

Understanding the Contribution of Social Capital to Human Development: Evidence from Panel Data

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The contribution of social capital to human development remains under researched despite a clear indication that countries with higher levels of human development, as measured by the Human Development Index (HDI) also have higher levels of generalized trust; a common indicator of social capital. We add to the existing knowledge on this subject by an empirical investigation using a panel data methodology in a worldwide sample. We argue that higher social capital, in the form of trust and institutions, contributes to support for policies that favor pro-social public spending and that leads to increased investments in education and health sectors. Higher levels of social capital in a society helps to overcome free riding problems associated with the provision of public goods. Due to this, the costs associated with monitoring and implementation of public goods provision are substantially reduced and it leaves the state with more funds at its disposal to be spent on social sectors. The benefits of higher social

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capital are not only limited to this as the higher levels of generalized trust among a society enables the citizens to overcome social dilemmas and to have a feeling of a shared fate with other fellow citizens. This allows them to share their good fortune with the less privileged in the form of supporting higher taxes and other contributions to be spent for the greater benefit of all in the society.

The dependent variable in our analyses is the UNDP's Human Development Index. The main independent variable is social capital that has been measured in its various dimensions collected from the World Values Survey and the International Country Risk Guide (ICRG) database. Our analysis is based on panel data as it provides various advantages over time series data for studying a phenomenon as trust or values in a society. Our analysis uses Fixed Effects (FE) models which can control for the time invariant country fixed effects in panel data. Furthermore, it addresses the problem of endogeneity which may rise due to omitted variable bias and controls for omitted variables that can correlate with key regressors (Woolridge, 2009; Gujarati, 2014).

Our analysis reveals that higher levels of generalized trust and government social capital in societies is positively and significantly linked to the achievement of higher HDI. The positive and significant association of these variables with HDI supports our theoretical position that social capital is a significant contributor to the achievement of human development.

1. Introduction

The aim of the present paper is to explore the relationship between social capital and human development in a worldwide sample. Social capital generally comprises features of social organization, such as trust, norms, and networks, that facilitate co-ordinated action between conflicting interests for the pursuit of a mutual benefit. Human development refers not only to the expansion of aggregate output and income, but also to the satisfaction of basic needs and human capabilities, such as health and education, which depend on public provisions, as well as participation in social and political institutions. We claim that such means and ends to development rely upon norms and networks of trust, reciprocity, co-operation and institutions or collectively termed as social capital. The role that social capital plays in achieving development outcomes had largely been ignored in traditional economic theories which relied on tangible factors as being responsible for generating economic growth. A reason for this exclusion was that economic development was synonymous with economic growth as it was expected that increases in national incomes will ultimately improve well-being of the populations. However, the varying development experiences of the developing countries forced economists to look beyond the orthodox solutions to the problem of underdevelopment. The path breaking work of North (1987) and later Putnam et al., (1994), placed the focus on factors such as norms, trust and institutions and brought these to the centre of the main discourse in economics. These factors, which can be expressed under the umbrella term of social capital, were considered as an important explanation of the nature and causes of economic performance of any country or region.

The contribution of social capital for economic development can be seen both at the micro level and macro level. At the microeconomic level this is seen primarily through the ways social

capital improves the functioning of markets and reduction in transaction costs. At the macroeconomic level, institutions, legal frameworks, and the government's role in the organization of production which affects macroeconomic performance.

Social interaction enables deference as well as establishes norms, rules and coordination which overcomes the free-riding problem and thereby prompts the production of public goods. When social capital is high, individual citizens are more prepared to pay their taxes honestly, more prepared to support investments in public goods, and more likely to support social insurance policies (Aghion, Algan, Cahuc, & Shleifer, 2010; Bergh & Bjørnskov, 2011; Stephen Knack, 2002; Stephen Knack & Keefer, 1997).

Social capital, in the form of collective action and solidarity can also be an effective channel to lobby for better public spending and achievement of wellbeing (Aghion et al. 2010; Bergh and Bjornkov, 2011). Through rational voting behaviour and informed citizenry, citizens can push governments for reforms and policies that aim at provision of public goods and increased social spending. The limited acceptance by voters of morally questionable behaviour among politicians restrains rent-seeking problems in politics (Knack and Keefer 1997; Knack 2002; Aghion et al. 2010).

The social capital literature provides some indications that trust would also be associated with broader measures of development such as the HDI, yet the association has not been empirically tested. In this paper, we therefore set out to explore the connection between social trust and human development. We explicitly test the overall hypothesis that social capital is associated with the increases in levels of human development over a longer time period.

The paper is organized as follows: the first section discusses the concept of human development and HDI as its measure, followed by a review of the existing literature on the subject. Following that we present the details of the methodology used and description of data. Next sections discuss the econometric results followed by conclusions and directions for future research.

2. HDI as a measure of development

In strict economic terms, economic development has meant the capacity of a national economy to generate and sustain an annual increase in its GDP at rates of perhaps 5% to 7% or more ((Todaro & Smith, 2003). Prior to 1970, development was mostly seen as rapid increases in overall income growth in an economy and most traditional economists viewed development as an obvious outcome of economics growth. The experiences of many Third World countries however, indicated that something was wrong with this narrow definition of economic development since the living conditions of masses of people remained unchanged despite achievements of growth targets (Naqvi, 1995; Seers, 1972; Todaro & Smith, 2003). There is a possibility that while GDP is rising, the standard of living could be getting worse if human health, environmental cleanliness, and other factors that are not included in GDP are worsening. This can be seen while comparing the various indices of health, education and life satisfaction even among high income countries. A simple measure such as the GDP is unable to account for the wellbeing and quality of life because many factors that contribute to people's happiness are not bought and sold and are unrelated to the level of income. For instance, while New Zealand with a per capita GDP of USD 37,294 ranks first on the Legatum Prosperity Index in 2016 due to a combination of a strong society, free and open markets, and high levels of personal freedom, Kuwait lags far behind in providing prosperity to its citizens though its per capita GDP is far above New Zealand at USD 71,887. Both countries fall into the high-income country category

however, their performance related to prosperity and wellbeing tell a strikingly different story which puts serious question marks on the eligibility of GDP and its derivatives as a useful measure of development and wellbeing.

There are many explanations why GDP is a limited measure of wellbeing and development. GDP includes what is spent on environmental protection, healthcare, and education, but it does not include actual levels of environmental cleanliness, health, and learning. Another argument against using GDP as a welfare indicator is its treatment of defensive expenditures: a category that includes items from expenditures on the military, money spent on building dams to protect human settlements from flooding, and costs of recovering from environmental damage etc. These expenditures contribute positively to the GDP, but they clearly do not contribute to well-being.

