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The crowding in hypothesis revisited: new insights into the impact of social protection expenditure on informal social capital

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ABSTRACT

This study revisits the crowding in hypothesis and contributes to the literature in two ways. First, in addition to *total* social spending, we examine whether different *types* of social spending increase social capital among their target groups. Second, we distinguish *within-* from *between-*country effects of social spending. Data from the European Social Survey are analysed with logistic multilevel regression models. We analyse two indicators of informal social capital: having social contact with friends, family or work colleagues and having anyone to discuss intimate and personal matters with. The results show that the more governments spend on social protection, the more likely people within those countries are to have social and intimate contact. The results also demonstrate that within-country effects of the types of social spending on having social contact disappear once we control for unobserved heterogeneity between countries. Yet, within countries with higher social spending on sickness/health care, old age and social exclusion, we find that these specific expenditures facilitate intimate contact among people in bad health, retirees and people who are having difficulties living on their present income, respectively. Overall, the crowding in hypothesis is supported. We conclude that it is important to examine the types of social spending and to distinguish within- and between-country effects.

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Introduction

Governments aim to improve social cohesion and want people to be or stay socially integrated. Providing social assistance could be one way of

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accomplishing this objective. A much-debated question is whether countries with high social spending tend to ‘crowd in’ or ‘crowd out’ social capital of its citizens. Put differently, does higher government expenditure on social protection foster or erode people’s social capital? Empirical evidence tends to support the former view and seems less supportive of the latter. Although some studies established no relation between macro-level social protection expenditure and micro-level social capital (Gesthuizen *et al.* 2008, 2009) or even a negative relation for the elderly (Scheepers *et al.* 2002) and the poor (Van der Meer *et al.* 2009), many studies found that higher social spending appears to increase average levels of social capital (Curtis *et al.* 2001; Rothstein 2001; Uslaner 2002; Hooghe and Stolle 2004; Van Oorschot and Arts 2005; Kääriäinen and Lehtonen 2006; Larsen 2007; Van Ingen and Van Der Meer 2011; Gelissen *et al.* 2012; Ellwardt *et al.* 2014). These somewhat inconsistent findings are partly attributable to differences in research designs. Most notably, previous research focused on different dimensions of social capital (e.g. participation in informal social networks, volunteering in formal networks or social trust, *cf.* Pichler and Wallace 2007), used different cross-national data sources (e.g. Eurobarometer, ESS, EVS or ISSP) and measured social spending differently (e.g. social protection expenditure or a typology of welfare state regimes). Notwithstanding these differences, there is a growing consensus that social spending positively affects individuals’ social capital, and we therefore focus on the theoretical mechanisms that predict a crowding in effect.

Approach and contributions

Most prior studies used total spending on social protection (as a percentage of Gross Domestic Product (GDP)) to put the crowding in hypothesis to the test. Little is known, however, about the impact of distinct types of social protection expenditure on social capital of the social groups they target (for a notable exception with regard to older people, see Ellwardt *et al.* 2014). In addition to the commonly used total social spending measure, we examine distinct types of social spending, that is, expenditure on sickness/health care, disability, unemployment, old age and social exclusion. We propose that these specific social protection expenditures are conducive to people’s social capital primarily because they provide (financial) resources to individuals who run a particularly high risk of social isolation. A recent study has shown that unemployed people and those in poor health are less likely to experience income poverty and

material deprivation in countries with high social spending (Saltkjel and Malmberg-Heimonen 2017). It remains a crucial question whether the disaggregated types of social spending are effective in helping disadvantaged people (i.e. their target groups) to gain access to social capital. We aim to provide new insights into the crowding in hypothesis by arguing and showing that it is important to break social spending down into a wide range of social benefits that are intended to protect people against social risks such as illness, old age and unemployment.

To advance our knowledge on the impact of social protection expenditure at the macro level on social capital at the micro level, it is not only relevant to distinguish types of social spending, but also to distinguish *within-* from *between-*country effects (Bell and Jones 2015; Te Grotenhuis *et al.* 2015). Between-country effects of social spending account for cross-national variation in social capital, whereas within-country effects account for differences in social capital within countries over time. We shed new light on the crowding in hypothesis by making this distinction explicit, which is important from both a theoretical and empirical perspective.

Theoretically, the mechanisms underlying within- and between-country effects address fundamentally different processes. We argue that the theoretical underpinnings for *between-*country effects of social spending reflect historically determined cultural and institutional differences across countries that are relatively stable over time and not likely to change quickly because they are the result of long-term socio-political processes (Esping-Andersen 1990). Conversely, we propose that *within-*country effects of social spending theoretically refer to governments that may decide to in- or decrease their expenditures on social protection. This would be more prone to change within countries in a shorter period of time. Prior studies used theoretical arguments related to within-country effects while failing to address these effects in their analyses (e.g. Van Oorschot and Arts 2005; Kääriäinen and Lehtonen 2006; Gelissen *et al.* 2012).

Empirically, within- and between-country effects may considerably differ as well. In fact, Snijders and Bosker (2012) state: 'it is the rule rather than the exception that within-group regression coefficients differ from between-group coefficients' (60). To the best of our knowledge, previous cross-national research is limited to between-country effects of social spending. Yet, to draw valid conclusions about the crowding in hypothesis, it is vital to also examine within-country effects.

