What Do Lost Wallets Tell Us About Survey Measures of Social Capital?

David Tannenbaum ⓡ Alain Cohn ⓡ Christian Lukas Zünd ⓡ Michel André Maréchal*

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Abstract

We validate survey measures of social capital with a new data set that examines whether citizens report a lost wallet to its owner. Using data from more than 17,000 lost wallets across 40 countries, we find that survey measures of social capital — especially questions concerning generalized trust or generalized morality — are strongly and significantly correlated with country-level differences in wallet reporting rates. A second finding is that lost wallet reporting rates predict unique variation in economic development and government effectiveness not captured by existing measures, suggesting this data set also holds promise as a useful indicator of social capital.

Keywords — Social capital, Trust, Honesty, Field Experiment, Surveys

Social capital is generally thought of as a collection of shared values, beliefs, and practices that limit opportunistic behavior and facilitate cooperation (Guiso, Sapienza, and Zingales 2011). As such, social capital encapsulates several distinct constructs, and chief among them are honesty and trust in others (Fukuyama 1995; Glaeser et al. 2000). Social capital is considered a fundamental factor underlying persistent differences in economic development (Arrow 1972; Mokyr 2009). Among other things, social capital has been linked to a country's gross domestic product (GDP), financial development, innovation, crime, and performance of its governance and institutions (Algan and Cahuc 2010; Djankov et al. 2003; Fountain 1998; Knack and Keefer 1997; Lederman, Loayza, and Menendez 2002; Guiso, Sapienza, and Zingales 2004, 2011; La Porta et al. 1997; Putnam, Leonardi, and Nanetti 1993; Tabellini 2008).

One of the more difficult issues in studying social capital is how to properly measure the construct. Standard practice across the social sciences has been to use data from large-scale surveys

*Authorship order for this paper was randomly determined (denoted by the ⓡ symbol). Tannenbaum: Department of Management, University of Utah (email: david.tannenbaum@utah.edu); Cohn: School of Information, University of Michigan (email: adcohn@umich.edu); Zünd: Department of Economics, University of Zurich (email: christian.zuend@econ.uzh.ch); Maréchal: Department of Economics, University of Zurich (email: michel.marechal@uzh.ch). We gratefully acknowledge financial support by the Gottlieb Duttweiler Institute.

administered across countries.[1] Within economics, researchers have focused on survey questions that measure preferences or beliefs related to cooperation and prosocial behavior. The most popular measure of this sort centers on *generalized trust*, in which social capital is measured as the aggregate response to the question, "generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?" Another common measure involves survey responses concerning *norms of civic cooperation* (Guiso, Sapienza, and Zingales 2011; Herrmann, Thöni, and Gächter 2008). This index is based on the degree of disapproval of actions that impose social costs onto others — such as opinions about cheating on taxes, avoiding fares on public transit, and accepting bribes. Yet another measure examines *generalized morality* or universal moral values (Tabellini 2008; Enke 2019), which emphasize norms of appropriate conduct and behavior with others beyond one's immediate family, kinship or social group. More recent data sets such as the Global Preferences Survey (Falk et al. 2018) also measure various forms of *prosocial preferences* related to social capital.

Political scientists and sociologists have also conceptualized social capital as *social connectedness* — the advantages and opportunities accruing to people through membership in certain communities (Bourdieu 1986; Putnam, Leonardi, and Nanetti 1993). In this case, social capital is measured as the average number of voluntary social groups a survey respondent belongs to (e.g., Knack and Keefer 1997). Unlike economic measures of social capital that focus on commonly-held values or beliefs, this measure emphasizes the strength of social ties to a community.

