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Do Survey Data on Social Capital Reflect Real Facts?

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Abstract

Whether survey data on social capital reflect real facts is relevant because such data are the basis of a substantial and influential literature. This literature highlights the role of social capital in fostering social cohesion, political stability, political and social participation, the quality of democracy, economic outcomes, health, and subjective well-being. However, the limited evidence on the convergence of survey data with objective measures of social capital raises concerns that this literature resembles a giant with feet of clay. We provide evidence that objective and survey measures of social capital correlate meaningfully. To this purpose, we exploit various sources of cross-country, cross-region, and time-series European objective data on blood donations, voter turnout, and newspaper reading. In addition, we expand our analysis to the correlation of survey data with semi-objective indicators of social capital. Semi-objective indicators originate from survey meta-data. Specifically, we use interviewers' reports to derive information on respondents' cooperation. Our findings indicate that survey measures of social capital are valid and disprove the suspicion that the social capital literature is a giant with feet of clay.

Keywords: Social capital, Validity, Survey indicators of social capital, Objective indicators of social capital, Semi-objective indicators of social capital, Trust

1 Introduction

In this paper, we check whether surveys provide a valid representation of objective measures of social capital.

Social capital is one of the most complex and debated concepts in the social sciences and, as such, it is subject to problems of conceptual stretching (Sartori 1970). It has been defined differently across disciplinary traditions and analytical perspectives, ranging from individual network-based resources to collective and normative properties of social organization (Bourdieu 1986 and 1989; Coleman 1988; Putnam 1993; Lin 2001).

Within the collective perspective, social capital is commonly distinguished into bonding, bridging, and linking forms. Bonding social capital refers to strong in-group ties (Putnam 2000); bridging social capital captures weaker ties that foster generalized trust across social groups (Putnam 2000; Uslaner 2002); and linking social capital refers to vertical relationships connecting individuals or groups to institutions (Woolcock 2001).

We refer to social capital as trust, together with cohesion and shared values that facilitate cooperation towards common goals (Putnam 1993). Social capital attracted considerable attention over recent decades across all social sciences. Social capital underlies social cohesion, political stability, political and social participation, and more generally the quality of democracy (Putnam 1993; Stolle & Hooghe 1998; Uslaner 1999; Knack 2002; Paxton 2002; Welzel et al. 2005; Cartocci 2011; Morlino 2011; Bordandini & Piotti 2019; Almagisti 2022), economic performance (Knack & Keefer 1997; Whitely 2000; Algan & Cahuc 2010; Tabellini 2010; Ponzetto & Troiano 2024), organizational governance (Lazega & Pattison 2017), economic mobility (Chetty et al. 2022) as well as health (Kawachi et al. 2008; Mohnen et al. 2012; Xue et al. 2020) and subjective well-being (Flap & Völker 2001; Helliwell & Putnam 2004; Bartolini & Sarracino 2014; Helliwell & Aknin 2018).

However, this literature could be a giant with feet of clay. Indeed, while initial studies used objective and territorial indicators of social capital (Putnam 1993 2000), almost all the subsequent empirical literature used measures of social capital collected through surveys. Hence, the credibility of such literature critically hinges on the ability of survey data to reflect accurately objective facts. The subjective nature of survey questions, along with the typical sources of survey error – such as non-random samples, wordings, positioning in the questionnaire, priming, translation problems, missing data – raise doubts about whether survey measures of social capital correctly reflect any objective measure of social capital.

Objective and survey-based indicators do not always provide consistent information. For example, data on perceptions of safety and victimization rates often diverge (McGinn et al. 2008; Prieto Curiel & Bishop 2016), as do data on perceived crime versus crime rates (Manning 2022), data on self-reported versus objective energy poverty (Bardazzi et al. 2023), and even the perceived greenness of neighborhoods and objective measures of greenness (Leslie et al. 2010). For this reason, the credibility of survey data often undergoes scrutiny. For example, much attention has been devoted to testing the validity of subjective well-being data (e.g. van Reekum et al. 2007; Schimmack et al. 2010; Lucas et al. 2012; Jovanović 2016).

A work by the OECD (2017) lends support to the validity of survey measures of interpersonal trust, but relies only on correlations among subjective data. Contributions analyzing the correlation between survey and objective data on social capital are scarce, and the literature has not gone much beyond anecdotal evidence, with the notable exception about the wallet experiment (The Economist, June 22 1996). Such experiment demonstrates a strong correlation between the rate of returned lost wallets and survey data on interpersonal trust across various cities, countries or regions.

In sum, the credibility of the data upon which rests the empirical literature on social capital is scant. Tests of the validity of survey measures are scarce because it is difficult and expensive to collect objective measures to use as yardsticks. We address this gap by collecting objective measures of social capital across countries, regions, and over time, and checking their correlation with survey data on social capital. A particular feature of our analysis is that we also consider survey meta-data as yardsticks to evaluate the validity of survey measures of social capital. By "survey meta-data" we refer to aspects such as the interviewer's evaluation of the respondent's cooperation, and the duration of the interview. We regard survey meta-data as semi-objective information as they are based on third-party evaluations of respondents' attitudes. Such data refer to the cooperative behavior of survey respondents, i.e. their availability to devote time to a public interest goal (the survey). Our aim is to establish to what extent survey indicators reflect objectively observed measures of social capital.

Objective and semi-objective data are especially useful to test the validity of survey data because the potential for survey errors diminishes as one moves from survey to semi-objective, and then to objective measures. In other words, objective data can be considered the true benchmarks that survey data try to represent.

