the resource opportunities of a given municipality not only depend on its own internal resource needs, but also its ability to acquire these necessary resources from the other external municipalities involved in the IMC. Put differently, we believe there has to be a good "fit between one organization's resource needs and another's resource provision" (Seabright et al., 1992, p. 124). From the perspective of the relatively smaller partner municipalities, we expect size asymmetry in favour of their host to represent a good fit simply because a substantially larger host will be more capable of "fill in" for their resource deficiencies compared to a host of similar size that would be more likely to encounter some of the same resource deficiencies as its partners (Andersen, 2011; Andersen and Pierre, 2010; Jacobsen, 2014; Teng, 2007). From the perspective of the relatively larger host, on the other hand, we expect the same type of asymmetry to have the opposite effect on service quality as this would entail the host being increasingly larger and more self-sufficient and its relatively smaller partners being less capable of "filling in". Based on the above assumptions, we hypothesise that:

**H1.** Increased size asymmetry in favour of the host will be positively related to service quality as perceived by the relatively smaller partner municipalities.

**H2.** Increased size asymmetry in favour of the host will be negatively related to service quality as perceived by the relatively larger host municipalities.

### 2.2. Size asymmetry and autonomy costs

Although there may be resource opportunities associated with IMC, we also argue for the need to consider the potential costs of establishing this type of cooperation. One of the most significant costs that theorists have attributed to involvement in interorganizational relationships are autonomy costs, or the potential loss of organizational decision-making autonomy (Oliver, 1990; Pfeffer and Salancik, 1978; Provan, 1984; Provan and Gassenheimer, 1994; Tavares and Feiock, 2014).

Central to resource dependence theory (Pfeffer and Salancik, 1978, p. 53) is that power will accrue to those organisations that control scarce resources and that "the potential for one organization's influencing another derives from its discretionary control over resources needed by that other and the other's dependence on the resource". In this respect, we believe that the varying degrees of size asymmetry inherent in most host municipality cooperation is also likely to result in varying degrees of power constraints and autonomy costs of the participants involved. From the perspective of the relatively smaller partner municipalities, we

believe that increased size asymmetry in favour of the host may entail a loss of decision-making autonomy because this enables their larger hosts to directly or indirectly use their power to impose their will on decision-making processes at the expense of their relatively smaller partners. This potential loss of influence over decision-making by the relatively smaller partners has also been highlighted as one of the main disadvantages of the host municipality model (Brandtzæg et al., 2019; Frisvoll et al., 2017; Langseth, 2012; Monkerud et al., 2019; Nilsen, 2013; Vinsand, 2010) and is probably the reason why the model is frequently referred to as “asymmetrical” (Frisvoll et al., 2017; Holum, 2019; Vinsand, 2010) and “imbalanced” (Langseth, 2012; Nilsen, 2013). From the perspective of the relatively larger host, on the other hand, this type of asymmetry is likely to result in less autonomy costs due to the relatively smaller partners having less power to influence the decision-making of the host.

However, the dyadic perspective of resource dependence theory (Casciaro and Piskorski, 2005) tends to ignore the complexity that may characterize some of these IMCs. As noted by Bel and Sebö (2021, p. 159), “by looking at IMC through the more structural lens provided by principal-agent theory, the main problem to emerge is that of multiple principals relating with one agent”. According to Voorn et al. (2019, p. 682), having multiple principals with potential diverging interest may create collective action problems resulting in “large inefficiencies and powerful agents if not properly dealt with.” These collective action problems can be found in IMC in Norway (Blåka, 2017a; Sørensen, 2007) and in other cooperative settings elsewhere (see Voorn et al., 2019 for an overview). Voorn et al. (2018) suggest several governance mechanisms that may help mitigate such problems, including contracting out the governance responsibility to one of the principals (usually the largest). Although this solution may help deal with problems of multiple principals, it involves delegating power to one of the principals that may dictate terms not included in the contract (Bel and Sebö, 2021; Voorn et al., 2019). Taking into account the variation in the number of participants in the IMC, this leads us to the following hypothesis:

**H3.** Increased size asymmetry in favour of the host will be positively related to autonomy costs as perceived by the relatively smaller partner municipalities.

**H4.** Increased size asymmetry in favour of the host will be negatively related to autonomy costs as perceived by the relatively larger host municipalities.

### 3. Methods and materials

#### 3.1. Study design and data collection

This cross-sectional study is based on survey data obtained from a questionnaire sent to all 428 Norwegian municipalities and registry data derived from Statistics Norway. The survey was approved by the Norwegian Centre for Research Data (project number 43163). The contents of the questionnaire were based on core concepts and questions frequently used in previous studies on IMC and other types of inter-organizational cooperation. The questionnaire was pre-tested on a small sample of representatives of the study’s target group before being sent out, and only a few minor adjustments were made.

On October 28, 2015 we invited the top health manager in all Norwegian municipalities to participate in an extensive online survey about their municipality’s involvement in and experiences of IMC in health services. After three reminders, we received responses from a total of 337 (79%) health managers, of which 53 were removed due to missing data and two more cases were removed due to duplication of questionnaires. Of the remaining 282 municipalities, we extracted 122 municipalities (25 hosts and 97 partners) that reported that they were participating in IMC organised according to a host municipality model in one or more of the focal health service areas. The respondents from each of these 122 municipalities provided us with information about different

aspects of their IMC, including the duration of the IMC, the number of participants in the IMC and the extent to which their involvement in IMC had contributed to better service quality and loss of decision-making autonomy. These survey data were merged with registry data obtained from Statistics Norway on municipal economy, municipal size, and size asymmetry (based on differences in municipal size).