Between-country effects are usually based on a limited number of samples within (a large number of) countries. These effects are vulnerable to spuriousness because it is not feasible to take into account unobserved differences between countries. We use high-quality data from seven rounds of the European Social Survey (ESS), covering multiple time points for multiple countries, which allows us to estimate within-country effects. More specifically, the data cover the period from 2002 to 2015, including economically turbulent times that led to changing socio-economic circumstances, austerity policies and large fluctuations in social spending in European countries (Armingeon 2013). This provides a unique opportunity to approach more reliable causal estimates of the impact of social protection expenditure on people's social capital. Moreover, it enables us to assess to what extent within-country effects diverge from between-country effects. Following the approach of Te Grotenhuis *et al.* (2015), we introduce country dummy variables in our multi-level models to absorb time-invariant unobserved heterogeneity between countries, reducing the risk of spurious results. Although we cannot fully take into account unobserved characteristics that change within countries over time, we do control for changing levels of wealth, unemployment and income inequality.

We direct our attention to informal social capital (Pichler and Wallace 2007), which is one of the core dimensions of social capital (Rothstein 2001; Van Oorschot *et al.* 2006). Informal social capital constitutes a valuable resource (Coleman 1988). For individuals, having informal social capital is associated with better health (Kawachi *et al.* 1999), more well-being (Brehm and Rahm 1997) and status attainment (De Graaf and Flap 1988; Lin 1999). Society as a whole may also benefit from people who participate socially because it stimulates economic growth (Fukuyama 1995) and social cohesion (Putnam 2000). In contrast, the absence of informal social capital would have detrimental consequences. We examine two individual-level indicators of informal social capital that are consistently available in the ESS data: having social contact with friends, relatives or work colleagues (in short: having social contact) and having anyone to discuss intimate and personal matters with (in short: having intimate contact). This enables us to examine the impact of total social spending and the types of spending on two aspects of informal social capital in a higher number of countries over a longer time span compared to previous work. Unfortunately, measures of formal social capital are not available in a sufficient number of ESS rounds to adequately test within-country effects. In sum, we address the

following research question: *To what extent do social protection expenditure and specific types of social spending increase the likelihood that individuals, particularly those who are disadvantaged, have informal social capital within European countries?*

The crowding in hypothesis

Existing studies have proposed and some have even tested mechanisms that render the relation between social protection expenditure and the likelihood that people have informal social capital plausible (e.g. Gelissen *et al.* 2012). Note that we are not able to actually test these mechanisms empirically. Rather than empirically testing them, we elaborate on these mechanisms to establish theoretical links between social spending at the macro level and informal social capital at the micro level. We contribute to existing theoretical accounts by separating the arguments that support between-country effects from those that support within-country effects. As this study's main innovation lies in the analysis of within-country effects, we only formulate hypotheses about the within-country effects of (the types of) social spending.

Between-country effects

Ever since Esping-Andersen's (1990) released his seminal work on welfare state regime types, comparative research into this topic has attracted much interest. The existing literature is extensive and focuses particularly on the causes and consequences of differences between welfare states. The by now classic 'three worlds of welfare capitalism' include the liberal, conservative and social-democratic regime, which are ranked from low to high decommodification: 'the degree to which individuals, or families, can uphold a socially acceptable standard of living independently of market participation' (37). Despite its merits, this classification received criticism (for an overview, see Arts and Gelissen, 2002) and our interest lies not in applying these (or any) ideal types. Yet, it is relevant to consider the notion that welfare states owe their origins to diverging historical processes and that cultural norms about social solidarity may have developed accordingly.

Welfare states did not suddenly come into existence, but are the outcome of long-term socio-political processes and demographic shifts that, to this day, partly determine the degree of decommodification that countries provide through social policy. Without going into much detail about the actual historical forces behind the development of the welfare

state (but see, for example, Flora and Heidenheimer 1981; Baldwin 1990; Esping-Andersen 1999), it is important to consider that different national patterns of welfare provision emerged. Countries widely differ in the relative roles they attribute to the state, market and family in providing social welfare (Esping-Andersen 1990), which depends on a large number of factors, such as the political composition of (past) governments, the level of need for social support and the extent of market failure. Consequently, countries also widely differ in their level of social spending. We argue that the historical development and design of welfare states has far-reaching consequences for contemporary cross-national variation in levels of informal social capital. As differences between countries in social spending are relatively stable over the time period that we examine (i.e. 2002–2015), we consider between-country effects of social spending to be responsible for cross-national differences in levels of social capital.

Cultural norms with regard to social solidarity may have developed alongside the emergence and design of welfare states. High government expenditure on social protection would increase people's informal social capital by promoting a national and even individual norm of social solidarity (Van Oorschot and Arts 2005). A welfare state offering social support to those in need sets an example for its citizens. People who grow up and live in countries with high social spending are socialised to encourage social solidarity and support (Rothstein 2001). Governments may thus develop a normative culture that stimulates people's social integration and creates opportunities to meet and mingle, increasing social participation. This means that all may benefit from high social spending. In countries where social spending lags behind or is relatively low, a normative culture may arise or persist in which people wonder why they should help others when the government does not support or even oppresses such endeavours (Völker and Flap 2001). Higher social protection expenditure thus fosters norms of social responsibility, which is conducive to having social and intimate contact (Gelissen *et al.* 2012).