GDP does not include any measures of changes in natural capital and environmental externalities. Since natural capital and ecosystem services do not have market prices, it is not included in GDP-like statistics that deal with marketed goods and services only. However, ecosystem services are tremendously important for the well-being of people in developing and developed countries alike.

According to Richard Easterlin, who conducted extensive research from the 1970's through 2000's, people do not become happier when they grow richer if they crossed some rather low threshold in terms of income. Secondly, GDP does not say anything about distributional effects and equity. When testing the Easterlin Paradox, Oishi and Kesibir (2015) found out that in the presence of grave inequalities, the increase in incomes does not make citizens happy. This was used as an explanation for the Easterlin Paradox which has earlier reported that increase in incomes does not lead to increase in happiness.

Another important point can be made about the “shadow” or informal economy, which is especially important in developing countries but also in many developed ones. Economic activities in the informal economy are not included in GDP statistics, even though they may have a tremendous influence on the welfare specifically of the poorer parts of the society.

In other words, it cannot be assumed that the monetary transactions increase well-being, i.e. that things are generally improving and progressing only because more money is being spent. Many of the points made above can be summarized within the notion of capabilities, which goes back to Amartya Sen (1985). He pointed out that human well-being does not depend solely on commodities as captured by the GDP statistics, but on the capability of people to use them in a way they wish to. Human development has been defined as enlarging people's choices in a way which enables them to lead longer, healthier and fuller lives and although income is an important part of development, it is not the only one. Development includes social and personal elements also which expand the capabilities available to the people to live the life they want and consider to be worth living. This understanding of wellbeing requires much more than just a simple statistic of economic activity. Sen (1981) and later Nussbaum (2001) provide the theoretical and ideational background for such measures. They argue that ten ‘capabilities’ ought to be supported by all regimes, not least democracies: (1) the ability to live a life of normal length; (2) being able to have reasonably good health, including access to nourishment and adequate shelter; (3) having ones physical integrity rights properly protected; (4) being free to use ones sense in a “truly human” way, including access to adequate education, and having ones freedom of speech properly protected; (5) having a free social life; (6) having liberty of conscience and religion; (7) having institutions protecting all forms of affiliation and the freedom of assembly, and having institutions protecting non-discrimination on the basis of race, ethnicity, sex, sexual

orientation, and nationality; (8) the ability to live in unison with nature; (9) having the freedom to enjoy recreational activities; and (10) having full political and civil liberties. This long list of demands, in most operationalizations of the concept, boils down to a smaller list of factors associated with the ‘substantive freedoms’ needed to ensure the ten capabilities. It is worth noting that these freedoms are not only negative – for example, freedom from having ones physical integrity violated – but also include positive freedoms. Many of these are associated with purely economic development, but education, health, governance and some form of political freedom is evidently inherent in this type of concept. In terms of measurement, we follow most of the literature in using the Human Development Index, developed by Mahbub ul Haq at the United Nations Development Program (UNDP), on the explicit ideational basis of Sen’s (1982) work. The HDI is a composite index, consisting of the logarithm to GDP per capita, life expectancy at birth, the adult literacy rate, and school enrolment ratios. GDP and life expectancy both receive a weight of one third while the latter factors each receive a weight of one sixth, on the basis that they both capture relevant characteristics of human capital. The proponents of the index argue that the HDI provides a more encompassing measure of overall development, since information on health and education are added to the well-known GDP statistics. Furthermore, it is often considered a benefit that GDP per capita enters with its logarithm, reflecting the standard assumption of decreasing marginal utility to income.

3. An Overview of The Existing Literature

The contribution of social capital for economic development can be seen both at the micro level and macro level. At the microeconomic level this is seen primarily through the ways social capital improves the functioning of markets and reduction in transaction costs. At the

macroeconomic level, institutions, legal frameworks, and the government's role in the organization of production which affects macroeconomic performance.

Although the published trust literature does not include a direct study of the relation between social trust and human development, it does provide a number of clues. As human development is necessarily closely associated with economic development, the growth studies within the literature provide evidence of an association. Due to the divergence in the measurement techniques for social capital and the diversity in its definition, the existing literature on the subject is divided broadly into two categories: first, there are studies that link trust, norms and group memberships to various economic outcomes, and then there are studies that link governance indicators or government social capital variables to economic outcomes.

Accordingly, our literature review of the existing studies explores both aspects. First, we begin with a review of a series of studies that define social capital as trust and study its relationship to various development outcomes. Then we review the studies that analyze the link between government social capital and development.

Another important feature of the current literature review is that there are very few studies that have directly measured the link of social capital (in any of its dimensions) with the broad concept of economic development. Most studies have used income-based indicators that measure economic growth. Since economic growth is an essential component of economic development, such studies do provide some clues to the possible relation between social capital and economic development as well. Due to this limitation however, our literature review mostly covers those studies that have explored the association between social capital and economic growth relying on income-based indicators such as GDP and its derivatives.

We begin with a brief overview of the studies that study the relationship between social capital and economic growth. Putnam (1993) suggested that the economic differences between Northern and Southern Italy were mainly due to social capital differences such as trust. Knack and Keefer (1997) tested these suggestions in a small crosscountry sample, finding that trust is a significant determinant of long-run growth rates. Their finding has since been reconfirmed in larger samples and submitted to various robustness tests. Whiteley (2000), Zak and Knack (2001) and Beugelsdijk (2005) conclude that trust is a robust and important determinant of growth. Berggren et al. (2008), exploring growth in the 1990s, are more skeptical but still conclude that trust is more robust than many more standard explanations while Dincer and Uslaner (2010) reconfirm the cross-country evidence across the US states. Bjørnskov (2012) using the largest country sample to date, identifies good governance and education as the transmission mechanisms connecting social trust and long-run economic growth. Using a different method to sort out causality, Algan and Cahuc (2010) use the inherited component of trust and its time variation of descendants of US immigrants. Their findings attribute Boulila et al. (2008) perform a similar analysis but only tests for the effect of trust through the education channel. They therefore find a significant governance mechanism but conclude that other direct mechanisms must be at work. Yamamura and Shin (2010) provide evidence across Japanese prefectures that trust is associated with productivity advances. an important role to trust in explaining economic backwardness across developing countries and economic differences between developed countries through the 20th century.

As the evidence that trust affects economic growth is strong, we would clearly expect trust to be associated with human development. Christoforou (2010) is the only larger-scale study to analyze the impacts of elements of social capital on economic growth and human development.

He does so across 32 European countries in the period since 1960 by regressing a human development indicator on the three different main measures of social capital: civic norms, social trust and group memberships. Overall, countries with higher levels of social capital also tend to have higher levels of human development. As one of the few studies in this literature, Christoforou (2010) finds that the association with group membership is stronger than that with social trust and civic norms.

