STOCKHOLM SCHOOL OF ECONOMICS

Department of Economics

Bachelor's Thesis in Economics

June 8th 2012

INCOME INEQUALITY AND SOCIAL TRUST: THE CASE OF WINDHOEK

Agneta Berge (22044) Thorun Wahlström (21935)

ABSTRACT

Social trust appears to be beneficial for society, but varies greatly in level across countries. Income inequality has been proposed as a strong determinant of social trust, although often without sufficient micro foundation. Employing the notion of distributive justice, we derive three micro level mechanisms between income inequality and social trust and test them empirically. We call the mechanisms "inequality aversion," "winners versus losers" and "the belief that one cannot get rich by just means." Using cross-sectional data that we collect in Windhoek, Namibia, we see that the belief that one cannot get rich by just means appears to be associated with lower social trust, by how untrustworthy behavior is generated in society. However, as our data supports only one out of three micro level mechanisms, distributive justice theory alone appears not to suffice in uncovering the mechanisms between income inequality and social trust. The data also indicates that a theory on income inequality as determinant of social trust should include how trustworthy behavior is generated. Future microeconomic research can take this further by investigating income inequality and trustworthy behavior in relation to inequality of opportunity and corruption. Future macroeconomic research should employ measures that capture the skewness of an income distribution as a complement to the Gini index.

Keywords: income inequality, social trust, distributive justice, Namibia

JEL codes: D63, Z13

Tutor: Örjan Sjöberg

Examiner: Kelly Ragan

ACKNOWLEDGMENTS

We would like to thank our tutor Örjan Sjöberg for assistance during the process of writing our thesis. The Central Bureau of Statistics in Namibia and Alwis Weerasinghe deserve our gratitude for their kind help and valuable insights. In addition, we thank Jette Bodin, who opened doors for us in Namibia. Erik Öberg and Hannes Malmberg, Ph.D. students at the Stockholm School of Economics, also provided us with constructive input, for which we are thankful. Lastly, we want to express our appreciation for the financial support from Sida's Minor Field Study Program.

CONTENTS

Abbreviations v
Introduction 1
Theoretical background 2
Income inequality and institutions 2
Measuring income inequality: the Gini index 2
Social trust: definition and determinants 2
Trust versus trust 2
Determinants of social trust 3
Trustworthiness, institutions and distributive justice 5
Trustworthiness and asymmetric information 5
The role of institutions 5
Fairness of society 6
Income inequality and distributive justice 7
Distributive justice: micro level mechanisms 8
Inequality aversion 8
Winners versus losers 8
The belief that one cannot get rich by just means 9
Summary: Our theoretical framework 9
Hypotheses 10
Choice of case study country 10
Introducing Namibia 12
Method 13
Research method and data requirements 13
Central challenges in quantitative data collection 14
Stratified sampling 15
Random sampling from each stratum: two methods to choose from 15
Pilot study 17
The final survey: the supermarket method 18
Random sampling at the supermarkets 19
The interview situation 19
Questionnaire design 20
The social trust question 20
Variables of interest 21
Data reliability 22

Measurement error 23
Econometric data analysis 23
Linear probability model 23
Regression specifications 24
Predictions 26
Empirical findings 26
Data quality 26
Response rate 26
Representativeness 27
Control variables 29
Measurement error 29
Econometric results 30
Comments on results 32
Theory implications 33
Future research 34
References 36
Appendix 1: Computed income by living standard 39
Appendix 2: Keywords translated to Oshiwambo 40
Appendix 3: Pilot study questionnaire 41
Appendix 4: Final survey questionnaire 47
Appendix 5: Explanation of control variables 53
Appendix 6: Complete regression results 54
Appendix 7: Simple correlations 55

ABBREVIATIONS

AFDB	African Development Bank
CBS	Central Bureau of Statistics
GDP	Gross Domestic Product
LPM	Linear Probability Model
NAD	Namibian Dollar
NHIES	Namibia Household Income & Expenditure Survey
NPC	National Planning Commission
OLS	Ordinary Least Squares
SD	Standard Deviation
WVS	World Values Survey

INTRODUCTION

There is a growing body of research, within different scientific fields, on the topic of social trust and its determinants. There are two reasons for why this is important to investigate. First, social trust has been empirically associated with normatively desirable outcomes, such as tolerance (Andersen & Fetner, 2008), reduced transaction costs and economic growth[1] (Zak & Knack 2001; Beugelsdijk et al. 2004). Second, societies vary greatly in their level of social trust. According to the 2005-2008 World Values Survey[2] (WVS), 74 % of the Norwegian and 68 % of the Swedish population believed that most people can be trusted, while the corresponding numbers for Zambia and Turkey were 12 % and 5 % respectively (see Table 1).

Income inequality has been suggested as one of the strongest determinants of social trust by several authors (Zack & Knack 2001; Uslaner 2002; Alesina & La Ferrara 2002; You 2005; Jordahl 2007). Possible mechanisms between income inequality and social trust do however often remain under-theorized. Jong-Sung You (2005) argued that "it is of great importance to establish better theory of social trust that illuminates the causal mechanisms" and that such "causal mechanisms need to be empirically tested." In establishing a better macroeconomic theory, possible mechanisms should be empirically tested as for how they ought to function on a micro level. Such studies can provide a micro foundation upon which future research on an aggregate level can build.

For these reasons, this study tests the theory of income inequality as determinant of social trust, and concludes how it could be improved. We set out to uncover micro level mechanisms between income inequality and social trust, derived from macro level theory, and test them empirically in a case study. Using this approach, we can reach in-depth understanding about what theoretical perspectives that may capture mechanisms in the relationship between income inequality and social trust, and provide implications for future micro- and macroeconomic research on the topic.

The next section describes the theory upon which this study is based. First, the concepts of income inequality and social trust are developed separately. Then we employ the notion of distributive justice to uncover possible micro level mechanisms between income inequality and social trust. After the theoretical background, the hypotheses we use in testing three micro level mechanisms are presented. Thereafter we introduce our case study country and elaborate on the methods used for data collection and data analysis. Lastly, we present our empirical findings and conclude how the tested theory could be improved.

[1] It should be mentioned that Felix Roth (2009) finds that economic growth is negatively related to an increase in social trust.

[2] The WVS is a global investigation of socio-cultural and political change, conducted by a network of social scientists from all around the world (WVS, 2012).

THEORETICAL BACKGROUND

INCOME INEQUALITY AND INSTITUTIONS

In this thesis, income inequality is viewed upon as a result of given institutions. The term institution is used frequently in previous research on income inequality and social trust, but is rarely explicitly defined. This is a limitation to previous research since ambiguousness in this concept may result in vague inference. Inspired by Douglass North (1991), an institution is throughout this thesis understood as a rule (or a set of rules) of social interaction. Institutions can be either formal, such as laws and regulations, or informal, such as social norms and conventions. It is however outside the scope of this paper to identify what type of institutions that generate income inequality.

Measuring income inequality: the Gini index

The Gini index (or coefficient) is a popular income inequality measure (Haughton 2005; Jordahl 2007) and is widely used in previous research on income inequality and trust (Alesina & La Ferrara 2002; Uslaner 2002; You 2005; Jordahl 2007; Rothstein & Stolle 2008; Andersen & Fetner 2008). The Gini index measures the dispersion of an income distribution, and a Gini coefficient of 1 indicates perfect inequality of incomes, while a Gini coefficient of 0 indicates a completely equal income distribution.

The Gini index satisfies several criteria for a good income inequality measure. It is for example population size independent, meaning that the inequality measure does not change if the population size changes, ceteris paribus. The Gini index is also mean independent, meaning that it does not change if all incomes were doubled. Satisfying these criteria, in combination with being easily accessible for most countries, makes the Gini coefficient a good measure for international comparison of income inequality. However, there are certain drawbacks to the Gini index. First of all, it is not easily decomposable, which means that the Gini index of a subpopulation cannot be given by decomposing the Gini index of a country. Moreover, incomes are measured differently across countries. While one country's Gini coefficient may be based on reported income data, another country's Gini coefficient may be based on a household expenditure survey. This also means that the unit of measure regarding incomes is individuals in some countries, while it is households in others (Haughton, 2005).

SOCIAL TRUST: DEFINITION AND DETERMINANTS

Trust versus trust

Trust is often used in a generic way in previous research, without a clear assessment of which type of trust is investigated. This is a limitation to previous research since both theory and analysis become less precise. The type of trust that is investigated in this thesis is social trust, which we define as generalized thin trust of interpersonal nature (You, 2005). Social trust links us to people who are different from ourselves; it is an out-group trust (Rothstein & Uslaner, 2005). Eric M. Uslaner (2008) argued that

"generalized trust represents a sense of social solidarity, a belief that other people, especially people unlike yourself, are part of your moral community" and provided an additional label for social trust, namely moralistic trust.

Social trust should be conceptually distinguished from trust embedded in personal relations, or particularized thick trust (You, 2005), which in contrast reflects social strains, where people have faith only in their in-group (Rothstein & Uslaner, 2005). Also, social trust should be distinguished from political trust. While the latter reflects confidence in political and public organizations, the former is an interpersonal type of trust (You, 2005).

