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In whom do you trust? Analysing the Role of Social Capital in Reducing Income Inequality-A Panel Data Approach

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A B S T R A C T

In this study, we examine if social capital, in the form of trust, networks, and institutions, affects income inequality across countries. We aim to build a narrative, supported by empirics that institutions embedded deeply in the fabric of the society play a critical role in motivating policies towards inclusive growth and distributive initiatives by the state. Policies aimed at distribution are a conscious choice that is driven by the society's level of trust in each other. Higher levels of trust among citizens leads to cooperative behavior and solves social dilemmas thus reducing free riding problems. Also, high trusting and cooperative citizens are more likely to push governments for reforms and policies that aim at the provision of public goods and increased social spending. Voters' limited acceptance of morally questionable behavior among politicians restrains rent-seeking problems in politics and encourages good governance.

The study uses panel data analysis utilizing data from World Values Surveys. The basic model used for testing the relationship between social capital and income inequality is through the fixed effects models. For developing a meaningful analysis, we distinguish between civil social capital and government social capital. We establish that higher levels of generalized trust (civil social capital) among citizens leads to a reduction in income inequalities. The significance of social capital is reiterated when the variables for government social capital are introduced in the model. Our study establishes that indicators of government social capital, particularly lower corruption levels have a significant impact on reducing income inequality.

1. INTRODUCTION

The biggest challenge to the wellbeing of our times is the growing gap between the rich and the poor. Economic growth has disproportionally profited higher income groups while lower income households have been left behind. This long-run increase in

income inequality not only raises social and political concerns but also economic ones. It tends to drag down GDP growth, due to the rising distance of the lower 40% from the rest of society. Lower income people have been prevented from realizing their human capital potential, which is bad for the economy (Keeley, 2015). Academics from all disciplines are captivated by the causes, consequences, and extent of economic inequality. Globally, the top 1% of the population owns 50% of the wealth, and the bottom 70% owns only 3% of the wealth.

The purpose of this paper is more than an empirical exercise. We aim to build a narrative, supported by empirics that institutions embedded deeply in the fabric of the society play a critical role in motivating policies towards inclusive growth and distributive initiatives by the state. Policies aimed at distribution are a conscious policy choice that is driven by the society member's trust in each other. Our theoretical interests lie in building a relationship between social capital and income inequality within countries.

Preferences for redistribution are crucial for the reduction in income inequalities. However, there is still a need to understand which factors make people willing to support such a system based on taxing the rich and the middle class and transferring resources to the poor. The theoretical literature on preferences for redistribution has been built largely on the seminal Meltzer–Richard model of a positive relationship between income inequality and median voter support for redistributive policies (Meltzer & Richard, 1981). Rational utility-maximizing voter models imply that under the universal franchise, the median voter's position in the overall income distribution scale dictates the tax rate and, therefore, the share of income to be redistributed. In a society with low inequality, popular support for redistribution would be less than in a highly unequal society (Borisova, Govorun, & Ivanov, 2017).

However, as noted in Alesina and Giuliano (2011) and Olivera (2015), this hypothesis has received mixed empirical support. Therefore, much theoretical and empirical effort has been devoted to the discovery of other factors that could drive redistribution preferences. Many factors other than pure economic self-interest have been discussed to affect preferences for redistribution. For example, voters may oppose

redistribution if they believe that taxes paid would be diverted from aiding the poor (Rothstein, Samanni, & Teorell, 2012; Svallfors, 2013). Redistribution also tends to be higher in societies in which people think that the poor are unlucky than in those where people believe that the poor are lazy and immoral (Alesina & Glaeser, 2004; Alesina & La Ferrara, 2005). Additionally, as shown in Alesina and Fuchs-Schündeln (2007) and Pop-Eleches &Tucker(2014), people who were exposed in their past to communist socialization are more likely to think that the state is responsible for individual welfare. Several papers show the importance of religion: more religious people tend to support redistribution less than atheists (Guiso, Sapienza, & Zingales, 2006; Scheve & Stasavage, 2006).

While social capital in the form of trust and civic engagement has previously been linked to, for instance, economic growth (Knack & Keefer, 1997), financial development (Guiso, Sapienza, & Zingales, 2004) and international trade (Guiso, Sapienza, & Zingales, 2009), its potential significance for redistribution has thus far been mostly disregarded. Few researchers have started to focus on social capital as one more non-economic factor that affects preferences for redistribution and enables a system of redistribution (Bergh & Bjørnskov, 2011, 2014; Bjørnskov & Svendsen, 2013; Brandt & Svendsen, 2010; Steiner Brandt & Tinggaard Svendsen, 2010; G. L. H. Svendsen & Svendsen, 2015). Social capital defined as "trust, norms, and networks that can improve the efficiency of society" (Putnam, Leonardi, & Nanetti, 1994) could preclude cheating and free-riding that undermine the welfare state and dilute public support for it. Thus, the generalized trust of an individual, i.e. his or her expectations of good behavior among unknown people, could raise demand for redistribution, as was empirically shown in Algan, et al., (2016) and Daniele and Geys (2015). Conversely, civic norms of an individual could lower preferences for redistribution – civic individuals (i.e. individuals with good norms) prefer less redistribution than uncivic ones, because the latter are prone to receive benefits without the bearing costs, i.e. avoid paying taxes and claim government benefits to which they are not entitled to (Algan et al., 2016).