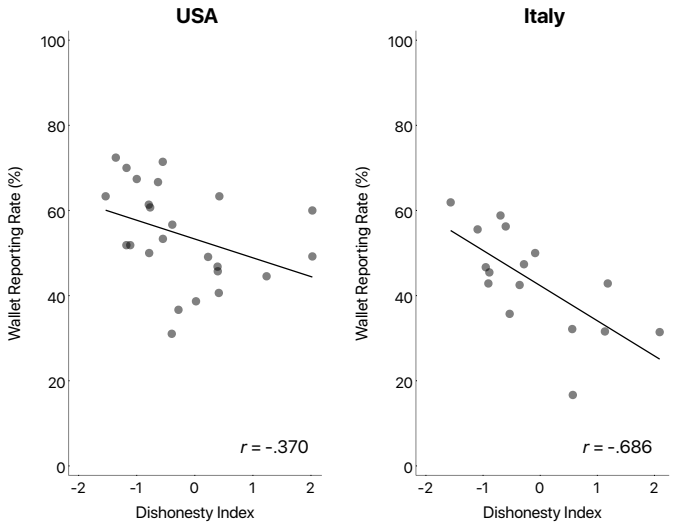
All of the approaches mentioned above rely almost exclusively on survey data. While survey responses have a number of attractive features — including that the most popular data sets are widely available and are often representative of the countries or regions sampled — such measures are not without limitations. Verbal measures suffer from cultural differences in how questions are interpreted or how participants make use of the response scales, and are susceptible to social desirability biases. It is also unclear how survey responses translate to concrete, meaningful behaviors (e.g., Bertrand and Mullainathan 2001).

This paper provides a behavioral benchmark for studying social capital. We recently conducted a large international field experiment where we turned in lost wallets with varying amounts of money at public and private institutions and measured whether recipients contacted the owners to return the wallets (Cohn et al. 2019). In total, we deposited over 17,000 wallets in 355 cities spanning 40 countries.

Returning a lost wallet contains elements of honesty and cooperation, and has been viewed as a

1. Past research has explored experimental measures of trust in economic games (Glaeser et al. 2000; Karlan 2005), but lab experimental measures are not widely available at the scale needed for cross-country comparisons (see Fehr et al. 2003 and Bellemare and Kröger 2007 for representative experiments in Germany and the Netherlands). It also remains an open question as to what extent behavior in the lab generalizes to the field (Levitt and List 2007). Researchers have also used behavioral proxies of social capital such as voter turnout and blood donations per capita (Guiso, Sapienza, and Zingales 2004; Nannicini et al. 2013). Because such behaviors are subject to different rules and regulations across countries, they have primarily been used to examine variation in social capital within rather than across countries.

Figure 1: Wallet Reporting Rates and Dishonesty



Notes: The y-axis represents the percentage of recipients in each city reporting a lost wallet in the US (left panel) and Italy (right panel). The x-axis represents city-level dishonesty index scores, with higher numbers reflecting greater dishonesty. For the US, our dishonesty index was constructed by extracting the first principal component from (1) the share of self-employed individuals in a city who reports an income in 2009 within US $500 of the first Earned Income Tax Credit (EITC) kink, as a percentage of individuals with non-zero self-employment income, as a measure of cheating on taxes (Chetty, Friedman, and Saez 2013), and (2) the number of federal court convictions for corrupt practices between 1976 and 2002 per 10,000 public officials in the state that the city belongs to (Glaeser and Saks 2006). For Italy, our dishonesty index was constructed by extracting the first principal component from (1) municipality-level rates of compliance or payment of a television licensing fee (Buonanno et al. 2019), (2) the difference between the cumulative amounts of public money allocated to capital expenditures and existing amounts of physical infrastructure (Golden and Picci 2006), and (3) historical data on prosecutors' requests to proceed with a criminal investigation against a member of Parliament (Nannicini et al. 2013). Lines represent the best fit to the data based on OLS estimation.

representative instance of social capital (Gintis 2016).[2,3] Unlike survey instruments, our data set examines a commonplace yet consequential behavior, and one in which respondents were unaware their behavior was observed by others. Supporting the external validity of our lost wallet paradigm, wallet reporting rates in our experiment are negatively correlated with objective behavioral proxies of dishonest behavior that are available at the regional level for the US and Italy, as shown in

2. In reviewing the literature on different measures of social capital, Paldam (2000) states "the famous wallet-test is an attempt to measure trust in a more general way: Here N wallets are 'forgotten' in public places and the test is how many that are handed back" (p. 644). Survey data also suggests that returning a lost wallet is viewed as an act of social capital. For example, we surveyed nationally representative samples in the United Kingdom, Poland, and the United States, and found that 89% of respondents viewed keeping a lost wallet as "somewhat inappropriate" or "very inappropriate" (Cohn et al. 2019).

