

## Social capital, collective efficacy and the provision of social support services and amenities by municipalities in the Netherlands

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### What is known about this topic

- People who live in areas with more social capital experience better health.
- A number of mechanisms behind this relationship have been proposed, among which is differential provision of public services and amenities. This has become more important as a consequence of decentralisation of social support policy.
- This mechanism has not yet been studied extensively.

### What this paper adds

- We find an interaction effect of social capital and collective efficacy on the provision of support services for informal caregivers in rural municipalities.
- We find no conclusive evidence for the provision of social support services and amenities as a mechanism behind the relationship between social capital and health.

### Abstract

Differential provision of local services and amenities has been proposed as a mechanism behind the relationship between social capital and health. The aim of this study was to investigate whether social capital and collective efficacy are related to the provision of social support services and amenities in Dutch municipalities, against a background of decentralisation of long-term care to municipalities. We used data on neighbourhood social capital, collective efficacy (the extent to which people are willing to work for the common good), and the provision of services and amenities in 2012. We included the services municipalities provide to support informal caregivers (e.g. respite care), individual services and support (e.g. domiciliary help), and general and collective services and amenities (e.g. lending point for wheelchairs). Data for social capital were collected between May 2011 and September 2012. Social capital was measured by focusing on contacts between neighbours. A social capital measure was estimated for 414 municipalities with econometric measurements. A measure of collective efficacy was constructed based on information about the experienced responsibility for the liveability of the neighbourhood by residents in 2012, average charity collection returns in municipalities in 2012, voter turnout at the municipal elections in 2010 and the percentage of blood donors in 2012. We conducted Poisson regression and negative binomial regression to test our hypotheses. We found no relationship between social capital and the provision of services and amenities in municipalities. We found an interaction effect (coefficient = 3.11, 95% CI = 0.72–5.51,  $P = 0.011$ ) of social capital and collective efficacy on the provision of support services for informal caregivers in rural municipalities. To gain more insight in the relationship between social capital and health, it will be important to study the relationship between social capital and differential provision of services and amenities more extensively and in different contexts.

**Keywords:** collective efficacy, health, service provision, social capital

### Introduction

There are differences between areas in the health of their inhabitants (Lomas 1998, Diez Roux 2001, Pickett & Pearl 2001, Subramanian *et al.* 2003, Diez Roux & Mair 2010). These health differences are related to social capital. Social capital develops through ties that

people have with each other and is a resource that can be used by individuals and groups (Coleman 1988). It consists of shared norms, mutual trust, and shared obligations and expectations. People living in areas with more social capital experience better health (Subramanian *et al.* 2003, Islam *et al.* 2006, Sundquist & Yang 2007, Hunter *et al.* 2011, Gilbert *et al.* 2013,

Vyncke *et al.* 2013). One of the mechanisms behind the relationship between social capital and health might be the differential provision of public services and amenities (Kawachi *et al.* 1999). Social capital might benefit collective action to lobby for (increased) provision of services and amenities (Kawachi *et al.* 1999). However, this mechanism has rarely been studied. We aim to investigate whether social capital is related to the willingness of people to undertake collective action (collective efficacy) and whether social capital and collective efficacy are related to the differential provision of social support services and amenities.

Only a few studies have addressed the relationship between social capital and the provision of, and access to, public services and amenities. People living in countries with high social trust might have better health because they have better public services (Halpern 2005). Furthermore, people living in communities with more social capital experience fewer problems with access to healthcare (Hendryx *et al.* 2002, Derose & Varda 2009). On the individual level, studies have shown that people with more social capital utilise more health services, more regularly have health check-ups, are less likely to report barriers to care and have more trust in healthcare professionals (Hendryx & Ahern 2001, Drukker *et al.* 2004, Nguyen *et al.* 2005, Derose & Varda 2009, Burr & Lee 2013, Chi & Carpiano 2013).

One study empirically tested whether there is a relationship between social capital and the activities and performance of healthcare organizations. The authors found a significant interaction effect: hospitals in communities with higher voter participation (as an indicator of social capital) and a higher percentage of board members from local community groups tended to provide more community-oriented services (although higher community participation of residents was related to fewer community-oriented services) (Lee *et al.* 2004).

Putnam (2000) posits that people who are more socially connected (who have more social capital) are more likely to do good for other people and work for collective goals (see also Kawachi *et al.* 1999). Socially connected people more often donate blood, give money and do volunteer work (Putnam 2000).