Most studies also note a strong association between social trust and education, although there is disagreement on the causal direction. Helliwell and Putnam (2007) analyze the effects of own and average education levels on measures of both trust and participation in American data from the US General Social Survey and the DDB Needham Lifestyle Survey. They find that increasing levels of own and average education lead to significant increases in social trust.

Sturgis et al. (2007) also find that trusters are on average better educated, healthier, and belong to higher income and social class groups. Yamamura (2012) instead explores the effects of social trust on students' language and mathematics achievement in primary and junior high school across Japanese prefectures, finding a strong causal effect of trust.

Recent studies have also documented an effect of social trust on levels and growth rates of education. In particular, Papagapitos and Riley (2009) and Bjørnskov (2009) test Coleman's (1988) theory in cross-country samples. Papagapitos and Riley (2009) and Bjørnskov (2009) document a significant and causal association between trust and secondary enrolment rates, as well as secondary school attainment. Bjørnskov (2009) finds a significant association between trust and the growth of secondary school attainment between 1960 and 2000. However, Bjørnskov (2009) also notes that such effects are more likely when the economy has reached

some level of technological sophistication, questioning the importance of trust in relatively poorer societies.

A smaller number of studies look at other relevant factors for human development. Most importantly, Kawachi et al. (1997) document a strong cross-country association between trust and health, measured by either mortality or life expectancy. Subramanian et al. (2002) find similar effects of social trust at the community level across the US. Jen et al. (2010) replicate these findings in a large cross-country study. Other factors often associated with concepts of human development also seem related to social trust. Studies since La Porta et al. (1996) document effects of social trust on features of formal institutions such as government effectiveness, participation in civic organizations, and legal quality. However, following arguments in Knack and Keefer (1997) and Boix and Posner (1998), Bjørnskov notes that such effects are more likely to occur in politically free countries in which the preferences and expectations of voters are more likely to affect actual institutional investments and policy. As this brief review shows, trust is related to a number of other aspects of human development than mere economic growth, making it potentially more important for such concepts of development.

The second strand of our literature review focusses on the relationship between government social capital and economic development. Most studies in literature are focused on developing a direct relationship between components of government social capital and economic development (i.e. per capita GDP growth and investment rates), applying basic correlation and regression techniques. Earlier cross-country studies approximated governmental social capital by Gastil's civil liberties indices (Gastil 1990), showing that civil liberties are linked positively with per capita income growth (Grier & Tullock, 1989; Kormendi & Meguire, 1985; Scully, 1988). However, the criteria selected for the construction of Gastil indices is largely political and not

economic in nature, and these were augmented or replaced later by several other indicators to measure governance. One of the examples is the World Bank's credibility index as a measure of social capital which is reported to be positively linked to a higher level of economic growth and as well as to higher levels of investment in a sample of forty seven countries. Research by Rodrik (1997) demonstrated that institutional quality was an important explanation of the differences in growth levels of East Asian countries.

The study by Kormendi and Meguire (1985) established the association of economic performance and government social capital initially. They obtained cross country data from the International Financial Statistics on per capita incomes, and investment as a share of GDP for forty seven countries from 1950 to 1977. They studied the impact of civil liberties on growth and investment. To capture the extent of civil liberties, they used the Gastil index. The index ranges from 1 to 7 where the minimum values indicate greater civil liberties. This index however, did not incorporate economic liberties. Kormendi and Meguire argued that since political and social freedoms are undoubtedly correlated to economic freedoms and therefore this index was not inadequate to be a good reflection of civil liberties in a country. According to empirical results of their study, growth rates were higher in countries with higher civil liberties. They also concluded that this effect on growth rate was through the investment channel. The investment to GDP ratio rises by 5 percentage points when civil liberties variable is included in the regression. Thus, they concluded that higher civil liberties in a country impact levels of investments in the country and that impacts growth levels.

Scully (1988) used the Gastil civil liberties indicators as proxies of the "institutional framework."

Scully viewed "independence of judiciary" as a measure of the accountability and fairness.

Another Gastil indicator is based on level of "economic freedom," in countries, which was used

as a measure of safety of private property. Another Gastil variable gauges political freedoms. Scully examined the effects of all three variables on growth of incomes for 115 countries from a period of 1960 to 1980 while using changes in the capital-labor ratio as control variable. The conclusion of the study was that countries with greater civil liberties and greater economic or political freedoms had twice the income growth as compared to countries with less freedom.

All these studies which used Gastil index faced causality issues because this index was constructed in 1973. All the independent variables in the studies capture the situation in the decade of 1970 but the economic indicators are till 1980s.

Index of civil liberty by Gastil, is not a useful measure for finer notions like the protection of property rights, contract enforcement, or the respect for law because of a variety of criteria used in its calculation which are irrelevant for these concepts such as the inclusion of religious freedom and inequality etc.

Some studies exploring the link of type of political regime to growth used Gastil's political and civil liberties indices as a reflection of democracy. The studies by Barro (1996) and Helliwell (1994) suggested that Gastil indexes are linked positively to economic performance through factor accumulation channels of educational achievement and investment rates since Gastil indexes were positive only when these two variables were omitted from the estimations.

The study by Isham, Kaufman, and Pritchett (1997) examined the relationship of governance and success of World Bank-funded projects during the period of 1974-1993. Their findings suggest that rates of return on projects are higher in countries where there is more civil liberty. However, political freedom and democracy did not affect the projects' performance. Surprisingly, civil

unrest was positively related to project performance which the authors believe is an indicator of increased public voice and accountability of government performance.

Barro (1991), in his classic study on the causes of economic growth, showed that events of political instability significantly and negatively impacted the share of private investments in the GDP.

Alesina, et al., (1996) investigated the relationship between political instability and economic growth across 113 countries during the period 1950-1982. The main finding of their paper was that whenever there was a strong likelihood of collapse of a government, economic growth was significantly reduced during that period. Similar results were obtained when instead of likelihood of government collapse, quick changes in government was used as explanatory variable.

Though overthrows of governments were a result of lower economic growth, there was no evidence that recurrent coups reduced growth rates as suggested by Londregan and Poole (1990;1992). Alesina and Perotti (1996) used income inequality and price of investment goods as instruments in their study. They found that political instability lowers share of investment in GDP, but political violence was not statistically significant for investment rates.

However, it cannot be said that political violence is an adequate measure to comment on the state of property rights in a country. For instance, unconstitutional takeovers of governments do not reflect real change in the status of protection of property rights etc and it is only the identity of the ruler which is changed. On the other hand, some stable governments have also bought in erratic and unpredictable policy reforms through executive orders which almost amounts to dictatorial measures.

The shortcomings of the Gastil index and the rising popularity of new institutional economics led to the search for better measures of quality of governance. Researchers turned to increasingly subjective ratings that were compiled by specialist firms which evaluated political risks in countries for international investors. These ratings services include Business International (BI), the International Country Risk Guide (ICRG), and Business Environmental Risk Intelligence (BERI).