3. Knack and Keefer (1997) compared trust scores to data from a lost-wallet study conducted by Reader's Digest. However, the sample size of the Digest study was considerably smaller than our current data set, at only 400 wallets total. Furthermore, this data is compromised by potential confounds which our study took explicit steps to remove. As an example, Reader's Digest dropped wallets in public spaces, which allows for selection effects (i.e., individuals who decide to pick up a lost wallet might be different from those who do not, thus 'selecting' into the study). By contrast, in our study we returned lost wallets to employees at the front desk of different institutions, thereby providing control over who participated in the experiment. For these reasons, our data represents a substantial improvement in comprehensiveness and fidelity.

Figure 1 (see the online appendix for details).

We document two basic findings from our lost wallet data set. The first is that some survey measures of social capital meaningfully correlate with our behavioral measure of social capital. The best predictor of wallet reporting rates is generalized trust, closely followed by generalized morality, and weaker but still significant are norms of civic cooperation. Other survey measures, including social connectedness and prosocial preferences, do not reliably predict wallet reporting rates. The second finding is that wallet reporting rates in our data also serve as a strong predictor of the economic outputs associated with social capital. In fact, wallet reporting rates outperform virtually every survey measure in predicting country-level differences in GDP, total factor productivity and indicators of government effectiveness. We conclude with implications of our data for research on social capital.

A Global Field Experiment

We use behavioral data from a field experiment we recently conducted that consists of 17,303 lost wallets from 355 cities across 40 countries (Cohn et al. 2019). Wallets were turned in at one of five different institutions: (i) banks; (ii) theaters, museums, or other cultural establishments; (iii) post offices; (iv) hotels; and (v) public offices, such as police stations, courts of law, or town halls. We focused on these institutions because they are common across countries, and typically have a public reception area that allowed us to perform the drop-offs.

Experimenters in our study returned a lost wallet (that they ostensibly found outside on the street) to a front-desk worker and then would promptly leave without requesting written proof of the transaction. After performing the wallet drop-off and exiting the building, experimenters would immediately record several recipient characteristics (e.g., their gender and age) and situational characteristics (e.g., whether other employees or customers were present). Among other things, each wallet contained a business card (in order to contact the owner). Contents of the wallet were always provided in the country's local language to signal that the owner was likely a resident. Business cards in each wallet were associated with a unique email address, allowing us to identify individual wallets that went reported or unreported. Our dependent measure was whether a wallet was reported to its owner by email within 100 days. For detailed information on the study procedure we direct the reader to the Supplemental Materials of Cohn et al. (2019). Data for the study is publicly available at https://doi.org/10.7910/DVN/YKBODN.

In the experiment we randomly varied the amount of money inside the wallet, with wallets usually containing either no money or the equivalent of US $13.45 (in purchasing power parity). We also ran additional treatment arms in the United States, United Kingdom, and Poland, including a high stakes version in which wallets contained the equivalent of US $94.15. Country-level reporting rates were strongly correlated across conditions — for example, the rank-order correlation between the $13.45 condition and the condition without money was 0.939 — so we combine data across conditions for the present analysis. The results we report below are virtually unchanged when we

restrict our analysis only to wallets containing no money, or only to wallets containing money.