Being socially connected does not necessarily provide an impetus to undertake (positive) collective action (Putnam 2000, Halpern 2005, Deth & Zmerli 2010). Social capital can lead to collective action for the public good if it coincides with so-called 'collective efficacy'. Collective efficacy can be

described as the extent to which people are willing to work for a common goal and want to intervene on behalf of the common good (Sampson *et al.* 1997). Sampson *et al.* (1997) have found that higher levels of collective efficacy are related to lower rates of violence within neighbourhoods. Collective efficacy, however, is not only related to preventing negative events but can also be used to positively contribute to the well-being of a neighbourhood (Sampson *et al.* 1997). In neighbourhoods with more social capital, where there are higher levels of trust, solidarity and shared norms, there is a higher capacity to work co-operatively to reach shared goals (Putnam *et al.* 1993, Sampson *et al.* 1997, Kilpatrick & Abbott-Chapman 2005, Frieling *et al.* 2012). Improving the provision of public services and amenities that enable self-sufficiency can be one of those shared goals.

### Social capital and collective efficacy

Social capital and collective efficacy are complementing concepts that have a number of similarities and dissimilarities. Both concepts tap into the constructs of trust, solidarity and cohesion – although social capital places more emphasis on the value of social networks and the most commonly used measure of collective efficacy incorporates social control over deviant behaviour (Coleman 1988, Sampson *et al.* 1997, Ansari 2013). Co-operation requires social capital, namely, shared norms, trust and reciprocity (Sretzer & Woolcock 2004, Sampson 2006, Ladin *et al.* 2015). Collective efficacy cannot develop and remain effective if social capital is absent (Ansari 2013), and increased levels of social capital may foster collective efficacy and co-operative behaviour (Collins *et al.* 2014, Ladin *et al.* 2015).

Studies into collective efficacy at the neighbourhood level generally use the concept of collective efficacy of Sampson *et al.* (1997) that taps into social control over deviant behaviour (e.g. Cohen *et al.* 2006, Kim & Ball-Rokeach 2006, Maimon & Browning 2012, Wind & Komproe 2012, Collins *et al.* 2014, Quattrin *et al.* 2014). To date we have found no studies that use measures of collective efficacy that focus on the willingness to contribute to the common good of the community and improve its well-being instead of only preventing negative events from occurring. Although Sampson *et al.* (1997) emphasise the potential of collective efficacy to contribute to positive change above and beyond informal control over deviant behaviour, this aspect of collective efficacy is notably absent from the literature.

## The Dutch municipal Social Support Act

The situation in the Netherlands provides a good case to study the relationship between social capital, collective efficacy and the provision of social support services and amenities for people who experience limitations to their participation in society (such as disabled people, chronically ill people or elderly people) in municipalities. The Social Support Act (Wmo), introduced in 2007 (and extended in 2015), gave municipalities responsibility for developing a coherent local social support policy (Schäfer *et al.* 2010, Kroneman *et al.* 2012). Local authorities can provide individual support as well as services and amenities that benefit multiple people. These services and amenities provided under the Social Support Act can help people maintain their autonomy by facilitating independent living and can enhance health and well-being within communities. Municipalities vary in the development and implementation of local support policy (van Houten *et al.* 2008). This variation offers a chance to study the relationship between social capital, collective efficacy and social support policy in municipalities.

This research aims to contribute to the literature about the relationship between social capital and health by examining the relationship between social capital and the differential provision of municipal social support services and amenities. We also hypothesise an interaction effect of social capital and collective efficacy on the number of services and amenities provided by municipalities.

Hypothesis 1: Social capital is positively related to the provision of social support services and amenities by municipalities.

Hypothesis 2: There is a positive interaction effect of social capital and collective efficacy on the number of social support services and amenities provided by municipalities.

## Methods

### Data and measurements

We combined existing data from several sources at the municipal level. The municipality is the lowest level of responsibility for social support policy and the provision of services and amenities. Because this study did not include individual level data, this study does not fall within the scope of the Medical Research Involving Human Subjects Act and does not require ethical approval.