When discussing the concept of trust as a measure of social capital, it is important to distinguish between personalized trust and generalized trust. Personalized trust refers to

thick trust or trusting our close circle of friends and family. Generalized trust, on the other hand, refers to trusting strangers. This type of trust, according to Fukuyama, is most relevant to public policy debates since the ability to trust strangers who only share a common nationality is what determines the public choice of distributive policies and a welfare measures in societies. Our paper aims to address a dearth of research on the issue and to explore how social capital can impact income inequalities. Our study includes data from both developing and developed countries and gives a more inclusive picture of the role social capital for economic outcomes.

Finally, we distinguish between two types of social capital, civic social capital and government social capital, as suggested by Collier (2002) and Knack (2002). While civic social capital, is about trust and networks, government social capital refers to the quality of formal institutions. Such an important distinction between the role of civic and government social capital for redistribution preferences has not been made previously and is an important contribution of the paper.

Civic social capital raises the preferences for pro-social policies leading to distribution and an informed citizenry which leads to collective action. Government social capital plays a critical role in giving equal access to national resources for all citizens, protection of their rights and provision of justice. Both types of social capital can be mutually reinforcing and the presence of one does not undermine the effectiveness of the other. The empirical and theoretical distinction between the types of social capital is necessary because it gives more meaningful insights about the relevance of both types of economic outcomes.

In the next section, we briefly define social capital. Next, we present the literature review followed by a conceptual framework. Then, we present our methodology which is followed by the results of our regression estimates and the last section draws conclusions from the research.

Defining Social Capital:

Pierre Bourdieu (1984), James Coleman (1988), Robert Putnam (1995), and Francis Fukuyama (1995) - are the main authors who have shaped the concept of social

capital in its modern application, accompanied by the contributions of innumerable authors coming from different disciplines. Bourdieu's point of view utilizes the idea of social capital in a generally limited sense to clarify societal imbalances and class-based systems. His work concentrated on social capital as something whose advantages gathered to people and offered favorable circumstances in a basically zero-sum game. His concept of social capital as access to assets (e.g. information, impact, opportunity, monetary help) has turned into a focal component of social capital research. For Bourdieu, the benefit from social capital for an individual relies on the extent of their network and on the aggregate of resources embedded in the networks (Fine, 2001). Coleman's principal area of interest was in the field of education, and he used social capital to shed light on the links between social inequalities and academic performance. Coleman, specifically, focused on the unintentional creation of social capital, contending that as it is regularly " a by-product of activities engaged in for other purposes " and that, thus it can be underinvested (Coleman, 1988). Coleman considered social capital as both a public good and a private good. He analyzed both micro and meso level networks, inspecting the impact of communications inside families especially for educational outcomes, and the role of the community and the implied norms and sanctions of the community.

Putnam (1995) defines social capital as "features of social organization, such as trust, norms, and networks, that can improve the efficiency of society by facilitating coordinated action". According to Putnam, "the core idea of the social capital theory is that networks have value and that social contacts affect the productivity of individuals and groups. Social capital refers to connections among individuals – social networks and the norms of reciprocity and trustworthiness that arise from them". Civic engagement lies at the heart of Putnam's concept of social capital. As a political scientist, Putnam focused on social capital as a driving force behind differences in governance and institutional outcomes across regions in Italy.

Francis Fukuyama (1995) also shares this view and he gives the most general statement of what social capital is: "the ability of people to work together for common purposes in groups and organizations". For Fukuyama, social capital is necessary for

collective action which leads to lower crimes rates, economic development, and effective political institutions.

2. LITERATURE REVIEW

Previous studies have pointed to many ways that trust affects the size of the welfare state and distributive policies. However, these studies have provided links in intuitive ways rather than creating a clear causality. Most studies that have studied the subject discuss the impact of trust on redistributive policies and the size of the welfare state. Though it does intuitively imply that the aim of redistribution and social transfers is the reduction in stark inequalities in the society, no study has directly addressed this association. The study by Bergh and Bjørnskov (2014) is perhaps the only study that has directly addressed the association between trust and inequality. In the following section, we present a careful outline of the recent literature that addresses all the direct and indirect links of trust leading to more redistributive policy measures.

According to Lindebeck (1995), welfare states cannot sustain without any moral constraint. Free rider problems could be endemic when universal access to welfare services is provided as many people might have fully rational incentives to seek such services despite not being able to be objectively qualified for that. The generalized trust provides the moral constraint to contain free rider problems and ensure the continuity of the public programs for social services.