Because of a wider coverage of countries, the ICRG indicators are extensively utilized in cross-country studies as compared to the other two indicators.

Keefer and Knack (1997) and Knack (1996; 1997) demonstrated, using ICRG and Beri indices, that the rate of convergence in poor countries was determined by the quality of governance. They showed that the capacity of less developed countries to make use of rapid growth possibilities was a function of contract enforcement and property rights.

Mauro (1995) constructed three variables from BI indicators: (1) "Corruption," (2) a bureaucratic efficiency (3) a "political stability" . All these governance variables were positively and significantly linked with growth and investment were positively. The governance variables' significance is reduced when the variable for investment is added to the model, suggesting that part of the growth effects of good governance are through the impact on innovation and efficiency of markets.

A significant downside of the indicators in the studies of Mauro (1995) and of Knack and Keefer (1995) is the limited view of the actual investment climate conditions. These indicators are targeted for foreign investors and do not reflect the conditions faced by the domestic investors

and unless the situation for both foreign and domestic investors is completely correlated, such indicators will not provide a complete picture of the investment climate in a country.

Kaldaru and Parts (2008) have demonstrated that government social capital, has a positive and significant impact on economic development. Data from World Bank Governance indicators is used as a proxy for government social capital. One of the few studies to use HDI as a measure of economic development, they analyze data from 34 European countries. According to their results, 86.1 % variation in HDI was determined by government social capital variables.

3.1 Conceptual Framework

Human well-being is raised by social capital in both intrinsic ways as well as when it is an instrument to facilitate economic performance. The intrinsic advantage of social capital is the desire for love, socialization and friendship in humans. Social capital is an indicator of the quality of personal relations, that involve trust, honesty, and mutual support, and these lead to an increase in the sense of well-being.

The instrumental gain from social capital occurs through the contribution of social capital for efficient functioning of markets and social insurance. Social capital enables economic cooperation, contract compliance, the division of labor, and provides social insurance against unforeseen incidents.

The importance of social capital for development is its ability to help in overcoming “social dilemmas” in innumerable facets of economic and social life. A social dilemma occurs when an individual is faced with the choice of bearing an individual cost for the greater good of others in the society (Rothstein, 2001; Sachs, 2015). In a society with higher levels of social capital, individuals are more willing to face such individual costs for the benefit of the society; and when

most people in society act like this, society benefits from higher economic productivity, strong social insurance, and greater resilience to cope with natural disasters (Christoforou, 2010, Sachs, 2015).

Social dilemmas can also be observed at the societal level. When social capital is high, individual citizens are more willing to pay their taxes scrupulously and to support investments in public good and social insurance policies (Aghion et al, 2010; Bergh and Bjornkov, 2011; Knack, 2002; Knack and Keefer, 1997). The most generous social welfare systems are in the Scandinavian countries, which have the highest social capital in the world as well. Social capital, in the form of collective action and solidarity can be an effective channel to lobby for better public spending and achievement of wellbeing (Aghion et al. 2010; (Bergh & Bjørnskov, 2011).

Another micro-linkage of the social capital to development is through its ability to influence political institutions which are then responsible for development planning. The values and norms that enable collective action and the level of trust in the society strengthens the efforts for sustainable development. Social capital makes citizens well informed and also builds their qualities of judgement (Posner & Boix, 2016). Through rational voting behaviour and informed citizenry, citizens can push governments for reforms and policies that aim at provision of public goods and increased social spending. Heineman and Tanz (2008) suggest that there is a greater likelihood in high-trust countries to introduce reforms for liberalization and improved legal processes.

Social capital can impact development mainly by improving coordination and encouraging collective action. By doing this, social capital allows for the free rider problem and the prisoner's dilemma to be overcome. By enabling deference as well as norms, rules and coordination, social interaction in the form of clubs and hierarchical institutions for example, surmounts the free-

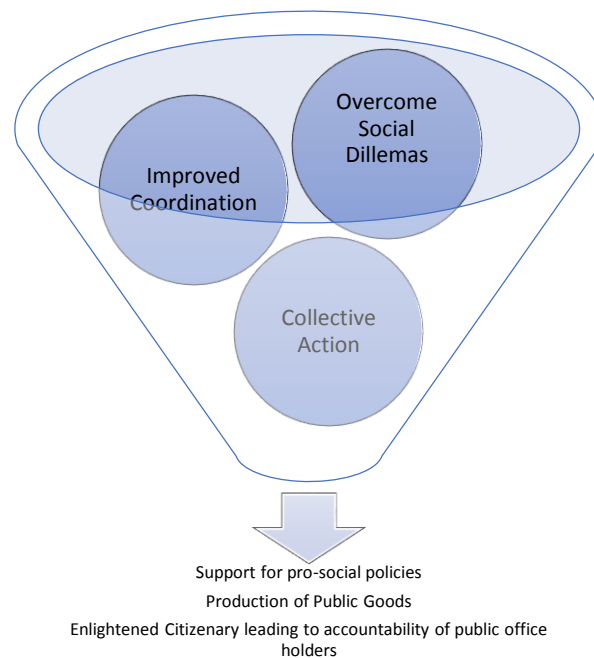
riding problem and thereby instigates the production of public goods. According to game theory, a prisoner's dilemma situation occurs in a simultaneous one-shot game where two players have an incentive to defect since whatever the other does, one is better off not cooperating. This Nash equilibrium results in a sub-optimal outcome, given that they would both have obtained higher pay-offs had they cooperated. Such situations are common in society, but since social interaction tends to be a repeated game, the incentive to cooperate increases, with a simple tit-for-tat strategy, especially when the social costs of defecting are high. Cooperation is most easily sustained through repeat play. When economic and political dealing is embedded in dense networks of social interaction, incentives for opportunism and malfeasance are reduced and thus the possibilities to cooperate increase.

Cognitive elements, such as civic norms of cooperation, increase the likelihood of a cooperative outcome, and several structural components of social capital work as deterrence to noncooperation. Collective action and consultative decision-making promoted by social capital allow for the minimisation of negative externalities, but also, on another level, for the promotion of development as freedom. Indeed, such collective action improves society's monitoring ability towards government and other stakeholders.

To manage pro-social policies, a large public bureaucracy is required to monitor and manage social security benefits and tax collection, which will drain state's resources (Mueller 2003). Most modern countries have wide-ranging regulation and monitoring systems for tax collection and social benefit fraud. Low trust implies a higher chance of dishonesty, so countries only need to increase monitoring (Algan & Cahuc, 2010). However, a large welfare state subsequently also implies an increased financial pressure due to maintenance of a large bureaucracy. A prominent level of trust lifts the fiscal burden of the state because a large bureaucracy is not needed for

monitoring purposes anymore. Aghion et al. (2010), Bergh and Bjørnskov (2011) also demonstrate that high trust countries need less monitoring of welfare programs. Figure 1 below shows our conceptual framework.