#### 3.2. Study setting

This study was conducted within a Norwegian healthcare context, reflecting a decentralized and publicly funded Scandinavian welfare model (Saunes et al., 2020). This model is based on the core values of universalism and equality in which all municipalities are assigned the same set of statutory tasks, financing system and legislation, aiming at ensuring equal access to services for all inhabitants (Arntsen et al., 2018; Arntsen et al., 2020; Leknes et al., 2013; Romøren et al., 2011; Saunes et al., 2020). Healthcare arrangements in Norway comprise a division of responsibility between the state level responsible for hospitals and specialist healthcare services, and the local municipal level responsible for primary healthcare services. Apart from long-term care (care for the elderly and disabled) and general practice, primary health care includes the responsibility for providing acute and emergency services and services related to disease prevention and health promotion (Ministry of Health and Care Services, 2011; Saunes et al., 2020).

However, the increasing requirements in terms of service quality, efficiency and complexity have resulted in such services being increasingly provided through various forms of IMC. The empirical setting specifically selected for the study was formalised and voluntary IMC organised according to an administrative host municipality model based on the Local Government Act § 28-1b (Ministry of Local Government and Regional Development, 1992), stating that “A municipality (collaborating municipality) may agree with another municipality (host municipality) that the host municipality shall carry out tasks and make decisions pursuant to the authority delegated by the collaborating municipality”. However, legal responsibility for service provision to their inhabitants is still retained by the partner municipalities, and they may instruct the host municipality regarding execution of the delegated authority in cases that exclusively concern the affected inhabitants in its municipality. These host agreements should primarily be regarded as bilateral agreements established between the host municipality and each of its partner municipalities and, as a minimum, shall contain information about the identity of the partners and host, the specific tasks and decision-making authority delegated to the host, the financial settlement between the partners and host, and the rules for withdrawal and dissolution (Norwegian Association of Local and Regional Authorities, 2013).

This type of IMC resembles interlocal contracting “in which one local government contracts with another for a service or provides the service to another” (LeRoux et al., 2010, p. 268). Interlocal contracting is most commonly used and studied within the context of local governments in the US, characterized by greater heterogeneity due to a higher level of fiscal autonomy and service responsibility, compared to those in Europe (Bel and Warner, 2015). This may also explain why US studies of IMC tend to give more attention to how different conditions of transaction costs may affect cooperation compared to European studies that seems to be more concerned with issues of scale and costs savings (Bel and Sebö, 2021; Bel and Warner, 2015).

The host municipality model was primarily established to help the many small Norwegian municipalities cope with the steadily increasing demands in local service delivery and it is frequently used to provide statutory local health services related to acute and emergency care (Arntsen et al., 2020; Blåka et al., 2012; Monkerud et al., 2019; Zeiner and Tjerbo, 2014), as well as disease prevention and health promotion (Ekornrud and Thonstad, 2016). This study includes four different types of health arrangements specifically set up to provide these types of services through a host municipality model:

- 1) Casualty clinics providing out-of-hours (OOH) services, or statutory acute and emergency services provided by the municipalities for their inhabitants when GP's office is closed (usually from 15.00 to 20.00 on weekdays and 24 h at weekends).
- 2) Municipal acute bed units (MAUs), which are statutory 24-h emergency services intended to reduce acute hospital admissions by requiring municipalities to provide short-term stays for patients diagnosed with acute conditions that are manageable by primary health care, or chronic conditions requiring re-evaluation of treatment (Norwegian Directorate of Health, 2014).
- 3) Child health clinics (CHCs) are statutory and involve health-promoting and preventive work aimed at pregnant women, children and young people, including diet, infant nutrition and breastfeeding (Ministry of Health and Care Services, 2007).
- 4) Healthy Life Centres (HLCs) are primary healthcare service offering effective, knowledge-based measures for people with, or at high risk of disease, who need support in changing their health behaviour and in coping with health problems and chronic disease (Norwegian Directorate of Health, 2017). Although such HLCs as such are not statutory, the Norwegian Directorate of Health encourages all municipalities to establish HLCs to improve and better manage statutory services related to disease prevention and health promotion.

### 3.3. Methods

In order to analyse how variation in size asymmetry affected service quality and autonomy costs of IMC in host municipalities and their partners, we performed Ordinary Least Squares Regression (OLS) on two separate datasets using standardised coefficients ( $\beta$ ). The first dataset contained registry and survey data obtained from 97 smaller partner municipalities involved in IMC in one or more of the four focal service areas ( $n = 147$ ). The second dataset contained registry and survey data obtained from 25 host municipalities involved in IMC in one or more of the four focal service areas ( $n = 37$ ). As the data used in this study are nested (municipalities in IMC arrangements), we initially considered using multilevel analysis (MLA) when analysing the effect of size asymmetry. However, because we extracted the hosts and their partners into two separate datasets, we ended up with many singletons (i.e. involving only one unit) as a result of many dyadic forms of IMC established between two municipalities, thereby making MLA inappropriate.

