

Bowling Alone or Bowling All in All?

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The rise of ICTs and new media technologies has opened a wide debate on their impact on social capital. Whilst researchers argue both in favour and against a positive effect of online connectivity on social capital, it is also important to note that there is little consensus on the definition of social capital per se. Merging theory from Coleman and Putnam, we here define social capital as both an attribute of individuals as well as a feature of communities, indicating that, within a social network, changes to social capital happen both at the agent and at the structural level. Taking thereafter a "from the bottom up" approach, we analyse the impact of internet usage on individuals' attitudes towards three fundamental dimensions of social capital: community engagement, socialization and social trust. Our framework sets a useful starting point to understand how individual behaviour can determine changes that at a large scale lead to core societal issues such as civic and political engagement, or the wellbeing of democratic institutions. In this research, we have availed of the European Social Survey data from 2018 to run ordinal logistic regressions aimed at assessing the impact of internet usage on social capital in 19 European countries. Our results indicate that online connectivity significantly increases an agent's social capital, which has critical implications for the social network that he is embedded in.

Introduction

Ever since Robert Putnam has popularised the concept of social capital with his 2000 book *"Bowling Alone"*, declaring the decline of Americans' sense of community, a large debate has formed over how the shift of life from the physical to the online realm has impacted individuals' civic, social, and political life. On the one hand, scholars see the Internet as detrimental to mental health, fostering depression, isolation, and weakening the strength of relations at the family and geographical level. On the other hand, researchers have seen in the digital world the possibility to contribute in new, creative ways to civic life, not to mention broader opportunities for the formation of ties and their maintenance.

The repertoire of resources that emerges as a result of social interaction and cooperation is known broadly as social capital. However, there has been very little consensus on the specific definition of social capital, with some stating that the concept has been misused or that it has lost its original meaning (Yang et al. 2009). Most recent research has drawn from Putnam's definition of social capital as an attribute of communities, meaning that it is inherent to the collective: it is rooted in relationships, and can be measured through network features such as reciprocity and trust. Putnam's definition comes as an expansion to previous understandings of the concept, where the focus of analysis was the individual, rather than the network. In this light, social capital could be seen as generated by people through social relations, yet belonging to each individual uniquely. Coleman (1988) went a step further and explained that, although being the product of individual rational choices, each action requires other individuals for social capital to emerge. These theories, if anything, remind us that social capital is a complex, multilevel concept that can be measured both at the individual level or at the network level; it can be used to describe a network, being a feature of it, but it can also bring benefit to individuals who are positioned in particular ways within it. Drawing from a comprehensive consideration of the aforementioned theories, we here join the debate on whether the recent emergence of Information and Communication Technologies (ICTs) has positively or negatively impacted social capital.

Three factors provide the rationale for this study. First, as changes at the individual and societal level caused by the online are relatively new and constantly evolving, there is need for more research to provide clarity on the implications of the adoption of new media technologies in our lives. Secondly, we propose that academia should take a “from the bottom up” approach in studies of social capital, adopting individual attitudes and behaviour as a unit of measure. In line with mechanistic explanations in analytical sociology, we propose to look at the micro-micro level, mainly how an actors’ usage of the internet affects its’ behaviour within dimensions that constitute social capital. This puts our research in the so-called middle-range theory framework, proposed by Merton (1968), one benefit of which is the opportunity to then extend the study to identify large macro outcomes, such as the current status of democracies, or declines in civic and political engagement at a national or international level. Finally, whilst an incredible amount of research in relation to ICTs and social capital has been published, we are not aware of publications that have adopted a similar framework to ours to look at the impact of Internet usage on social capital in Europe. In this regard, considerable amount of papers have focused on the United States, and others that instead have looked at Europe have chosen a different measure of analysis (Shah et al. 2001; Sum et al. 2008; Blekesaune et al. 2010).