Lastly, because of the popularity of the concept of social capital, social trust should be defined in relation to this notion too. Robert Putnam (2000) defined social capital as ''features of social life, networks, norms, trust that enable participants to act together more effectively to pursue shared objectives.'' Social trust is therefore often considered to be a major component of social capital (Alesina & La Ferrara 2002; Rothstein & Stolle 2008). However, since aspects such as access to and membership in various types of networks are also considered to be components of social capital, social trust and social capital are not the same. This does nevertheless imply that a study on social trust may not only contribute to the current state of knowledge on the topic itself, but also to the vast body of research on social capital.

Determinants of social trust

Considering that social trust appears to be beneficial in several ways for a society, but varies greatly across countries (see Table 1), it is important to understand what societies that produce higher social trust (You, 2005). Many researchers have taken on the challenge of investigating determinants of social trust and a variety of theories have been proposed in consequence. Among these theories, two broad schools of thought can be identified: individual theories and societal theories (Delhey & Newton 2002; You 2005).

Individual theories include theories on what personal traits are important for social trust, such as optimism or life control (Uslaner, 2002). The individual perspective also incorporates theories on how individuals' life experiences of becoming winners or losers in society, measured as for example happiness (Putnam, 2000), income or status (Newton, 1999), matters for social trust. Societal theories, on the other hand, emphasize the role of social contacts, both formal (Putnam, 2000) and informal (Kumlin & Rothstein, 2010). Societal theories also incorporate characteristics of societies as a whole, such as ethnic heterogeneity (Alesina & La Ferrara, 2002), welfare systems (Rothstein & Uslaner, 2005), fairness of society (You 2005; Rothstein & Stolle 2008; Kumlin & Rothstein 2010) and income inequality (Zack & Knack 2001; Uslaner 2002; Alesina & La Ferrara 2002; You 2005; Jordahl 2007).

Table 1. Percentage of people who agree that most people can be trusted

Country	Social trust	Country	Social trust	Country	Social trust
Norway	74%	Uruguay	28%	Argentina	17%
Sweden	68%	Ukraine	28%	Guatemala	16%
Finland	59%	Ethiopia	24%	Mexico	16%
China	52%	Taiwan	24%	Serbia	15%
Vietnam	52%	India	23%	Burkina Faso	15%
Switzerland	51%	Bulgaria	22%	Morocco	13%
Australia	48%	Andorra	21%	Cyprus	13%
Indonesia	43%	Romania	20%	Chile	12%
Canada	42%	Spain	20%	Zambia	12%
Thailand	42%	Poland	19%	Brazil	9%
USA	40%	Egypt	18%	Malaysia	9%
Japan	39%	Georgia	18%	Ghana	9%
Germany	34%	Slovenia	18%	Peru	6%
Jordan	31%	Moldova	18%	Rwanda	5%
South Korea	30%	Mali	17%	Turkey	5%
Italy	29%	South Africa	17%	Trinidad	4%
				Average	26%

Source: WVS, 2005-2008.

The majority of previous research on social trust is based on cross-country survey data, which is often "plagued by omitted variables, endogeneity, measurement error and influential outliers" (Jordahl, 2007). Indeed, theories about the importance of formal social networks, personal traits and ethnic heterogeneity in determining social trust have not been robust in further empirical testing (Delhey & Newton 2002; You 2005; Rothstein & Uslaner 2005). Among the theories that do not have empirical evidence against them in explaining social trust are, to our knowledge, the individual theory on becoming winners or losers in society and societal theories regarding fairness of society and income inequality. However, while there are empirical findings on relationships between social trust and for example income inequality, this relationship is mostly observed on an aggregate level. Causal logics often remain under-theorized and possible micro level mechanisms are not sufficiently empirically tested in previous research.

For this thesis, income inequality is the primary social trust determinant of interest. However, to help uncover micro level links from income inequality to social trust and make the theory comprehensive, aspects regarding fairness of society and experiences of becoming winners and losers in society are employed too.

TRUSTWORTHINESS, INSTITUTIONS AND DISTRIBUTIVE JUSTICE

Trustworthiness and asymmetric information

Person A's trust in person B typically reflects A's information about or experience, direct or indirect, of B's trustworthiness (You, 2005). Trustworthiness thus generates more trust. Also, person A trusting person B to cooperate in a collective action problem (to be trustworthy) increases the likelihood of person A to cooperate (to be trustworthy) too (Ostrom, 2000). That is, trust will produce more trustworthy behavior. Trust and trustworthiness are in this way mutually reinforcing (Putnam, 2000).

The perhaps most efficient way of gaining reliable information about other people's trustworthiness is by having direct social contacts with them. However, as Staffan Kumlin and Bo Rothstein (2010) put it, "the value of social contacts as an information source about the trustworthiness of others is limited by the fact that one can only have so many social contacts." We do not have first hand information about the trustworthiness of the vast majority of people, why there is asymmetric information between person A and person B regarding person B's trustworthiness. However, indirect experiences of the trustworthiness of people in general can give additional information about what to expect from most other people in society. Such information can play an important role in shaping social trust, and this is where institutions enter.

The role of institutions

Institutions can function as an information source about the majority of people living in the society in which the institutions operate (You 2005; Rothstein & Stolle 2008; Kumlin & Rothstein 2010). For this study, it is the information about the trustworthiness of most other people that is relevant and institutions may thus reduce the information asymmetry in the case of social trust.

Kumlin and Rothstein (2010) argued that institutions provide information about the trustworthiness of the majority of people in society since it a) has created, b) supports and c) is affected by the institutions. We develop this argument further in light of our definition of institutions and with complementary literature by Francis Fukuyama (1995), You (2005) and James G. March and Johan P. Olson (1989).

Part a) of Kumlin and Rothstein's (2010) argument is concerned with the people who created the institutions. First, it is plausible that several institutions are not created by a majority of people, but rather by a small minority. Second, it remains unclear how close in time an institution must have been created to affect current social trust. As this part of Kumlin and Rothstein's (2010) argument may be applicable to only a small number of institutions and is of rather vague nature, we do not use it as a component in our theoretical framework and analysis.

As for part b) of Kumlin and Rothstein's (2010) argument, it is quite reasonable to believe that a majority of people may support institutions (or at least a majority of institutions), both formal and informal ones. It

is also reasonable to believe that institutions can reflect values and moral standings of the people who support them. According to Fukuyama (1995), the central idea behind social trust is the belief that most people share your fundamental moral values. In other words, if institutions provide people with information about the moral values of most other people, they also provide information about their trustworthiness, which reduces the information asymmetry in the social trust case.

Lastly we turn to part c) of Kumlin and Rothstein's (2010) argument, which involves how people are affected by institutions. You (2005) claimed that institutions affect the majority of the people by forming the context in which their behavior is shaped, which may be applicable to both formal and informal institutions. According to March and Olson (1989), human behavior is influenced by material incentives as well as by values, norms and perceptions. Institutions, then, can produce incentives, perceptions, values and norms[3] that may generate trustworthy behavior among the majority of people, which in turn affects social trust.

In conclusion, by reflecting moral values of those supporting the institutions and by affecting the context in which behavior is shaped, institutions can provide information about the trustworthiness of most other people in society. To reduce the information asymmetry in the context of social trust, it may thus be rational for people to use the information from institutions when deciding whether most people can be trusted or not. The parameter that has been suggested that people judge this information by is fairness of society, or how fair they perceive the society in which the institutions operate to be (You 2005; Rothstein & Stolle 2008; Kumlin & Rothstein 2010). So fairness of society appears to be important for social trust, but what is really fairness of society? And how is it related to income inequality, our primary social trust determinant of interest?

Fairness of society

To develop the fairness of society concept, we make use of John Rawls's (1971) notion of *"justice as fairness,"* inspired by You (2005). Rawls (1971) conceptualized justice along three dimensions: formal, procedural and distributive justice. Just like with income inequality, we define levels of formal, procedural and distributive justice as results of given institutions. That is, institutions shape fairness of society.

Distributive justice is concerned with distribution of resources, why it is related to income inequality. According to You (2005), distributive justice requires fair distributive rules and fair distributive outcomes. What constitutes a fair income distribution is widely debated and a perfectly equal income distribution is not necessarily fair. You (2005) claims that an income distribution is fair when it is relatively equally and normally distributed, rather than skewed, assuming abilities are approximately normally distributed in society (a popular but perhaps strong assumption). In addition, You (2005) argues that the skewness of an income distribution captures its justice better than does the income gap per se, although both aspects

[3]According to our definition of institutions, produced norms are indeed new institutions.

should be taken into account. Rawls (1971) suggests that an income distribution is fair if its inequality is to the benefit of the least advantaged. David Miller (1992) argues that a set of three independent criteria are at work when people make judgments of distributive justice, namely equality, merit and need.

Distributive justice may not always be successfully isolated from formal and procedural justice in practice, why we make use of these concepts too to uncover mechanisms between income inequality and social trust. Formal justice is defined as "impartial and consistent administration of laws and institutions," regardless of their substantive principles, according to Rawls (1971). In practice, this implies freedom from corruption and authorities that properly interpret and adhere to rules. Rawls (1971) defined the key principles of procedural justice as equal liberties and fair equality of opportunity. According to Rawls (1971), fair equality of opportunity implies that "positions and offices should be open to all" and that "all should have a fair chance to attain them." Bo Rothstein and Eric M. Uslaner (2005) conceptualized equality of opportunity as whether the state promotes equality of opportunity through public policies, rather than whether there actually is equality of opportunity in society.