Prior to the regression analysis, we performed tests for linearity, heteroscedasticity and potential issues of collinearity between the independent variables included in our analysis, showing acceptable levels of variance of inflation (VIF) and bivariate correlations (Tables 1 and 2). Because of positive skewness, we performed a log transformation (log) of several of our variables. Missing values were replaced by series means.

### 3.4. Variables and measures

A total of eight variables were included in the analysis of our two

datasets, of which two were included as dependent variables (service quality and autonomy costs) and one as an independent variable (size asymmetry). The final five variables served as control variables to adjust for any potential effect of variances on the cooperative arrangement itself (IMC size and IMC duration), the characteristics of the focal municipality (municipal size and municipal economy) and the type of service in question (service type). Descriptive statistics and correlations for these variables in both datasets are shown in Table 1 below.

#### 3.4.1. Dependent variables

Our two dependent variables, service quality and autonomy costs, were based on survey data obtained from the top health-managers in 25 host municipalities and 97 partner municipalities, responding to one or more of the questionnaires regarding their involvement in IMC in the four focal service areas (OOH, MAU, CHL, HLC). In each of the questionnaires, we asked the respondents to indicate on a five-point Likert scale the extent to which:

- 1) IMC had contributed to improved service quality in the focal service area (service quality)
- 2) They agree that IMC had contributed to loss of influence over decision-making in the focal service area (autonomy costs)

#### 3.4.2. Independent variable

Only one independent variable, size asymmetry, was included in our analysis. Size asymmetry was measured as the population size of a focal municipality relative to the population size of other participant(s) involved in the same IMC, based on registry data obtained from Statistics Norway. Given that this study analyses two separate datasets (hosts and partners), size asymmetry had to be calculated somewhat differently. In the dataset that only contained partner municipalities, size asymmetry was measured by taking the ratio of the population size of the host municipality to the population size of each individual partner (Emerson, 1962; Gulati and Olivia Wang, 2003). In the dataset that only contained host municipalities, size asymmetry was measured by taking the ratio of the population size of the host municipality to the size of its partner (if only one partner), or the average size of all partners in the IMC (if more than one partner) (Steinacker, 2004). Size asymmetry in both datasets was log transformed (log) due to skewness.

#### 3.4.3. Control variables

Five additional control variables were included in both datasets that may have the potential to affect both the service quality and autonomy costs of IMC. The first two control variables relate to the characteristics of the focal host or partner municipality (municipal size and economy); the next two control variables relate to the characteristics of the cooperative arrangement itself (IMC size and duration); and the final control variable reflects the type of health service in focus (type of service). More specifically, these five control variables were measured as follows:

- 1) Municipal size was measured by using the number of inhabitants living in each municipality (log).

**Table 1**

Descriptive statistics and correlations, dataset containing partner municipalities ( $n = 147$ ).

| Variables            | Mean (SD)    | 1.     | 2.     | 3.   | 4.     | 5.    | 6.   | 7.    | 8. |
|----------------------|--------------|--------|--------|------|--------|-------|------|-------|----|
| 1. Size asymmetry    | 7.4 (8.4)    | 1      |        |      |        |       |      |       |    |
| 2. IMC size          | 5.2 (2.3)    | .15    | 1      |      |        |       |      |       |    |
| 3. IMC duration      | 7.9 (6.0)    | -.10   | .03    | 1    |        |       |      |       |    |
| 4. Municipal size    | 4870 (411)   | -.31** | .19*   | .11  | 1      |       |      |       |    |
| 5. Municipal economy | 108.9 (22.9) | .07    | -.21*  | -.07 | -.53** | 1     |      |       |    |
| 6. Type of service*  | 0.48 (0.50)  | .08    | -.36** | .07  | .08    | .21** | 1    |       |    |
| 7. Service quality   | 4.1 (0.88)   | .17*   | -.06   | .04  | .08    | -.05  | .02  | 1     |    |
| 8. Autonomy costs    | 2.96 (1.09)  | .14    | -.03   | .06  | .07    | -.02  | -.01 | -.17* | 1  |

Note:  $p < .05$ ; \* $p < .01$ ; \*\*.

\* Disease prevention and health promotion services (HLC and CHL) were coded 1 and acute and emergency services (OOH and MAU) were coded 0.

**Table 2**  
Descriptive statistics and correlations, dataset containing host municipalities (n = 37).

| Variables            | Mean (SD)     | 1.     | 2.     | 3.    | 4.     | 5.   | 6.    | 7.   | 8. |
|----------------------|---------------|--------|--------|-------|--------|------|-------|------|----|
| 1. Size asymmetry    | 4.3 (5.2)     | 1      |        |       |        |      |       |      |    |
| 2. IMC size          | 4.2 (1.8)     | -.19   | 1      |       |        |      |       |      |    |
| 3. IMC duration      | 7.6 (5.4)     | .25    | -.20   | 1     |        |      |       |      |    |
| 4. Municipal size    | 21649 (40900) | .67**  | .09    | .24   | 1      |      |       |      |    |
| 5. Municipal economy | 99.5 (3.2)    | -.12   | -.31*  | -.23  | -.46** | 1    |       |      |    |
| 6. Type of service*  | 0.2 (0.4)     | .122   | -.48** | .13   | .05    | .14  | 1     |      |    |
| 7. Service quality   | 4.3 (1.1)     | -.59** | .44**  | -.30  | -.43** | .09  | -.37* | 1    |    |
| 8. Autonomy costs    | 1.8 (1.4)     | -.32   | .38*   | -.38* | -.12   | -.09 | -.19  | .36* | 1  |

Note: p < .05; \*p < .01; \*\*.