In this paper, we first show the correlation between two indexes of social capital, one based on survey measures and one based on objective measures, at the level of Italian regions. Subsequently, we investigate the cross-country and time-series correlations between trust in others, a commonly used survey-based measure of social capital—and objective or semi-objective measures of social capital, and in particular of cooperative behaviors. Besides being a frequently observed measure of social capital, trust is considered a central ingredient of social capital since the beginnings of studies on the topic. For example, Putnam (1993) defined social capital as "features of social organizations, such as networks, norms and trust that facilitate action and cooperation for mutual benefit". We adopt the same definition of social capital, but extend our analysis also to survey data on donations of money; time dedicated to associations; having interest or conversations about politics; and newspaper reading. Our results indicate that survey-based and objective and semi-objective measures of social capital correlate positively and significantly across regions, countries and over time. This allows us to conclude that survey measures of social capital provide reliable information on the social capital prevalent in societies.

The paper is organized as follows. In Section 2, we present the main studies currently available on the validity and reliability of survey measures of social capital. Section 3 illustrates our results and provides details on data and methods. In Section 4, we summarize our findings.

2 Background

In recent decades, the burgeoning literature on social capital has become increasingly influential in social sciences. Most empirical studies on the topic rely on data collected through surveys. Interpersonal trust, for instance, is typically operationalized using respondents' answers to standard questions included in cross-national surveys, such as: "Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?".

Many papers use the answers to this and similar questions without careful evaluation of the accuracy of survey-based measures. Interviews-related errors (such as errors derived by recording incorrect answers), respondent-related errors (such as errors due to the misunderstanding of questions), and survey or administrative mode errors (such as errors caused by the so-called desirability bias or errors related to the rapidity of telephone interviews) are some of the cause of potential observation errors that affect surveys (Groves 1989, 14-15). Responses may also be affected by respondents' perceptions of the survey context. For example, perceived survey sponsorship can systematically influence reported political trust, particularly when respondents believe that governmental actors are involved in the data collection process (Isani and Schlipphak, 2023). More generally, the subjective nature of survey questions and the potential errors commonly affecting surveys, raise doubts about the accuracy of the collected data, and question the validity of survey-based measures on which hinges the vast majority of the literature on social capital.

Reliability and validity are two facets that researchers typically consider when assessing accuracy. Reliability has to do with the extent to which a measure produces consistent data over time or across similar measurement tools. A measure that consistently produces the same results when repeated over short time periods or when operationalized through similar questions is reliable. Reliability thus refers to the low variance of the measure.

Validity refers to whether the measure truly represents what it is supposed to measure. In other words, validity reflects the ability of an indicator to correctly reflect (theoretically and empirically) the underlying concept that it intends to measure (Marradi 1980). The validity of a measure therefore depends not only on its statistical properties, but also on a transparent and theoretically defensible correspondence between the construct, its observable dimensions, and the indicators used to represent it (Øby, 2025).

Reliability does not imply validity. If, for example, a person's intelligence is measured by his shoe size, the data can be reliable, but not valid (Corbetta 2003, 81). Validity is usually analyzed in terms

of content (or face) validity, which refers to whether the measure is intuitively and theoretically meaningful; convergent (or criterion-related) validity, which refers to whether the measure correlates well with other indicators of the same concept; and construct validity, which refers to whether the measure behaves as theory predicts[1]. In this paper we focus on convergent validity; that is we assess whether and to what extent survey-based measures of social capital correlate with objective measures.

The OECD (2017) provided evidence supporting the reliability of commonly used measures of interpersonal trust in surveys, demonstrating strong correlations across different surveys and multiple waves of the same survey. Additionally, the face validity of this trust measure is similarly well-supported (OECD 2017). Its construct validity is also well-established, as it shows the expected correlations with GDP per capita, unemployment rates, homicide rates, and life satisfaction, both in terms of direction and magnitude (OECD 2017). There is little research however, on the convergence between survey-based and objective measures of social capital. One of the most important studies is the "wallet experiment" reported by the Reader's Digest (The Economist, June 22, 1996). The experiment consisted in randomly dropping twenty wallets containing $50 cash and the addresses and phone numbers of their owners in 20 Western European cities from 14 different countries. Similarly, ten wallets were dropped in 12 U.S. cities. Subsequently, the experimenters compared the proportion of wallets returned with the share of people declaring to trust others using data from the World Values Survey. The correlation coefficient between the share of returned wallets and the share of people declaring to trust others was 0.65. The fact that nearly the same correlation holds at regional level strengthens the results of the experiment.

This study is often reported as the main evidence of convergence between survey and objective data on social capital. However, the sample size of wallets used in the experiments is small (20 wallets per city), making it difficult to generalize its validity. The original Reader's Digest experiment was limited by its small sample size and relatively weak experimental control. Tannenbaum et al. (2020) substantially extended this approach through a standardized field experiment involving more than 17,000 wallets across 40 countries. Their findings support the validity of generalized trust and related measures, but remain focused mainly on trust and honest behavior. We broaden this approach by considering several survey measures and multiple objective and semi-objective data across regions, countries, and over time.

[1] Construct validity tests, in other words, analyze statistically whether an indicator corresponds to theoretical expectations in terms of relationships with other variables. For instance, if I have the theoretical expectation that there exists an inverse relationship between education and racial prejudices, I can test the validity of an indicator of racial prejudices by its correlation with education.