### Provision of services and amenities

For the provision of services and amenities by municipalities, we used information from the survey used for the evaluation of the Social Support Act. Data were collected from January 2013 to the end of May 2013 through a questionnaire sent to every municipality. The questionnaire was completely or partially filled in by 338 of 415 municipalities (a response rate of 83%). With regard to the provision of services and amenities in municipalities, the results of this questionnaire provided complete or partial data for 321 municipalities (77%). Response rates did not differ between more or less urban municipalities (Kromhout *et al.* 2014). Additional analyses showed that municipalities that did not provide data on the provision of support services for informal caregivers or on the provision of individual services and support, had on average a lower percentage of people in the highest income quartile within their municipality (24.5% versus 25.5%). There was no relationship between the percentage of people in the highest income quartile and the provision of services and amenities. Furthermore, there were no differences between municipalities with and without missing data in the level of social capital and collective efficacy. Therefore, we do not expect that results would be different if we would have had data on the provision of services and amenities of all municipalities.

The provision of services and amenities by municipalities was measured in three ways (Vonk *et al.* 2010). The first indicator was the number of services that municipalities provide to support informal caregivers (maximum is nine; e.g. advice, education/training, counselling, respite care and financial support). The second indicator was the number of different individual services and support that the municipality offers (maximum is 27; e.g. domiciliary help, adaptation of the house and meal supply). The third indicator was the number of general and collective services and amenities that are available within municipalities (maximum is 13; e.g. a lending point for wheelchairs and mobility scooters, collective transport facilities and sports facilities for disabled people).

### Social capital and collective efficacy

#### Data

Information about social capital and collective efficacy was obtained through WoOn, the 'Housing and Living Survey 2012', commissioned by the Ministry of the Interior and Kingdom Relations. WoOn 2012 is representative of residents of the Netherlands,

18 years and above. The data were collected among 69,336 people in all municipalities between September 2011 and May 2012 (response rate of 58%). On average there were 168 respondents per municipality, with a minimum of 1 and a maximum of 3077 respondents (SD = 310.5). Data were collected by telephone, face-to-face interviews and through the Internet. Participants were randomly selected from the population of Dutch households with at least one person aged 18 years or above. About half of municipalities have between 20,000 and 50,000 inhabitants, about a third have less than 20,000 inhabitants, 10% have between 50,000 and 100,000 inhabitants, and about 5% have more than 100,000 inhabitants (Statistics Netherlands 2014).

#### *Social capital*

Because social capital is inherent in and develops through social relations, social capital was measured by focusing on social contacts between neighbours. Social capital within municipalities was based on five questions on contacts among neighbours: contact with direct neighbours, contact with other neighbours, whether people in the neighbourhood know each other, whether neighbours are friendly to each other, and whether there is a friendly and sociable atmosphere in the neighbourhood.

Response categories were 'totally agree', 'agree', 'neutral', 'don't agree' and 'totally don't agree' (thus ranging from 1 to 5). Variables and the resulting scales were coded such that higher values indicate more social capital. We applied ecometrics (Raudenbush & Sampson 1999, Raudenbush 2003) using MLwiN 2.24, to aggregate the measurement of social capital to the municipal level. We followed the approach described by Mohnen and colleagues and adjusted for sex, age, education, income, employment status, home ownership and years of residence (Mohnen *et al.* 2011). By aggregating individual responses to the municipal level using the ecometric method, we adjusted for differences in the number of respondents per municipality, differences between individuals within municipalities, and individual response patterns on the five questions. This resulted in a three-level model; one level for municipalities, another for individuals and the last level for the items measuring social capital. The measure of municipal social capital is based on the municipal level residual, indicating the degree to which the social capital of a municipality differs from the grand mean. A positive score means a higher level of social capital than average. The reliability of the social capital measure depends on the variance at the three levels in the model (Hox 2002). Its interpretation is similar to

Cronbach's alpha in psychometrics scale analysis. The reliability of the social capital measure is estimated by:

$$\lambda_k = \frac{\sigma^2}{\sigma^2 + \frac{\tau^2}{J_k} + \frac{\omega^2}{nJ_k}}$$

In this formula,  $\sigma^2$  is the variance at the municipal level,  $\tau^2$  is the variance between individuals per municipality and  $\omega^2$  is the variance between the items.  $J_k$  is the number of individuals in municipality  $k$ . The number of items that measure social capital is denoted by  $n$  (see also Mohnen *et al.* 2011). The reliability of our social capital measure on the municipal level was 0.69. A value above 0.60 is considered to be adequate (Moss *et al.* 1998).