\* Disease prevention and health promotion services (HLC and CHL) were coded 1 and acute and emergency services (OOH and MAU) were coded 0.

- 2) Municipal economy was measured as the percentage of free income per capita relative to the national average (log). Free income represents a municipality’s residual income after its mandated tasks have been fulfilled and constitutes approximately 72% of the available income of Norwegian municipalities.
- 3) IMC duration refers to the number of years that the municipality had been part of an IMC.
- 4) IMC size refers to the number of municipalities participating in the specific IMC.
- 5) Type of service was also included as a control variable, constructing a dummy variable of which services related to disease prevention and health promotion were coded 1 (HLC and CHL) and which acute and emergency services were coded 0 (OOH and MAU).

**4. Results and discussion**

We started by asking to what extent and in what way size asymmetry between host municipalities and their partners affected the perceived service quality and autonomy costs resulting from their involvement in IMC. The results of this study suggest that the varying degree of size asymmetry inherent in these types of IMC has the potential to affect both service quality and autonomy costs, but that this depends on what perspective we take (Table 3).

First, from the perspective of the relatively smaller partner municipalities, we found size asymmetry in favour of the host to be positively related to service quality (supporting H1) and autonomy costs (supporting H3). These findings indicate that the smaller the size of the partner relative to its host, the more likely it is that these partners will improve health service quality through IMC while also experiencing more autonomy costs. However, from the perspective of the host municipalities, we found size asymmetry in favour of the host to be negatively related to service quality (supporting H2), but not to autonomy costs (not supporting H4). These findings indicate that the larger the size

**Table 3**  
Multiple regression analysis (OLS).

|                         | PARTNERS (n = 147) |                | HOSTS (n = 37)  |                |
|-------------------------|--------------------|----------------|-----------------|----------------|
|                         | Service quality    | Autonomy costs | Service quality | Autonomy costs |
| Size asymmetry (log)    | .258**             | .225*          | -.425*          | -.258          |
| IMC size                | -.149              | -.108          | .300            | .239           |
| IMC duration            | .054               | .074           | -.062           | -.302          |
| Municipal size (log)    | .191               | .184           | -.094           | -.075          |
| Municipal economy (log) | .021               | .062           | .104            | -.079          |
| Type of service*        | -.048              | -.068          | -.171           | .004           |
| R2                      | 6.8                | 5.2            | 51.3            | 28.5           |

Note: Standardized beta values (p < .05; \*p < .01; \*\*).

\* Disease prevention and health promotion services (HLC and CHL) were coded 1 and acute and emergency services (OOH and MAU) were coded 0.

of the hosts relative to their partner(s), the more likely it is that these hosts will benefit less from service quality, while having no significant impact on their perceived autonomy costs. However, it should be noted that the dataset that only contained hosts shows a positive and quite strong correlation (0.67) between municipal size and size asymmetry (Table 2), which may indicate that much of the effect of size asymmetry may be attributable to variations in the size of the host itself rather than size asymmetry. We therefore performed an additional regression analysis in which size asymmetry was omitted from the analysis, resulting in a 51.3 to 43.1% reduction of explained variance and indicating that size asymmetry adds unique variance above and beyond what was explained by the variation in the host size alone.

Taken together, our findings suggest that increased size asymmetry in favour of the host is likely to benefit the relatively smaller partners but not the larger hosts in terms of improving the quality of health services through IMC. However, achieving these quality benefits among the partners appears to be at the expense of losing decision-making autonomy.

**4.1. Size asymmetry and service quality**

Although traditional considerations of small absolute size may help us understand why municipalities need to cooperate to provide health services in the first place (Arntsen et al., 2018), the results of this study suggest that this is not sufficient if we want to achieve a better understanding of why some municipalities benefit more than others in terms of service quality. More important than the absolute size of municipalities appears to be their size relative to other municipalities involved in the same IMC, giving rise to various levels of size asymmetry between the host and its partner(s). More specifically, we found that increased size asymmetry in favour of the host is likely to enhance the service quality as perceived by the smaller partners while undermining the service quality among their relatively larger hosts. These findings indicate the presence of relative size effects in IMC in health services (Dobrev and Carroll, 2003) and lend strong support to resource dependence theory (Pfeffer and Salancik, 1978), emphasising the importance of not only considering the internal resource needs of a given organisation, but also its ability to acquire such resources from other external organisations.

From the perspective of the partner municipalities, the results of this study indicate that they would be better off establishing cooperation with a relatively larger host that could help them gain access to the resources and capacities needed to provide quality health services to their inhabitants. This may include expensive medical equipment and technology, infrastructure and housing, highly specialised health personnel, a sufficiently large and professional environment, etc. (Graddy, 2008; Hulst and Montfort, 2007; Leknes et al., 2013). Thus, greater size asymmetry in favour of the host appears to represent a better resource fit for these partners simply because this may entail both a greater need for resources and the ability to acquire them from their host. Put differently, a substantially larger host will be more capable of “filling in” for the resource deficiencies of a partner compared to a host

of similar size that is more likely to encounter some of the same types of resource deficiencies (Andersen, 2011; Andersen and Pierre, 2010; Jacobsen, 2014; Teng, 2007). However, from the perspective of the relatively larger and more self-sufficient host municipalities, this very same type of asymmetry is likely to represent a worse resource fit because this entails both a reduced need for and ability to acquire resources from its partners.