Here, we operationalize social capital as comprised of three dimensions: socialization, trust in others and willingness to help others. Thus we hereby formulate our hypotheses:

H1a: we expect a positive association between Internet usage and socialization; H1b: we expect a negative association between Internet usage and socialization;

H2a: we expect a positive association between Internet usage and social trust; H2b: we expect a negative association between Internet usage and social trust;

H3a: we expect a positive association between Internet usage and willingness to help others. H3b: we expect a negative association between Internet usage and willingness to help others.

Methodologically, we have run ordinal logistic regressions to assess the magnitude and significance of the effects, and we have conducted a robustness check to validate our results using multinomial logistic regression. The results put us in a clear direction towards which stance to take on the debate: we find significance, for all our models, on a positive association between Internet usage and our dependent variables, indicating that high usage of the Internet seem to foster collaboration, cooperation, trust and social welfare among the citizens of the 19 European countries part of our study.

Literature Review

Defining and measuring social capital

The concept of social capital has endured one of the most dynamic theoretical evolutions in the history of sociology. Early mentions of the term appeared with Bourdieu (1986), who proposed that accumulated labour is what generates capital, of which he identified three forms: economic, cultural and social. His proposition entailed that social capital is a feature of individuals, measured through the resources acquired by “more or less institutionalized relationships of mutual acquaintance or recognition” (Bourdieu 1986:248). A little later, Coleman (1988) expanded upon it by stating that social capital is comprised not of one single measure, but rather of the sum of different aspects of social structures that provide benefit to the individuals within it. His definition is noteworthy for mainly two aspects: the pursuit of benefit is a given feature of individuals as rational beings, thus social capital is here understood within an expected-utility framework; as actors seek to generate productivity from their social environment they require multiple resources such as trust, information, and norms, which can only generate by multiple individuals through cooperation and coordination. The most notable shift in social capital theory happened in 2000, with the publication, by Robert Putnam, of *‘Bowling Alone’*. In the book, Putnam proclaims the decline of American civic life and

roots this in a substantial loss of social capital in American society. The idea that social capital can be lost at an aggregate level is the key feature of Putnam's theoretical work. The idea here is that social capital emerges as a collective resource from the multitude of strong and weak ties that individuals within a society possess. Fundamentally, Putnam believed that social capital, as an aggregate-level tool comprised of trust and mutually benefitting engagements, is key in assessing and determining the status of democracy and civic life in a given nation. Simply put, social capital is embodied by factors that while not being directly political, have critical implications for civil functioning.

It is not necessary to see Coleman and Putnam as situated on two opposite sides of a theoretical spectrum, rather it is critical to differentiate between the two theories when determining which unit of analysis to adopt to measure social capital. In line with Coleman, we look at individuals' beliefs, who may be driven by an inner purpose to maximise benefit. In line with Putnam, we suggest that social capital can be used as a tool to measure macro outcomes such as the current political situation worldwide. Adopting an analytical sociology perspective, we here suggest that Coleman and Putnam theories can be both used to build a mechanistic explanation of how for instance the adoption of technologies has impacted the wellbeing of democracies. Looking at it from a Coleman (1986) boat perspective, we place ourselves at the micro-micro level, using individual attitudes and behaviour as a unit of measure. Within this framework, we study the impact of online connectivity on social capital by measuring the relationship between internet usage and individual behaviour within three commonly used dimensions of social capital: socialization, community engagement, and social trust. Following guidelines provided by the OECD (2002), we describe socialization as an indicator of informal networks, which are essential in their ability to provide unpaid help, such as advice, money and emotional support. Community engagement, on the other hand, is a measure of formal networks in the community, and a more aggregate-level predictor of the civic functioning of a country. Finally, we have chosen social trust as the willingness to trust others. Trust is a critical measure in studies of social capital, as it reflects ethical and moral views on humanity, while being subtly affected by interpersonal experiences (OECD 2002).