Other scholars used experiments to test the validity of survey-based measures of trust, finding mixed evidence. Glaeser et al. (2000) observed that those who self-reported higher levels of trust also exhibited less trust in others in a Trust Game experiment. Murtin et al. (2018) used a combination of experimental games (the Trust Game, but also the Public Goods Game, the Dictator Game and the Risk Ladder Experiment) along with a survey asking how much other people and institutions can be trusted. The authors found that survey measures of trust are positively correlated with the behavior exhibited in the experiments. Tang and Gong (2023) find a mixed correlation between trust game and survey trust driven by in-group and out-group belonging.

The Covid-19 pandemic provided additional evidence supporting the hypothesis of a positive association between survey-based and observed measures of social capital. Changes in mobility at the onset of the epidemic - measured for instance by individuals' movements using phone geo-localization - are considered a good proxy of compliance with social distancing. A number of papers emphasized the role played by pre-existing levels (of survey measures) of social capital in reducing mobility right after the Covid-19 outbreak. High trust in institutions has been found associated with large reduction in non-essential mobility across European regions (Bargain & Aminjonov 2021). Another study shows that during the early phase of Covid-19, social distancing was positively related to sense of civic duty. This holds across U.S. counties and individuals, and European regions (Barrios et al. 2020). Borgonovi and Andrieu (2020) show that mobility reduced faster and more dramatically in US counties with a high index of participation to religious, volunteering and community activities. Mobility dropped more sharply in Italian provinces with high social capital, as measured by an index including blood donations, trust in others, and newspaper readership (Durante et al. 2021). By observing the movements of smartphones in the U.S. in 2020, Besley and Dray (2022), observe that communities with higher levels of trust were more respectful of the lockdowns in the United States. Social capital proved to have a similar effect on mobility within Japan during the 2020 and 2021 lockdown (Kuroda et al. 2022).

Another attempt to validate survey measures is provided by Falk et al. (2022), who test the consistence of survey data on a sample of about 400 students, by selecting survey items about risk, time preferences, trust, and reciprocity that best predict behaviours in laboratory experiments. Their contribution is an important methodological benchmark for the experimental validation of survey measures, although it does not address whether these indicators reflect observed facts outside an experimental setting.

Other experimental data confirm the decline of social capital that has been documented in the US over recent decades (Putnam 2000), a trend strongly supported by survey data (Bartolini et al. 2013).

In an experiment, envelopes with stamps and addresses were intentionally left in public spaces such as sidewalks, shopping malls, and phone booths to observe whether individuals would pick them up and deposit them in a mailbox. This experiment served as an indicator of altruistic actions exhibited by unknown others. A recent study revealed a significant decrease in this kind of pro-social behavior among residents of the United States between 2001 and 2011, whereas no such decline was observed among Canadian residents (Hampton 2016).

Moreover, anecdotal evidence is consistent with country rankings based on survey data on trust (Knack 2002). For instance, in Scandinavian countries – which frequently top the country rankings of trust in others – people tend to leave their bicycles unlocked in public areas more frequently than elsewhere. Finally, Knack detected a strong correlation between trust in others and attitudinal measures of how trustworthy people are toward strangers.

In sum, the evidence on the validity of survey-based measures of social capital lacks size, rigor, and methodological focus, particularly outside experimental settings. This is at odds with the work done to check the validity of other survey-based measures, such as subjective well-being. A number of influential social scientists devoted considerable efforts to evaluate the validity and reliability of subjective well-being measures, demonstrating that these measures correlate well with a range of objective data on well-being (see OECD 2013 and 2017 for a review).

The lack of evidence on the validity of survey-based measures of social capital is a significant issue, and threatens the robustness of the empirical foundations of most literature on social capital. Moreover, the few studies on this topic focus mainly on trust. We address this gap and contribute to the literature by checking the convergent validity of various survey-based measures of social capital using several high quality objective and semi-objective measures.

3 Results

3.1 Analysis across Italian regions

We start the analysis of the association of survey-based and objective measures of social capital by looking at Italian regions. In a pioneering work, published in 1993, Robert Putnam and his colleagues built an original index of social capital in Italy using four objective indicators covering two dimensions. The first dimension, political participation, included the following indicators: Preference voting; Referenda voting turnout; Newspapers sold. The second dimension, civic participation,

focused on participation in sport, mutual, cultural and recreational associations. We updated Putnam's work and created an objective index of social capital using administrative data from Italian regions. Specifically, our index of social capital adopts the same Putnam's dimensions (political and civic participation), but replaces the preference and referenda voting with the turnout in general elections. This variable identifies a proactive behavior motivated by collective engagement. Average political turnout in general elections is officially and publicly available on the website of the Italian Ministry of Interior.[2] We collected data on the number of newspapers sold between 2008 and 2014 from the Institute "Accertamenti Diffusione Stampa",[3] which provides information for each registered newspaper sold in each Italian region. Sport newspapers were excluded from the sample.

As a measure of civic participation, we replaced association membership with data on blood donations. Blood donations – an anonymous gift - are a paradigmatic example of purely altruistic behaviors, triggered by the sense of moral obligation towards the community (Cartocci 2007). This variable is not publicly available online, and was retrieved (and aggregated from) each individual "Centro Regionali di Coordinamento e Compensazione" (CRCC) and the regional health offices. Data cover the period 2009 - 2014.

To create the objective index of social capital, we first run a confirmative factor analysis to test the consistency of the final three objective indicators[4] (political turnout, newspaper reading and blood donations), then we averaged the three normalized indicators[5] to build the index for each Italian region.