Taken together, the results indicate that whereas increased size asymmetry in favour of the host appears to represent a good fit for the smaller partners in terms of service quality, the opposite appears to be the case for their relatively larger hosts. Although this may potentially create a tension regarding who should serve as the host in the early stage of the cooperation process, it would still appear that the largest municipality in the group is almost exclusively chosen as the host. However, this raises an interesting question: If service quality does not appear to improve among significantly larger hosts, why bother to assume the demanding role of a host or even join an IMC in the first place? We believe that one potential answer to this question could be that there may also be additional types of considerations that motivate such larger municipalities to assume a host role, which are not part of this analysis, and which include increased legitimacy, influence and reputation (Chen and Graddy, 2010). Moreover, given the large and specialised requirements necessary to providing many of the health services included in this study, the largest municipality may be the only municipality capable of taking on this role and may also feel obliged to assume the responsibility as a “big brother” within a group of significantly smaller neighbouring municipalities.

#### 4.2. Size asymmetry and autonomy costs

Although it may seem obvious that partner municipalities lose a degree of decision-making autonomy by delegating tasks and authority to a host municipality through a written agreement (Langseth, 2012; Nilsen, 2013; Vinsand, 2010), the results of this study suggest that this is likely to depend on the degree of size asymmetry between the host and its partners. More specifically, the results show that increased size asymmetry in favour of the host appears to increase the perceived loss of decision-making autonomy among the relatively smaller partner municipalities, indicating that power may be an issue in this type of cooperation. These findings are in accordance with the resource dependence perspective (Pfeffer and Salancik, 1978, p. 53), arguing that “the potential for one organization’s influencing another derives from its discretionary control over resources needed by that other”, and may indicate that greater size asymmetry enables the host to impose its will on decision-making processes at the expense of its relatively smaller partners. Thus, it may seem that the potential challenges of power imbalance associated with this type of cooperation (Brandtzæg et al., 2019; Frisvoll et al., 2017; Langseth, 2012; Nilsen, 2013; Vinsand, 2010), appear to be dependent on the level of size asymmetry between the host and its partners. It should also be noted that although local health managers and others taking part in IMC in Norway are not politically appointed, they represent different municipalities with potentially different political preferences. Previous Norwegian studies have found host-municipalities to be significantly more liberal compared to their partners (Monkerud et al., 2019), something that may affect the level of conflict and perceived loss of autonomy (Tavares and Feiock, 2014).

However, from the perspective of the host, asymmetry in size relative to its partner(s) did not appear to make any difference with regard to their loss of autonomy. Put differently, a host cooperating with partners of similar size did not result in greater loss of autonomy compared to cooperating with relatively smaller and less powerful partners. One possible explanation for this is that the size asymmetry and subsequent power imbalance inherent in this type of IMC are almost exclusively one sided, with the host being the largest and most powerful. Moreover, our measurement of size asymmetry in the dataset that only contained hosts

is based on the ratio of the host size to the sum of the population size of its partners, showing significantly less asymmetry (the host being an average of 2.7 times larger), compared to the dataset that only included the partners (the host being an average of 7.4 times larger) (Tables 1 and 2).

Taken together, the results of this study supports the notion of Broom et al. (1997, p. 90) that “scarcity of resources prompts organisations to form asymmetric relationships, even if the formation of relationships necessitates the loss of autonomy”. We believe this is because very small municipalities may have little choice but to cooperate in order to fulfil their commitments (Andersen and Pierre, 2010). This argument is also supported by Norwegian studies reporting that some municipalities see IMC as a necessity for delivering services that require a certain scale of production and level of specialised skills (Leknes et al., 2013; Zeiner and Tjerbo, 2014). The individual establishment of acute and emergency services such as OOH or MAU would be difficult, if not impossible, for some small Norwegian municipalities that have limited resources and capacity.

It is also worth noting that an increased number of participants involved in these types of cooperation’s (IMC size) does not seem to yield any significant effect on outcomes. This is contrary to what has been found in other cooperative settings both in Norway (Blåka, 2017a; Sørensen, 2007) and elsewhere (see Voorn et al., 2019 for an overview). This may of course be due to differences in the nature of “softer” health services compared to the more “hard” and technical services focussed on in the other studies. However, the results may also indicate that multiple principal problems may be effectively dealt with through contracting out the governance responsibility to a host municipality.

## 5. Conclusion

The host municipality model has been pointed to as one of the most beneficial ways of organising IMC in terms of achieving better service quality for small municipalities, while also acknowledging the potential loss of autonomy associated with this type of IMC (Langseth, 2012; Nilsen, 2013; Vinsand, 2010). The results of this study shows that the service quality and autonomy costs resulting from involvement in this type of IMC is not a given, but rather depends on whether we consider the perspective of the partner or the host and the degree of size asymmetry between them. From the perspective of the relatively smaller partners, the results suggested that they are likely to benefit greatly from size asymmetry in terms of improved service quality, although this would appear to be at the expense of losing decision-making autonomy. However, from the perspective of the relatively larger hosts, this type of asymmetry is likely to negatively affect service quality while having no significant effect on decision-making autonomy.