According to Butler, Giuliano, and Guiso, (2016), a welfare state would become financially unviable as the public overuses the welfare programs. A higher number of low trusting individuals would mean higher costs per universal benefit scheme or public good supply. Thus, higher levels of interpersonal trust not only act as a moral constraint to overusing the welfare system but also is the cause of willingness to contribute to the tax system to finance a generous social policy.

According to Bjørnskov and Svendsen (2013), in a low trust society, the costs of monitoring and sustaining social welfare programs will increase public spending overall but without sufficient means of financing it. The ability to raise revenue by the

governments is also affected by the trust levels and in the absence of high trust, a government would run budget deficits and loss of international creditworthiness.

According to D'Hernoncourt and Méon (2012), ceteris paribus, high-trust countries have smaller underground economies. Their results suggest that low-trust citizens are more likely to conceal income and economic activity from the government, thereby undermining the ability to finance a large welfare state and spend on social services.

Heinemann and Tanz (2008) find that high-trust countries are more likely to introduce reforms that improve legal quality and liberalize regulations. Bergh (2008) argues similarly for how the Scandinavian countries have been able to maintain the welfare state by reforming parts that either worked against their official purposes or had become fiscally unsustainable. Nannestad (2008) noted that high trusting populations are more willing to vote for extending social spending to larger populations with less direct monitoring. The belief that most people can be trusted also translates to the feeling that it is possible to extend benefits to others without risk of fraud or cheating.

Similarly, Jensen and Svendsen (2011) note that high-trust populations like Scandinavian countries are willing to pay very high taxes to finance a universal welfare state because higher trust reduces the chances of free riding. In other words, trust increase the willingness to accept one's taxes being spent on nonmonitored transfers and benefits to strangers.

An indirect channel through which trust effects redistributive policies and inequality and is through its impact on bureaucratic effectiveness. Most modern countries have extensive monitoring, registration, and bureaucratic control with social transfers and taxation. Nonetheless, a larger welfare state also implies a substantially larger public bureaucracy that will impose a fiscal burden on the state (Mueller, 2004). According to Bergh and Bjørnskov, (2011), in high trust societies, the need for strict monitoring of public welfare programs is reduced that leaves more resources at to be utilized for welfare programs rather than the upkeep of the bureaucracy. The literature points that higher trust levels improve the efficiency of the bureaucracy by lifting the fiscal burden that arises due to the maintenance of a large bureaucracy for keeping misuse of public facilities in check.

Owing to this effect, the state has more funds at this disposal to allocate to welfare and social policies (Bergh, 2008).

Using Japanese survey data, Yamamura (2012), studies the third component of social capital, namely networks, to account for the role of interaction among people in their preferences for redistribution. Yamamura shows that higher community participation leads to more pro-redistributive preferences due to psychological externalities, but never discusses community-level trust and norms, the two other ingredients of social capital that have received the most attention in the literature.

In the paper on the Russian economy, Borisova, Govorun, and Ivanov (2017) prove that generalized trust matters both statistically and economically, suggesting that people living in regions with higher generalized trust prefer redistributive policies of the state. Specially in case of countries with weak formal institutions, social capital can bridge the gap between formal enforcement and buttress public support for the welfare state.

A strand of literature emanating from experimental economics also lends support to the positive association between trust and social welfare policies. By employing the public good games to measure trust and cooperative behaviour, each player in such games benefits from the donations of others and the individual level free riding incentive exists. Even though a higher total level of contribution would benefit the whole group. At the equilibrium state, a large contribution to public goods is reflective of the higher expectations of reciprocal co-operation because only players believing that others will do the same should contribute. Within the confines of the public good games, contributions to the public good can, therefore, be interpreted as support for social welfare programs. This analogy can be applied to the positive association between trust and support for welfare policies (Carpenter & Seki, 2011; Fehr & Leibbrandt, 2011; Karlan, 2005; Thöni, Tyran, & Wengström, 2012). A critical aspect of weak formal institutions is that they provide opportunities to hide income, which in turn creates demand for redistribution from those who have a comparative advantage in hiding income and therefore enjoy government benefits without paying taxes. Social capital could remedy such a situation and allow

governments in post-socialist countries to spend more, even when formal institutions are weak because in a high trust society the abuse of the welfare state is much less.

Through rational voting behaviour and informed citizenry, citizens can push governments for reforms and policies that aim at the provision of public goods and increased social spending. Voters' limited acceptance of morally questionable behavior among politicians restrains rent-seeking problems in politics (Aghion, Algan, Cahuc, & Shleifer, 2010; Knack, 2002; Knack & Keefer, 1997). An indirect effect of social trust implies that all other things being equal, bureaucracies are more effective when free rider problem is solved due to the moral constraint of the citizens (Knack, 2002; Putnam, 1995). According to Aghion et al. (2010), and Bergh and Bjørnskov (2011), the fiscal pressure that a larger bureaucracy exerts on large welfare states is alleviated by high levels of trust and show that high trust countries need less monitoring of welfare programs.