Within-country effects

The central premise of this study – building on prior contributions (Van Oorschot and Arts 2005; Van Oorschot and Finsveen 2010) – is that social protection expenditure increases (particularly, but not exclusively, financial) resources of individuals, which in turn may facilitate social and intimate contact. Previous research used this theoretical mechanism to substantiate between-country effects of social spending, whereas we

argue that it should refer to within-country effects. Governments may decide to in- or decrease their expenditures on social protection over time. Eligibility criteria and social benefit levels can thus change within countries over time, which may affect the likelihood that people have informal social capital within those countries.

Participating in informal social activities usually involves some costs. One can think of costs related to the activity itself (e.g. going to the movies or having drinks), travel expenses (e.g. car fuel or public transportation) or buying gifts for celebratory occasions (e.g. birthdays or weddings). People who live in countries with high social spending are financially supported by the state. As Van Oorschot and Finsveen (2010) put it: 'Welfare states offer people with less personal social capital access to a generalized, resourceful network of welfare institutions and their services' (196). These (financial) resources may enable informal social participation when people have their basic needs covered and decide to spend some of the money on social activities (Kohli 1999). Indeed, the crowding in hypothesis postulates that: *The more countries spend on social protection, the more likely individuals within those countries are to have social and intimate contact (H1)*.

What matters for individuals is not only how much a government spends in *total* on social protection, but also how much a government spends on certain *types* of social protection. Governments can invest in a wide range of social benefits, including benefits for sickness/health care, disability, unemployment, old age and social exclusion. They are intended as '... transfers to households, in cash or in kind intended to relieve them from the financial burden of a number of risks or needs' (Eurostat 2012). We examine whether these expenditures affect their target groups. For example, if disability expenditure increases the likelihood that disabled people have informal social capital, then the average level of informal social capital in a country increases, but it should mainly increase informal social capital of the disabled. We include those social protection arrangements that are explicitly designed to increase social participation among the following groups: sickness/health care expenditure for people who report that they are in bad health, disability and unemployment benefits for the disabled and unemployed, old age benefits for retirees and social exclusion expenditure for individuals who are having difficulties living on their present income.

Receiving government support could be just the boost in resources that disadvantaged people need to be, stay or become socially active (Van Oorschot and Finsveen 2009). One can think of medication that is

compensated or health insurance coverage for people who are sick or suffer from disease. Disabled persons and jobless people will benefit from disability and unemployment benefits as their previous income is (partly) substituted. Likewise, old age pensions could be the only income that elderly receive. Welfare states may also offer actual services, which is seldom acknowledged (Kautto 2002). Older people may, for instance, receive free public transport or specialised transport services. Vulnerable social groups could still face a struggle to satisfy basic needs, but targeted interventions by welfare states can provide financial resources and help to relieve people's financial burden (Wallace and Pichler 2007). To the extent that their basic needs are covered, social needs can become more prominent. Economic security can be seen as a precondition of informal social participation (Van der Meer *et al.* 2008). People who receive social benefits may use part of those benefits for many purposes, such as paying for a social activity or buying a public transport ticket. Welfare states may thus be able to redistribute financial resources and encourage informal social participation among, in particular, disadvantaged people (Van Ingen and Van Der Meer 2011). This leads to the following set of hypotheses: *The more countries spend on sickness/health care (H2a), disability (H2b), unemployment (H2c), old age (H2d) and social exclusion (H2e), the more likely individuals in bad health (H2a), disabled people (H2b), the unemployed (H2c), retirees (H2d) and people who are having difficulties living on their present income (H2e) within those countries are to have social and intimate contact.*

Data and measurements

European Social Survey

We use individual-level data from seven waves of the repeated cross-sectional ESS, conducted between 2002 and 2015. Individuals – 15 years of age and older living in private households – are interviewed face to face. Response percentages are relatively high and samples are generally representative at the country level, although large differences exist across countries and waves. More information about the ESS, sampling strategies, response rates and representativeness is available at www.europeansocialsurvey.org.

The pooled dataset includes 336,964 respondents in 36 countries. Albania, Israel, Kosovo, Russia and Ukraine are excluded because of missing information on social protection expenditure, dropping the number of respondents to 302,100. We also excluded people who are in school as students are not yet part of the labour force. This selection is

needed to draw valid conclusions about the impact of disability, unemployment and old age benefits. After removing respondents with a missing value on the dependent variables and 19 country-year combinations with less than 50 respondents, 269,553 respondents across 245 country-year combinations and 31 countries remain. An overview of the country-year combinations is available online as supplementary material (Table A1).¹ Note that not every country is observed each year.

Informal social capital

Two indicators of informal social capital serve as dependent variables (Pichler and Wallace 2007). First, respondents were asked how often they meet socially with friends, relatives or work colleagues (in short: social contact). Respondents could answer: never, less than once a month, once a month, several times a month, once a week, several times a week and every day. Never and less than once a month are coded 0 while the other categories are coded 1. We dichotomised this variable as we expect that social spending enables social participation of, in particular, people who seldom or do not meet at all with friends, family and colleagues.² Moreover, intimate contact is a dichotomous variable, so dichotomising social contact also increases comparability. Nearly 9 out of 10 respondents (89.8 percent) have social contact, but there are huge differences across countries and years, ranging from 48.6 percent in Hungary in 2013 to 98.8 percent in Portugal in 2003. Second, respondents had to indicate whether they have anyone to discuss intimate and personal matters with (in short: intimate contact): no (0) or yes (1). 90.6 percent of the respondents have intimate contact. There are again large differences across countries and years. In Turkey in 2008, 57.9 percent of the respondents indicated they have someone to discuss intimate and personal matters with, whereas this percentage amounts to 99.0 percent in Sweden in 2012.