Unless stated otherwise, for all analyses we regress wallet reporting rates on country-level variables of social capital using ordinary least squares (OLS) estimation. Observations are coded as 100 when a wallet was reported and 0 otherwise, and country-level explanatory variables are standardized to have a mean of zero and standard deviation of one. With this coding scheme, regression coefficients can be interpreted as the percentage point difference in reporting rates associated with a one standard deviation change in the explanatory variable. Regressions also include fixed effects for treatment condition, recipient and situational characteristics, and type of institution. Standard errors are adjusted for clustering at the country-level. We also correct p-values to account for the false discovery rate that may arise from multiple hypothesis testing (Benjamini and Hochberg 1995). In the online appendix, we report extremely similar results to those described here when not including our set of statistical controls, and when using probit rather than OLS models.

Results

Validating Survey Measures of Social Capital

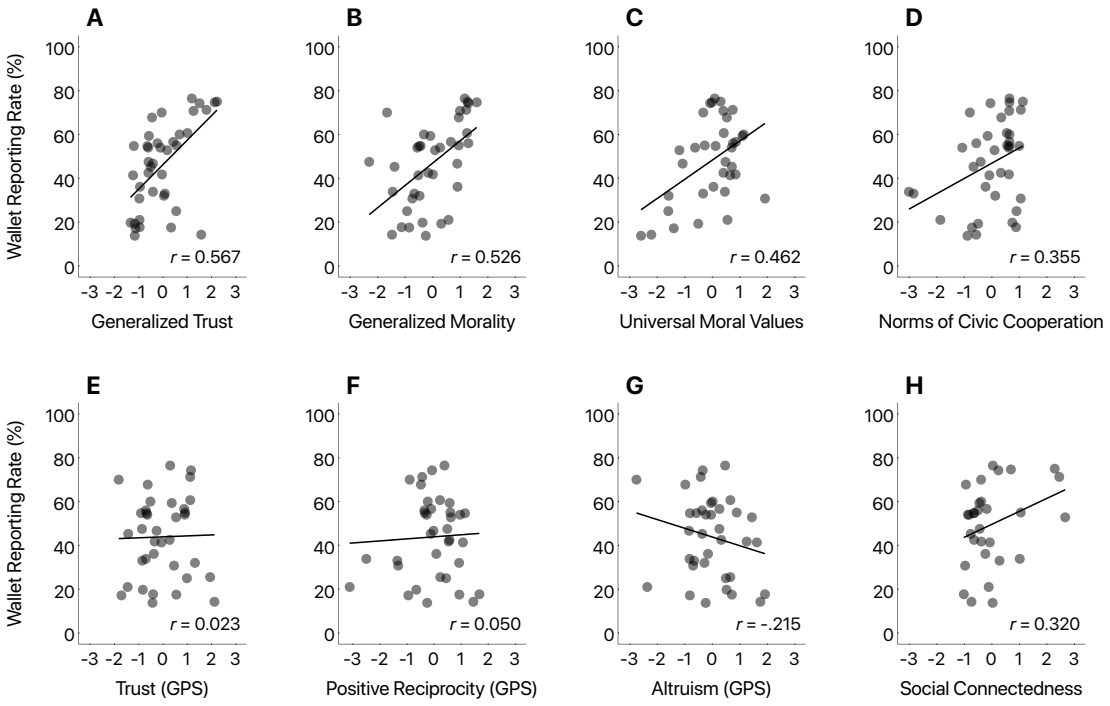
Figure 2 illustrates the country-level correlations between the survey measures of social capital and wallet reporting rates, and Table 1 provides regression coefficients that adjust for baseline controls. Of the eight survey measures we examined, generalized trust from the WVS is the single strongest predictor of wallet reporting rates. Column 1 of Table 1 indicates that a one standard deviation change in generalized trust is associated with an 9.0 percentage point increase in reporting a lost wallet, an amount equivalent to a 0.46 standard deviation in wallet reporting rates across countries ($p = 0.005$). The country-level correlation between generalized trust and wallet reporting rates is 0.57.