Income inequality and distributive justice

Henrik Jordahl (2007) and Alberto Alesina and Eliana La Ferrara (2002) proposed an "aversion to heterogeneity" theory in explaining the negative effects of income inequality on social trust. They argued that people are more inclined to trust those who are similar to themselves, including in terms of income. The reason is that social proximity implies less information asymmetry and greater probability of repeated interaction. However, the concept of income inequality is fairly reduced taking only dissimilarities into account. Also, the concept of social proximity is fairly reduced only accounting for income proximity. Lastly, the notion of social trust does not incorporate reciprocity, why repeated interaction is not relevant. It is therefore questionable to interpret the negative effects of income inequality as being caused by its heterogeneity (You, 2005).

Instead You (2005) presented the "fairness explanation" which posits that "fair societies in terms of distributive, procedural and formal justice tend to encourage trustworthy behavior as well as trust in others." You (2005) tested this against the aversion to heterogeneity explanation in the case of social trust and found support for the fairness explanation. He therefore argued that unfair societies are the real causes of distrust. Applying the fairness explanation to the case of income inequality, it may be when economic diversity is combined with perceptions of justice that it erodes trust (Kumlin & Rothstein, 2010). For these reasons, we employ distributive justice to capture mechanisms in the process of income inequality negatively affecting social trust.

Next we present three possible micro level mechanisms between income inequality and social trust. They have emerged by employing the concept of distributive justice when interpreting three theories on determinants of social trust: the individual theory on becoming winners or losers in society and societal

theories regarding fairness of society and income inequality respectively. We call the three micro level mechanisms inequality aversion, winners versus losers and the belief that one cannot get rich by just means.

DISTRIBUTIVE JUSTICE: MICRO LEVEL MECHANISMS

The two first micro level mechanisms build on the logic of how institutions may reflect moral values of the people who support them, while the third builds on the logic of how institutions may affect the context in which behavior is shaped. As for distributive justice theory, the first mechanism is derived from Miller's (1992) line of reasoning on the three criteria people use in judging distributive justice, while the two latter ones are derived from You's (2005) argument on how the skewness of an income distribution may capture its level of justice.

Inequality aversion

Miller (1992) claimed that some people judge the fairness of an income distribution based on its equality. Using such criteria to judge fairness may reflect that these individuals are inequality avert; a personality type acknowledged by previous research (Fehr & Schmidt, 1999). However, despite living in an unequal society, only being inequality avert may not be a sufficient condition for seeing income inequality as signals of unfair society or weak distributive justice. The individual should also *perceive* the current income distribution to be unequal and want it to be more equal. Such individuals may indeed see income inequality as sort of exploitation and unfair society (Jordahl, 2007). If institutions reflect moral values of the people who support them, in line with Kumlin and Rothstein's (2010) argument, inequality avert people that perceive society to be unfair may conclude that people in general are not trustworthy and display lower social trust than others.

Winners versus losers

You (2005) argued that unfair rules and unfair administration of rules "will produce a large number of losers" and that "the poor will regard themselves as losers in unequal societies." Assuming normally distributed abilities, a skewed income distribution with a large proportion of poor people may be the result of for example unfair distributive rules. An assumption in psychological literature on attribution theory is that people will interpret their environment in such a way as to maintain a positive self image. This means that people tend to attribute their successes to internal factors, such as their efforts and abilities, but their failures to external factors (Harvey & Martinko, 2011). It is thus possible that poor people attribute their poverty to external factors, for example to an unfair society in form of weak distributive justice, and that poor people therefore perceive the society to be unfair. If distributive justice levels are results of institutions and if institutions provide information about the moral values of those who support them, the poor can conclude that people in general are not trustworthy. Poor people may as consequence display lower social trust than others.

The belief that one cannot get rich by just means

The third possible micro level link between distributive justice and social trust makes use of formal and procedural justice too. It does in other words incorporate the whole fairness of society notion to a certain extent, but with distributive justice as point of departure.

In a society with an income distribution skewed to the right, a few hold a large share of national income and many are poor. With the assumption of normally distributed abilities, people may perceive such distribution as an inequality of opportunities, or weak procedural justice, and believe that one cannot get rich by just means (You, 2005). Such belief may give rise to untrustworthy behavior, like cheating and corruption, which are symptoms of weak formal justice. Institutions that allow corruption to exist not only affect trust in, for example, public officials, but also in people in general, through how corruption produces untrustworthy behavior in society.

Corrupt transactions often involve both public officials and private actors. If rule of law is weak, one party may cheat without being punished, which makes trusting more costly for the other party. In this way, corruption creates material incentives for the other party to be corrupt too (You 2005). Perceptions of corruption may also create more corruption, or as You (2005) reasoned, "If people perceive they are surrounded by corruption, they may feel they have to accept and even participate in corruption." Bo Rothstein and Dietlind Stolle (2008) also elaborated on this relationship between weak formal justice and untrustworthy behavior, saying that "the individual agent will witness the use of corruption amongst fellow citizens, and will feel obliged to engage in corrupt practices in order to get what he or she deems necessary in life." Like so, corruption can spread in a society and become habitual, which in turn can generate norms about corruption that may be transmitted to following generations (You & Khagram, 2005).

In conclusion, in a society with a skewed income distribution, people may believe that one cannot get rich by just means. In combination with weak formal justice, both incentives for, and perceptions and norms of untrustworthy behavior can be produced. In such society, it can be rational for the individual not to trust people in general.

SUMMARY: OUR THEORETICAL FRAMEWORK

Social trust can only be imperfectly generated by social contacts. By reflecting moral values of those who support the institutions and by affecting the context in which behavior is shaped, institutions can provide information about the trustworthiness of most other people in society. People can use this information from institutions to reduce the information asymmetry in the context of social trust and make better-informed decisions on whether to trust people in general or not. For such decision, it has been suggested that people judge the information by how it affects their perception of fairness of society. Using the notion of "justice as fairness," we understand fairness of society by conceptualizing justice along three

dimensions: formal, procedural and distributive justice. While income inequality and distributive justice are related, they are not the same. However, in light of studying social trust determinants, the negative effects of income inequality on social trust can probably be better understood if employing the concept of distributive justice. Using both individual and societal theories on determinants of social trust, three ways in which income inequality may affect social trust emerge. We interpret them for how they ought to function on a micro level, and call them: inequality aversion, winners versus losers and the belief that one cannot get rich by just means.

HYPOTHESES

To empirically test the theory of income inequality as determinant of social trust, three testable hypotheses are derived from the three aforementioned possible micro level links. Each hypothesis is formulated so as to test one, and only one, of these suggested micro level mechanisms between income inequality and social trust. The hypotheses are:

H1: Inequality aversion

An inequality avert person who both judges the fairness of the income distribution based on its equality and who wants the current income distribution to be more equal, is expected to display lower social trust than others.

H2: Winners versus losers

A poor person may regard her-/himself as loser in society and interpret her/his poverty as result of an unfair society. Social trust is therefore expected be lower for a poor person than for others.

H3: The belief that one cannot get rich by just means

A person who believes that one cannot get rich by just means is thought to believe that most other people in society are not trustworthy, given the way corruption spreads in society. Such person is expected to display lower levels of social trust than others.

CHOICE OF CASE STUDY COUNTRY

In the ideal case, a microeconomic study like this one is performed in a couple of countries with different income inequality levels. This would provide a more solid micro foundation to build future macro level research on, as variation in income inequality enables stronger inference. Restricted by time, money and the scope of this thesis, we perform our study in one country. Three parameters are evaluated in the choice of case study country: income inequality level, previous research in the country and feasibility of the study.

Regarding income inequality level, it is reasonable to choose a country with large income inequality as effects of income inequality on social trust should be easier to capture there. Also, large income inequality implies large variation in income, which facilitates testing income related micro level mechanisms between income inequality and social trust.

We believe the Gini index's advantages outweigh its disadvantages, and use it to compare income inequality levels internationally and identify a suitable case study country for this thesis. Social trust is a sticky variable; it does not change much over time (Rothstein & Uslaner, 2005). In addition, "the effect of inequality on social trust is likely to be a long-term effect" (You, 2005). For the purpose of such comparison, Table 2 therefore reports the 15 highest Gini coefficients in the world from 1990 to 2011.

Table 2. Gini coefficients 1990-2011

Country	Gini (max)	Year	Gini (latest)	Year
Swaziland	0.61	1995	0.51	2010
Colombia	0.61	2002	0.56	2010
Botswana	0.61	1994	0.61	1994
Brazil	0.61	1990	0.55	2009
Micronesia, Fed. Sts.	0.61	2000	0.61	2000
Belize	0.61	1994	0.53	1999
Central African Republic	0.61	1992	0.56	2008
Honduras	0.61	2008	0.57	2009
Bolivia	0.63	2000	0.56	2008
Lesotho	0.63	1994	0.53	2003
Maldives	0.63	1998	0.37	2004
Comoros	0.64	2004	0.64	2004
Seychelles	0.66	2007	0.66	2007
South Africa	0.67	2006	0.63	2009
Namibia	0.74	1993	0.58*	2009

Source: World Bank 2012a; * CBS forthcoming.

As can be seen in Table 2, a country that for some time has ranked as one of the most unequal countries in the world with respect to the Gini index is Namibia. Further, social trust has never been measured in Namibia, why no previous research has tested the theory of income inequality as determinant of social trust there. In addition, conducting a study in Namibia is facilitated by the fact that English is the official language there. For these reasons, we chose Namibia as our case study country.