Social protection expenditure

Social spending is measured as the percentage of GDP spent on social protection in each combination of country and year preceding the year of the

¹We checked what would happen if we removed all country-year combinations with less than 150 respondents. The results are provided as online supplemental material (Tables A2 and A3). The substantive conclusions do not change.

²Coding only 'never' as not having social contact is not feasible due to the small proportion of respondents that never has contact with friends, family and colleagues. Including 'never', 'less than once a month' and 'once a month' in the not having social contact category provides similar results as presented in Table 2 (results are available upon request).

interview to establish causal ordering. We did not lag this variable two years as applying for social benefits, means-testing or other bureaucratic procedures do not take that long before applicants actually receive those benefits. The ESSPROS manual provides the following definition (Eurostat 2012):

The integrated system of social protection statistics provides a coherent comparison between European countries of social benefits to households and their financing. Social benefits are transfers to households, in cash or in kind intended to relieve them from the financial burden of a number of risks or needs. The functions are disability, sickness/health care, old age, survivors, family/children, unemployment, housing and social exclusion. (7)

We only include the functions that are purposefully designed to facilitate social and intimate contact among vulnerable groups, which are sickness/health care, disability, unemployment, old age and social exclusion expenditure. These types of expenditure provide people in bad health, disabled and unemployed people, retirees and individuals who are having difficulties living on their present income resources to initiate informal social participation or to remain socially active. We refer to the ESSPROS manual for an overview of the types of support the functions include. An analysis of variance showed that 89 and 11 percent of the variation in social spending is attributable to differences between countries and within countries, respectively.

Contextual-level control variables

We added GDP per capita, national unemployment rates and Gini coefficients as proxies for the macro-economic conditions in a country. As there are large fluctuations in these characteristics within and between countries, affecting governments in their ability and need to invest in social protection, it is crucial to control for macro-economic circumstances. We distilled GDP per capita at Purchasing Power Parities (PPP) from the World Bank to capture national wealth. This characteristic is logged to minimise the influence of countries with high GDP. We derived the unemployment figures from the online statistical database of the United Nations Economic Commission for Europe (UNECE). The figures again refer to the combination of country and year preceding each interview year. Lagged Gini coefficients are obtained from the Standardized World Income Inequality Database (SWIID), which aims to maximise comparability across countries and years (Solt 2016). The highest correlation between the contextual-level variables was 0.625

(between total social spending and GDP), which does not directly indicate multicollinearity.

Individual-level control variables

We included a wide range of individual-level variables that have shown to be related to informal social capital (Gesthuizen *et al.* 2008; Van Oorschot and Finsveen 2009). Educational attainment refers to the highest level of education respondents have completed. We condensed the International Standard Classification of EDucation (ISCED) categories into primary, secondary and tertiary education. Employment status consists of five categories: employed, unemployed, permanently sick or disabled, retired and other. Subjective household income is measured by asking: ‘Which of the descriptions comes closest to how you feel about your household’s income nowadays?’. The answer categories were: living comfortably on present income, coping on present income, finding it difficult on present income and finding it very difficult on present income. We also included age in years, gender, migrant status, marital status, number of children in the household and urbanisation. Age is divided by 10 for ease in displaying parameter estimates. We also added age squared to account for curvilinear effects. Descriptive statistics of all variables are shown in Table 1.³

Multiple imputation of missing data

We imputed missing values on the individual-level independent variables using the Markov Chain Monte Carlo (MCMC) algorithm in SPSS version 23, also known as the fully conditional specification approach. This method specifies an imputation model for each variable with missing values, sequentially going through all variables. We generated 25 imputed datasets. The model included all individual-level variables in Table 1 along with country as well as year dummy variables to take into account the nested structure of the data. 13,629 respondents (5.1 percent) had at least one missing value and across all variables, the missing data proportions ranged between 0.1 (gender) and 1.8 percent (subjective household income).⁴

³None of the variables are centred on their mean value. Next to practical reasons, we are not interested in interpreting the intercept or in interaction effects. The estimates of social spending would be the same.

⁴Multiple imputation of missing values is widely accepted as superior to single imputation methods or listwise deletion of missing values (Enders 2010). Nevertheless, we analysed a dataset in which all the missing values were removed. The conclusions with regard to the hypotheses do not differ. The results are available online as supplemental material (Tables A4 and A5).

Table 1. Descriptive statistics ($N_1 = 269,553$; $N_2 = 245$).