Institutional trust, while principally related to citizens' judgment of the responsiveness and integrity of the executive and legislative branches of government is often interpreted in a broad sense to take into account trust in systems over which the government may only have partial control. Trust in the education and healthcare systems of a country, in media institutions, in the military, in the judiciary system or even in business, banks and markets are often included in a survey measuring institutional trust. Trust in institutions is an important public resource. Just as an individual's level of trust (or distrust) in another person will affect their willingness to partake in cooperative action, the same is likely to be the case for their trust in institutions. Trust in government, for example, may shape people's willingness to pay taxes, to accept policy reforms, to support military objectives, and to comply with social service programmes (Braithwaite & Levi, 2003). Likewise, Knack (2002) provides evidence from across the US states that voters in high-trust states are more likely to accept institutional reforms.

In sum, the existing literature has provided insights into the role of trust in preferences of redistribution and welfare policies across various countries but specifically in the Scandinavian context. We believe that preferences for pursuing redistributive and

welfare policies will ultimately lead to less income inequalities and the role of trust for its distributional impact has not been explored explicitly in the academic literature yet.1

Our broad research question thus reads, to does social capital in the form of trust and group memberships affect income inequality worldwide.

2.1   Conceptual Framework:

Public policy programmes are generally implemented through continuous and repeated interactions between institutions and citizens, as well as among citizens. Consequently, public good provision is likely to be deficient when citizens do not cooperate and "co-produce" public goods (De Witte & Geys, 2013). Support for social welfare policies that aim to reduce inequalities and provide benefits to the lesser fortunate ones in the society thus will at least in part reflect one's belief in the trustworthy and cooperative nature of one's fellow citizens — as this determines one's expectations concerning a just distribution of the burden of public policies (Rothstein, 1998). Since individuals engaging in antisocial behaviour such as cheating, free riding or tax evasion can undermine public good provision independent of institutions' quality, support for social welfare policies requires the trust that one's fellow citizens abstain from such disruptive behaviours.

Trust facilitates the belief that the various groups in society have a shared fate and that it is the responsibility of those with more resources to provide for those with less. We see this in the societies with high levels of civic engagement and trust that they can gain a sense of solidarity and overcome free-riding problems. Such societies pursue policies that are effective in reducing inequalities and help those with fewer resources. The pursuit of such policies is a conscious policy choice which stems from the citizens' sense of generalized trust. In societies with high levels of social trust, a concern for all will lead to a search for policies that reduce disparities of wealth and opportunities even further

In line with this argument, we hypothesize that all else equal, trusting individuals will be more likely to believe that fellow citizens will deal with public goods honestly and

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[1] Except for the study by Bergh and Bjornskov, (2014), no study has explicitly addressed the relationship between inequality and trust to the best of our knowledge. We expand upon that work by using various dimensions of trust including private and public institutional trust as well as group memberships to test the relationship of trust and inequality.

would not exploit the system to achieve benefits that they are not entitled to, or to avoid payments they should normally bear. This encourages the support for more redistributive and social policies that lead to a reduction in income inequalities in the society.

3. RESEARCH METHODOLOGY

3.1 Model Estimation:

Gini index of World Development Indicators has been as a measure of income inequality. The data is from the period of 2000-2014. The value of the Gini index lies between 0 and 1. A value of 0 indicates perfect income equality while a value of 1 indicates that all income in the country goes to only one person. So, a lower value of the Gini index implies an equal distribution of incomes.

The choice of our independent variables was difficult due to the intangible nature of our variables and issues of measurement surrounding the concept of social capital. We have followed the approach of Knack and Keefer (1998) and Bjørnskov and Svendson (2012) for selecting our generalized trust variable. Data was gathered from the World Values Survey which is a worldwide database for collecting information about the living standards and well-being of cities around the globe. We have used the results of the survey question: "Generally speaking, do you think most people can be trusted?" The responses are divided into 5 categories based on a Likert style scale ranging from complete trust to none. We added the percentages of people who completely trusted others and used the sum as an indicator of generalized trust.

This question has proven to be a dependable and valid indicator in numerous surveys since being introduced by Rosenberg (1956) and added to the US General Social Survey. While Nannestad (2008) notes that this question may seem ambiguous, he and a long list of studies find clear evidence of its validity as a measure of the specific concept of social trust and not other types of trust (e.g., (Bjørnskov, 2007, 2008; Knack, 2002; Ostrom & Ahn, 2009; Sapienza, Toldra-Simats, & Zingales, 2013; G. T. Svendsen & Bjørnskov, 2007). In addition, to the measure of generalizing trust, we also included a measure of citizens' trust in an institution as a proxy for support of public policies. The data for institutional trust is also derived from the World Values Survey. The specific

question that we have focussed on is "Do you have confidence in the following: Parliament, Police, Judiciary, Military, Press, Banks, Big Companies, and Media". The percentage of responses for maximum confidence has used a measure of institutional trust. We divided the institutional trust into Public and Private Institutions where Parliament, Police, Judiciary, and Military were grouped as Public Institutions and the rest were counted as Private Institutions. All data was from 2000 to 2014. We term all these three variables as Civic Social Capital.