We next examine survey measures of generalized morality, or the tendency to adhere to norms of appropriate conduct and behavior towards anonymous strangers.[4] Following Tabellini (2008), we use the WVS measure which asks respondents to indicate whether "tolerance and respect for other people" is one of the top five qualities children are encouraged to learn at home.[5] Shown in column 2 of Table 1 (Panel A), this measure is associated with an 8.3 percentage point increase

4. Consistent with the results reported here, in Cohn et al. (2019) we report additional results showing that country level characteristics associated with generalized morality — such as whether a national language does not permit the dropping of first person pronouns (Kashima and Kashima 1998), a country's share of Protestants (Putnam, Leonardi, and Nanetti 1993; Weber 1930), weaker family ties (Alesina and Giuliano 2014), and communities with historically low pathogen prevalence (Fincher et al. 2008; Fincher and Thornhill 2012) — are also positively correlated with wallet return rates.

5. Tabellini's index of generalized morality varies across papers. In Tabellini (2008) the index is a composite of the generalized trust and respect items from the WVS, and in Tabellini (2010) the index also includes a measure of obedience towards parents and locus of control. We decided to use the single respect item as our measure of generalized morality because (a) this item appears to most closely resemble the construct of interest (i.e., has the highest face validity), and (b) so that cleaner comparisons can be made in relation to generalized trust. When we use the other indices used by Tabellini we find similar results to those reported above.

Figure 2: Wallet Reporting Rates and Measures of Social Capital



Notes: Scatterplots display the country-level relationship between wallet reporting rates and (A) generalized trust from the World Values Survey, (B) generalized morality ("respect and tolerance for others") from the World Values Survey, (C) universal moral value scores from the Moral Foundations Questionnaire (Enke 2019; Graham et al. 2011), (D) an index of civic cooperation norms from the World Values Survey (Guiso, Sapienza, and Zingales 2011), (E–G) trust, positive reciprocity, and altruism scores from the Global Preferences Survey (Falk et al. 2018), (H) an index of social connectedness from the World Values Survey (Knack and Keefer 1997). For each graph the y-axis represents wallet reporting rates in a given country (from 0-100%) and the x-axis represents the explanatory variable (standardized at the country-level to have a mean of 0 and standard deviation of 1). Lines represent the best fit to the data based on OLS estimation.

in reporting a lost wallet, which is equivalent to a 0.42 standard deviation in wallet reporting rates across countries ($p = 0.005$). Another measure of generalized morality proposed by Enke (2019) takes the difference score between "universal" moral values to "communal" moral values from the Moral Foundations Questionnaire (Graham et al. 2011). Column 3 of Table 1 (Panel A) indicates this measure is associated with a 6.8 percentage point increase in wallet reporting rates, representing a 0.35 standard deviation change in wallet reporting rates across countries ($p = 0.015$). The country-level correlation is 0.53 for generalized morality and wallet reporting rates, and 0.46 for universal moral values and wallet reporting rates.

Next we examine norms of civic cooperation, which measure the degree of disapproval for actions that confer a private benefit while imposing a social cost on others (Knack and Keefer 1997). Following Guiso, Sapienza, and Zingales (2011), we extract the first principal component from three WVS items which ask opinions about claiming public benefits one is not entitled to, free riding on public goods, and accepting bribes. Using this index we find that norms of civic cooperation also

predict wallet return rates, albeit less strongly than generalized trust. Shown in column 4 of Table 1 (Panel A), civic cooperation is associated with a 5.5 percentage point increase in wallet reporting rates, which is equivalent to a 0.28 standard deviation in wallet reporting rates across countries ($p = 0.015$). The country-level correlation between norms of civic cooperation and wallet reporting rates is 0.36.