	Range	Mean	SD
Dependent variables (N_1)			
Having social contact	0/1	0.889	
Having intimate contact	0/1	0.906	
Independent variables (N_2)			
Total social protection expenditure	10.6–34.2	23.943	5.367
Sickness/health care expenditure	3.5–10.4	6.643	1.556
Disability expenditure	0.2–4.7	2.190	0.945
Unemployment expenditure	0.1–3.7	1.311	0.868
Old age expenditure	3.4–14.0	8.731	2.149
Social exclusion expenditure	0.0–1.5	0.499	0.326
GDP per capita (logged)	9.2–11.1	10.333	0.380
Unemployment rate	2.1–24.8	7.865	3.667
Income inequality (Gini)	22.8–45.9	28.988	3.962
Independent variables (N_1)			
Educational level			
Primary	0/1	0.312	
Secondary	0/1	0.392	
Tertiary	0/1	0.296	
Employment status			
Employed	0/1	0.535	
Unemployed	0/1	0.063	
Permanently sick or disabled	0/1	0.026	
Retired	0/1	0.259	
Other	0/1	0.117	
Subjective household income			
Living comfortably on present income	0/1	0.279	
Coping on present income	0/1	0.461	
Difficult on present income	0/1	0.187	
Very difficult on present income	0/1	0.074	
Age (/10)	1.5–10.5	5.038	1.719
Female	0/1	0.537	
Migrant	0/1	0.141	
Marital status			
Married/Cohabiting	0/1	0.564	
Divorced	0/1	0.105	
Widowed	0/1	0.106	
Single	0/1	0.225	
Number of children in household	0–15	0.708	1.020
Urbanisation			
Rural area	0/1	0.376	
Small city	0/1	0.306	
Big city	0/1	0.318	

Source: European Social Survey (2002–2015).

Analysis

We performed logistic multilevel regression analysis with SPSS version 23 to take into account the hierarchical structure of the data (i.e. individuals nested within country-year combinations). As the dependent variables are binary, logistic regression analysis is appropriate. We started with estimating a random intercept model without covariates. The intraclass correlation for having social contact is 0.169 ($0.667/[0.667 + 3.29]$), meaning that 16.9 percent of the total variance in having social contact is due to

differences between country-year combinations. This figure amounts to 14.7 percent ($0.565/[0.565 + 3.29]$) for having intimate contact. The high intraclass correlations confirm that performing the multilevel analysis is appropriate.

We added all contextual- and individual-level variables in Model 1. We also included country dummy variables to take into account unobserved differences between countries and, hence, examine *within*-country effects of (the types of) social spending (Te Grotenhuis *et al.* 2015).⁵ The country dummy variables were excluded in Model 2, but it includes year dummy variables. The effect of (the types of) social spending in this model thus represent *between*-country effects.

Results

Within-country effects of social spending on informal social capital

Table 2 presents the results of the analysis of the impact of total social spending on both dimensions of informal social capital. Note that Model 1 shows the *within*-country effects of social protection expenditure and Model 2 its *between*-country effects. We first discuss the within-country effects. The results show that total social spending is positively related to both indicators of informal social capital. People within countries with higher social spending are more likely to have social (logit = 0.029) and intimate contact (logit = 0.106). This corroborates the crowding in hypothesis (H1).⁶

We estimated average marginal effects (AMEs) to consider the strength of the within-country effects. The AMEs of social spending on having social and intimate contact are 0.00248 and 0.00793, respectively. This means that individuals are 0.248 percent more likely to have social contact and 0.793 percent more likely to have intimate contact when a country increases social spending by 1 percent of its GDP. When we look at Ireland, which is the country with the largest gap in social spending

⁵One could also analyse multiple observations for multiple countries with three-level models: individuals (level 1), country-year combinations (level 2) and country (level 3). These models account for the fact that the observations for one country are more similar to each other than observations for another country (Schmidt-Catran and Fairbrother 2016). However, they do not take into account time-constant unobserved heterogeneity between countries.

⁶In the online supplemental material, we present the correlations between total social spending and both dimensions of informal social capital for each country separately (Table A6). If the number of observations for a given country is too low, it is not feasible to calculate or reliably interpret the correlation. This is the case for Croatia, Iceland, Italy, Lithuania, Luxembourg, Latvia and Romania. We conducted sensitivity tests in which we excluded these countries simultaneously. We also performed a robustness check in which seemingly influential countries were removed (Table A7). The results of these robustness checks do not alter our substantive conclusions.

Table 2. Within- (M_1) and between- (M_2) country effects of total social spending on informal social capital, results of logistic multilevel regression analysis, logit coefficients and standard errors ($N_1 = 269,553$; $N_2 = 245$).