Ideally, we would have conducted our study in both rural and urban areas of Namibia to capture differences in trust levels between different regions of the country and form a more comprehensive understanding of the nation as a whole. Restricted by mainly time we had to delimit our study geographically. Although poverty remains a predominantly rural phenomenon, with 42% of all households

in the rural areas classified as poor, compared to just 7% in the urban areas in 2003/2004 (AFDB, 2009), the income inequality levels do not differ much between urban and rural areas (CBS, 2008).

Under South African apartheid rule in Namibia, ethnic groups were forced to live separately in the country and such living patterns persist in most parts of Namibia. Indeed, regions are still referred to as "Owamboland," "Damaraland" etcetera, which are names of different ethnic groups. The Namibian capital Windhoek may therefore be the place where the best cross-section of the Namibian population can be found today. Almost all ethnic groups of Namibia, different age groups, education levels and occupation statuses are represented there (NPC 2004; CBS forthcoming). Further, although the level of social trust differs somewhat between different sized towns internationally, as Table 3 shows, these differences are fairly small. We therefore delimit our study geographically to Windhoek, the capital of Namibia.

Table 3. Social trust per size of town

Size of town*	Social trust
0-2,000	26%
2,000-5,000	24%
5,000-10,000	26%
10,000-20,000	27%
20,000-50,000	25%
50,000-100,000	22%
100,000-500,000	25%
500,000+	25%
Average	25%

Source: WVS, 2005-2008.
*82% of sample, or 38 of the 48 countries, are accounted for, due to country specific brackets.

Introducing Namibia

Namibia is a Sub-Saharan country bordering to South Africa, Botswana, Angola and Zambia. It is one of the most sparsely populated countries in Africa, with about 2.1 million inhabitants in 2011 on an area of 825,615 square kilometers (NPC, 2012). With a population of 322,500 persons in 2011, Windhoek is the capital and the largest city of Namibia. Windhoek is situated in the Khomas region, which in 2011 had a total population of 340,900 persons (NPC, 2012). This means 95% of the Khomas population lives in Windhoek.

There is a great ethnic diversity in Namibia. Using main language spoken in the household as proxy for ethnicity, approximately 48% of the households in Namibia belong to the largest ethnic group Owambo.

Owambo is labeled as the majority group and the other ethnic groups are labeled as minority groups (Afrobarometer, 2008).

Namibia is a young democracy, as it became formally independent from South Africa in 1990, after over 100 years as a German and later South African colony. Since independence Namibia has experienced a relatively stable economic growth, much thanks to peace, political stability and established legal and financial institutions (AFDB, 2009). Today Namibia is generally defined as a middle income country and is one of Africa's richer countries, with a per capita Gross Domestic Product (GDP) of 5,331 United States dollars in 2010 (World Bank, 2012b).

Although somewhat encouraging, this does not relate the full story of Namibia. The country inherited great inequalities from the colonial time (Jauch, Edwards & Cupido, 2009) and behind the high per capita GDP, relative to the region, hides one of the world's most unequal societies with regards to incomes.

Incomes in Namibia are measured through Namibia Household Income & Expenditure Surveys (NHIES), performed by the Central Bureau of Statistics (CBS). The unit of measure is households and household income is "derived as the sum of total consumption and non-consumption expenditures such as for livestock, motor vehicle license, house and land. Savings are not included in computed household income" (CBS forthcoming). The Gini index is thereafter calculated on the adjusted per capita income for every single household member. Three NHIES:s have been undertaken in Namibia since independence: in 1993/1994, 2003/2004 and 2009/2010. The Gini coefficient of Namibia has been reported as 0.74 (CBS, 1996), 0.64 (CBS, 2006) and 0.58 (CBS, forthcoming) by these three surveys respectively. This indicates that the Namibian society has one of the highest income inequality levels in the world (see Table 2), although the trend appears to be towards lower income inequality.

In addition to being unequal, the income distribution in Namibia is also highly skewed. In 2003/2004, the poorest 25% of the households accounted for only 6.4% of total annual consumption, while the richest 2% of the households accounted for 15% of total annual consumption. Indeed, the richest 10% of the households accounted for almost half of all consumption in Namibia in 2003/2004 (CBS, 2006).

METHOD

RESEARCH METHOD AND DATA REQUIREMENTS

Two types of data are required to test the theory of income inequality as determinant of social trust: quantitative data and secondary data. Quantitative data on Windhoek is necessary in order to perform statistical hypothesis tests of the theory we investigate in this thesis. Therefore, we have completed a minor field study in Windhoek during spring 2012 collecting such data. In addition, a quantitative approach, using the same question in measuring social trust as do previous research, facilitates

generalizing from our results and comparing with previous research on social trust. This is particularly important as social trust has not up until now been measured in Namibia. It will also enable assessment of the external validity of our study once the WVS data from the currently ongoing wave is released, which measures social trust and for the first time includes Namibia.

It would have been ideal to have access to panel data, data from different points in time or from different countries today. This would have enabled us to make stronger inference about the tested theory. As there is no such data that is suitable for our thesis and as it is outside the scope of this study to gather it ourselves, we have to rely on cross-sectional data from one point in time and from one country. Our primary data consequently comes from a quantitative study in the form of a survey that we conduct in Windhoek.

The second type of data required is secondary data in the form of macroeconomic measures regarding social trust and income inequality internationally, as well as socio-demographic variables for Windhoek and Namibia. These measures are used to make international comparison and assess the representativeness of our sample.

Central challenges in quantitative data collection

In the ideal case, our quantitative data comes from a random sample, as this gives us unbiased and consistent estimators. To get valid test statistics, the ideal case also involves this random sample to be drawn from a normal distribution.

If the variables in a sample are independent and identically distributed, the sample is said to be random (Wooldrigde, 2008). A central challenge that we address throughout our data collection is therefore to ensure that citizens of Windhoek have a non-zero probability of being sampled (independent variables) and that all residents have equal probabilities of being sampled (identically distributed variables).

Our dependent variable of social trust is binary (for further discussion, see *The social trust question* below) why we cannot assume normally distributed population error terms. To get valid test statistics and make inference from our data, we must therefore rely on asymptotic normality, which implies that averages of random variables behave like normally distributed random variables, as we get more and more data. A sufficiently large sample is therefore a second aim, in order to make use of asymptotic normality of the population error terms. For asymptotic normality, a rule of thumb is that a sample is sufficiently large if it contains at least 30 observations (Wooldridge, 2008).

In the following we describe the actions we have taken during our data collection in order to obtain as random a sample as possible. We also identify potential violations of this randomness, which will have consequences for the validity of our estimates and test statistics. We begin by describing the sampling procedure.

STRATIFIED SAMPLING

To properly investigate the impact of income inequality on social trust in Windhoek, we want to obtain variation in our variables of interest and capture social trust levels and views of people in different parts of the income distribution. Given this importance of income representativeness, stratified sampling is considered the most suitable sampling method. This involves dividing the population into subgroups, or strata, based on a parameter of interest and then collecting simple random samples from each subgroup (Newbold, Carlson & Thorne, 2006). With income as our stratification parameter of interest, stratified sampling thus facilitates reaching people from different parts of the income distribution. The alternative to stratified sampling would have been to rely completely on simple random sampling. Sampling only once, however, as we do, we must make conclusions on this only sample, which then may or may not be representative of the target population.

In stratified sampling, the strata must be mutually exclusive and collectively exhaustive groups of the target population. In other words, respondents should belong to one, and only one, of the strata. To stratify the Windhoek population with respect to income, we used the stratification of Windhoek residential areas made by the CBS. The CBS stratification of Windhoek areas is not based on income but on the living standards of the majority of households in an area. The living standards, in turn, are based on subjective evaluations of the geographical location and the housing type in the area. Windhoek areas are classified into three different groups based on the living standards: high, middle and low standard areas. From the NHIES 2009/2010 (CBS, forthcoming) we conclude that income levels are correlated with living standards (see Appendix 1). Low income households are with most certainty to be found in low standard areas and so forth. As the living standard strata are mutually exclusive and collectively exhaustive, the CBS stratification of Windhoek enables us to reach the whole spectrum of income groups.

To allocate observations to each stratum we use proportional allocation. The proportion of sample members in any stratum consequently equals the proportion of population members in the same stratum, which are obtained from the 2001 Namibia Population and Housing Census (NPC, 2004). Low standard areas account for approximately 33% of Windhoek town. The equivalent figures for the middle and high standard areas are 35% and 32% respectively. The same proportions are thus assigned to the sample strata.

Having made the stratification, the next step in stratified sampling is to collect simple random samples from each stratum. This is a necessary condition, and is what separates it from quota sampling, as the latter implies filling quotas of respondents in respective stratum in a non-random manner.

Random sampling from each stratum: two methods to choose from

The choice of sampling method within each of the three strata is central, as different methods may result in different degrees of randomness of the sample. Since sampling methods that involve collecting data via

mail or electronically via online surveys are not feasible in Windhoek, we identified two sampling methods to choose from: door knocking and standing outside supermarkets (henceforth called the supermarket method). Door knocking would involve selecting households randomly, with the help of a sample frame developed by the CBS, and allocate them proportionally to each stratum. We would then visit each household and ask a household member to participate in our survey. The supermarket method would entail carrying out the survey outside the supermarkets of Windhoek, in the three different areas classified by living standards. By supermarkets we refer to supermarkets that sell food.

These two methods both have the advantage of allowing us to control the data collection process, as for who is actually participating in the survey and, for example, the respondent's interpretation of our questions. In choosing which to employ, the methods were evaluated mainly on their likelihood of resulting in random samples, that is, whether they give the Windhoek population non-zero and equal probability of being sampled. Taken into account were also differences between the two methods regarding resources (mainly time) needed to obtain a large sample and our security.