We argue that the results of this study may have some important practical and theoretical implications. From a practical perspective the results may help practitioners and local managers make better decisions about which municipality to choose as a host or partner, as well as shedding light on some of the potential consequences and trade-off effects of choosing one over another. Theoretically, the study supplements the current literature on IMC and other forms of inter-organisational cooperation by suggesting that traditional considerations of an organisation’s absolute size is not necessarily sufficient to gain a better understanding of why some municipalities benefit more than others in terms of service quality, as well as why some municipalities are more likely to lose their autonomy. Rather, the results suggest that the quality benefits and autonomy costs resulting from IMC will ultimately depend on the relative size of a focal municipality situated within a broader cooperative context, giving rise to various levels of size asymmetry and power imbalance.

The study also has some limitations. First, it is based on cross-sectional data collected at a single point in time focusing on one specific type of IMC used to provide health services within a Norwegian healthcare context. We must therefore be cautious about making

generalisations as the results cannot automatically be assumed to apply other types of IMC in other types of services or geographical contexts, or at other points in time. Second, this study solely focuses on asymmetry in size, thereby leaving out other potential sources of asymmetry such as financial capacity, demographical composition, political preferences, etc. Third, the focus of this study is limited to the organisational (i.e. municipal) level of analysis. We believe that future studies of IMC may benefit greatly from also including additional sources of asymmetry (e.g. financial capacity, demographical composition, political preferences, etc.), and other levels of analysis (i.e. individual and network). Finally, our two outcome variables (service quality and autonomy costs), based on subjective and self-reported data measured on a Likert scale, are subject to potential response biases (social desirability, common method, etc.). Although objective indicators of service quality have been used in previous research on IMC in more “hard” and technical service areas (see e.g. Blåka, 2017b), the diverse and complex nature of service quality within the context of health care makes it difficult to capture through objective measures (Blåka, 2017b; Brown and Potoski, 2005). As noted by Brown and Potoski (2005) “it is easier to measure the quality of trash collection than of mental health care services”, something that also may explain the scarcity of literature in the topic area (Bel and Sebó, 2021). Where available, however, objective measures of service quality and autonomy costs and how these relates to asymmetry should be considered in future research.

#### Credit author statement

BA, DOT, and TIK conceived the study and elaborated the questionnaire in collaboration. BA and TIK handled data collection. BA did all statistical analyses in collaboration with TIK. BA drafted the manuscript and revisions. All authors gave input to the manuscript and accepted the final version. This work was supported by the University of Agder [98454]; Aust-Agder Development and Knowledge Fund [2013/3148-51].