Regional survey data on social capital are sourced from the "Multipurpose survey on households: Aspects of daily life", a nationally and regionally representative survey administered on a yearly basis by the Italian Statistical Office (ISTAT) on a sample of nearly 50,000 residents.[6] We focus on the following variables: the share of people declaring to speak about politics at least some times; the share of people declaring to read a newspaper at least once per week; and the share of people declaring to have donated money to an association in the last year. We chose these survey-based variables to match those included in our objective index of social capital; data are available from 2010 to 2014.

[2] https://elezionistorico.interno.gov.it.
[3] https://www.adsnotizie.it/.
[4] In a preliminary step, we confirmed consistence across the indicators through factor analysis; the total variance explained is 67%; the loadings vary between 0,77 and 0,85.
[5] Each indicators was set to 100 in correspondence of the Italian average. For more details, see Bordandini and Cartocci (2018).
[6] This survey collects the main information on the daily life of individuals (and households), concerning their habits, behaviors, and opinions about different topics, including life satisfaction, economic condition, educational attainments, and political and social participation. For more details: https://www.istat.it/en/archivio/129934.

We created a subjective index of social capital[7] by aggregating the three variables using the same method described for the objective index (confirmatory factor analysis, and average of the normalized scores). In addition, we include in the analysis the share of people declaring to trust others, another widely used survey-based measure of social capital.

Table 1 shows the bivariate correlation between survey and objective measures of social capital across Italian regions. Objective measures are reported in columns, whereas survey-based ones are presented in rows, with the last one showing data for trust. Each cell reports the Pearson's correlation coefficient[8] and its statistical significance in brackets.

Table 1 Pearson's correlations (r) between survey data and objective indicators of social capital across Italian regions

	Newspaper sold 2008-2014 (per 1,000 inhabitants)	Blood donations 2009-2014 (per 1,000 inhabitants)	General election voting turnout (2008-2013)
Newspaper reading 2010-2014 (% people who read newspaper at least once a week)	0.94 (0.00)	0.56 (0.01)	0.56 (0.01)
Donations to associations in last 12 months 2010-2014 (% yes)	0.84 (0.00)	0.66 (0.00)	0.68 (0.00)
Speak about Politics 2010-2014 (% people who speak about politics at least once a week)	0.87 (0.00)	0.60 (0.01)	0.71 (0.00)
Trust in others 2010-2014 (% people who say that most people can be trusted)	0.89 (0.00)	0.37 (0.11)	0.55 (0.01)

Sources: Multipurpose Survey on Households (MHS), 2010-2014 (survey measures), Ads, CRCC, Italian Ministry of Interior (objective measures).

Despite the low number of observations (19, corresponding to the number of Italian regions included in the analysis[9]), the correlation between survey and objective measures of social capital is strong and significant, especially when survey and objective data refer to a similar phenomenon, i.e. along the grey bisector in Table 1.

We keep trust separated from the other measures because it does not belong to the set initially identified by Putnam and colleagues in 1993. However, the correlation between trust in others and the objective indicators of social capital is always positive and often significant. This indicates that

[7] In a preliminary step, we confirmed consistence across the indicators through factor analysis; the total variance explained is 92%; the loadings vary between 0.95 and 0.97.
[8] Pearsons's r ranges from -1 (perfectly negative correlation) to +1 (perfect positive correlation).
[9] There are actually twenty Italian regions, but Valle d'Aosta and Piedmont have been merged since Valle d'Aosta has a very small population of approximately 126,000 inhabitants.

trust, a widely used survey-based measure of social capital, correlates with objective data on social capital at regional level.

Table 2 shows the correlation between each survey-based measure of social capital and the index of objective social capital. Correlation coefficients are all positive, statistically significant and larger than 0.80.

Table 2 Pearson's correlations (r) between survey measures and an objective index of social capital across Italian regions

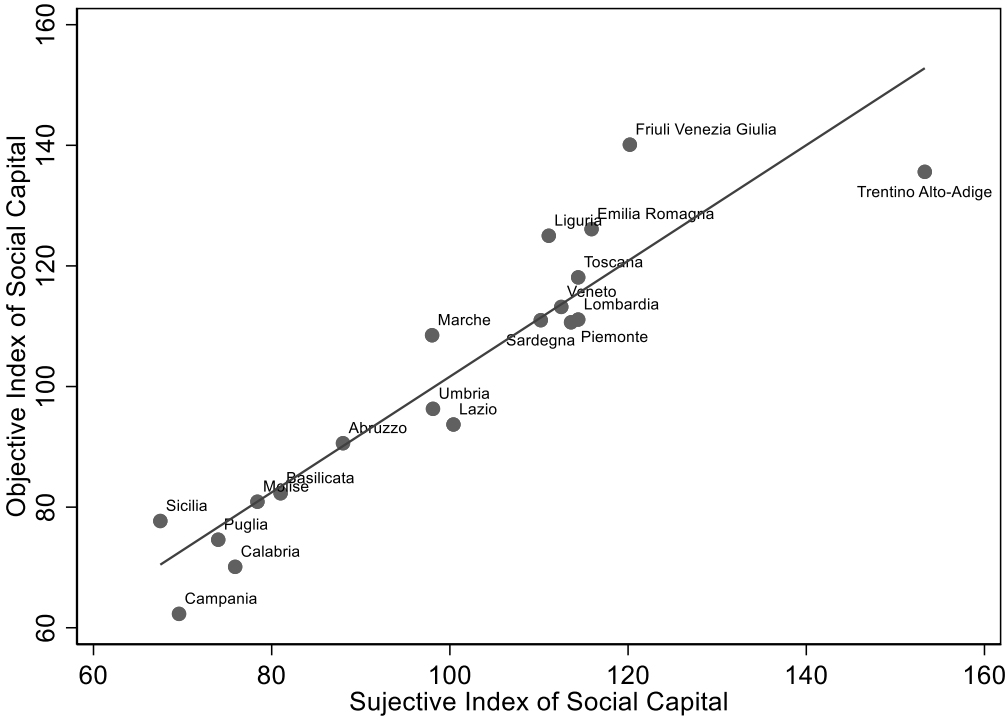
	Objective Index of Social Capital
Newspaper reading 2010-14 (% people who read newspaper at least once a week)	0.93 (0.00)
Donations to associations in last 12 months 2010-14 (% yes)	0.90 (0.00)
Speak about Politics 2010-14 (% people who speak about politics at least once a week)	0.91 (0.00)
Trust in others 2010-14 (% people who say that most people can be trusted)	0.82 (0.00)