Regarding non-zero probabilities, the supermarket method is considered superior to the door knocking method. The fact that every citizen can come to supermarkets, means that Windhoek residents in theory have non-zero probabilities of being sampled employing the supermarket method. In contrast, using the door knocking method, every Windhoek resident does not even in theory have non-zero probability of being sampled as there are homeless people. However, in practice, considering that the very poorest may not come to supermarkets, there may not be perfectly non-zero probabilities of being sampled with the supermarket method either.

A second aspect in obtaining non-zero probabilities is the risk of selection bias once we are outside the supermarkets or the houses. As participation in our survey is voluntary, a systematic variation in who participates and who does not causes selection bias in our sample when this variation is related to social trust. This is a potential violation to the independency and identical distribution of our variables. It may also imply that we will not make inference on the relevant population. For our study, with social trust as dependent variable, the issue of selection bias is particularly relevant, since people who participate in the survey may indeed be people who are more trusting than others. Such selection bias will also result in a positive bias in the dependent variable of social trust. Obtaining this type of selection bias is probably a risk with both sampling methods. It may be argued that the risk is lower in the door knocking method as people may feel more secure, and therefore more willing to participate, in their homes. It is however possible to argue for the opposite too, namely that people who have lower social trust are less likely to open the door to strangers than to talk to them outside a supermarket.

Considering the second desired characteristic of the variables, namely that they be identically distributed, or that all Windhoek residents have equal probabilities of being sampled, the supermarket method is

limited in that large households may send only one person to the supermarket. There is a risk of systematic variation between which types of persons that represent their household in supermarkets; a more outgoing or responsible person of a household may for instance be the one coming to the supermarket. This also implies a risk that persons in large households become underrepresented in the sample.

Lastly, obtaining a large sample given our time restrictions is considered most feasible with the supermarket method. First, high fences and walls make door knocking per se difficult. Second, the supermarket method is considered to be the most secure and the least time consuming method. As people may not be at home during the day, the door knocking method requires much time since the survey then only could be conducted during evenings. Also, we consider it unsafe to knock doors alone, why we could not collect data simultaneously using that method.

After discussions with Mr. Weerasinghe, consultant at the CBS, the supermarket sampling method is chosen for this study, because it is considered to result in a fairly random sample and because it is the more feasible method. With good decision rules on how to select respondents in a random way outside supermarkets and on how to minimize non-response, some of the limitations to the randomness of the supermarket sampling method may be managed. These decision rules are tested in the pilot study and we describe them in detail when we draw the outlines of our final survey.

PILOT STUDY

A pilot study was executed during two days with the purpose of testing the chosen supermarket method and our mentioned decision rules, learning more about the interview situation and testing our questionnaire. We carried out the pilot outside supermarkets in the three different strata to assess whether our sampling method generated respondents from low income groups up to high income groups, as predicted from the NHIES 2009/2010 data (CBS, forthcoming). In this sense, the pilot was successful and we could conclude that sampling in the three different strata of Windhoek classified by living standards resulted in a sample containing the whole spectrum of our ten income groups.

The pilot study also generated valuable insights that allowed us to improve our questionnaire and interviewing methods. We learned that conducting the survey in only English, the official language, would not suffice, especially not in the low standard areas. The ideal situation would have been to have translators of every local language spoken in Windhoek to conduct the survey with us along with translated versions of the questionnaire. This would minimize potential measurement error and selection bias caused by language barriers. Unfortunately this option was not feasible due to limited resources in terms of money and time. Our conclusion from the pilot study was, however, that a translation of the survey to Oshiwambo would suffice for communication with the absolute majority of potential respondents who did not speak English. For this purpose, two students from the University of Namibia,

who are native speakers of Oshiwambo and who speak English fluently, translated the questionnaire as well as a number of important keywords to Oshiwambo. The translation was made to Oshiwambo by one translator and back to English by the other translator, so that the quality of the translation could be adequately assessed.

Although we considered English and Oshiwambo to suffice for communication with the majority of Windhoek residents, it should be noted that our data will suffer from selection bias if people who cannot participate due to language barriers have systematic similarities in a variable that is directly or indirectly related to social trust. It is for example possible that people who do not speak English may have lower education levels. As education levels have been associated with social trust in previous research, a risk of selection bias caused by language barriers is present and would result in a less random sample.

In addition to language barriers we met other forms of communication difficulties with respondents during the pilot study. Some questions were poorly understood due to vague phrasing, long sentences and complicated or excessive words (see Appendix 3 for the full pilot study questionnaire). Many respondents were not familiar with answering on a scale from 1 to 10, which resulted in many answers on the extremes (1 or 10). They did not seem to grasp the meaning of the other numbers on the scale since these did not have their own headings. In light of these findings, we sought to minimize potential measurement error by simplifying questions and changing scales to binary response options or scales where all numbers had own headings. We also developed keywords that were translated to Oshiwambo (see Appendix 2) and explanations for the more difficult words that were kept in the questionnaire.

The pilot study furthermore provided us with information on the time required to carry out the survey. In light of the information gained from the pilot study, we concluded that a sample size of 200 respondents would be feasible given our time restrictions, and these survey interviews were scheduled to be performed during 16 days.

THE FINAL SURVEY: THE SUPERMARKET METHOD

For the final survey, the ideal case would have been to sample from every supermarket in Windhoek to ensure representativeness of the sample and equal probabilities of being sampled. As our time was restricted, this was not possible for us to do. It implies that all Windhoek residents may not have equal probability of being sampled in our study, which means we may not have a perfectly random sample. We did however collect data from as many supermarkets as possible. With the assistance from the CBS, we selected three supermarkets in low standard areas, three in middle standard areas and four in high standard areas. Supermarkets were chosen to obtain a geographical spread between them within the strata, as there may be supermarkets that only a particular group of people have access to or for other reasons choose to do their grocery shopping in.

To safeguard against the possibility that different types of people come to the supermarket at different times during the day or only on weekdays or weekends, we sampled from every supermarket on both a weekday and in the weekend, as well as during different parts of the day.

Random sampling at the supermarkets

As previously mentioned, it is important to develop clear rules on how to sample respondents in the actual survey situation at the supermarkets. We therefore designed sampling decision rules with the aim of ensuring that people who come to the supermarket have non-zero and equal probabilities of being sampled.

In ensuring no one was sampled twice and minimizing non-response, we only sampled people entering a supermarket, and not people exiting a supermarket. This choice was based on the assumption that there would be more non-respondents among people who exit a supermarket, considering they may have groceries that need to reach a refrigerator quickly.

Our rule on how to sample the first respondent of the day implied selecting the person who came towards the entrance of the supermarket at a given time. Five minutes after finishing an interview, the first person who then approached the supermarket was sampled. We used a rolling schedule, so that we collected data, but never sampled, simultaneously. This way, no person could be sampled twice. A further measure to minimize non-respondents was to insist if the sampled person hesitated in participating in the survey. In the case a person still did not want to participate, we immediately chose the next person coming towards the entrance of the supermarket.

We also developed a rule to reduce the risk of selection bias in carrying out a survey on social trust. This rule was to not sample people who approached us on their own initiative, as there may have been systematic similarities especially regarding social trust among people who did this.

Lastly, we aimed at obtaining an equal share of men and women in line with the actual Namibian gender composition (NPC, 2012). For this purpose, we alternated between the genders. Although this decision rule violates perfect randomness, we used it as we considered a representative gender composition important.

The interview situation

Before starting an interview, respondents received full information about the purpose of our presence in Namibia and of the interviews. They were also ensured all answers were treated with strict confidentiality.

In some areas of Windhoek we attracted much attention, but were careful in not letting others listen in to interviews, since some of the questions are of a more sensitive type. Caring for the privacy of the interviews can reduce potential measurement error in the data caused by lack of honesty in answering

the questions. The only persons who were allowed to hear interviews were the ones that respondents came to the supermarket with, when they did not come alone. In these situations, we were careful in not letting this person affect the respondent with her/his own opinions.

We also made sure to read questions and note answers in a neutral way, so as to not affect respondents with our personal opinions. The translated version of the questionnaire into Oshiwambo reduced, but did not remove, the language barriers. We did our best to overcome these language barriers by using the Oshiwambo keywords and respondents' friends who were present during interviews and could assist with translation. These measures reduce potential measurement error in the data caused by language barriers.

QUESTIONNAIRE DESIGN

In the choice of questions, previous research on determinants of social trust and our pilot study provided guidance. Most questions are taken directly or are inspired by questions from the WVS. The questionnaire is designed to take no longer than 15 minutes to complete, in order to reduce the risk of selection bias caused by systematic variation in levels of opportunity cost of time.

As for question categories, we start with socio-demographic questions on aspects such as age, native language, educational level and occupational status. The questionnaire then continues with questions relating to social trust and its determinants. These are mainly inspired by societal theories on the determinants of social trust and include for example questions on trust in various public and political organizations, how the respondent perceives s/he has been treated by public authorities, the respondent's view on ethnic heterogeneity and the respondent's perception of her/his safety. The questions of interest for testing the theory of income inequality as determinant of social trust are presented below. These questions constitute the basis for our dependent variable of social trust and our hypothesis variables. The whole questionnaire is enclosed in Appendix 4.