The internet and social capital

The debate of whether the adoption of ICTs has benefitted or compromised society could arguably not be more polarized. On the one hand there are studies concluding that the Internet causes a decline of social capital (Kraut et al. 1998; Nie & Erbring 2000; Stoll 1995; Loch and Conger 1996). Kraut et al. (1998) stress that the Internet has fostered isolation that damages family and social ties, damaging psychological wellbeing. Nie and Erbring (2000) similarly conclude that being online takes away time dedicate to real-life friendships, leading to a decrease in socialization. Stoll (1995), in his book *'Silicon Snake Oil'*, condemns the Internet for promising too much, meaning that it will not be up to the challenge of substituting real-life experiences. Loch and Conger (1996) stress that ICTs pose a risk of 'de-individuation', described as a process of estrangement from others that damages compliance and understanding of norms.

The opposite side of the spectrum sees a more positive stance on the issue. Shah et al. (2001) report of studies that portray a positive usage of the Internet as a tool to acquire information, maintain relationships, and establish virtual communities of specific interests. In Davis (1999) *'The Web of Politics'*, the author makes the arguments that citizens will learn to use the Internet to participate in politics in unprecedented ways. Rheingold (1993) appeals to the fact that online we can form communities of interest that would perhaps not be present at the narrow-geographical level, inducing a nearly liberating form of psychotherapy for individuals who would otherwise not be able to find similar others. For these scholars, the Internet has a positive effect on social capital as it leads to knowledge gain, tie formation and civic engagement (Norris & Jones 1998; Shah et al. 2001).

As most of these studies relate to the United States, we turn our head towards Europe and ask the question of whether internet usage is correlated to increases or decreases in social capital in nineteen European countries.

Data

In order to test the impact of Internet usage on the three dimensions of social capital we have mentioned above, we avail of the last round of the European Social Survey (ESS round 9, 2018). The ESS is essentially a comprehensive survey carried out through interviews, and it includes questions aimed at measuring political engagement, attitudes towards welfare, immigration, subjective health, sociodemographic and socioeconomic status of a representative sample of European citizens. The ninth round of the ESS comprises 19 countries, with the following respective sample sizes: Austria (AT) 2499; Belgium (BE) 1767; Bulgaria (BG) 2198; Switzerland (CH) 1542; Cyprus (CY) 781; Czechia (CZ) 2398; Germany (DE) 2358; Estonia (EE) 1904; Finland (FI) 1755; France (FR) 2010. As some observations were missing in some variables, we let our models filter out missing data, which brought the final number of observations per country to 34,498: AT 2443, BE 1754, BG 1769, CH 1483, CY 762, CZ 2290, DE 2322, EE 1880, FI 1732, FR 1962.

Dependent Variable: social capital - Given that social capital is a multidimensional concept, meaning that it is not possible to capture it through one specific measure, we have selected three variables that portray the dimensions we deem most important to capture the effect on.

Socialization

Socialization is measured ordinally through the question “Compared to other people of your age, how often would you say you take part in social activities?”. Answers range between 1 and 5, with the ranking “Much less than most”, “Less than most”, “About the same”, “More than most”, “Much more than most”.

Community engagement

Community engagement is a variable more specifically capturing the respondent attitude towards whether it is “Important to help people and care for others well-being”, and answers range between 1-6, “Very much like me”, “Like me”, “Somewhat like me”, “A little like me”, “Not like me”, “Not like me at all”. For the purpose of this analysis and comparison across signs of coefficients and graphs, we have reversed this variable so that lower rates are scored with lower numbers, and viceversa.

Trust

Trust is asked in the ESS as “Would you say that most people can be trusted, or that you can’t be too careful in dealing with people?”. Answers range on an ordinal scale between 0-10, where 0 is “You can’t be too careful”, and 10 is “Most people can be trusted”.

Independent Variable: internet usage - Our main predictor is variable resulting from the question: “People can use the internet on different devices such as computers, tablets and smartphones. How often do you use the internet on these or any other devices, whether for work or personal use?”. Possible answers run on a scale from 1 to 5, and include “Never”, “Only occasionally”, “A few times a week”, “Most days”, “Every day”.

Control variables - Finally, we have included control variables to account for sociodemographic and socioeconomic factors. Those are:

Age - A discrete variable ranging between 15-90.