#### References

- Aldag, A.M., Warner, M., 2018. Cooperation, not cost savings: explaining duration of shared service agreements. *Local Govern. Stud.* 44 (3), 350–370.
- Aldag, A.M., Warner, M.E., Bel, G., 2020. It depends on what you share: the elusive cost savings from service sharing. *J. Publ. Adm. Res. Theor.* 30 (2), 275–289.
- Andersen, O.J., 2011. Balancing efficiency, effectiveness and democracy in organizing inter-municipal partnerships: conflicting aims? *Scandinavian Journal of Public Administration* 15 (2), 25–46.
- Andersen, O.J., Pierre, J., 2010. Exploring the strategic region: rationality, context, and institutional collective action. *Urban Aff. Rev.* 46 (2), 218–240.
- Arntsen, B., Torjesen, D.O., Karlsen, T.-I., 2018. Drivers and barriers of inter-municipal cooperation in health services – the Norwegian case. *Local Govern. Stud.* 44 (3), 371–390. <https://doi.org/10.1080/03003930.2018.1427071>.
- Arntsen, B., Torjesen, D.O., Karlsen, T.-I., 2020. Associations between structures, processes and outcomes in inter-municipal cooperation in out-of-hours services in Norway: a survey study. *Soc. Sci. Med.*, 113067.
- Bel, G., Sebó, M., 2021. Does inter-municipal cooperation really reduce delivery costs? An empirical evaluation of the role of scale economies, transaction costs, and governance arrangements. *Urban Aff. Rev.* 57 (1), 153–188.
- Bel, G., Warner, M.E., 2015. Inter-municipal cooperation and costs: expectations and evidence. *Publ. Adm.* 93 (1), 52–67.
- Bel, G., Warner, M.E., 2016. Factors explaining inter-municipal cooperation in service delivery: a meta-regression analysis. *Journal of Economic Policy Reform* 19 (2), 91–115.
- Belgraver, H., Verwaal, E., 2018. Organizational capital, production factor resources, and relative firm size in strategic equity alliances. *Small Bus. Econ.* 50 (4), 825–849.
- Blåka, S., 2017a. Does cooperation affect service delivery costs? Evidence from fire services in Norway. *Publ. Adm.* 95 (4), 1092–1106.
- Blåka, S., 2017b. Service quality, inter-municipal cooperation and the optimum scale of operation: the case of local fire departments in Norway. In: *The Rise of Common Political Order*. Edward Elgar Publishing.
- Blåka, S., Tjerbo, T., Zeiner, H., 2012. *Kommunal Organisering 2012*. Oslo. NIBR-rapport, p. 12.
- Brandtæg, B.A., Lunder, T.E., Aastvedt, A., Thorstensen, A., Groven, S., Møller, G., 2019. *Utredning Om Små Kommuner*. Telemarkforskning, TF-rapport(473).
- Broom, G.M., Casey, S., Ritchey, J., 1997. Toward a concept and theory of organization-public relationships. *J. Publ. Relat. Res.* 9 (2), 83–98.
- Brown, T.L., Potoski, M., 2005. Transaction costs and contracting: the practitioner perspective. *Publ. Perform. Manag. Rev.* 28 (3), 326–351.
- Casciaro, T., Piskorski, M.J., 2005. Power imbalance, mutual dependence, and constraint absorption: a closer look at resource dependence theory. *Adm. Sci. Q.* 50 (2), 167–199.
- Chen, B., Graddy, E.A., 2010. The effectiveness of nonprofit lead-organization networks for social service delivery. *Nonprof. Manag. Leader.* 20 (4), 405–422.
- Das, S., Sen, P.K., Sengupta, S., 1998. Impact of strategic alliances on firm valuation. *Acad. Manag. J.* 41 (1), 27–41.
- Dobrev, S.D., Carroll, G.R., 2003. Size (and competition) among organizations: modeling scale-based selection among automobile producers in four major countries, 1885–1981. *Strat. Manag. J.* 24 (6), 541–558.
- Dollery, B., Kitchen, H., McMillan, M., Shah, A., 2020. Intermunicipal cooperation. In: *Local Public, Fiscal and Financial Governance*. Springer, pp. 257–285.
- Ekornrud, T., Thonstad, M., 2016. *Frisklivssentraler I Kommunane: Kartlegging Og Analyse Av Forebyggende Og Helsefremjende Arbeid Og Tilbod*.
- Emerson, R.M., 1962. Power-dependence relations. *Am. Socio. Rev.* 31–41.
- Eythörsson, G.T., Kettunen, P., Klausen, J.E., Sandberg, S., 2018. Reasons for inter-municipal cooperation: a comparative analysis of Finland, Iceland and Norway. In: *Inter-Municipal Cooperation in Europe*. Springer, pp. 105–129.
- Frisvoll, S., Gjertsen, A., Farstad, M., Moseng Sivertsvik, R., 2017. *Evaluering Av Styling Og Ledelse I Værnesregionen. Hvordan Organisere Styling Og Ledelse I Vertskommunesamarbeid?*.
- Graddy, E.A., 2008. The structure and performance of inter-organizational relationships within public service delivery networks. In: *Paper Presented at the Consortium on Collaborative Governance Mini-Conference (Santa Monica, California)*.
- Gulati, R., 1998. Alliances and networks. *Strat. Manag. J.* 19 (4), 293–317.
- Gulati, R., Olivia Wang, L., 2003. Size of the pie and share of the pie: implications of network embeddedness and business relatedness for value creation and value appropriation in joint ventures. In: Vincent, B., Werner, R., Chris, S. (Eds.), *The Governance of Relations in Markets and Organizations*, vol. 20. Emerald Group Publishing Limited, pp. 209–242.
- Guo, C., Acar, M., 2005. Understanding collaboration among nonprofit organizations: combining resource dependency, institutional, and network perspectives. *Nonprofit Voluntary Sect. Q.* 34 (3), 340–361.
- Hannan, M.T., Carroll, G.R., Dobrev, S.D., Han, J., 1998. Organizational mortality in European and American automobile industries Part I: revisiting the effects of age and size. *Eur. Socio. Rev.* 14 (3), 279–302. <https://doi.org/10.1093/oxfordjournals.esr.a018240>.
- Holum, M.L., 2019. Intermunicipal cooperation and the choice of organizational form: independent joint ventures versus contractual agreements. *Int. Publ. Manag. J.* 1–25.
- Høverstad, F.A., 2019. Vakt- og beredskapsordninger i de kommunale helse-, omsorgs- og barnevernstjenestene. *Utredningsoppdrag for KS – FoU-prosjekt nr. 184007*.
- Hulst, R., Montfort, A.V., 2007. Inter-municipal cooperation: a widespread phenomenon. In: Hulst, R., Montfort, A.V. (Eds.), *Inter-Municipal Cooperation in Europe*. Springer Netherlands, Dordrecht, pp. 1–21.
- Hulst, R., van Montfort, A., 2007. Comparative analysis and conclusions. In: *Inter-municipal Cooperation in Europe*. Springer, pp. 211–238.
- Hulst, R., Montfort, A.V., 2012. Institutional features of inter-municipal cooperation: cooperative arrangements and their national contexts. *Publ. Pol. Adm.* 27 (2), 121–144.
- Hulst, R., Montfort, A.V., Haveri, A., Airaksinen, J., Kelly, J., 2009. Institutional shifts in inter-municipal service delivery. *Publ. Organ. Rev.* 9 (3), 263–285.
- Jacobsen, D.I., 2014. *Interkommunalt Samarbeid I Norge: Former, Funksjoner Og Effekter*. Fagbokforlaget.
- Jacobsen, D.I., 2015. Regional governance networks: filling in or hollowing out? *Scand. Polit. Stud.* 38 (2), 115–136.
- Jacobsen, D.I., 2017. 10. Democratic Effects of Inter-municipal Cooperation: Equal Effects for All?, vol. 217. *The Rise of Common Political Order: Institutions, Public Administration and Transnational Space*.
- Kwon, S.W., Feiock, R.C., 2010. Overcoming the barriers to cooperation: intergovernmental service agreements. *Publ. Adm. Rev.* 70 (6), 876–884.
- Langseth, G.V.M., 2012. *Alternative Forvaltningsretninger I Nord-Trøndelag* Retrieved from.
- Leknes, E., Gjertsen, A., Holmen, A.T., Lindeløv, B., Aars, J., Sletnes, L., Røiseland, A., 2013. *Interkommunalt samarbeid. Konsekvenser, muligheter og utfordringer*. Stavanger, IRIS rapport 8.
- LeRoux, K., Brandenburger, P.W., Pandey, S.K., 2010. Interlocal service cooperation in US cities: a social network explanation. *Publ. Adm. Rev.* 70 (2), 268–278.
- Local Government Act*, (1992). Retrieved from: <https://www.regjeringen.no/globalassets/ uploads/krd/tx-23249-kommuneloven-eng.pdf>.
- Lundqvist, L.J., 1998. Local-to-local partnerships among Swedish municipalities: why and how neighbours join to alleviate resource constraints. *Partnerships in Urban Governance*. Springer, pp. 93–111.
- Ministry of Health and Care Services, 2007. *Recipe for a Healthier Diet - Norwegian Action Plan on Nutrition (2007–2011)* (Retrieved from Oslo).
- Monkerud, L.C., Stokstad, S., Indset, M., 2019. *Bruk Av Vertskommunemodellen Blant Norske Kommuner 2008-2016*.
- Municipal Health and Care Services Act*, (2011).
- Nilsen, J., 2013. *Interkommunale Samarbeidsmodeller for Styrket Plankompetanse Og Kapasitet* (Retrieved from).
- Norwegian Association of Local and Regional Authorities, 2013. *Formelt Interkommunalt Samarbeid* (Retrieved from Oslo).
- Norwegian Directorate of Health, 2014. *Kommunenes Plikt Til Øyeblikkelig Hjelp Døgnoppford: Veiledningsmaterieill [Municipalities' Obligation for Acute Bed Units: Guidance Material]* (Retrieved from Oslo).
- Norwegian Directorate of Health, 2017. *Healthy Life Centres in Norway*. Retrieved from: <https://www.helsedirektoratet.no/english/healthy-life-centres>.