The social trust question

It is important to use a question that is successful in capturing social trust. The 2008 Afrobarometer survey in Namibia asks respondents: "How much do you trust other Namibians?" Such a question does measure trust in persons that the respondent may not know personally, why it could be argued that social trust has been measured previously in Namibia. We do however consider this to be a vague and imprecise measure of social trust. Rather than only measuring out-group trust, it captures a fair amount of in-group trust, as the respondent is Namibian. For the sake of precision and unambiguousness, a social trust measure should not be restricted to nationalities.

We employ a widely used[4] (Economic Social Data Service, 2010) question to measure social trust, first seen in work by Morris Rosenberg (1956):

"Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?"

We use a binary response to this question, as does the WVS (2005-2008). Those who say that most people can be trusted are given a score of 1, and those who say that you need to be very careful are scored 0. The social trust level is obtained as the percentage of people who state that "most people can be trusted."

It is argued that attitudinal questions about trust, as the one we use, weakly predict social trust due to its vague and abstract nature (Glaeser et al., 2000). Instead of measuring actual trusting behavior, the question is claimed to predict the overall trustworthiness level in a society. However, this is not necessarily an obstacle in using it, as trust and trustworthiness are mutually reinforcing. Moreover, Uslaner (2002) claimed to have shown in a factor analysis that this question does measure social trust. In search for external validity, we use the question above to create our dependent variable of social trust, as its wide usage enables international comparisons. To create a measure of whether this question is successful in measuring social trust or not we include a control question for social trust. Question 24 (see Appendix 4) asks the respondent to state to what extent s/he trusts people in general on a scale from "not at all" to "completely." Answering both that "most people can be trusted" and that people in general can be trusted "completely" or "quite much" (alternatively non-trusting answers to both questions) indicates the respondent understands the question for our dependent variable well.

Variables of interest

To test our three hypotheses on micro level mechanisms between income inequality and social trust, we formulate questions that by themselves or together with other questions capture these mechanisms. These questions are presented below for each hypothesis.

H1: Inequality aversion

Question 44 (see Appendix 4) is based on Miller's (1992) theory of the three criteria people use to evaluate distributive justice: merit, need and equality. The question asks the respondent to rank three rules for how to allocate income to people, starting with the rule the respondent thinks is the fairest way of allocating income. The three distributive rules to rank are that incomes should be given "to each one based on their skills and effort," "to each one based on their needs" and "to each one equally." The variable *Rule1equality* is a binary variable equal to 1 if the respondent chooses "to each one equally" as the fairest income allocation rule.

[4] In for example WVS, European social survey, International Social Survey Program, General Social Survey and Eurobarometer.

Question 55 (see Appendix 4) asks the respondent to state whether s/he thinks that the income distribution in Namibia should be completely equal, more equal than now, the same as it is now or more unequal than now. The variable *Idequality* is a binary variable equal to 1 if the respondent either thinks that the income distribution in Namibia should be completely equal or more equal than now.

Hypothesis 1 is concerned with an inequality avert person who both relates fairness of the income distribution to its equality and wants the income distribution to be more equal than it currently is. We therefore use these two variables to create an interaction term, *Rule1equality*idequality*, in order to capture the possible effect inequality aversion has on social trust.

H2: Winners versus losers

Question 17 (see Appendix 4) asks the respondent to place his/her household in one out of ten income groups, where 1 is the lowest income group and 10 is the highest. Inspired by the WVS, income is defined as all wages, salaries, pensions and other incomes that come in to the respondent's household, in an average month, before tax. The ten income groups are based on computed incomes from the latest NHIES regarding the annual household income deciles in Namibia (CBS, forthcoming). The computed incomes in the NHIES do not include savings, while the incomes we ask for in the survey do. As we only use the NHIES information to construct our brackets, we consider this discrepancy to be a minor issue.

We cluster the ten income groups into three variables for three different income levels: *Lowinc* (equal to one if income group 1-2), *Midinc* (equal to one if income group 3-6) and *Highinc* (equal to one if income group 7-10). The clustering is based on Table A1 in Appendix 1 that shows, for each of our income groups, how many households that live in the three different strata of Windhoek. An income group is considered *Lowinc* if the largest share of households in this group lives in the low standard area, and the same reasoning is applied when clustering groups into *Midinc* and *Highinc*.

H3: The belief that one cannot get rich by just means

In question 42 (see Appendix 4) we ask the respondent to rank four possible reasons for why a rich person is rich in Namibia, starting with the reason the respondent believes is most important. The four reasons are: "hard work," "cheating/corruption," "is skilled" and "born rich." The variable *Reason1corruption* is a binary variable equal to 1 if the respondent chooses "cheating/corruption" as the most important reason. We consider a person who believes that one cannot get rich by just means to be captured in this variable.

DATA RELIABILITY

To increase the reliability of our data, we put restrictions on the survey respondent in form of a lower age limit of 18 and a lower Windhoek residency limit of one year. In order to build views on our survey topics such as social trust, income distribution and organizational quality, a person should preferably be of adult

age. The WVS uses an age limit of 16 years, which came to our knowledge after having chosen a limit of 18 years for our study. Despite not having the exact same age limit, the WVS rule provides support for our age rule. In the same line of argument as for a lower age limit, a lower limit on the respondent's residency in Windhoek of one year was chosen as it takes some time for the social trust level of a person to actually reflect the society in which s/he lives. Moreover, our questions about institutions are of a nature that the respondent should have lived in Windhoek for some time to answer them credibly.

To ensure the data had been coded correctly, we used a randomizer to produce 20 numbers between 1 and 200. The randomly sampled questionnaires were thereafter controlled for potential coding errors. In the 20 questionnaires, no errors were found.

Measurement error

Communication issues can cause a discrepancy between the observed and the actual value of a variable, and it is possible that our data suffers from such measurement error. In the case of our dependent variable of social trust, we will be able to get an indication of whether measurement error exists by comparing the results from this question with the results from our control question for social trust.

Furthermore, three independent variables are probably particularly exposed to suffer from measurement error due to an inherent difficulty in answering them. The first two are the mother's and the father's educational level. Difficulties lie in family constructions where the respondent may not have lived with her/his parents, and in an education system that has changed much over the past years, which impedes the respondent's ability of knowing the exact educational level of her/his parents.

The third question regards household income. However, by asking the respondent to place her/his household in an income bracket we may reduce, but not eliminate, the risk of measurement error as the respondent is not required to know the exact household income. Also, our clustering of income groups into low, middle or high income levels reduces potential measurement error.

A higher educational level may increase the respondent's ability to answer these questions correctly. Also, for the income question, the larger the household size, the harder it may be to report household income correctly. If such correlation between the measurement error in an explanatory variable and the observed measure of the same variable is present, all our estimators will suffer from attenuation bias. A second consequence of measurement error in both the dependent variable and the independent variables is that the error variance will be larger, which makes it more difficult to obtain significant estimates.

ECONOMETRIC DATA ANALYSIS

Linear probability model

To make inference on the micro level effects of income inequality on social trust, we perform an Ordinary Least Squares (OLS) multiple regression analysis. As our dependent variable is binary, the Linear

Probability Model (LPM) is used. The estimated y therefore denotes the predicted probability of an answer that "most people can be trusted."

The LPM has certain drawbacks. First, it is possible to attain predicted probabilities of less than zero or greater than one for specific combinations of values of independent variables. Second, the partial effect of any explanatory variable appearing in level form is constant in the LPM. It is therefore not possible to see dissimilar marginal effects of different values of an explanatory variable. For this reason, we use binary explanatory variables. In addition, it might not make sense that a one unit increase in the variables has a constant effect and it can be hard to interpret the effect of a one unit increase in a variable of ordinal meaning.

A logistic model overcomes the shortcomings of LPM but its coefficients are more difficult to interpret and communicate. To assess the robustness of the OLS estimates from an LPM regression, we perform a logistic regression. Using marginal effects, slope coefficients of the logistic regression are easily compared with the OLS coefficients. We find that a few control variables change substantially in economic and statistical significance, but our conclusions regarding the hypothesis variables remain the same.[5] The LPM results relevant for this thesis are therefore considered robust and we decide to use the LPM for its simplicity in estimation and interpretation.

The variance of the unobservable error in the LPM is by definition not constant across the different values of the explanatory variables and heteroskedasticity is thus present. We therefore use heteroskedasticity-robust standard errors to get valid confidence intervals and t-statistics for the hypothesis tests. As previously mentioned, we must furthermore rely on asymptotic normality as our dependent variable is binary.

Regression specifications

Ideally, with a perfectly random sample, no control variables are needed in a regression to establish causality. However, due to the practical limitations to this study that have resulted in potential violations to the randomness of the sample, we use control variables to better isolate the true relationship between our variables of interest and our dependent variable, and to reduce omitted variable bias. This is, indeed, the standard case in econometric analysis.

Initially, the variables of interest for each hypothesis are tested separately with no control variables. Next, we add a set of exogenous socio-demographic controls, that is, variables not thought to be correlated with the error term. This first set of controls constitutes the short specification. Then a second set of control variables of potentially endogenous nature is added to the short specification, and together they constitute the long specification. The method of short and long specifications has been used in previous research with the purpose of getting a robustness indication of the relationship between an independent

[5] Econometric results from the logistic regressions can be obtained upon request.

variable and the dependent variable (Lindqvist & Östling, 2010). The socio-demographic controls we employ have been used in previous research on social trust and explanations of them are enclosed in Appendix 5.