Our second set of independent variables are related to the quality of governance and institutional performance. Such variables have also been termed as "government social capital" due to their ability to influence the behaviour of citizens and their capacity to trust each other and to gather for collective action (Collier, 2002; Knack, 2002). The source of our data is the ICRG political risk database in line with previous researchers (Knack, 2002; Knack & Keefer, 1997). The ICRG data quantify risk factors for the institutional performance of 140 countries. The political risk score has a maximum value of 100 and the lowest value of 0. A high value indicates minimal risk in a category. The indicator from the ICRG database is Government Effectiveness, Political Stability, Control of Corruption, Rule of Law, and Regulatory Quality. A brief description of all the five indicators is given below:

Government Effectiveness: It measures bureaucratic quality and its institutional strength.

Political Stability: It measures the extent of the threat of foreign conflict and internal conflicts as well as ethnic tensions within the country. This is also an assessment of government's ability to carry out its declared programs, and its ability to stay in office.

Control of Corruption: This indicator is an assessment of the level of corruption within the system. This not only measures direct forms of corruption such as financial corruption but also considers patronage, nepotism, job reservations, 'favor-for-favors', secret party funding, and suspiciously close ties between politics and business.

Rule of Law: This indicator not only assesses the impartiality and strength of the legal system but also includes actual observance of laws.

Regulatory Quality: This provides an assessment of risks to businesses which are not covered by political risks. It includes the risk of contract expropriation, payment delays and ability to repatriate profits.

In addition to these, we have used various control variables as informed by literature. We include the logarithm of GDP per capita, measured in US dollars using PPP. This effectively controls for the traditional Kuznets curve, which states that inequality is increasing in economic development at low levels of development, due to sectorally unbalanced growth, while it will be decreasing in development from some level, as other sectors and political redistribution outweigh the initial effects (Kuznets, 1955). Government final consumption expenditures (as a percentage of GDP) measure the provision of publicly provided goods and services. The total tax rate on profits (as a percentage of total profit) is used a proxy for redistributive policy (Prasad, 2008). The percentage of urban population in the total population also controls for the Kuznet curve effect that maintains that an increase in industrialization would lead to a reduction the gap of incomes between rural and poorer areas as more and more regions become urbanized as result of economic growth and industrialization. Second, we also add the more recent explanation of a political Kuznets curve in the form of our Voice and Accountability variable as an indicator of democracy (cf. (Tridico, 2010). The rationale is that with increasing democratic influence, larger groups in society will become politically influential and thus be able to tweak redistributive policies in their favor. At some point, the electorate becomes sufficiently representative of the entire population that further democratic development will cause a more even distribution of incomes, as the electorate will demand redistributive policies benefitting the median household. Citizens' ability to participate in decision-making and to hold their governments accountable can allow for more effective lobbying for social services, human development enhancement and inclusive policies (Bergh & Bjørnskov, 2014).

3.2   Model Specification:

The basic models that have been used to estimate the impact of social capital on income inequality are Panel Fixed Effects (FE) models according to the results of the

Hausman test. Panel data sets for economic research have several major advantages over conventional cross-sectional or time-series datasets (Hsiao, 2014). Panel data give the researcher a large number of data points (N T), increasing the degrees of freedom and reducing the collinearity among explanatory variables and hence improving the efficiency of econometric estimates (Wooldridge, 2015). Panel data gives a means of resolving the magnitude of econometric problems that often arise in empirical studies. Panel data allows controlling for omitted (unobserved or mis-measured) variables. If panel data are available, and observations among cross-sectional units are independent, then one can invoke the central limit theorem across cross-sectional units to show that the limiting distributions of many estimators remain asymptotically normal and the Wald-type test statistics are asymptotically chi-square distributed (Pesaran, Shin, & Smith, 1999; Phillips & Moon, 2000).

Urbanization, Voice and Accountability, Ln Per Capita Income, Government Final Consumption Expenditure as a percentage of GDP, and the Total Tax rate on profits are the control variables that have been used.

The model takes the functional form as follows:

GINI = f (Generalized Trust, Institutional Trust, Government Social Capital)

$$GINI_{it} = \beta o + \beta_1\, GenTru_{it} + \beta_2 PubTru_{it} + \beta_3 PriTru_{it} + \beta_4 GovSoc_{it} + \beta_5 X'_{it} + \eta_i + \varepsilon_{it}$$

In the above equations, $GINI_{it}$ is the Gini coefficient, β0 a constant term, GenTru is generalized trust, PubTru is institutional trust in public institutions, PriTrus is institutional trust in public institutions, GovSoc is government social capital. X is a vector of control variables, ε_{it}_N (0, σ2I) an i.i.d. error term and ηi the time-invariant country specific effect term.