Note: p-values in parentheses.

We finally consider the association between the objective and subjective indexes of social capital (see Figure 1). The Pearson's correlation between the two synthetic measures is 0.92. Moreover, the subjective index explains nearly 85% of the overall variation of the objective index.

This evidence indicates that survey-based measures of trust in others and of other measures of social capital can be regarded as valid, at least in the cross-sectional case of Italian regions. In the next section, we check to what extent this finding can be generalized across countries and over time.

Fig. 1 Objective and subjective social capital indexes across Italian regions



3.2 Cross-sectional and time–series data

The analysis across countries and over time supports the hypothesis that survey-based measures of social capital, most frequently trust in others, are valid. We reached this conclusion after replicating the indicators selected for the Italian case at international level, and considering various objective indicators.

It is difficult to find objective data on social capital that are consistently measured across countries and/or over time. In 2016, the World Health Organization published the ranking of blood donations across countries. We matched this information with survey-based measures of trust sourced from the European Social Survey (ESS)[10]. Specifically, the ESS measures the attitude of individuals towards others through three questions, asking respectively how much, on a scale from 0 to 10, people (1) can be trusted, (2) try to be fair, and (3) try to be helpful. We combined the three questions in a synthetic

[10] The European Social Survey (ESS) reports internationally comparable data across Europe since 2002. The sample includes adult individuals from various European countries and is representative at the national level. The survey is conducted every two years and involves topics such as happiness, economic conditions, social capital. For more details: https://www.europeansocialsurvey.org/about/.

index of social trust using the arithmetic average.[11] Figure 2 shows the strong and positive correlation between the ranking of blood donations per capita in 2016 and the index of social trust in 2020. The two indicators are measured four years apart; we return to this lag in Section 3.3, where the correlation between blood donations and survey data holds even across multi-year intervals.

The Polish statistical office (GUS) provides the opportunity to test the validity of survey data on social capital over time. Indeed, the statistical office published data on blood donations from 2005 to 2014. We correlated this time series with the share of people trusting others (see Figure 2). Data on trust are sourced from the European Social Survey (ESS), as described above. Despite the small number of years available for the analysis (9 years), the correlation appears positive and statistically significant with a coefficient of 0.67. In sum, available evidence indicates that survey-based measures of social capital are valid: they correctly reflect objective measures.

[11] The three questions (ranging from 0 to 10) of the survey respectively are: 1) "Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?"; 2) "Would you say that most of the time people try to be helpful or do you think that they are primarily looking out for themselves?" and 3) "Do you think people would try to take advantage of you if they got a chance or that they would try to be fair?".

Fig. 2 Correlation between blood donations (WHO 2016) and an index of Social Trust (ESS 2020) across European countries