We also examine three measures of prosocial preferences collected from the Global Preferences Survey — generalized trust, altruism, and positive reciprocity (Falk et al. 2018). Despite their apparent similarity to other measures of social capital, and also being thoroughly validated alongside experimental measures of social preferences in a sample of German students, all three of these items do a relatively poor job of predicting country-level wallet reporting rates. The trust item from the GPS is negatively and not significantly correlated with wallet reporting rates ($p = 0.993$), and both the positive reciprocity and altruism questions are also not significantly correlated with wallet reporting rates (p-values were 0.993 and 0.370, respectively). The null result for trust is especially surprising, given that the survey question used in the GPS resembles that of the WVS and the two measures are positively correlated across countries.[6]

Our last survey measure concerns social connectedness, or the strength of voluntary social ties among group members (Bourdieu 1986; Putnam, Leonardi, and Nanetti 1993). Following Knack and Keefer (1997), we proxy social connectedness using the per-country average number of voluntary social groups that citizens reported belonging to (these social groups include affiliations with religious, professional, or political organizations). Social connectedness is associated with a 2.3 percentage point increase in wallet reporting rates, an amount not significantly different from a null of zero association ($p = 0.210$). Across countries, the correlation between social connectedness and wallet reporting rates is 0.32.

Lastly, we were also able to examine the role of measurement error for our estimates of generalized trust, as we had near-identical measures of both generalized trust and wallet reporting rates (as suggested by Gillen, Snowberg, and Yariv 2019). Using an "obviously related" instrumental variables (ORIV) regression[7] for the subset of countries in which we can apply the correction, we find that the country-level correlation between generalized trust and wallet reporting rates increases from 0.54 (without correction) to 0.62 (with correction). This modest increase suggests that our measures are not subject to serious measurement error concerns, at least at the country-level.

Using wallet reporting rates to predict economic and institutional performance

Ultimately of interest to economists is the usefulness of social capital in explaining variation in economic development. We compare our lost wallet data to survey measures of social capital in its

6. The trust item used in the GPS asked respondents to rate (from 0 "does not describe me at all" to 10 "describes me perfectly") the statement, "As long as I am not convinced otherwise, I assume that people have only the best intentions." For the 60 countries that overlap, Falk et al. report a country-level correlation between trust from the WVS and trust from the GPS of $r = 0.49$ ($p < 0.01$). For the 35 countries that overlap in our data set, the country-level correlation is $r = 0.64$ ($p < 0.01$).

7. We provide full details on our ORIV specification in the online appendix.

ability to predict economic and institutional performance. Unlike our previous analysis we now treat wallet reporting rates as a right hand side variable and, to facilitate comparison, we standardize wallet reporting rates to have a mean of zero and standard deviation of one (similar to our other measures of social capital).

Table 2 illustrates that lost wallet reporting rates explain substantial variation in economic and institutional performance, over and above existing measures of social capital.[8] Column 1 of the table reports the bivariate relationship between each measure of social capital and GDP per capita, and column 2 reports the multivariate model where wallet reporting rates are included alongside a given survey measure of social capital. The same exercise is repeated for total factor productivity in columns 3 and 4 of the table. Two patterns clearly emerge from the table. First, wallet reporting rates explain substantial variation in economic productivity above existing measures of social capital. For instance, when predicting GDP per capita, adding wallet reporting rates alongside generalized trust increases the model R-squared by over 170% (from 0.36 in the bivariate model to 0.62 in the multivariate model). Second, for the multivariate models, wallet reporting rates outperform (in terms of coefficient size) virtually every survey measure of social capital, and often substantially so.

The last four columns of Table 2 illustrate that wallet reporting rates also explain unique variation in institutional performance across countries. Columns 4–8 of the table report the same analysis used in the previous paragraph, but with World Bank government effectiveness ratings and a behavioral measure of institutional efficiency (i.e., the proportion of incorrectly addressed international mail that is returned; Chong et al. 2014) as outcome variables.[9] Similar to our economic productivity measures, we find that wallet reporting rates explain substantial variation in institutional performance not captured by existing survey measures of social capital.