Gender - A dummy variable returning 0 for Male and 1 for Female.

Education - A dummy variable returning 0 if the respondent has not completed any higher education and 1 if the respondent holds anything from a Bachelor degree and upwards.

Results

As a first step in the analysis, we have looked at descriptive statistics by country in relation to our dependent and independent variables. Not surprisingly, higher internet usage, as well as more positive attitudes towards social trust, are to be found among Nordic countries or richer European nations. Cross-country variation lead to a consideration on whether to include country as an interaction term or a control variable in our models, but following Rodríguez-Pose and von Berlepsch (2014) we have concluded that this was not a necessary step to have an overview of the relationship between internet usage and our dependent variables in Europe as a whole.

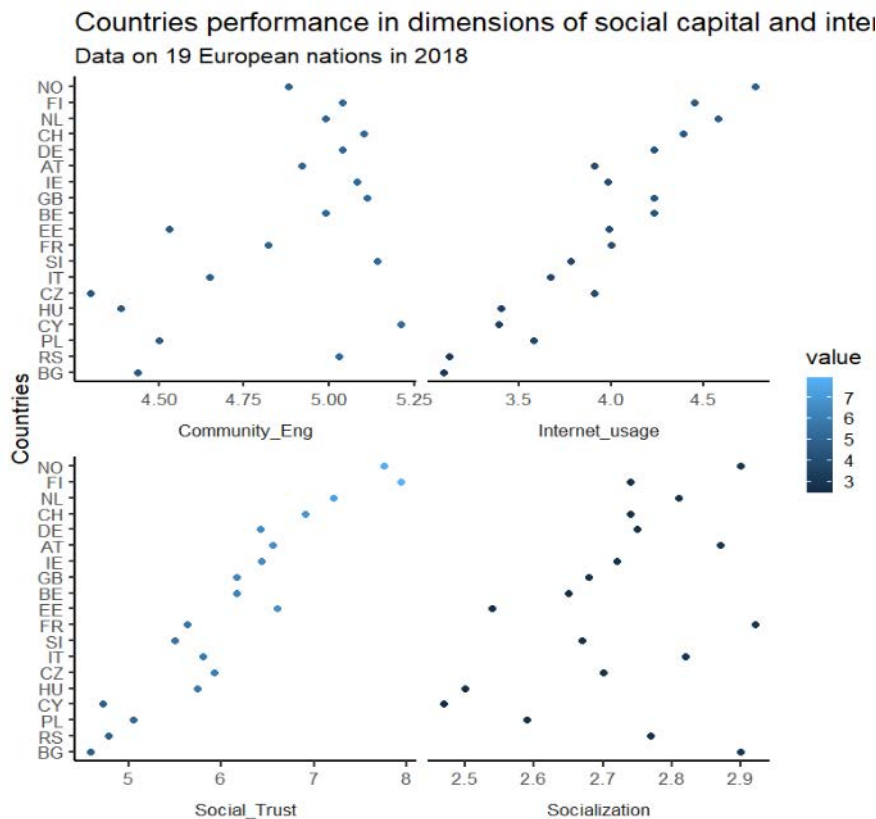


Figure 1: Data from ESS round 9

Table 1 shows the results from three separate models varying in each having one dimension of social capital as dependent variable. Model 1, respective to socialization, shows that internet usage is positively and significantly associated with socialization. Additionally, it appears that women socialise less than men. Individuals with higher education socialise more, and older people too. Model 2 has community engagement as dependent variable, and reports significant and positive results for all our variables, indicating that those who use the internet more also tend to deem more important to help others. Similarly, women, people with higher education and older individuals significantly are more willing to engage with their communities. Finally, in Model 3 we have chosen social trust as dependent variable, and, similarly to model one, we have positive and significant coefficients at all levels for the exception of gender, suggesting women trust less than men, and that internet users, people with higher education and older individuals trust others more.