#### *Collective efficacy*

To create a reliable measure of collective efficacy, we used a range of indicators that we expect to capture (a part of) the construct 'collective efficacy' (Box 1). Given our dependent variable, we used measures that focus on willingness to positively contribute to the common good.

The first indicator was based on a single question from WoOn 2012 which measures the degree to which respondents feel responsible for the liveability of their neighbourhood. This question is answered on the same 5-point scale as the social capital measure. We coded the question in such a way that a higher score means a higher level of responsibility. We also aggregated the response to the above-mentioned question to the municipal level by using the ecometric approach (Raudenbush & Sampson 1999, Raudenbush 2003). We used the municipal-level residual of answers to this question. The other measures which we expect to capture the aspects of the construct 'collective efficacy' are described in Box 1.

Because collective efficacy cannot develop if social capital is weak or absent, we examined the correlations between social capital and the possible indicators of collective efficacy. Furthermore, we investigated the results of an exploratory factor analysis for further information on the possibility to construct a measure of collective efficacy based on all or some of these indicators. We chose indicators of collective efficacy based on their correlation with social capital and the results of the factor analysis.

#### **Municipal control variables**

We expected a relationship between the provision of services and amenities, the level of social capital, the level of collective efficacy, and the social composition and urbanity of the municipality. Therefore, we

**Box 1** Indicators of collective efficacy

Average return of charity collections per inhabitant of a municipality in 2012 in euros (Central Bureau on Fundraising (CBF) 2013).

Voter turnout at the municipal elections of 2010 (Dutch Electoral Council 2013).

Percentage of people in a municipality that has registered as a blood donor in December 2012 (Sanquin 2014)

The percentage of people within a municipality that registered at 'Burgernet' (Citizenweb) in October 2013. Burgernet is an initiative from municipalities and the police. Citizens can register in their own municipality to be notified in case of a safety threat, such as theft, burglary or a missing person case. Registered citizens are asked to look out, this can help the authorities to find a suspect or missing person (Burgernet 2013)

Percentage of people within a municipality who has registered as an organ donor in October 2013 (National Donor Registration 2013).

included a number of characteristics of municipalities in 2012 to take into account possible confounders in the relationship between social capital, collective efficacy, and the provision of services and amenities. Urbanity was based on the number of addresses per km<sup>2</sup> (1 = Urban = more than 2500 addresses km<sup>2</sup>, 2 = Semi-urban = 1500–2499 addresses km<sup>2</sup>, 3 = Intermediate urban-rural = 1000–1499 addresses/km<sup>2</sup>, 4 = Semi-rural = 500–1000 addresses per km<sup>2</sup>, 5 = Rural = up to 500 addresses per km<sup>2</sup>). We included the percentage of the population 65 or older and the percentage of people in the highest income quartile. The younger and wealthier a population, the less we expected them to appeal to the municipality for services and amenities to support their health and self-sufficiency, either because they are in better health or because they may more often choose to purchase individual services instead of relying on municipal provisions. Statistics Netherlands (CBS) (2014) provided information about these municipality characteristics.

**Analytic strategy**

We fitted three regression models to test our hypotheses. In the first model, we estimated the association of social capital, collective efficacy, the percentage of 65 and older, the percentage of people in the highest income quartile and urbanity with the support services municipalities offer for informal caregivers. The second model estimated the association of the same independent variables with the provision of individual services and support at the social support (Wmo) office. The third model estimated the association of these variables with the provision of general and collective services and amenities. All models were first estimated with only main effects and subsequently the interaction between social capital and collective efficacy was added. We used Poisson regression, appropriate for the analysis of count data, for the first and third models and negative binomial regression for the second model. A Poisson distribution requires that the variance of a dependent

variable is equal to the mean, which was not the case for the second model. To deal with overdispersion, we used a negative binomial regression model (Ver Hoef & Boveng 2007). Regression analyses were performed using Stata, with a significance level of 0.05.

Additionally, we estimated models including a three-way interaction between urbanity, social capital and collective efficacy to investigate whether the relationship between social capital, collective efficacy and the provision of municipal services and amenities varies by urbanity.

Variance inflation factors were examined for each variable included in the regression models. None of the regression models displayed signs of multicollinearity. Variance inflation factors in our models did not exceed 2, whereas values of 4 or 10 are often used as cut-off points indicating multicollinearity (O'Brien 2007).