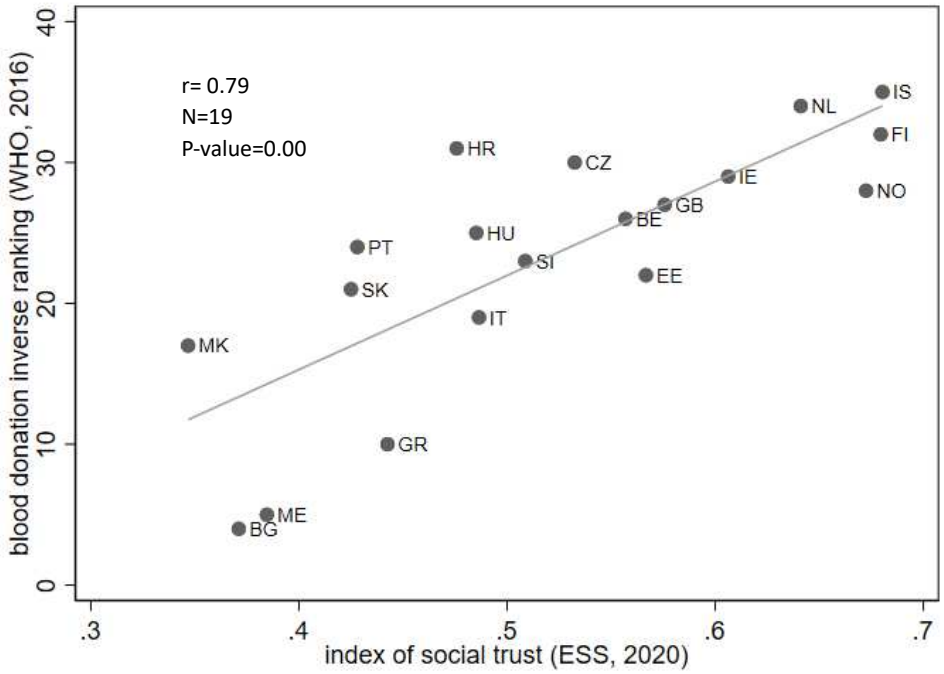
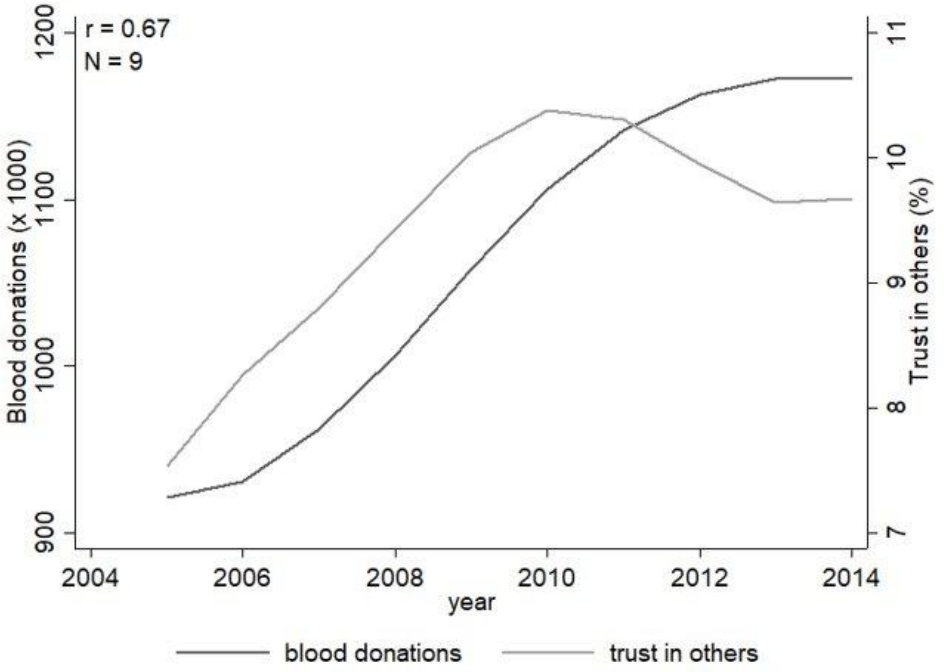


Fig. 3 Association between trust in others (ESS) and blood donations (GUS) over time in Poland



3.3 Analysis using semi-objective measures of social capital

The use of survey metadata as semi-objective measures of social capital provides additional ways to test the validity of survey-based indicators. Semi-objective data refer to survey metadata about the behavior of the respondent during the interview. These measures include the length of the survey, and the interviewer's assessment of respondent's cooperation. These data constitute, to the best of our knowledge, an original adoption of indicators to measure actual cooperative behaviors, which are at the core of social capital. For example, the interview length measures a "time gift" aimed at a collective purpose (the survey). Similar to the interview length, respondent cooperation involves respondents' unrewarded cooperation for a public purpose. This variable is based on the interviewer's opinion of how cooperative was the respondent during the interview. This variable is available in several cross-country surveys, including the ESS. As part of the questionnaire, the interviewers answer questions such as the following: "Respondent tried to answer questions to the best of ability" with an ordered categorical indicator ranging from 1 ("never") to 5 ("very often"). [12] We emphasize that, despite being sourced from surveys, the answers to these two questions are from third-parties, namely the interviewers. They represent, therefore, an observation of an external observer of respondents' attitudes.

To begin with, the ESS provides detailed information about the attitude of respondents towards the interview that can be used both at the individual level or aggregated by country. Specifically, the ESS provides information about the duration of the survey (in minutes) and respondents' cooperation during the interview. We use these variables to check the validity of three survey measures of social capital, namely: the share of people who, in the previous 12 months, volunteered for not-for-profit or charitable organization; the share of people who declared to be quite or very interested in politics; and the interpersonal trust index that we introduced earlier.

Table 3 reports the results of the correlations across European countries. We found positive, large and statistically significant correlations. The duration of the interview (first column), which reflects respondents' willingness to dedicate time and attention to others, correlates at 63% with the index of social trust, at 72% with the share of respondents interested in politics, and at 75% with the share of respondents who volunteers for not-for-profit organizations. Respondents' cooperation (second column) attracts comparatively smaller coefficients, but still quite large. In the case of the share of respondents interested in politics, the correlation coefficient is 50%; the correlation with the index of

[12] The European Quality of Life Survey and the European Working Condition Survey ask the interviewer: "Please, assess the respondent's cooperation during the interview" obtaining a ordered categorical variable ranging respectively from 1 (Very good) to 5 (Very bad) and from 1 (Excellent) to 4 (Bad).

social trust is 55%, and it reaches 59% when we consider the share of respondents volunteering. Finally, the third column of Table 3 reports the correlation coefficients between the three 2020 ESS semi-objective measures of social capital and blood donations, as provided by the WHO in 2016. Figures indicate that blood donations in 2016 significantly correlate with survey measures of social capital four years later. In particular, the correlation with the index of social trust is 79%, significant at 1%.