To quantify the relative contribution of wallet reporting rates, compared to survey measures of social capital, in explaining economic outputs we performed a series of pairwise dominance analyses (Azen and Budescu 2003; Budescu 1993). This procedure decomposes the total R-squared from a multivariate model into the relative contribution provided by each variable in the model, with contribution weights standardized to sum to one. We conducted a dominance analysis for all 32 comparisons provided in Tables 2 and 3 (eight multivariate models for each of our four outcome variables). Results are reported in Table A3 in the online appendix. For 31 of the 32 comparisons, we find that wallet reporting rates contribute the majority of variance explained in the model. In 25 of the comparisons wallet reporting rates outperform its survey counterpart by more than a factor of two. Thus, a country's propensity to report a lost wallet appears to contain considerable new information in explaining cross-country differences in social capital.

8. We conducted our lost wallet experiment from 2013 to 2016, so we use GDP and total factor productivity indices from 2017. Data are from Penn World Tables.

9. The World Bank has five other indices of governance quality: (1) voice and accountability, (2) political stability and absence of violence, (3) regulatory quality, (4) rule of law, and (5) control of corruption. Compared to the government effectiveness ratings, we find even more pronounced effects of wallet reporting rates in predicting these other indices.

Discussion

In this paper we provide a behavioral measure of social capital, namely the likelihood that citizens will report a lost wallet to its owner. We use wallet reporting rates from Cohn et al. (2019) to establish two stylized facts.

First, existing survey measures of social capital — especially generalized trust and generalized morality — are strongly correlated with country differences in reporting a lost wallet. This finding validates the large and widespread use of cross-country survey data as a proxy for social capital, and that skepticism over survey measures of social capital may be unwarranted. The most widely used measure of social capital — the generalized trust measure from the WVS — is also, reassuringly, the survey measure most predictive of wallet reporting rates. Other measures, such as prosocial preference measures from the recently developed Global Preferences Survey, performed relatively poorly in predicting wallet reporting rates. Additional tests and validation may be needed to establish whether such measures can serve as useful proxies of a country's social capital.

A second finding is that lost wallet reporting rates explain additional variation in economic and institutional performance across countries, suggesting that our measure contains unique information not captured by existing measures of social capital. When feasible, researchers may wish to use lost wallet reporting rates from our data, alone or in combination with existing survey measures, to help understand the causes and consequences of social capital.

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Table 1: Survey Measures and Wallet Reporting Rates

	Panel A			
	(1)	(2)	(3)	(4)
Generalized Trust	8.987			
	(2.748)			
Generalized Morality		8.279		
		(2.776)		
Universal Moral Values			6.840	
			(2.202)	
Civic cooperation				5.510
				(2.157)
Controls:				
Institution FE	yes	yes	yes	yes
Recipient FE	yes	yes	yes	yes
Situation FE	yes	yes	yes	yes
Treatment FE	yes	yes	yes	yes
Observations	16,895	16,621	15,494	16,321
Countries	39	38	35	37
	Panel B			
	(5)	(6)	(7)	(8)
Trust (GPS)	−1.201			
	(2.766)			
Positive Reciprocity (GPS)		−0.187		
		(2.881)		
Altruism (GPS)			−3.895	
			(2.611)	
Group membership				2.298
				(2.242)
Controls:				
Institution FE	yes	yes	yes	yes
Recipient FE	yes	yes	yes	yes
Situation FE	yes	yes	yes	yes
Treatment FE	yes	yes	yes	yes
Observations	15,895	15,895	15,895	13,623
Countries	36	36	36	30

Notes: OLS estimates with standard errors clustered at the country-level. The dependent variable in all models takes a value of 100 if a wallet was reported and 0 otherwise. All models include controls for the type of institution the wallet drop-off was performed at, characteristics about the recipient of the lost wallet (gender, age), situational characteristics of the wallet drop-off (the presence of a computer, coworkers, or other bystanders), and treatment condition. For full details on control variables see Cohn et al. (2019).