FIGURE 1 LINKING SOCIAL CAPITAL TO DEVELOPMENT-A CONCEPTUAL FRAMEWORK



Type equation here.

4 Research Methodology

4.1 Model Estimation

The basic specification of the econometric model may be written as

$$Y_{it} = X_{it}\beta + Z_i\alpha + \varepsilon_{it}$$

This is the pool equation; it has $K \times 1$ vector of independent variables in vector excluding a constant term. In this equation there may be heterogeneity among cross sections. The cross section effect is shown by $Z_i\alpha$ where Z_i has a constant term and cross section specifications are constant over time t . We may estimate the above model by using simple Ordinary Least Squares if we assume all cross sectional effects are available across all observations. It may be mentioned that this is the most simple and generic form of the model, some restrictions need to be imposed on the coefficients. If same individuals are sampled over time, it may be unrealistic to suppose that error term would be uncorrelated from various time periods (Verbeek 2012). Under such circumstances OLS is assumed not to be efficient in relation to an estimator which uses this correlation in error term over the time.

This error term may be written as

$$\varepsilon_{it} = \alpha_i + U_{it}$$

This is considered to be homokedastic and independent over time. On the other side this term is an unobservable or cross sectional time invariant variable. For a most appropriate estimation technique, it is important to know that if or not the unobserved cross sectional effect is linked with the independent variables included in the model. Generally, there are two approaches which are used to overcome this issue. The “random effects” model assumes that all those factors that may have impact on the dependent variable are not included in the model as explanatory variables; it may be abridged by the random error term (Verbeek 2012). However, it may also be considered that cross section specific effects are not correlated with the independent variables, under such circumstances it may be better to model the cross section specific constant term as randomly distributed across cross-sectional units (Greene 2013). The second technique is known

as “fixed effects” model, it is based upon the assumption that the excluded independent variables are correlated the regressors.

The fixed effect model can be written as follows

$$Y_{it} = \alpha_i + X_{it}\beta + \varepsilon_{it}$$

It is a linear regression and to estimate the fixed effect model, there is need to transform the equation so that cross section specific unobservable effects are eliminated. This can be done in various ways; one way is that we may include a dummy variable for each cross section in the model like given as

$$Y_{it} = \sum_{j=1}^n \alpha_j d_{ij} + X_{it}\beta + U_{it}$$

\sum Will be = 1 if $i = j$ and 0 elsewhere.

It provides set of N dummy variables in the model. The parameters for the β and $\alpha_1, \dots, \alpha_N$.

The coefficient can be estimated by OLS that is why it is known as “least squares dummy variable estimator” (LSDV). There is another way to estimate the in efficient manner that is by running the regression after taking deviations from the individual means (Verbeek 2012). By doing this eradicate the individual or cross sectional effects.

$$Y_{it} - \bar{Y}_i = X(X_{it} - X_i)\beta + (U_{it} - \bar{U}_i)$$

By doing so we get the observations that differ from individual means and this may be termed as “within transformation”. The OLS estimator obtained from this regression is known as “Fixed

effect estimator". This is assumed to be consistent if independent variables are exogenous (Neira et al. 2008). This estimator is based upon differences within individuals and explains that why is different from and it is unable to clarify why is different from (Verbeek 2012). Based upon this discussion, the following model have been developed.

The model takes the functional form as follows:

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

The econometric form of the model is as follows

$$HDI_{it} = \beta_0 + \beta_1 GenTru_{it} + \beta_2 PubTru_{it} + \beta_3 PriTru_{it} + \beta_4 GovSoc_{it} + \beta_5 X'_{it} + \eta_i + \varepsilon_{it}$$

In the above equation, HDI_{it} is Human Development Index, β_0 a constant term, GenTru is generalized trust, PubTru is institutional trust in public institutions, PriTru is institutional trust in public institutions, GovSoc is government social capital. X is a vector of control variables, $\varepsilon_{it} \sim N(0, \sigma^2)$ an i.i.d. error term and η_i the time-invariant country specific effect term. Various specifications of the model have been used for robustness check.

4.2 Description of Variables

a) Dependent Variable

The HDI is a national composite indicator with three components representing health, education and income. The first is a proxy for health care and living conditions and measures life expectancy at birth. The second is the knowledge variable which is the weighted average of adult literacy and (2/3) and average years of schooling (1/3). Since 1995, the latter has been replaced by a combined enrolment ratio for primary, secondary and tertiary levels. The third component is the national real GDP per capita, adjusted for purchasing power parity, and is a proxy for

disposable income. After being standardised, the three components are averaged to produce the index (from 1994 onwards).

b) Independent Variables

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 can define social capital broadly as the comprehensive cluster of institutions, relationships, networks, attitudes and values that govern interactions and relations among people which lead them to collective action contributing to economic, social and institutional development (Grootaert & Van Bastelaer, 2002). This broad and provisional definition provides us a way to operationalize the concept for empirical research.

Our definition distinguishes two dimensions of social capital. Firstly, “structural” social capital, referred to relatively objective and externally observable social structures –networks, associations and institutions-, and the values, rules and procedures they embody. Secondly, “cognitive” social capital, encompasses more subjective and intangible elements such as perceptions, observations, generally accepted attitudes, shared values, norms of behaviour, reciprocity relationships and trust (Grootaert & Bastelaer, 2002).

In this study, the indicators of interpersonal trust, and institutional trust have been used as proxy for measuring the cognitive dimension of social capital. The structural dimension of social capital is represented by government social capital variables and group membership indicators.

i) Civic Social Capital

We have followed the approach of Knack and Keefer (1998) and Bjørnskov and Svendsen (2012) for selecting our generalized trust variable. Data was gathered from the World Values

Survey (WVS) which is worldwide database for collecting information about the living standards and wellbeing of citizen 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 indicator of generalized trust. The panel data is from the period of 1999 to 2014.

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; Stephen Knack, 2002; Ostrom & Ahn, 2009; Sapienza, Toldra- Simats, & Zingales, 2013; Svendsen & Bjørnskov, 2007)).

In addition, to the measure of generalize trust, we also included a measure of citizens’ trust in 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 focused on is “Do you have confidence on the following: Parliament, Police, Judiciary, Military, Press, Banks, Big Companies, and Media”. The percentage of responses for maximum confidence was used a measure of institutional trust. We divided 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.