Table 3 Correlations (Pearson's r) between survey data and semi-objective and objective data

		Semi-objective data		Objective data
		Interview Length (ESS 2020)	Respondent Cooperation (ESS 2020)	Blood Donations (WHO 2016)
Survey-based data	Volunteer (ESS 2020)	0.75*** (0.00)	0.59*** (0.00)	0.59*** (0.00)
	Interest in Politics (ESS 2020)	0.72*** (0.00)	0.50** (0.02)	0.47** (0.04)
	Social Trust Index (ESS 2020)	0.63*** (0.00)	0.55*** (0.00)	0.79*** (0.00)

*p<0.10; **p<0.05; ***p<0.01

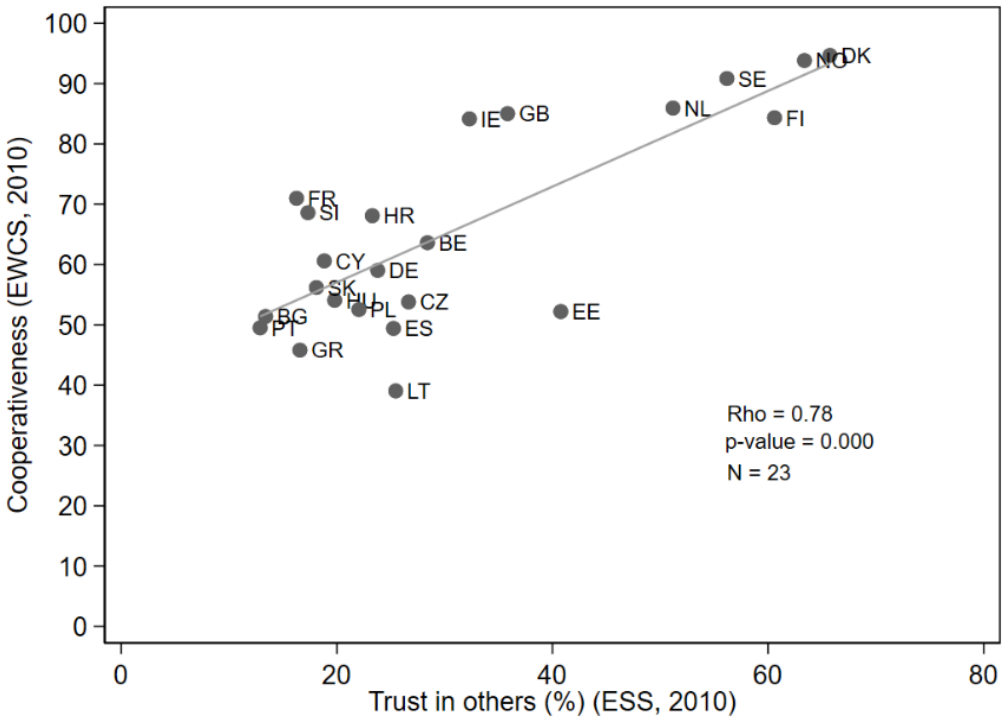
These results hold independently from the considered survey. For instance, the European Quality of Life Survey[13] or the European Working Condition Survey[14] also provide suitable metadata to replicate our test with interviewers' evaluations on respondents' cooperativeness. Figure 4 shows a positive and significant association across surveys between cooperativeness (sourced from the EWCS in 2010) and the share of people trusting others as measured in the ESS in 2010 (Panel A) and in the EQLS in 2011 (Panel B). The coefficients are respectively 78% and 68% significant at 1%. Panel C in figure 4 indicates also a positive (50%) and significant correlation between respondents' cooperativeness and the share of people trusting others within surveys, namely the EQLS in 2011[15].

[13]The European Quality of Life Survey (EQLS) examines the quality of life of European citizens across various aspects. It was initiated in 2003 and is conducted every four years by Eurofound. The EQLS is a comprehensive survey conducted through interviews based on questionnaires, ensuring representation of the adult population aged 18 years and above. For more details: https://www.eurofound.europa.eu/surveys/european-quality-of-life-surveys.

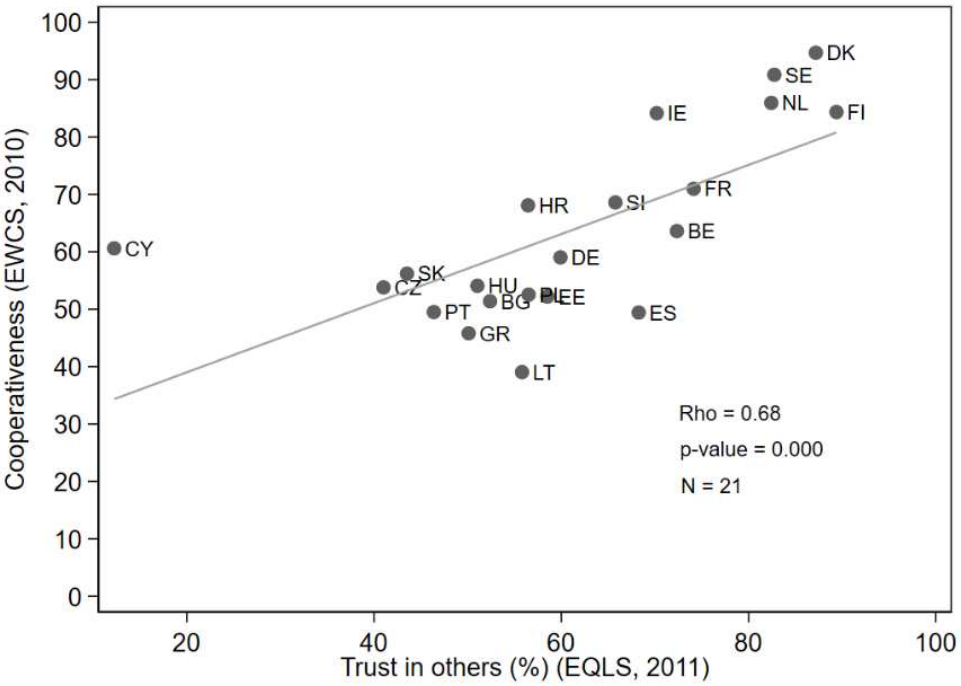
[14] The European Working Conditions Survey (EWCS) since 1990 provides detailed information about the working conditions of European employees and self-employed European workers along with other data such as data provided by the interviewers. For more details, see: https://www.eurofound.europa.eu/surveys/european-working-conditions-surveys-ewcs.