Table 2: Predictive Value of Wallet Reporting Rates

	Log GDP per capita		Log Productivity (TFP)		Government Effectiveness		Letter Grade Efficiency	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Generalized trust	0.424	0.177	0.487	0.230	0.554	0.335	0.074	−0.008
	(0.093)	(0.065)	(0.093)	(0.098)	(0.078)	(0.079)	(0.041)	(0.038)
Wallets		0.436		0.454		0.387		0.144
		(0.084)		(0.102)		(0.076)		(0.047)
N	39	39	38	38	39	39	39	39
R^2	0.358	0.615	0.357	0.568	0.506	0.673	0.073	0.262
Generalized morality	0.410	0.220	0.621	0.451	0.545	0.348	0.090	0.021
	(0.076)	(0.045)	(0.081)	(0.078)	(0.088)	(0.072)	(0.033)	(0.037)
Wallets		0.367		0.329		0.380		0.134
		(0.075)		(0.082)		(0.082)		(0.050)
N	38	38	37	37	38	38	38	38
R^2	0.417	0.650	0.600	0.717	0.503	0.674	0.106	0.270
Universal Moral Values	0.263	0.032	0.259	0.004	0.165	−0.116	0.118	0.069
	(0.099)	(0.078)	(0.107)	(0.078)	(0.116)	(0.076)	(0.041)	(0.041)
Wallets		0.522		0.574		0.635		0.111
		(0.095)		(0.097)		(0.086)		(0.034)
N	35	35	35	35	35	35	35	35
R^2	0.153	0.593	0.107	0.490	0.046	0.539	0.219	0.359
Civic Cooperation	0.256	0.096	0.289	0.099	0.276	0.087	0.086	0.040
	(0.087)	(0.087)	(0.105)	(0.085)	(0.098)	(0.067)	(0.043)	(0.054)
Wallets		0.451		0.535		0.536		0.131
		(0.086)		(0.079)		(0.075)		(0.043)
N	37	37	36	36	37	37	37	37
R^2	0.158	0.586	0.127	0.507	0.128	0.546	0.095	0.285
Trust (GPS)	0.319	0.308	0.061	0.050	0.333	0.321	−0.016	−0.018
	(0.140)	(0.099)	(0.072)	(0.050)	(0.113)	(0.065)	(0.050)	(0.039)
Wallets		0.496		0.197		0.523		0.133
		(0.086)		(0.048)		(0.064)		(0.043)
N	36	36	34	34	36	36	36	36
R^2	0.196	0.616	0.035	0.384	0.197	0.628	0.003	0.213
Positive Reciprocity (GPS)	0.118	0.095	−0.020	−0.027	0.096	0.072	0.009	0.003
	(0.11)	(0.092)	(0.053)	(0.045)	(0.100)	(0.064)	(0.040)	(0.044)
Wallets		0.499		0.201		0.527		0.133
		(0.102)		(0.047)		(0.084)		(0.044)
N	36	36	34	34	36	36	36	36
R^2	0.027	0.450	0.005	0.368	0.017	0.453	0.001	0.208
Altruism (GPS)	0.051	0.160	−0.009	0.026	0.040	0.155	−0.033	−0.006
	(0.116)	(0.964)	(0.052)	(0.050)	(0.119)	(0.085)	(0.037)	(0.037)
Wallets		0.541		0.205		0.566		0.131
		(0.108)		(0.049)		(0.075)		(0.043)
N	36	36	34	34	36	36	36	36
R^2	0.005	0.480	0.001	0.367	0.003	0.485	0.015	0.209
Group Membership	0.242	0.101	0.094	0.044	0.413	0.262	0.071	0.042
	(0.066)	(0.071)	(0.038)	(0.039)	(0.076)	(0.072)	(0.031)	(0.035)
Wallets		0.472		0.168		0.503		0.096
		(0.077)		(0.045)		(0.089)		(0.045)
N	30	30	30	30	30	30	30	30
R^2	0.155	0.620	0.105	0.367	0.277	0.600	0.091	0.222

Note: OLS estimates with robust standard errors in parentheses. Outcome variables are log GDP per capita, log total factor productivity (relative to the United States), government effectiveness ratings from the World Bank, and the proportion of incorrectly addressed international mail from a country that is returned to sender (Chong et al. 2014). All explanatory variables are aggregated at the country-level and standardized to have a mean of zero and standard deviation of one.