In Figure 2, we have displayed the odds ratio calculated from the model log of the odds coefficients. As noticeable, internet usage is significantly positively affecting all three dimensions of social capital in our study, suggesting that higher usage of the internet has beneficial effects of social trust, that it leads to higher socialization and that it makes people more willing to help others. Specifically, the odds ratio of 1.21 for internet usage in the first plot (displayed by the dot), indicates that one increase in internet usage increases your odds to go from one score on the socialization scale to the next one by 1.21. In the second plot, the

Table 1: Ordinal logistic regression output. The relationship between internet usage and socialization, community engagement and trust.

	<i>Dependent variable:</i>		
	social (1)	engagement (2)	trust (3)
internet usage	0.191*** (0.008)	0.071*** (0.008)	0.223*** (0.008)
gender	-0.073*** (0.020)	0.440*** (0.020)	-0.054*** (0.019)
high education	0.245*** (0.023)	0.145*** (0.022)	0.497*** (0.021)
age	0.002*** (0.001)	0.003*** (0.001)	0.008*** (0.001)
Observations	35,139	35,075	35,637
<i>Note:</i> *p<0.1; **p<0.05; ***p<0.01			

odds ratio of internet usage indicate that one increase in unit of internet usage increases your odds to choose a higher category on the community engagement scale by 1.07. The third graph odds ratio for internet usage is 1.25, indicating that one increase in internet usage unit increases your odds to go from a category on the social trust scale to the next one by that amount. Whilst the trend is positive in all three dimensions, the magnitude of the effect seems to be stronger for socialization, suggesting that people might use the internet to build and maintain social relations. To sum up, our results therefore indicate that European residents' internet usage significantly and positively improves their social capital.

Finally, as log of the odds and odds ratio can be challenging to directly interpret, we have converted them in predicted probabilities. Figure 3 shows our predicted probabilities for each model. In relation to the first model, we can see an increase in probability of socialising more the more internet usage one declares. The trend is reversed for those who do not socialise as much as their peers: less socialization is predicted to report less internet usage. Positive trends for high community engagement and negative trends for low community engagement are also noticeable in figure 2, although the magnitude of the effect is not as large. Lastly, similar dynamics appear in relation to social trust. We can infer from Figure 3 that most people are situated in the middle of each spectrum, with less people predicted to choose extreme responses.

Upon failing the Brant tests run to validate our models in light of the requirement for ordinal logistical models to fulfill the parallel regression assumption, we have decided to conduct a robustness check to see if significance is still present when using multinomial logistic regression instead. We found significance in all our equivalent multinomial logistic models (see Table 2, 3, 4), which gives us more security in our stance that, in our data, we find a positive association between internet usage and social capital, confirming our hypotheses H1a, H2a and H3a.

Odds Ratios: Socialization, Community Engagement and Trust in Europe



Predicted Probabilities: Socialization, Community Engagement and Trust in Europe



Table 2: Socialization in Europe. Multinomial logistic regression

	<i>Dependent variable:</i>			
	Less than most	About the same	More than most	Much more than most
	(1)	(2)	(3)	(4)
internet usage	0.204*** (0.015)	0.271*** (0.014)	0.387*** (0.017)	0.316*** (0.028)
gender	-0.174*** (0.040)	-0.159*** (0.038)	-0.219*** (0.045)	-0.181*** (0.069)
high education	0.420*** (0.052)	0.435*** (0.050)	0.713*** (0.056)	0.654*** (0.080)
age	-0.006*** (0.001)	-0.009*** (0.001)	0.004*** (0.001)	-0.0001 (0.002)
Constant	0.568*** (0.114)	1.000*** (0.108)	-1.380*** (0.131)	-2.355*** (0.201)
Akaike Inf. Crit.	91,739.960	91,739.960	91,739.960	91,739.960

*Note:**p<0.1; **p<0.05; ***p<0.01
Data from ESS 2018.