4. RESULTS AND DISCUSSION

As a first impression, we present the scatter plot distribution of Generalized Trust and Gini Index in Fig. 1. The graph clearly presents the negative relationship between income inequality, as measured by the GINI index, and generalized trust. The countries with highest trust scores like the Netherlands, Sweden, Switzerland and New Zealand have lower GINI indices as compared to countries like Columbia, Brazil, Mexico which has high GINI indices and low trust scores. The second scatter plot (Fig. 2) shows the distribution

of general government final consumption (GGFC) expenditure (as % of GDP) and Generalized Trust. The level of general government final consumption expenditures shows a negative association with generalized trust as well.
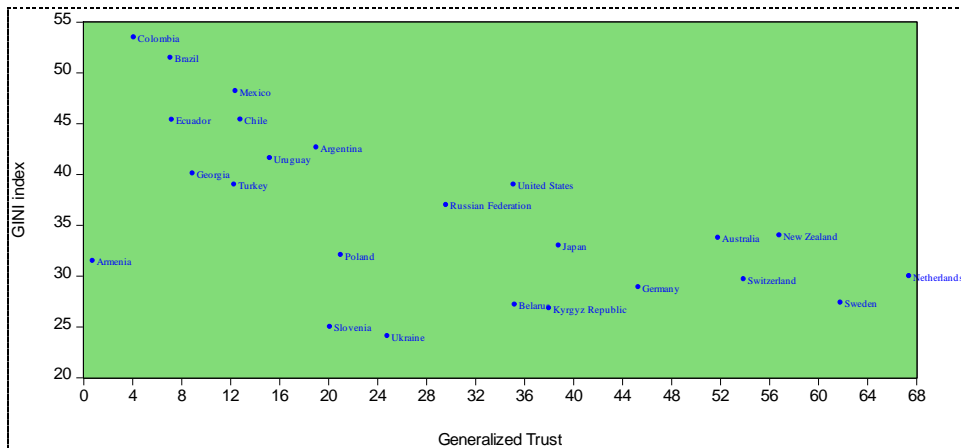
Figure 1: Relationship between GINI index and Generalized Trust

Figure-2: Relationship between GGFC Expenditure and Generalized Trust

4.1   Main Results:

Table 1 presents the main results of our regression estimates. Our results are in line with the earlier works of Bergh and Bjørnskov (2014) regarding the association between trust and inequality. Our measure of generalized trust is statistically significant across all estimations. The variable for Generalized Trust is statistically significant at 1% in reduction

of income inequalities across all specifications. The higher the level of generalized trust among society members, the lower will be the disparities in income.

Similarly, group memberships are also significant across all specifications. The findings are a departure from earlier studies notably Knack and Keefer (1997), who did not find a positive association between group memberships and economic performance. The role of group memberships must be seen here as lobby groups which can favour pro-social spending and demand more equitable distribution of resources ((Bjørnskov, 2006; Nannestad, 2008).

Table 1: Main Results			
	1	*2*	*3*
C	74.02386 (11.91518) ***	64.38627 (10.22615) ***	88.57136 (13.33088) ***
Institutional Trust (Public)	0.003536 (0.033372)		0.006182 (0.039859)
Institutional Trust (Private)	-0.028705 (0.039183)		-0.054484 (0.039859)
Generalized Trust	-6.905653 (2.847893) *		-7.640314 (2.985379) *
Group Memberships	-5.971937 (1.552935) ***		
Regulatory Quality		-2.455445 (1.482925) **	-3.690968 (1.736533) *
Rule of Law		2.799082 (3.857521)	-11.37415 (4.243443) ***
Political Stability		3.081551 (3.591732)	1.592161 (3.920862)
Control of Corruption		-6.714045 (2.826433) *	-5.115383 (2.811765) *
Government Effectiveness		1.244712 (6.323942)	-13.35909 (7.244423) *
Urbanization	-0.460181 (0.162504) ***	-0.463594 (0.115183) ***	0.494812 (0.161342) ***
Voice and Accountability	2.192462 (2.902159)	4.51171 (3.384139)	-13.42946 (4.348878) ***
R.Sq	0.978	0.967	0.980

While generalized trust finds support in our equations, higher institutional trust (public) is not statistically significant. The significance of generalized trust describes a shift from government to civil society trust which can happen when a society is more unequal and its government thus does not represent the will of the people.

The variables for regulatory quality are significant in Model 2 and 3 (b=-2.45 and -3.69 respectively). The most important finding of the regression estimates is the significance of the corruption variable for reducing income inequalities whether we control for distributional policies or level of income of the sample or not. While many studies have focussed on the adverse association of corruption with growth, the results of our estimates provide evidence on the distributional effects of corruption. Corruption can affect redistribution through its biased tax systems favouring the rich, poor targeting of social programs, lobbying by the wealthy to create policies that favour the rich and distort asset ownership, and unequal access to education (Gupta, Davoodi, & Alonso-Terme, 2002).