The short specification is as follows:

$$social\ trust = \beta_0 + \beta_1 male + \beta_2 black + \beta_3 age + \beta_4 age^2 + \beta_5 minority + \beta_6 windhoekyrs + \beta_7 motherprimary + \beta_8 mothersecondary + \beta_9 mothertertiary + u$$

We include the educational level only of the respondent's mother, instead of both parents' educational levels, for two reasons. Number one, the correlation between parents' educational levels is 0.86, why we risk multicollinearity by including both variables. Number two, while there are 26 missing values to the father's educational level, there are only 17 missing values to the mother's educational level.

The long specification is as follows:

$$social\ trust = short\ specification + \beta_{10} noeduc + \beta_{11} primary + \beta_{12} secondary + \beta_{13} employed + \beta_{14} student + \beta_{15} pensioner + \beta_{17} immigrant + \beta_{18} hhsize + u$$

As the correlation between respondents having secondary and tertiary education is -0.90, we leave the variable *Tertiary* in the intercept, to avoid multicollinearity.

The fourth and last regression specification includes all hypothesis variables and the long specification of control variables. We call this the complete specification and include it in our analysis since it is plausible that our hypothesis variables are correlated with each other. By comparing the estimated coefficients on the variables of interest in these four levels of regression specification, we will get a robustness indication of the relationship between our variables of interest and social trust.

The complete specification is as follows:

$$social\ trust = long\ specification + \beta_{19} rule1equality + \beta_{20} idequality + \beta_{21} rule1equality * idequality + \beta_{22} midinc + \beta_{23} highinc + \beta_{24} reason1corruption + u$$

Regarding omitted variable bias, we aim at including all variables relevant in explaining social trust and that are correlated with our variables of interest. There is nonetheless still a risk that our regressions suffer from omitted variable bias, especially since we are dependent upon cross-sectional survey data and as we deliberately omit variables we have collected data on. These variables are omitted as they fall outside the scope of this thesis. In addition, we lose degrees of freedom and report simplicity by including too many variables. There should however be least omitted variable bias in the complete specification.

Predictions

As the theory explicitly predicts how the variables of interest should affect social trust, that is, positively or negatively, we formulate one-sided null hypotheses. These are in turn designed so as to make the theories behind the hypotheses falsifiable.

The theory behind hypothesis 1 predicts that an inequality avert person who both judges the fairness of the income distribution based on its equality and wants the current income distribution to be more equal should have lower social trust than others. The coefficient sign on the interaction term *Rule1equality*idequality* is therefore predicted to be negative. Our null and alternative hypotheses for hypothesis 1 are:

$$H1_0: \beta_{rule1equality*idequality} < 0, \qquad H1_1: \beta_{rule1equality*idequality} \geq 0$$

For hypothesis 2, the theory predicts that a poor person should have lower social trust than others. The coefficient signs on *Midinc* and *Highinc* are therefore expected to be positive, with *Lowinc* in the intercept. Our null and alternative hypotheses for hypothesis 2 are thus:

$$H2_0: \beta_{midinc} > 0, \beta_{highinc} > 0, \qquad H2_1: \beta_{midinc} \leq 0, \beta_{highinc} \leq 0$$

The theory upon which hypothesis 3 is built predicts that a person who believes that cheating and corruption is the most important reason why a rich person is rich in Namibia should have lower social trust than others. A negative sign on the coefficient for *Reason1corruption* is in consequence predicted. Our null and alternative hypotheses for hypothesis 3 are:

$$H3_0: \beta_{reason1corruption} < 0, \qquad H3_1: \beta_{reason1corruption} \geq 0$$

EMPIRICAL FINDINGS

DATA QUALITY

There may be limitations to the data quality as we encountered challenges regarding for example selection bias and measurement error in the data collection. This means our sample may not be perfectly random and that our estimates may not be entirely valid. However, as a result of having gathered the data ourselves, we have a good understanding of the aforementioned problems and a unique possibility to discuss potential limitations to the data. For this reason, we precede the presentation of our results with assessing our data quality.

Response rate

We asked 637 individuals to participate in the survey. Out of these, 27 individuals were not part of our target population, in that they were below 18 years old or had not lived in Windhoek at least one year. Among the remaining 610, 200 participated, which gives us a response rate of 33%. Decomposed on

gender and on our three strata (low, middle and high living standards) respectively, the non-responses are fairly evenly outspread.

Yehuda Baruch and Brooks C. Holtom (2008) analyzed response rates from 309 studies that had used data collected from individuals and that were published in referred academic journals. Table 4 shows results for the surveys that, just like our survey, had not used incentives or reminders to increase response rates. Baruch and Holtom (2008) argued that the response rate norm should be within one standard deviation (SD) from the average of these studies. Our response rate of 33% is just above the lower cut off limits.

Table 4. Individual-level survey response rates

Individual-level studies	N	Avg. response rate	SD	Lower cut-off limit (Avg. response rate-SD)
No incentive	133	51.1	21.7	29.4
No reminder	145	52.3	19.8	32.5

Source: Baruch and Holtom, 2008.

The fact that it was voluntary for a sampled individual to participate, in combination with our relatively low response rate, can indicate that our data suffers from a non-negligible selection bias. One potential source of selection bias is that choosing to participate may be positively correlated with having higher social trust. This implies that our dependent variable may be positively biased and that we may not have sampled from the relevant population.

The most commonly *stated* reason for not participating in the survey was lack of time. If opportunity cost of time is systematically different for, say, rich and poor people, and if income levels are correlated with social trust, then this is another source of selection bias. Lastly, 22 persons could not participate due to language barriers. As English skills may be correlated with educational level, which is likely to be associated with social trust, this may be a third, although rather small, source of selection bias in our sample.

Representativeness

When evaluating our data quality, we also look at how representative the respondents are of the target population. For this purpose, Table 5 reports socio-demographic values from the Windhoek population and from our sample. When numbers for the Windhoek population are not available, numbers for the Khomas region population are used.

Regarding age, income level, living standard, household size and ethnic composition, our sample is reasonably representative of the Windhoek population. As for education level and occupation status, students and individuals with tertiary education are overrepresented in the sample. One reason for this

may be that the Windhoek population numbers include the whole Khomas region, in which 5% of the population lives in rural areas. People in rural areas are less likely to have as good access to tertiary education as people in urban areas. It is also reasonable that there are more immigrants in Windhoek city than in Khomas region in general, which may be the reason why immigrants are overrepresented in the sample. All in all, we do consider our sample to be fairly representative for the Windhoek population and conclude that our data collection is successful in this respect. In particular, having a representative sample regarding income levels is important for the quality of our sample.

Table 5. Socio-demographic values for the Windhoek population and for the sample

Category	Variable	Windhoek pop.	Sample
Gender	Male	51% ***	50%
Age	18-30	48%**	52%
	31-40	27%	26%
	41-50	14%	11%
	50-80	11%	12%
	80+	1%	0%
Income	Low	39% *	35%
	Middle	40%	38%
	High	21%	27%
Living standard	Low	33%**	37%
	Middle	35%	33%
	High	32%	30%
Household size	1 person	15% **	12%
	2 persons	18%	14%
	3 persons	10%	14%
	4 persons	15%	15%
	5 persons	11%	11%
	6-7 persons	14%	20%
	8-9 persons	7%	10%
	10+ persons	5%	7%
Ethnicity	Owambo	37%**	35%
	Afrikaners & Coloreds	24%	22%
	Nama/Damara	13%	13%
	Herero	9%	7%
	German	3%	6%
	Other (7+ types)	14%	17%
Education level	No education	5%*	2%

	Primary	17%	4%
	Secondary	61%	51%
	Tertiary	17%	43%
Occupation status	Student	12%**	23%
	Unemployed	23%	22%
	Employed	53%	53%
	Pensioner	4%†	3%
Place of birth	Immigrant to Namibia	8%**	14%

Sources: *CBS forthcoming, **NPC 2004, ***NPC 2012.

†Pensioner includes disabled. Occupational status includes population aged 15 and above.

It is not surprising that the gender composition of the sample reflects the Windhoek population gender composition, as we alternated between male and female respondents in our survey to achieve this. Although this means we may not have independent random variables, having spent 16 days outside 10 different supermarkets we did not perceive the gender composition of the people coming to supermarkets to be much unlike an equal composition.

Control variables

Establishing whether control variables behave as previous research predicts they should provides an additional quality indication. In previous research social trust normally increases with the respondent's education (Glaeser et al. 2000; Alesina & La Ferrara 2002; You 2005). In our statistical analysis, however, a person with no or primary education is more likely to trust most other people than a person with tertiary education (see Appendix 6). This result is statistically significant on a 1%-level and is a quite puzzling finding, which may indicate lower quality of the data. However, control variables such as minority status and being black or not, both behave as previous research predicts they should on a statistical significance level of 1% (Glaeser et al. 2000; Alesina & La Ferrara 2002; You 2005).

Measurement error

We find that 25% of our sample states that most people can be trusted, which thus would be Windhoek's social trust level. However, the correlation between our social trust variable and our control variable of social trust is only 0.49, which may imply a measurement error in our dependent variable, in addition to it possibly being positively biased. A bias in our OLS estimators will arise if this measurement error is correlated with one of the independent variables. In addition, if there is measurement error in the dependent variable, this may indicate that our independent variables are exposed to measurement error too, which can cause attenuation bias in all OLS estimators.