Table 3: Community engagement in Europe. Multinomial logistic regression

	<i>Dependent variable:</i>				
	Not like me	A little like me	Somewhat like me	Like me	Very much like me
	(1)	(2)	(3)	(4)	(5)
internet usage	0.059 (0.066)	0.204*** (0.061)	0.255*** (0.060)	0.286*** (0.059)	0.315*** (0.060)
gender	-0.070 (0.177)	0.046 (0.163)	0.082 (0.160)	0.328** (0.159)	0.711*** (0.160)
high education	0.177 (0.240)	0.216 (0.223)	0.365* (0.219)	0.449** (0.218)	0.517** (0.219)
age	-0.003 (0.006)	0.0001 (0.005)	0.0005 (0.005)	0.004 (0.005)	0.004 (0.005)
Constant	1.325*** (0.491)	1.978*** (0.453)	2.780*** (0.444)	3.064*** (0.442)	2.200*** (0.444)
Akaike Inf. Crit.	92,465.750	92,465.750	92,465.750	92,465.750	92,465.750

*Note:**p<0.1; **p<0.05; ***p<0.01
Data from ESS 2018.

Table 4: Social trust in Europe. Multinomial logistic regression

<i>Dependent variable:</i>						
	1	2	3	4	5	6
	(1)	(2)	(3)	(4)	(5)	(6)
internet usage	0.062** (0.027)	0.119*** (0.023)	0.183*** (0.021)	0.213*** (0.022)	0.264*** (0.019)	0.337*** (0.021)
gender	0.050 (0.071)	-0.026 (0.060)	-0.176*** (0.055)	-0.002 (0.056)	-0.072 (0.050)	-0.148*** (0.054)
high education	0.087 (0.097)	0.133 (0.082)	0.297*** (0.074)	0.337*** (0.075)	0.447*** (0.068)	0.563*** (0.071)
age	-0.001 (0.002)	-0.001 (0.002)	-0.002 (0.002)	-0.004* (0.002)	0.004*** (0.002)	-0.0001 (0.002)
Constant	-0.686*** (0.199)	-0.248 (0.168)	-0.020 (0.155)	-0.232 (0.159)	-0.061 (0.141)	-0.597*** (0.152)
Akaike Inf. Crit.	155,837.800	155,837.800	155,837.800	155,837.800	155,837.800	155,837.800

Dependent variable: (continued)

	7	8	9	Most people can be trusted
	(7)	(8)	(9)	(10)
internet_usage	0.416*** (0.020)	0.436*** (0.021)	0.410*** (0.030)	0.232*** (0.034)
gender	-0.163*** (0.051)	-0.120** (0.054)	0.016 (0.075)	-0.023 (0.091)
high_edu	0.828*** (0.068)	0.986*** (0.070)	1.011*** (0.088)	0.688*** (0.109)
age	0.005*** (0.002)	0.012*** (0.002)	0.013*** (0.002)	0.019*** (0.003)
Constant	-0.951*** (0.147)	-1.790*** (0.155)	-3.147*** (0.221)	-3.180*** (0.265)
Akaike Inf. Crit.	155,837.800	155,837.800	155,837.800	155,837.800

*p<0.1; **p<0.05; ***p< 0.01
Data from ESS 2018.

Limitations and Conclusion

In this paper, we have assessed the impact of internet usage on social capital in nineteen European countries. Being social capital a multidimensional concept, we have run three ordinal logistic regression that aimed at assessing the relationship between internet usage and three fundamental dimensions of social capital: socialization, community engagement and social trust. Our results indicate that there is a positive significant association between internet usage and those three measures, indicating that European residents' online connectivity has improved their social capital. We do, however, acknowledge that internet usage is a rather broad measure of experiences of the digital world. As Shah et al. (2001) propose, the impact of the internet in our lives requires us to go beyond a simple black and white interpretation of whether the internet is used or not, but rather on how the internet is used, whether it is in relation to acquire information, perform tasks or communicate with others. To our defense, our dataset did not allow us for such a flavourful measure of online connectivity. Yet, we believe our study still provides an indication that the internet seems to benefit society overall, and we suggest that future research might focus on how European residents' specific usage of the internet affects social capital. Additionally, while we have applied a broad approach to visualise the trend at a European level, future researchers could expand this study by assessing country-level variation of the effect.

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