**Results**

Table 1 shows the descriptives of the three measures of the provision of services and amenities under the Social Support Act, social capital, the possible indicators of collective efficacy and the municipal control variables. In 2012, Dutch municipalities varied in the services and amenities they provided for their inhabitants.

Table 2 shows the correlations between social capital and the six possible indicators of collective efficacy. The responsibility people feel for the liveability of their neighbourhood, average charity collection returns per inhabitant, voter turnout at the municipal elections and the percentage of registered blood donors within a municipality were significantly related to social capital. Exploratory factor analysis of the six possible indicators, using the principal factors method, identified one factor (eigenvalue of 1.34) with positive factor loadings varying between 0.36 and 0.73. This factor included the responsibility people feel for the liveability of their neighbourhood, average charity collection returns per inhabitant, voter turnout at the municipal elec-

**Table 1** Descriptive statistics of social support services and amenities provided within municipalities, social capital, collective efficacy indicators and confounding variables

Concepts	Variables	Data source	Year	Range in data set	Mean	SD
Social support services and amenities	Number of support services for informal caregivers ( $n = 300$ )	Netherlands Institute for Social Research	2012	1–9	5.3	1.6
	Number of individual services and support ( $n = 321$ )	Netherlands Institute for Social Research	2012	0–27	12.0	6.4
	Number of general and collective services ( $n = 304$ )	Netherlands Institute for Social Research	2012	2–13	7.8	2.3
Social capital	Social capital ( $n = 414$ )	WoOn 2012	2012	–0.28 to 0.25	0	0.09
Collective efficacy	Responsibility for the liveability of the neighbourhood ( $n = 414$ )	WoOn 2012	2012	–0.15 to 0.08	0	0.03
	Average charity collection returns per inhabitant ( $n = 405$ )	CBF	2012	€0.04–12.6	€3.5	€1.4
	Voter turnout at the municipal elections ( $n = 405$ )	Dutch Electoral Council	2010	40.4–80.1%	56.5%	0.07%
	Percentage of registered blood donors in a municipality ( $n = 414$ )	Sanquin	2012	0.08–27.0%	8.7%	2.7%
Municipality characteristics	Percentage of registered inhabitants at Burgernet in a municipality ( $n = 399$ )	Burgernet	2013	0.03–21.8%	8.5%	3.7%
	Percentage of registered organ donors in a municipality ( $n = 405$ )	Donor register	2013	6.4–28.6%	21.1%	3.15%
	Percentage of inhabitants 65 and older ( $n = 414$ )	Statistics Netherlands	2012	7.9–27.7%	17.5%	2.8%
	Percentage of people in the highest income quartile ( $n = 406$ )	Statistics Netherlands	2012	14.7–43.9%	25.2%	4.8%
	Variables	Data source	Year	Category	Number	Per cent
	Urbanity of municipality ( $n = 414$ )	Statistics Netherlands	2012	Urban	14	3.4
				Semi-urban	62	15.0
				Intermediate urban–rural	86	20.8
				Semi-rural	145	35.0
				Rural	107	25.9

tions and the percentage of registered blood donors within a municipality. We found negative factor loadings for the percentage of members of Burgernet and the percentage of organ donors. The percentage of members of Burgernet and the percentage of organ donors were also not significantly related to social capital. Therefore, we used as indicators for collective efficacy the responsibility people feel for the liveability of their neighbourhood, average charity collection returns per inhabitant, voter turnout at the municipal elections and the percentage of registered blood donors within a municipality. We standardised these variables and created a scale of these four indicators of collective efficacy. The reliability of this measure, based on Cronbach's alpha, is 0.65.

Table 3 shows that there was no significant relationship between social capital and the provision of the three types of services and amenities. There were fewer general and collective services in rural municipalities compared to urban municipalities.

There were no significant interaction effects of social capital and collective efficacy on the three types of services and amenities provided by municipalities (not in table). The estimated coefficients for the main effects of social capital and collective efficacy did not change when we included the interaction in the three models. Additional analyses showed a significant positive relationship between the interaction of social capital and collective efficacy and the provision of support services for informal caregivers in rural municipalities (coefficient = 3.11, 95% CI = 0.72–5.51,  $P = 0.011$ ). The relationship between social capital, collective efficacy, the provision of collective services and amenities and individual services and support did not vary by urbanity.