Group memberships refer to involuntary participation in civil organizations and formal networks. A measure that has been widely used to represent this dimension of social capital is that of associational activity, represented by the memberships in associations. This indicator was

introduced by Putnam to show the intensity of horizontal interaction, which he believed to be an essential form of social capital with merits in creating trust and norms of cooperation that can impact community productivity and well-being. Putnam did not find any negative externalities related to horizontal networks and systematically associated such networks with a trust-enhancing mechanism that would benefit the society. However, it is also possible that such networks can be tightly knit groups that want to exclude others and proceed to rent-seeking activities (Olson 1982).

Another reason to use such measures with care is that they do not capture the level of involvement of the respondent in the group.

The WVS question that captures this informal connectedness asks the respondent if they are an active member of any civil society organization.

The voluntary organisations and activities stated in the WVS are social welfare services; religious organisations; education, arts, music or cultural activities; trade unions; political parties or groups; local community action; third world development or human rights; conservation and the environment; professional associations; youth work; sports or recreation; women's groups; peace movement; consumer groups; voluntary organisations concerned with health and 'other' groups. The average number of groups a person is a member of, is the group membership variable.

ii) Government Social Capital

Our second set of independent variables are related to 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; Stephen Knack, 2002). The source of our data is the ICRG political risk database in line with previous researches (Stephen Knack, 2002; Stephen Knack & Keefer, 1997). The ICRG data quantifies risk factors for institutional performance of 140 countries. The political risk score has a maximum value of 100 and a lowest value of 0. A high value indicates minimal risk in a category. The indicators from the ICRG database are 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 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.

While most recent studies use instrumental variables estimators to assess the influence of trust on growth, education and other outcomes, we believe that it is unnecessary in our case. We examine the human development in the period 2000-2014, in which trust scores have been approximately stable in the majority of countries around the world (Uslaner, 2002) . As such, there is little reason to believe that our estimates will suffer from endogeneity bias.

5. Results and Analysis

As a first glance we present some graphs which show the relationship between between HDI and some independent variables. Countries like India, Armenia, Iraq, Libya, Qatar, Kuwait, for instance, report health spending which is far less than countries like Serbia, Brazil, South Africa etc., however they have higher or similar scores for HDI. This anomaly makes it worthwhile to disregard the significance of financial resources for achieving human development for a while and pay attention to the factors that hinder countries from achieving higher human development despite financial means.