The variable for government effectiveness is significant and positively associated with income inequality in Model 3. It confirms that higher levels of red tape and associated rent-seeking that can come with a highly bureaucratic and regulated environment can affect service delivery specially in social sectors. Bureaucracy is a part of the state that directly delivers public services and runs redistribution programs that significantly affect the level of inequality. However, state capacity in promoting economic growth does not necessarily lead to an equal distribution of resources in a society if the quality of governance is poor (Utama, 2014). The role of bureaucratic clientelism can distort effective redistribution of state resources. Bureaucratic clientelism is the informal institution which competes with bureaucratic formal institutions to affect the distributive politics. Bureaucratic efficiency can be eroded in the presence of clientelism and rent-seeking. Bureaucratic clientelism can be understood as the hierarchical relationship between politicians and non-elected bureaucrats that allows the control of resource distribution for gathering or maintaining political support from targeted constituencies (Utama, 2014). Our results also support the suggestion put forth by Mueller (2004), Bergh and Bjørnskov (2011) and Bergh (2010) that

a large bureaucracy puts a financial burden on the state leaving lesser resources for social transfers that impact inequality.

Rule of Law is statistically significant at the 1 % level in Model 3 (b= -11.37). Earlier empirical works have demonstrated that the rule of law reduces income inequality (Licht, Goldschmidt, & Schwartz, 2007). A plausible causality can be established running from the rule of law to lower income inequality if we consider that the absence of the former allows the wealthy to further exploit their economic power at the expense of the poor, thereby increasing income inequality. Without the rule of law, the rich become richer and the poor become poorer.

The positive coefficient of urban population on income inequality results at least partly from the relative lack of inter-community networks (bridging social capital) in urban areas. Indeed, bonding social capital is prevalent in cities given a certain lack of extra-community trust in such an anonymous context, which discourages inter-community networking. Urbanisation thus increases income inequality through the social capital channel. Statistically, a 1% increase in city dwellers is associated with about a 0.09% increase in the Gini index.

Our results are also in line with Rothstein (1998) that regardless of the quality of governance and formal institutions, the level of generalized trust affects the preference for public good provision. The antisocial behaviour of cheating or abusing the system of public good provision is independent of the quality of institutions or the level of income of the country.

4.2   Robustness Analysis

In the following, we explore the robustness of the findings to a number of potential other variables and factors, some of which are likely to proxy for specific, potential transmission mechanisms between trust and inequality. In Table 2, we first test the findings when including measures of government size which is government final consumption expenditures (as a percentage of GDP). This variable subsumes the most obvious transmission mechanisms as they provide direct measures of the extent of redistributive policy across countries.

The table, therefore, shows a set of tests for direct effects of welfare states and redistributive efforts that all other things being equal will be associated with larger government sectors. We find an expected negative effect of government final consumption expenditures on inequality, and hence no likely effect on social trust. Government final consumption expenditures that include all publicly provided goods and services are significant across all estimations.

Similarly, we find an expected negative association with the total tax rate on profits with inequality across all estimations and no likely impact on civic social capital variables. We did not find any significant effect of the political Kuznet curve in the estimations as the voice and accountability variable was insignificant across all estimations as opposed to the findings of Chong (2004) and Bergh and Bjørnskov (2011). We also find that the association of urbanization with inequality becomes irrelevant when the variables of government final consumption expenditure, a log of GDP per capita, and the total tax rate on profits are added to the model.

Overall, our main results remain unchanged and the significance of all civic social capital variables is maintained in the robustness analysis. We can infer that the dimensions of civic social capital as measured by generalized trust and group memberships has a significant impact on reducing income inequalities as found earlier by Bergh and Bjørnskov (2011).

Table 2: Robustness Results				
	1	2	3	4
C	63.73384 (12.56580) ***	79.57251 (12.98480) ***	79.76156 (11.30705) ***	96.05317 (14.16827) ***
Urbanization	0.047875 (0.132635)	-0.219877 (0.198871)	-0.121608 (0.129091)	-0.237012 (0.197583)
Voice and Accountability	0.655305 (2.717259)	1.216153 (3.311802)	-5.225869 (3.501709)	-14.34332 (4.669951) ***
Ln Per Capita Income	-2.426804 (0.804834) ***	-2.240615 (0.648440) ***	-2.538634 (0.554593) ***	-2.041904 (0.652553) ***
Total Tax rate on profits (% of total profit)	-0.045161 (0.022970) **	-0.053644 (0.022887) ***	-0.054169 (0.024097) ***	-0.059037 (0.023877) ***

General Government Final Expenditure (% of GDP)	-0.391238 (0.117408) ***	-0.251954 (0.104869) ***	-0.322970 (0.100799) ***	-0.236831 (0.102769) ***
Institutional Trust (Public)		-0.034190 (0.031779)		-0.021099 (0.031242)
Institutional Trust (Private)		-0.012907 (0.037132)		-0.044468 (0.037725)
Generalized Trust		- 0.068486 (0.032175) **		- 0.053453 (0.031946) *
Group Memberships		-2.977200 (1.320244) ***		-3.706160 (1.376653) ***
Regulatory Quality			-1.138288 (1.517424)	-1.932309 (1.797898)
Rule of Law			2.031282 (3.984527)	-10.14289 (4.407273) ***
Political Stability			-2.287374 (3.794384)	-4.213734 (4.064857)
Control of Corruption			-7.012278 (2.835532) ***	-4.746522 (2.845615) *
Government Effectiveness			-4.935935 (6.614326)	-20.19695 (7.428335) ***
R.Sq	0.97	0.98	0.97	0.98

Overall, all models, strengthen the theoretical position about the importance of social capital for reducing income inequality.