## Discussion

The trend in the Netherlands towards decentralisation of social support policy provided us with an opportunity to study a possible mechanism in the

**Table 2** Pearson correlation of social capital and collective efficacy indicators, *P*-values in parentheses, pairwise deletion (min *n* = 395, max *n* = 414)

	1.	2.	3.	4.	5.	6.	7.
1. Social capital	1	0.55 ( <i>P</i> < 0.001)	0.50 ( <i>P</i> < 0.001)	0.38 ( <i>P</i> < 0.001)	0.11 ( <i>P</i> = 0.026)	0.06 ( <i>P</i> = 0.245)	0.08 ( <i>P</i> = 0.113)
2. Responsibility for the liveability of the neighbourhood		1	0.32 ( <i>P</i> < 0.001)	0.29 ( <i>P</i> < 0.001)	0.10 ( <i>P</i> = 0.051)	-0.04 ( <i>P</i> = 0.419)	-0.03 ( <i>P</i> = 0.548)
3. Average charity collection returns per inhabitant			1	0.60 ( <i>P</i> < 0.001)	0.31 ( <i>P</i> < 0.001)	0.02 ( <i>P</i> = 0.663)	-0.18 ( <i>P</i> < 0.001)
4. Voter turnout at the municipal elections				1	0.28 ( <i>P</i> < 0.001)	0.01 ( <i>P</i> = 0.804)	-0.15 ( <i>P</i> = 0.002)
5. Percentage of registered blood donors in a municipality					1	-0.03 ( <i>P</i> = 0.491)	0.10 ( <i>P</i> = 0.040)
6. Percentage of registered inhabitants at Burgernet in a municipality						1	0.09 ( <i>P</i> = 0.080)
7. Percentage of registered organ donors in a municipality							1

relationship between social capital and health. This is – as far as we know – the second study that puts the hypothesis on social capital and service provision to the test and – just as the earlier study – without evidence in favour of this hypothesis. Overall, the models in this study had little predictive value and were unable to explain variation in the municipal provision of social support services and amenities.

We looked at social capital at a local level by examining contacts in the neighbourhood and we used several indicators of collective efficacy. The indicators that we used provided us with measures of collective efficacy that focus on the neighbourhood (the degree of responsibility people experience), a measure of the willingness people have to exert their influence for the common good at the municipal level (voter turnout at the municipal elections) and a more general indication of the degree to which people are willing to contribute to the common good (average charity collection returns and percentage of blood donors).

In additional analyses, we found a relationship between the interaction of social capital and collective efficacy and the provision of support services for informal caregivers in rural municipalities. This implies that social capital may be a valuable asset for the provision of services and amenities in rural areas

when levels of collective efficacy are higher. More research is needed to investigate whether and how different mechanisms behind the relationship between social capital and health vary according to urbanity.

Lee *et al.* (2004) studied the relationship between social capital and the provision of community-oriented health services by hospitals in the US and also did not find conclusive evidence for this relationship. They report a significant interaction between voting participation and community representation on the governance board of hospitals. They also report that in counties with greater engagement in community activities and volunteer work, hospitals provided fewer services that were aimed to promote community health (Lee *et al.* 2004). They propose that communities with higher participation in social activities and voluntarism may find other ways to fulfil their need for health services. Therefore, there may be less necessity for hospital involvement in community service provision. In Dutch municipalities, there may be a higher availability of informal help and support in areas with more social capital and collective efficacy. It is possible that we did not find evidence for the relationship between social capital, collective efficacy and municipal services and amenities because we were not able to include the availability of informal help and support.

**Table 3** Poisson (models 1 and 3) and negative binomial regression (model 2) of social capital and collective efficacy on the provision of social support services and amenities