	Having social contact		Having intimate contact	
	M_1	M_2	M_1	M_2
Total social protection expenditure	0.029 (0.013)*	0.058 (0.010)***	0.106 (0.024)***	0.036 (0.009)***
Contextual-level control variables				
GDP per capita (logged)	-0.192 (0.113)~	0.689 (0.164)***	1.053 (0.206)***	0.463 (0.139)**
Unemployment rate	-0.022 (0.009)*	-0.007 (0.013)	-0.015 (0.016)	-0.010 (0.011)
Income inequality (Gini)	0.041 (0.028)	0.007 (0.012)	0.127 (0.050)*	-0.001 (0.010)
Individual-level control variables				
Educational level				
Primary	-0.452 (0.020)***	-0.450 (0.020)***	-0.580 (0.022)***	-0.581 (0.020)***
Secondary	-0.222 (0.019)***	-0.223 (0.019)***	-0.297 (0.021)***	-0.297 (0.021)***
Tertiary	ref.	ref.	ref.	ref.
Employment status				
Employed	ref.	ref.	ref.	ref.
Unemployed	-0.054 (0.028)~	-0.054 (0.028)~	-0.289 (0.029)***	-0.290 (0.029)***
Permanently sick or disabled	-0.533 (0.036)***	-0.532 (0.036)***	-0.386 (0.038)***	-0.389 (0.038)***
Retired	0.033 (0.022)	0.031 (0.022)	-0.132 (0.024)***	-0.134 (0.024)***
Other	-0.054 (0.023)*	-0.054 (0.023)*	-0.253 (0.026)***	-0.257 (0.026)***
Subjective household income				
Living comfortably	ref.	ref.	ref.	ref.
Coping	-0.327 (0.021)***	-0.333 (0.021)***	-0.217 (0.021)***	-0.216 (0.021)***
Difficult	-0.717 (0.024)***	-0.722 (0.024)***	-0.515 (0.025)***	-0.514 (0.025)***
Very difficult	-1.079 (0.028)***	-1.083 (0.028)***	-0.855 (0.030)***	-0.852 (0.030)***
Age (/10)	-0.365 (0.026)***	-0.365 (0.026)***	-0.538 (0.026)***	-0.536 (0.026)***
Age (/10) squared	0.010 (0.002)***	0.010 (0.002)***	0.029 (0.002)***	0.029 (0.002)***
Female	-0.060 (0.014)***	-0.060 (0.014)***	0.434 (0.015)***	0.435 (0.015)***
Migrant	-0.173 (0.020)***	-0.173 (0.020)***	-0.216 (0.021)***	-0.215 (0.021)***
Marital status				
Married/Cohabiting	ref.	ref.	ref.	ref.
Divorced	0.014 (0.023)	0.013 (0.023)	-0.669 (0.023)***	-0.668 (0.023)***
Widowed	0.053 (0.022)*	0.052 (0.022)*	-0.793 (0.022)***	-0.792 (0.022)***
Single	0.052 (0.023)*	0.052 (0.023)*	-0.686 (0.023)***	-0.684 (0.023)***
Number of children in household	-0.095 (0.007)***	-0.095 (0.007)***	0.039 (0.009)***	0.039 (0.009)***

(Continued)

Table 2. Continued.

	Having social contact		Having intimate contact	
	M_1	M_2	M_1	M_2
Urbanisation				
Rural area	ref.	ref.	ref.	ref.
Small city	0.007 (0.016)	0.007 (0.016)	0.010 (0.017)	0.009 (0.017)
Big city	0.033 (0.016)*	0.033 (0.016)*	0.063 (0.018)***	0.061 (0.018)***
Intercept	5.862 (1.163)***	-3.680 (1.688)*	-11.762 (2.091)***	-0.477 (1.429)
Contextual-level variance	0.039	0.333	0.163	0.228
Country dummy variables	Yes	No	Yes	No
Year dummy variables	No	Yes	No	Yes

Source: European Social Survey (2002–2015).

Significance levels: *** $p < .001$, ** $p < .01$, * $p < .05$, ~ $p < .1$.

over time (a gap of 8.2 percentage points), the probability differences amount to approximately 2.0 (8.2×0.248) and 6.5 percent (8.2×0.793).

We now turn to the within-country effects of the types of social spending on informal social capital for the specific groups they aim to support. The results are presented in Model 1 in Table 3. The sample size differs per analysis because we selected the following groups: people who self-reported (very) bad general health, the permanently sick or disabled and unemployed, retirees and people who are having difficulties living on their present income.⁷ Unfortunately, estimating cross-level interaction effects was not feasible because of convergence problems.

The findings reveal that none of the types of total social protection expenditure have a within-country effect on the likelihood of having social contact among the specific target groups. Hence, we cannot confirm the crowding in hypothesis for this indicator of informal social capital (H2a to H2e). The fact that the estimates of these specific expenditures do not reach statistical significance could be due to the smaller sample sizes or because the variance in the types of social spending and/or having social contact is limited within countries over time.

The picture looks different for the analysis of having intimate contact. The higher the expenditure on sickness/health care (logit = 0.247) and old age (logit = 0.254) in a country, the more likely that people in bad health and retirees within those countries have intimate contact. These findings are in line with H2a and H2d. Disability and unemployment benefits are not related to this dimension of having informal social capital within countries, which rejects H2b and H2c. Social exclusion expenditure

⁷The number of disabled people in our sample is too low to analyse separately. Therefore, the disabled and unemployed are analysed together.

Table 3. Within- (M_1) and between- (M_2) country effects of the types of social spending on informal social capital for target groups, results of logistic multilevel regression analysis, logit coefficients and standard errors.

	Having social contact		Having intimate contact		N_1
	M_1	M_2	M_1	M_2	
Type of social protection expenditure					
Sickness/health care expenditure	0.076 (0.055)	0.207 (0.043)***	0.247 (0.063)***	0.173 (0.035)***	24,126
Disability expenditure	0.075 (0.139)	0.344 (0.063)***	-0.080 (0.177)	0.145 (0.053)**	24,034
Unemployment expenditure	-0.070 (0.104)	0.049 (0.073)	0.077 (0.137)	-0.005 (0.059)	24,034
Disability + Unemployment expenditure	-0.014 (0.074)	0.249 (0.051)***	0.014 (0.097)	0.092 (0.044)*	24,034
Old age expenditure	0.045 (0.040)	0.080 (0.023)***	0.254 (0.057)***	0.033 (0.018)~	69,813
Social exclusion expenditure	-0.004 (0.173)	0.733 (0.167)***	0.467 (0.219)*	-0.247 (0.129)~	70,185
Country dummy variables	Yes	No	Yes	No	
Year dummy variables	No	Yes	No	Yes	

Note: Models are controlled for contextual- and individual-level variables (see Table 2).

Source: European Social Survey (2002–2015).