5. CONCLUSION

The main finding of this paper is the evidence of a strong association between levels of trust and reduction in income inequalities. Social spending and welfare policies for redistribution are a conscious policy choice that is traditionally reached through consensus politics and endorsed by the public. On one hand, social trust gives confidence to ordinary citizens to trust each other and be supportive of distributive policies. It means that the demand for distributive policies is matched by the supply of willing citizens to part with their incomes in the form of higher taxes and fees. Thus, social trust can resolve the social dilemmas faced by citizens by being willing to pay taxes and other fees to finance spending for the greater good of the society. This scenario offers an environment for more pro-social and distributive policies (Nannestad, 2008; Sachs, 2015).

Secondly, welfare policies face free rider problems and cannot stay financially viable over the long run without the moral constraint of the citizens. The role of social trust thus becomes central to the sustainability of any welfare spending programs because of the expected likelihood of people not cheating or concealing their situations to claim benefits.

Another implication of our findings is that the role of government social capital stays critical in explaining the reduction in income inequalities. Income inequality is only one facet of the social inequality that can be created through institutional measures. Income inequality results due to poor governance and capture of the state by a few. Governments influence the lives of ordinary citizens not only through the control of national resources but also through service provision and access to justice. The fair treatment of citizens of citizens and equal access to opportunities by state institutions is vital for creating an environment where citizens can realize their full potential. Protection of life and property of every citizen and access to justice decides the choices citizens of a country can make about their livelihood and everyday matters. An oppressive regime or state captured by the elite will only work to benefit a few in the society and thus restrict the choices and opportunities for the unprivileged ones in the society. Equal treatment of all citizens by the state ensures a level playing field for all and creates opportunities for everyone to achieve in life according to their capability. What Amartya Sen (1985) calls as "unfreedoms" are the shackles of poor governance, corruption, and injustice by the state that undermines the individual's ability to prosper and live a life which is meaningful.

Our study has limitations and can be complemented in several ways. Firstly, we see that other measures of inequality can be analyzed for further research. Secondly, progress can be made in analyzing data through innovative measures like researching further aspects of social capital. Various cultural attributes like norms of reciprocity, religious affiliation and levels of education and existing incomes can be employed in future analyses.

Overall, our research has underscored the significance of social capital for reducing income inequality. So, governments may want to develop policy measures that

directly and indirectly affect the levels of social capital among their population in addition to traditional economic tools for reducing income inequality.

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Appendix A

1- Descriptive Statistics

Variables	Mean	Std.Dev	Observations
Gini Index	36.06	8.55	354
Private Institutions Trust	11.30	6.83	582
Public Institutions Trust	13.69	8.47	581
Regulatory Quality	0.73	0.20	725
Rule of Law	0.67	0.20	725
Total Tax rate on Profits (%)	40.32	21.42	653
Voice and Accountability	0.70	0.22	725
Urban Population	64.91	21.45	739
Control of Corruption	0.48	0.21	722
Generalized Trust	0.59	0.54	656
General Govt Consumption Expenditure	15.82	4.47	738
Group Memberships	0.49	0.18	570
Government Effectiveness	0.60	0.27	725
Political Stability	0.71	0.11	725
PCI (in USD)	18102.42	21081.86	775

2- List of Countries

3- Algeria	36- Jordan	67- Tunisia
4- Andorra	37- Kazakhstan	68- Turkey
5- Argentina	38- Korea, Rep.	69- Ukraine
6- Armenia	39- Kuwait	70- United Kingdom
7- Australia	40- Kyrgyz Republic	71- United States
8- Austria	41- Lebanon	72- Uruguay
9- Azerbaijan	42- Libya	73- Uzbekistan
10- Bahrain	43- Malaysia	74- Vietnam
11- Belarus	44- Mali	75- Yemen, Rep.
12- Brazil	45- Mexico	76- Zambia
13- Bulgaria	46- Moldova	
14- Burkina Faso	47- Morocco	
15- Canada	48- Netherlands	
16- Chile	49- New Zealand	
17- China	50- Nigeria	
18- Colombia	51- Norway	
19- Cyprus	52- Pakistan	
20- Ecuador	53- Poland	
21- Egypt, Arab Rep.	54- Qatar	
22- Estonia	55- Romania	
23- Ethiopia	56- Russian Federation	
24- Finland	57- Rwanda	

25- France 26- Georgia 27- Germany 28- Ghana 29- Guatemala 30- Hong Kong SAR, China 31- India 32- Iran, Islamic Rep. 33- Iraq 34- Italy 35- Japan	58- Serbia 59- Singapore 60- Slovenia 61- South Africa 62- Spain 63- Sweden 64- Switzerland 65- Thailand 66- Trinidad and Tobago	