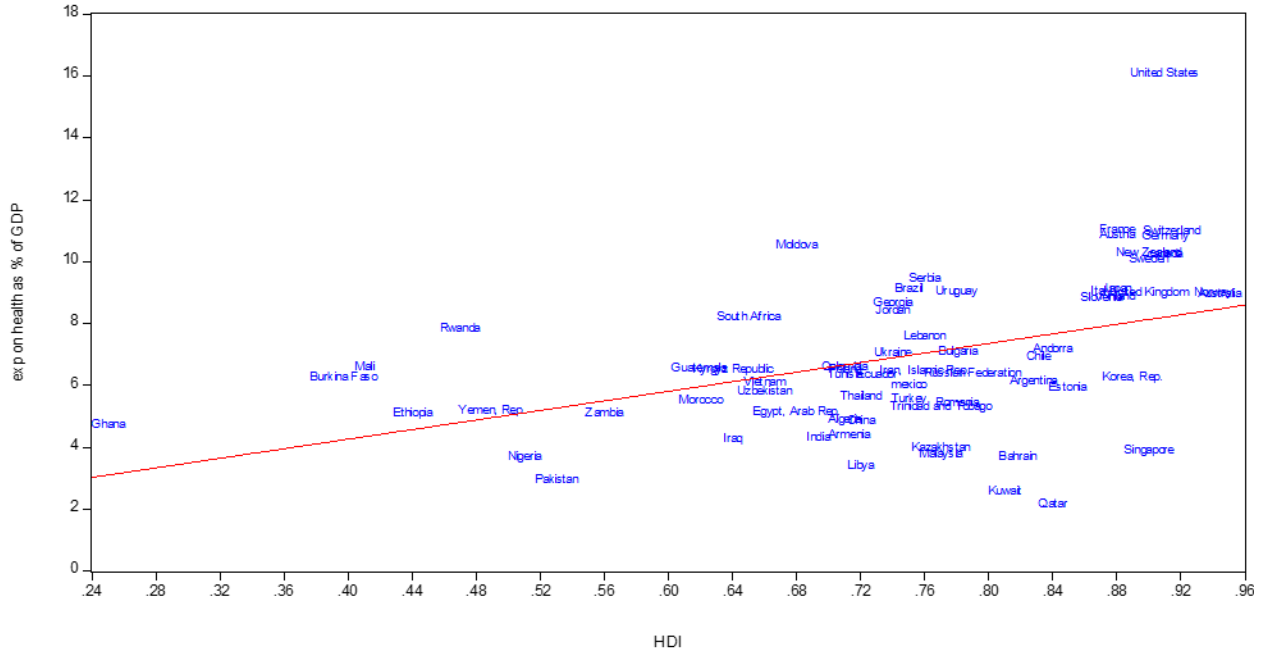


Figure 2 Expenditure on Health and HDI

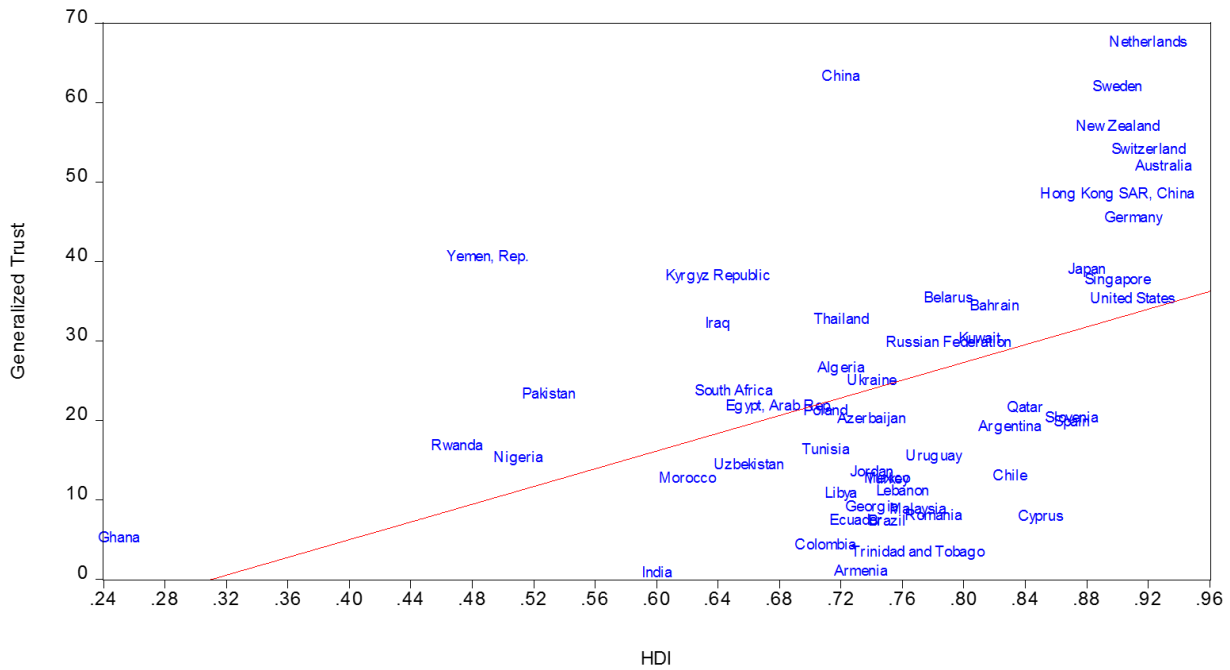


Figure 3 Generalized Trust and HDI

In the second graph, we present the relationship of HDI and Generalized Trust, which is one of our social capital indicators. The countries with higher levels of Generalized Trust also have higher HDI scores.

Table 1: Descriptive Statistics

Variables	Mean	Std.Dev	Observations
Gini Index	36.06	8.55	354
HDI	0.748730	0.143352	736
Poverty headcount ratio	6.22	12.05	243
Per Capita Income	18102.42	21081.86	775
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

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Government Effectiveness	0.60	0.27	725
Political Stability	0.71	0.11	725
Total natural resource rent as % of GDP	8.762197	12.08138	728
Secondary School Enrolment	88.16	24.31	617

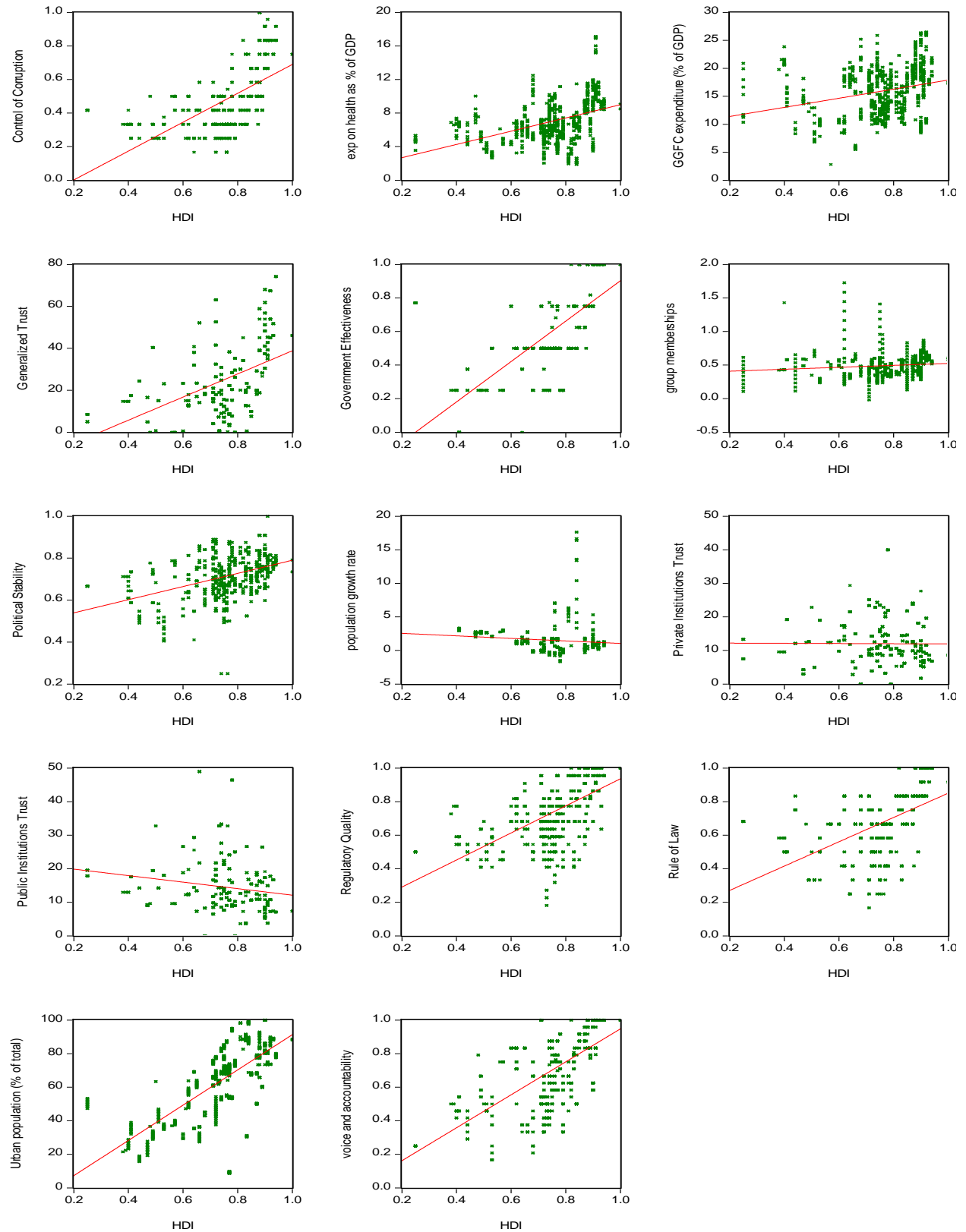


Figure 4 Relationship Between HDI and Social Capital

We present below the results of our econometric estimations in Table 2.

Table 2: Main Results. Determinants of HDI

	Estimated Coefficients		
	1	2	3
Generalized Trust	0.115192 (0.036792) ***		0.179197 (0.091597) **
Institutional Trust (Public)	-0.001638 (0.000640)		0.004621 (0.001435) ***
Institutional Trust (Private)	0.002702 (0.000658) ***		-0.004906 (0.002078) *
Group Memberships	-0.018935 (0.010312) **		0.006792 (0.027411)
Regulatory Quality		0.041305 (0.014365) ***	-0.124756 (0.055761) *
Rule of Law		0.061544 (0.033241) **	-0.007653 (0.063260)
Political Stability		0.045312 (0.026824) **	0.111291 (0.098017)
Control of Corruption		0.035584 (0.027162)	-0.117089 (0.078901)
Government Effectiveness		0.058748 (0.0561999)	0.344959 (0.059217) ***

Voice and Accountability	-0.099487 (0.026188) ***	0.013771 (0.033651)	-0.159522 (0.072949) **
Urbanization	0.003454 (0.000842) ***	0.000527 (0.0002655)	0.000812 (0.000454) **
C	0.739746 (0.064085) ***	0.868585 (0.049773) ***	0.875028 (0.084990) ***
Overall R.Sq	0.991	0.251	0.547

SE are given in parenthesis

*, **, *** denotes levels of significance at 10%, 5%, and 1% respectively. R-squared indicates the overall R-squared.