Significance levels: *** $p < .001$, ** $p < .01$, * $p < .05$, ~ $p < .1$.

does positively affect the likelihood of having intimate contact within countries (logit = 0.467), confirming H2e. In countries where governments spend more on social exclusion, people who are having difficulties living on their present income are more likely to have intimate contact. Overall, we consider this to be rather convincing evidence for the crowding in hypothesis. In particular, the theoretical argument that the types of social spending increase informal social capital of specific groups, that is, people in poor health, retirees and individuals who are having difficulties living on their present income, by providing them (financial) resources to initiate or to continue intimate contact is supported.

Between-country effects of social spending on informal social capital

The effects of total social protection expenditure (Table 2) and the specific types (Table 3) in Model 2 represent between-country effects. The results show: the higher the government spending on social protection, the higher the average level of social (logit = 0.058) as well as intimate contact (logit = 0.036). The between-country effects of social spending thus also support the crowding in hypothesis.

We again estimated AMEs to consider to what extent the effects are substantive. The AMEs of social spending are 0.00494 for having social

contact and 0.00281 for having intimate contact. Comparing the countries with the lowest (10.6 percent in Turkey) and highest (34.2 percent in France) percentage of GDP spent on social protection, we can calculate that the difference in probabilities between these countries is almost 12 percent ($[34.2 - 10.6] \times 0.494$) for social contact and nearly 7 percent (23.6×0.281) for intimate contact.

Moving on to the between-country effects of the types of social spending in Table 3, we see that these effects strongly point towards crowding in effects (9 out of 12 times). We now compare these between-country effects to the within-country effects in Model 1. The results are striking, especially regarding having social contact. For this dimension of informal social capital, it seems crucial to take into account unobserved heterogeneity between countries, as the results are vulnerable to spuriousness (5 out of 6 times). This holds true in only two instances for having intimate contact, although in one instance (i.e. for social exclusion expenditure) the direction of the effect even changes from negative to positive. If we, for example, look at the effect of old age expenditure on having social contact, the results show that it explains differences between countries in average levels of having social contact, but not within countries over time. Theoretically, mechanisms like diverging historical processes and cultural norms about social solidarity would be plausible explanations, whereas governments that in- or decrease social protection expenditure over time do not seem to play a substantial role. The overall picture that emerges is that interpreting between-country effects of social spending may lead to false conclusions with regard to the crowding in hypothesis, particularly when theoretical arguments are used that assume a within-country effect. Hence, if possible, it is important to control for unobserved country heterogeneity.

To gain more insight into why within and between effects can differ so much, we present a similar figure as Te Grotenhuis *et al.* (2015). Figure 1 is an ecological scatter plot that shows the between-country effect of old age expenditure on having social contact. Each dot represents a country-year observation. The regression line represents the positive between-country effect: if expenditure on old age is higher, the average number of people having social contact is higher. We highlighted three countries to explain why we found a non-significant within-country effect. For Ireland, the relation between old age expenditure and having social contact seems to be negative, whereas this relation tends to be positive for the Netherlands. Yet, it is quite difficult to draw a regression line through the observations for Poland. The slope would be flat, indicating

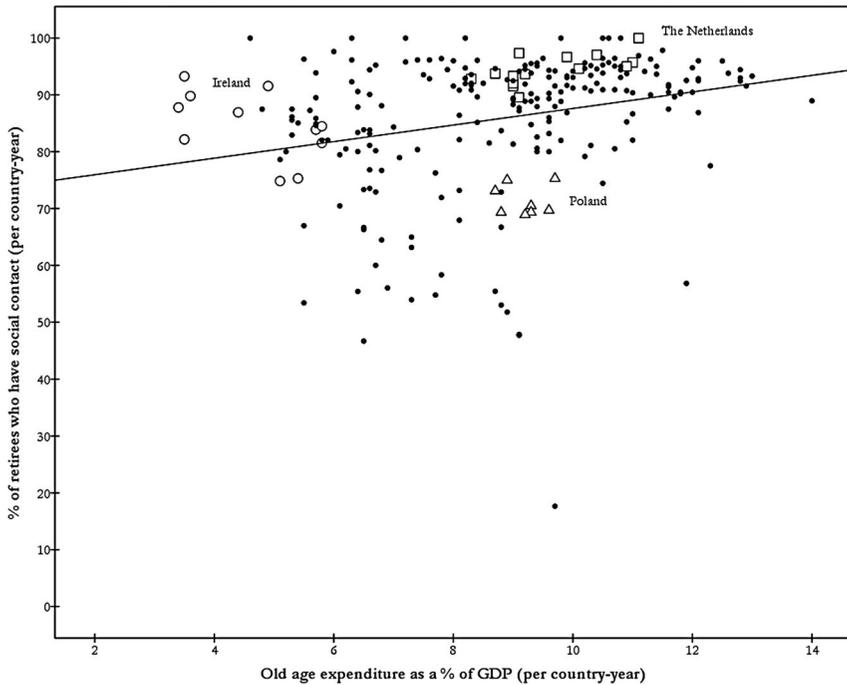


Figure 1. The between country-year effect of old age expenditure on having social contact. Source: European Social Survey (2002–2015).

that this type of expenditure has no effect in this country. In sum, an average within-country effect across these country-year observations appears to be absent, which is exactly what happens when we estimate a country-fixed effects model.