[15] We use the Spearman's Rho coefficient rather than the Pearson's r because the analysis is based on the ranks of the observations rather than their raw values.

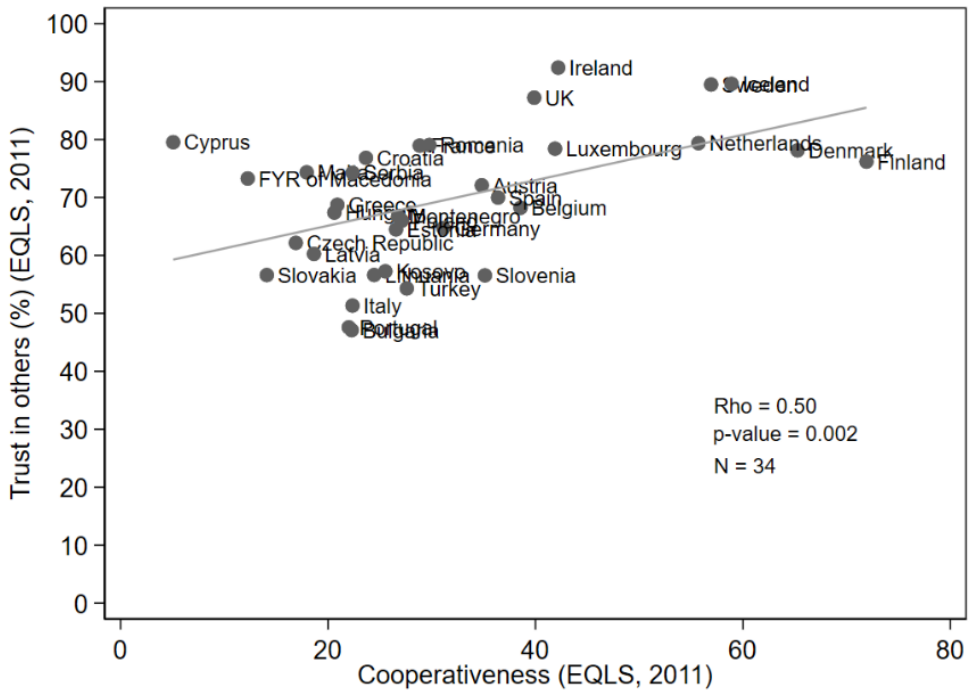
Fig. 4 Respondents' cooperation and the trust in others across surveys (EQLS, EWCS, and ESS)



Panel A – across surveys



Panel B – across surveys



Panel C – within surveys

4 Conclusion

Survey-based data on social capital are the basis of a large and influential literature showing the key role of social capital for social cohesion, political stability, political and social participation, quality of democracy, economic performance, health and subjective well-being. However, we know very little about whether survey–based data on social capital reflect actual social capital. The limited evidence on this issue suggests that the empirical foundations of the social capital literature are fragile. Indeed, operationalization errors (interviewer and respondent-related errors, instrument-related errors, and sampling errors) can hamper the survey-based data quality. This is the reason why in other cases, such as the literature on subjective well-being, scholars investigated the validity and reliability of their instruments at length. Survey-based measures of social capital, however, have not undergone the same scrutiny. Our aim is to fill this gap by testing the validity of survey measures of social capital.

We conceive social capital as a sense of moral obligation that individuals have towards unknown others (Cartocci 2007). Hence, we focus on aspects such as trust, political participation, and social cooperation testing the correlation of their survey-based indicators with objective or semi-objective measures of actual social capital. We document that survey-based measures show significant correlations with various indicators, both across and within countries, as well as in cross-sectional and longitudinal analyses. In particular, we show three outcomes : i) a survey-based index of social

capital strongly correlates with an objective-based index of social capital across Italian regions; ii) trust in others is significantly associated with blood donations across European countries, and over time in Poland; iii) several survey-based measures of social capital (trust in others, interest in politics and volunteering in associations) correlate with semi-objective data (length of interview and respondent's cooperation) across European countries. Our findings provide consistent evidence that survey-based measures of social capital converge with objective and semi-objective indicators across different geographical and temporal settings. This convergence strengthens confidence in the validity of survey measures, but does not eliminate the need for explicit construct definitions and a transparent justification of the correspondence between concepts and indicators (Øby, 2025). Future research should further assess the validity of social capital measures by combining survey responses with behavioural data, administrative records, experimental evidence, and interview metadata, while testing the comparability of these relationships across countries and over time.

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