Empirical analysis in the study begins with Model 1 which presents the estimation results of the benchmark model as presented in Table 2. The model is presented in its simplest form with civil social capital variables entering the estimation as determinants of HDI. Our variables for Generalized Trust and Institutional Trust (private) are statistically significant and positively associated with HDI. The positive association of the Generalized Trust variable with HDI corroborates the earlier works of Ozcan and Bjornskov (2011). However, our group membership variable is negatively associated with HDI. The reason for this can be that our group membership variable contains both “Olsonian” and “Putnam” types of associations. And keeping in view the divergent views on the usefulness of group memberships, it is possible that the full effects of group memberships is not reflected when both types of groups are jointly studied.

Model 2 analyses the relationship between government social capital and human development. Regulatory quality (b= 0.04276) and political stability (b= 0.02749) are positively associated

with human development. The works of Han et al., (2014), Pardhan and Sanyal (2011) and Uddin and Joya (2007) report similar results to our findings and emphasize that the quality of governance is critical in determining that a bureaucracy is able to provide procedural clarity and technical competence and is likely to introduce efficiency as a criterion for allocation of public goods and frame effective government policies. Our results support the institutional view on development that to protect from opportunism and to reduce uncertainty, regulatory quality, effective enforcement of rules and sanctions are necessary to be implemented by government for sustainable economic development (Aron, 2000).

In Model 3, we include both civil social capital and government social capital variables. The variable for Institutional Trust (public) becomes significant in the model ($b=7.53005$) when we include variables for government social capital to the model. The positive significance of Institutional Trust (Public) suggests that trust in public institutions and government social capital are not substitutes of each other. While the latter is a measure of quality of governance, trust in public institutions works exactly in the same manner as generalized trust. While improvements in governance indicators is mostly reflected in technical details, the actual faith of the public in government machinery is reflected through the variable of Institutional Trust (public).

Government social capital variables do not change their signs and neither lose significance in the presence of civil social capital variables in Model 3. Another key finding in our results is that the Group membership variables become insignificant when Government Social Capital variables are added to the equation. The negative effects of the exclusive groups that can reduce HDI values is overcome by effective governance. It is true that when governments act efficiently, without bias and prejudice towards certain groups, then the provision of public goods will become equitable. The capture of resources in a few hands will be curbed when institutions are

strong and work for the overall benefit of the citizens without being held hostage by a few groups.

Our inclusion of the urbanization variables seems to reflect that despite the social and environmental costs of urbanizations, its benefits for economic outcomes outweigh the costs. Urbanization is found to be significant and positively linked to HDI.

In line with theory and intuition, a lower value of the voice and accountability variables leads to lower level of human development indicators. The countries where the people are not able to hold their governments accountable, will not be able to lobby for more social sector spending and better health and education outcomes.

5.2 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 social capital and human development. We include expenditure on health as a % of GDP. The reason for not including education expenditures was that health expenditures presented the most variance across countries and could have more valuable contribution to the model. Lastly, we have also included population growth rate as an independent variable to control for its effects on declining economic welfare which can indirectly affect human development.

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 HDI as found earlier by Bergh and Bjørnskov (2011). Similarly, government social capital

variables also remain unchanged in overall significance except for the variable of Political Stability which becomes statistically significant in our robustness check.

Table 3: Robustness Analysis

	Estimated Coefficients
Expenditure on health as a % of GDP	0.004223 (0.000588) ***
Population growth rate	0.004152 (0.001169) ***
Urbanization	0.003755 (0.000521) ***
Institutional Trust (Public)	7.53005 (0.000134) **
Institutional Trust (Private)	-0.000123 (0.000134)
Generalized Trust	0.0529333 (0.015999) ***
Group Memberships	0.022438 (0.005513) ***
Regulatory Quality	0.060928 (0.008845) ***
Rule of Law	-0.018935 (0.010630)

Political Stability	0.028236 (0.013993) ***
Control of Corruption	-0.013650 (0.010566)
Government Effectiveness	0.120581 (0.039026) ***
Voice and Accountability	-0.051232 (0.015251) ***
c	0.484286 (0.048195) ***
Overall R.Sq	0.99

SE are given in parenthesis
 *, **, *** denotes levels of significance at 10%, 5%, and 1% respectively. R-squared indicates the overall R-squared.

Overall, all models, strengthen the theoretical position about the importance of social capital for human development.

6. Conclusion

Our main conclusion from the empirical exercise in the previous sections is that social capital, enhances development. From our results, we gather that increase in Generalized Trust leads to an increase in the HDI.

The relevance of civil social capital in explaining various levels of development consolidates the valuable role of each measure of social capital at personal and institutional level. Therefore, generalized trust has been confirmed as a developmental ingredient, which was already proclaimed favourable to economic growth (Knack and Keefer, 1997; Zak and Knack, 2001; Fukuyama, 1995). Its effects on development are mostly hypothesized to flow through the income channel, since it reduces transaction costs and thereby stimulates efficiency gains.

Another key finding is the fundamental role played by government social capital in enhancing development. Indeed, the government social capital variables – government effectiveness, control of corruption, regulatory quality and the rule of law - are almost invariably highly significant and have substantial coefficients. Our empirical evidence supports the institutional view to a certain extent, and infers the complementary roles of government and civil social capital. Our findings corroborate the earlier works of Kormendi and Meguire (1985) , Alesina et al.,(1996) and later Knack and Keefer (1997) about the significance of government social capital for economic performance.

We can conclude from our empirical exercise that development planning can only be done through deliberate political choice. Increased public spending on housing education, transport and health etc can ensure that citizens achieve a better quality of life and live the lives they value but these policies can only be achieved and planned if there is public will behind it. Since development is a conscious public choice, the process of development and its determinants cannot be fully understood without taking into consideration the social capital of the society. The statistical significance of social capital variables in the presence of economic variables in all our models is testimony to the fact that social capital variables should be given consideration in economic planning.

Our results also support the view that economic agents do not operate in isolation against the assumptions of orthodox, mainstream economics. Economies are basically social subsystems with multifaceted relations to the larger economies (Knoke, 2014; Todaro & Smith, 2003).

6.1 Limitations of Study and Directions for Future Research:

Our independent variable for measuring human development was the UNDP's Human Development Index. However, this indicator is not ideal, since it is not a perfect illustration of human development and it retains a number of weaknesses, similar to the income-based indicators that are intentionally avoided in this research. The major limitation of the HDI is the incomplete consideration of equity and deprivation, among others. Therefore, we suggest that other indicators of development may also be considered to examine the impact of social capital on development.

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