- Oliver, C., 1990. Determinants of interorganizational relationships: integration and future directions. *Acad. Manag. Rev.* 15 (2), 241–265.
- Pfeffer, J., Salancik, G., 1978. *The External Control of Organizations: A Resource Dependence Perspective*. Harper & Row, New York.
- Provan, K.G., 1984. Interorganizational cooperation and decision making autonomy in a consortium multihospital system. *Acad. Manag. Rev.* 9 (3), 494–504.
- Provan, K.G., Gassenheimer, J.B., 1994. Supplier commitment in relational contract exchanges with buyers: a study of interorganizational dependence and exercised power. *J. Manag. Stud.* 31 (1), 55–68.
- Romøren, T.I., Torjesen, D.O., Landmark, B., 2011. Promoting coordination in Norwegian health care. *Int. J. Integrated Care* 11 (Special 10th Anniversary Edition).
- Saunes, I.S., Karanikolos, M., Sagan, A., 2020. Norway: health system review. *Health Systems and Policy Analysis* 22 (1).
- Seabright, M.A., Levinthal, D.A., Fichman, M., 1992. Role of individual attachments in the dissolution of interorganizational relationships. *Acad. Manag. J.* 35 (1), 122–160.
- Sørensen, R.J., 2007. Does dispersed public ownership impair efficiency? The case of refuse collection in Norway. *Publ. Adm.* 85 (4), 1045–1058.
- Steinacker, A., 2004. Game-theoretic Models of Metropolitan Cooperation. *Metropolitan governance: Conflict, competition, and cooperation*, pp. 46–66.
- Tavares, A.F., Feiock, R.C., 2014. Intermunicipal Cooperation and Regional Governance in Europe: an Institutional Collective Action Framework. *European Consortium for Political Research*, Glasgow, Scotland.
- Teles, F., Swianiewicz, P., 2018. Motives for revisiting inter-municipal cooperation. In: *Inter-Municipal Cooperation in Europe*. Springer, pp. 1–13.
- Teng, B.S., 2007. Corporate entrepreneurship activities through strategic alliances: a resource-based approach toward competitive advantage. *J. Manag. Stud.* 44 (1), 119–142.
- Tjerbo, T., 2010. *Vertskommunesamarbeid I Norske Kommuner*.
- Vinsand, G., 2010. *Vertskommunesystem eller samkommune*. In: NIVI-notat.
- Voorn, B., van Genugten, M., van Thiel, S., 2019. Multiple principals, multiple problems: implications for effective governance and a research agenda for joint service delivery. *Publ. Adm.* 97 (3), 671–685.
- Warner, M.E., 2006. Intermunicipal Cooperation in the US: a regional governance solution? *Urbanpublic Econ. Rev.* (6), 221–239.
- Zeiner, H.H., Tjerbo, T., 2014. *Interkommunale Samarbeid På Helseområdet*.