Conclusions and discussion

This study has added to our understanding of the consequences of social protection expenditure for two indicators of people's informal social capital in Europe: having social contact and having intimate contact (Pichler and Wallace 2007). It has offered new insights into the crowding in hypothesis by (1) examining the impact of different types of social spending for specific target groups, besides total social spending, and (2) by theoretically distinguishing and empirically testing within- and between-country effects of social protection expenditure and the types of social spending on informal social capital. Using data derived from seven rounds (2002–2015) of the ESS, we have come to several innovative conclusions.

Our first conclusion is that *total* social spending is positively related to both dimensions of informal social capital. The more governments spend on social protection, the more likely people are to have contact with friends, family or work colleagues and the more likely they are to have anyone to discuss intimate and personal matters with. Total social spending helps to explain differences in having social and intimate contact within countries over time (within-country effects) as well as cross-national variation in having social and intimate contact (between-country effects). These findings are clearly in line with the crowding in hypothesis. Previous research on informal social capital only tested and found between-country effects of social spending while using theoretical arguments for within-country effects (e.g. Van Oorschot and Arts 2005; Kääriäinen and Lehtonen 2006; Gelissen *et al.* 2012). This is the first study to theoretically distinguish within- from between-country effects of social spending on informal social capital and to empirically test both these effects. We argued that the theoretical mechanism underlying within-country effects is based on governments that increase expenditures on social protection, which provides financial resources and services to people, enabling them to participate socially. Contrastingly, between-country effects are the result of historical processes that shaped welfare states differently and may have also led to different cultural norms with regard to social solidarity. Further research is required to determine the empirical validity of these theoretical mechanisms.

Our second contribution to the literature is that we disaggregated total social spending into a wide range of social benefits (i.e. expenditures on sickness/health care, disability, unemployment, old age and social exclusion) and examined whether these *types* of social spending increase informal social capital of their specific target groups. The results showed that, within countries over time, the types of social protection expenditure are unrelated to the likelihood that disadvantaged individuals have social contact and, to a lesser extent, for having intimate contact as well. We demonstrated that this appears to be due to the fact that unobserved differences between countries were not taken into account. Unobserved country heterogeneity seems to be partly responsible for the crowding in effect of sickness/health care, disability, old age and social exclusion expenditure. Although we were not able to fully control for time trends within countries, it is important to control for time-constant differences between countries to approach more reliable causal effects of (the types of) social spending on informal social capital.

In contrast to the findings with regard to having social contact, some of the types of social spending are related to the likelihood that disadvantaged people have intimate contact. More specifically, sickness/health care, old age and social exclusion expenditure seem to financially enable intimate contact for their specific target groups: people in poor health, retirees and people who are having difficulties living on their present household income. This supports our theoretical line of reasoning about within-country effects and the contact-facilitating nature of financial resources and services: governments spending more on social protection may provide disadvantaged individuals with resources that relieve their financial burden, which allows them to (continue to) have intimate contact.

Although this study yielded valuable insights, we would like to point out some potential shortcomings. To reach a better understanding of the broadness of the phenomenon, it would be more informative to have even more indicators of informal social capital. In addition, the inclusion of family, friends and especially colleagues into one measure may raise validity questions. It has also become apparent that some types of social spending are important in facilitating intimate contact, whereas they are not associated with having social contact. A possible explanation for this finding could be that disadvantaged people who are supported by the welfare state are more likely to spend some of that money on more urgent matters like meeting with people with whom they can discuss intimate and personal matters and who may offer the most help, rather than 'wasting' some of that money and time on their broader social network. With the classic distinction proposed by Granovetter (1973) in mind, it could be more valid to distinguish contact with friends, family and colleagues separately. The non-significance of the relation between the types of social spending and having social contact may now have been obscured by combining these different social relations into one measure.

Another point of discussion is that some types of social spending do have an influence on people's likelihood to have intimate contact within countries (sickness/health care, old age and social exclusion expenditure), whereas other types do not (disability and unemployment expenditure). The group of disabled and unemployed people in the data is small, which raises concerns about statistical power. It could also be the case that those who are disabled and jobless have more time on their hands to participate socially while they do not face the physical restrictions that people in bad health encounter. In other words, disabled and

unemployed persons are more mobile than elderly and people with health issues. Previous research found that, controlling for financial resources, unemployed people actually participate more because time constraints are not an issue (Gallie *et al.* 2003). For people who are sick or suffer from (non-work related) disease and for older people, receiving government support could be just the boost they need to become or remain socially active. Future studies should further examine the impact of the types of social protection expenditure on informal social capital of the groups they target.

Another possible area of future research would be to replicate this study with formal social capital as outcome. We limited the scope of this study to informal social capital. Indicators of formal social capital are only available in two rounds of the ESS, which is not sufficient as a high(er) number of time points are needed to assess within-country effects of social spending. It would thus be helpful if questions about formal social capital would be continuously included in cross-national data collection efforts. Previous conclusions about the crowding in hypothesis with regard to formal social capital may also be different when taking into account unobserved heterogeneity between countries (e.g. Van Ingen and Van Der Meer 2011).

To summarise, we showed that it is important to examine the impact of the types of social spending and, if feasible, to control for time-stable differences between countries when assessing crowding in effects on informal social capital. We were able to demonstrate the (potential) danger of interpreting between-country effects as if they were within-country effects, which is also important from a theoretical point of view. Following this approach leads us to the conclusion that countries with high social spending, if anything, seem to increase informal social capital of its citizens, once more providing evidence against the crowding out hypothesis.

Disclosure Statement

No potential conflict of interest was reported by the authors.

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