	Model 1 (support for informal caregivers) ( <i>n</i> = 297)			Model 2 (individual services and support) ( <i>n</i> = 318)			Model 3 (general and collective services) ( <i>n</i> = 301)		
	Coef.	95% CI	<i>P</i> -value	Coef.	95% CI	<i>P</i> -value	Coef.	95% CI	<i>P</i> -value
Intercept	1.66	1.35 to 1.98	<0.001	2.43	2.06 to 2.81	<0.001	2.25	2.00 to 2.50	<0.001
Independent variables									
Social capital	-0.06	-0.86 to 0.74	0.882	0.25	-0.70 to 1.20	0.611	0.33	-0.32 to 0.99	0.319
Collective efficacy	-0.03	-0.13 to 0.06	0.485	-0.07	-0.18 to 0.04	0.238	0.00	-0.08 to 0.08	0.983
Percentage 65 and older	0.00	-0.02 to 0.02	0.838	-0.01	-0.03 to 0.01	0.433	0.00	-0.01 to 0.02	0.813
Highest income quartile	0.00	-0.01 to 0.01	0.836	-0.01	-0.02 to 0.01	0.420	0.00	-0.01 to 0.00	0.272
Urbanity of municipality									
Urban	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Semi-urban	0.03	-0.29 to 0.34	0.862	0.09	-0.29 to 0.46	0.650	-0.10	-0.35 to 0.15	0.438
Intermediate urban-rural	0.06	-0.26 to 0.39	0.711	0.07	-0.32 to 0.45	0.734	-0.14	-0.39 to 0.12	0.303
Semi-rural	-0.02	-0.35 to 0.32	0.929	0.03	-0.36 to 0.43	0.869	-0.21	-0.47 to 0.06	0.123
Rural	0.00	-0.35 to 0.36	0.986	0.05	-0.37 to 0.46	0.823	-0.29	-0.57 to -0.01	0.041
Pseudo <i>R</i> -squared	0.002			0.002			0.006		

Ref. = reference category.

Three types of social capital can be distinguished: bonding, bridging and linking social capital. 'Bonding' social capital refers to relationships between people in homogeneous networks with similar social identities (intragroup relations). 'Bridging' social capital refers to relations between people in heterogeneous networks (intergroup relations) (Putnam 2002). If municipalities have residents who are more connected to their neighbours, we expect that there is a larger potential to undertake action – even if there is little bridging social capital *between* neighbourhoods within municipalities. This study however did not provide information on specific neighbourhood networks. Linking social capital consists of more vertical and formal relations between people who differ in terms of institutionalised power and resources (Sretzer & Woolcock 2004). We did not have a measure of linking social capital, but this may be an important resource to facilitate contact between citizens and local government officials responsible for municipal support policy. It is possible that residents experience that local government officials are not approachable and that they cannot influence municipal policy.

A methodological strength of this article is the use of the econometric approach to construct a measure of social capital. Use of the econometric approach resulted in a measurement that takes into account differences between municipalities in the number of respondents as well as differences between municipalities in the characteristics of the respondents (Raudenbush & Sampson 1999, Raudenbush 2003).

We did not have data on services and amenities for all municipalities in the Netherlands. We found

no differences in the level of social capital and collective efficacy between municipalities with and without missing data on the provision of services and amenities. Therefore, we do not expect that results would be different if we would have had data on the provision of services and amenities by all municipalities.

Our research has not provided evidence for the increased provision of social support services and amenities as a mechanism behind the relationship between social capital and health. Other factors that we were not able to incorporate in our study may be more important for municipal policy than the factors we studied. Because municipalities have the responsibility to formulate the content of social support policy, political differences between municipalities may cause variation in the provision of services and amenities. Future research could include political differences between municipalities. Furthermore, we could not measure the degree of collective efficacy specifically for health-related goals and we did not have information on the actual effort put into lobbying for social support services and amenities by residents. A more specific measure of collective efficacy could possibly provide more insight into the relationship between social capital and the provision of services and amenities.

We also do not know whether the practical availability of different services and amenities was equal between municipalities in 2012. For instance, regarding support services for informal caregivers, some municipalities may have had a wider array of possibilities for respite care than other municipalities.



Future research can possibly include more specific types of services and amenities. Finally, in other studies it is relevant to not only include the provision of services and amenities by municipalities but also to incorporate experienced access to services and amenities by residents. Residents may be more likely to undertake action to improve access to services and amenities that already exist, instead of lobbying for new services and amenities.

Our findings call for a more elaborate study of the relationship between social capital, collective efficacy and the provision of social support services and amenities in other contexts. Not only the Dutch situation but also other countries with decentralised healthcare systems provide a situation that is suitable to test this hypothesis (e.g. Finland). Furthermore, it is possible that this mechanism can be better tested in the next few years when policy changes have been implemented for a longer time and citizens have had more experience with municipal support policy.

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### Author contributions

GW drafted the manuscript and performed the statistical analysis. PG conceived of the study, participated in its design and co-ordination and helped draft the manuscript. MK provided data for the study and helped draft the manuscript. All authors read and approved the final manuscript.

### Conflicts of interest

The authors do not have any conflict of interest.

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