In conclusion, there are potential limitations to the randomness and quality of our data. This implies we will not be able to establish causality regarding the theory of income inequality as determinant of social trust. However, our sample is reasonably representative of the relevant population. Regarding reliability of possible inference on our data, there is no multicollinearity problem among the variables of interest (see Appendix 7) and no conclusions change when using logistic regressions instead of OLS regressions. With a total of 200 observations, the three strata each contain more than 30 observations and our sample is sufficiently large for asymptotic normality. All this speaks in favor of the quality of the empirical results we are about to report. For these reasons, we believe that our estimates are valid enough to provide insights to the tested theory. We nonetheless ask the reader to bear the potential limitations in mind when moving on to the next section, where we present our econometric results.

ECONOMETRIC RESULTS

The results of interest for each hypothesis are presented below; see Appendix 6 for results for all variables in the complete regression. We also remind the reader that coefficients are to be interpreted as the predicted probability of an answer that most people can be trusted.

Table 6, 7 and 8 report estimated coefficients, robust standard errors and 95% confidence intervals for the variables of interest for hypothesis 1, 2 and 3 respectively, from all four levels of regression specification.

Hypothesis 1 predicts a negative sign on the *Rule1equality*idequality* coefficient. A qualitative analysis of *Rule1equality*idequality* provides support for the null hypothesis, since the coefficient has the anticipated negative sign in all four levels of regression specifications. However, the magnitude of the coefficient increases by more than 50% from the long to the complete specification, why a potential effect does not appear to be robust. It is in addition statistically significant on a 5% level at best, and this is only in the long regression specification.

Table 6. Econometric results for hypothesis 1
"Inequality aversion"

H1. Dependent Variable: Social Trust				
Level of spec.	**Variable**	**β (Rob. Std. Err.)**	**[95% Conf. Interval]**	
No controls	Rule1equality	0.133	-0.207	0.474
		(0.173)		
	Idequality	0.087	-0.073	0.247
		(0.081)		
N: 200	Rule1equality*idequality	-0.254	-0.621	0.114
R^2: 0.02		(0.186)		
Short spec.	Rule1equality	0.285	-0.159	0.728
		(0.225)		
	Idequality	0.076	-0.071	0.224
		(0.075)		
N: 183	Rule1equality*idequality	-0.286	-0.752	0.179

R^2: 0.19		(0.236)		
Long spec.	Rule1equality	0.356*	-0.053	0.765
		(0.207)		
	Idequality	0.092	-0.061	0.245
		(0.078)		
N: 183	Rule1equality*idequality	-0.399*	-0.826	0.028
R^2: 0.34		(0.216)		
Complete spec.	Rule1equality	0.289	-0.124	0.702
		(0.209)		
	Idequality	0.096	-0.047	0.239
		(0.073)		
N: 183	Rule1equality*idequality	-0.343	-0.766	0.081
R^2: 0.41		(0.215)		

Note: The table reports results from four different regressions. Robust standard errors are in parentheses.

*p<0.05, **p<0.01, ***p<0.001 (one-sided hypothesis tests)

Hypothesis 2 predicts a positive sign on both the *Midinc* and the *Highinc* coefficients, with *Lowinc* in the intercept. The majority of the reported coefficients does not have the predicted sign, are statistically insignificant and change much in magnitude between regression specification levels. Indeed, in the complete regression both variables are statistically insignificant and only one coefficient has the expected sign.

Table 7. Econometric results for hypothesis 2
"Winners versus losers"

H2. Dependent Variable: Social Trust				
Level of spec.	**Variable**	**β (Rob. Std. Err.)**	**[95% Conf. Interval]**	
No controls	Midinc	0.038	-0.095	0.170
		(0.067)		
N: 200	Highinc	0.166*	0.007	0.325
R^2: 0.02		(0.081)		
Short spec.	Midinc	-0.112	-0.268	0.045
		(0.079)		
N: 183	Highinc	-0.187*	-0.402	0.028
R^2: 0.20		(0.109)		
Long spec.	Midinc	0.010	-0.143	0.162
		(0.077)		
N: 183	Highinc	-0.041	-0.271	0.189
R^2: 0.32		(0.117)		
Complete spec.	Midinc	0.029	-0.111	0.170
		(0.071)		
N: 183	Highinc	-0.060	-0.279	0.158
R^2: 0.41		(0.111)		

Note: The table reports results from four different regressions. Robust standard errors are in parentheses.

*p<0.05, **p<0.01, ***p<0.001 (one-sided hypothesis tests)

Hypothesis 3 predicts the coefficient of the variable *Reason1corruption* to be negative, which it is through all regression specification levels. The coefficient is economically significant and indicates that a person who believes cheating and corruption is the most important reason why rich people are rich in Namibia is about 24 percentage points less likely to agree that most people can be trusted, than a person not sharing this belief. Further, the partial effect of the variable on social trust seems to be robust as the value of the coefficient remains stable when controlling for more variables. Lastly, the partial effect of the variable *Reason1corruption* on social trust is statistically significant on a 0.1%-level through all specification levels and none of the confidence intervals go from negative to positive. Together, this provides support for hypothesis 3.

Table 8. Econometric results for hypothesis 3
"The belief that one cannot get rich by just means"

H3. Dependent Variable: Social Trust				
Level of spec.	**Variable**	**β (Rob. Std. Err.)**	**[95% Conf. Interval]**	
No controls N: 200 R^2: 0.09	Reason1corruption	-0.267*** (0.054)	-0.373	-0.160
Short spec. N: 183 R^2:0.25	Reason1corruption	-0.241*** (0.057)	-0.353	-0.129
Long spec. N: 183 R^2: 0.39	Reason1corruption	-0.245*** (0.058)	-0.359	-0.131
Complete spec. N: 183 R^2: 0.41	Reason1corruption	-0.235*** (0.057)	-0.348	-0.122

Note: The table reports results from four different regressions. Robust standard errors are in parentheses.

**p*<0.05, ***p*<0.01, ****p*<0.001 (one-sided hypothesis tests)

Comments on results

In summary, we find support for one out of three hypotheses, namely hypothesis 3 which we call "the belief that one cannot get rich by just means." This is in addition the hypothesis with the most explanatory power on its own, since its regressions have the highest R^2 values in specification levels other than the complete.

Regarding hypothesis 1, the variables used to test it are in our opinion successful in capturing the sought respondent characteristics, and the corresponding questions were not exposed to many difficulties during data collection. However, as mentioned throughout the thesis, the quality of our data is limited in general, which may be why the results for hypothesis 1 provide no help in what conclusion to draw regarding the theory of income inequality as determinant of social trust.

Moving on to hypothesis 2, we believe the variables used to test the hypothesis suffer from certain limitations in addition to the general limitations to the data quality. For example, we probably created too little room for variation among income groups in the upper part of the income distribution. As we aimed at capturing a large variation in income, this is indeed an issue. The bracket limit of our highest income group, 25,000 Namibian dollars (NAD), is based on the highest income decile of the country as a whole. This may be too low in the context of the capital and we got such indications during the survey. This may be why our income group 10 contains a large share of our sample (17%).

Moreover, we measure household income and not per capita income. As we collected data on household size, we know that one respondent in our sample lives in a household of 26 people with a total income of 1,001-4,000 NAD per month, whereas 3 respondents in our sample live alone with an income of 25,000 NAD or more per month. The way income groups are defined in this study, the full difference in per capita income between these individuals is not captured. We aim, however, at capturing some of this difference by controlling for household size in the regressions.

During data collection, we also noted that respondents had difficulties in assessing their own average monthly income in general, and the corresponding of their household in particular. There is consequently potentially measurement error in the income variables. Together, these aspects may be why the results for hypothesis 2 do not provide guidance in what conclusion to draw regarding income inequality as determinant of social trust.

THEORY IMPLICATIONS

Despite limitations to our data collection methods, we believe there are interesting theory implications to draw from our empirical findings, since the data provides support for hypothesis 3. Therefore, we extract the following insights to the theory of income inequality as determinant of social trust.

In our data, a distributive justice theory that appears to uncover mechanisms between income inequality and social trust is the idea of how the skewness of an income distribution captures negative effects of income inequality on social trust. This is an important implication as macroeconomic research often only uses the Gini index, which measures the dispersion of an income distribution, to capture these effects.

However, as we only find support for one out of three hypotheses, the concept of distributive justice appears not to suffice in uncovering the mechanisms in the process between income inequality and social trust. First of all, there are probably mechanisms that cannot be uncovered by employing justice or fairness perspectives. Second of all, the theory upon which hypothesis 3 is built is indeed the one that most explicitly incorporates a broader fairness of society perspective, in terms of formal, procedural and distributive justice.

On the role of institutions, information about how institutions shape the behavior of people in general appears to affect social trust. Therefore, a theory of income inequality as determinant of social trust should probably include how trustworthy behavior is generated, in order to have practical bearing.

FUTURE RESEARCH

This study has taken a first step in testing possible micro level mechanisms between income inequality and social trust, but there are more tests to be done. Distributive justice alone does not appear to capture and uncover the mechanisms that cause income inequality to affect social trust. Interesting future micro level research on effects of income inequality on social trust could be developed in a broader fairness perspective. Such research could for example investigate the relationship between income inequality and equality of opportunity on the one hand and corruption on the other, and on how such relationships affect trustworthy behavior in society.

There can for instance be interesting mechanisms to study regarding education, which is associated with social trust and probably also with equality of opportunity. Is there a systematic difference in which school types or educational levels people with different income level have access to? If people then systematically only meet those with similar income levels, how will such increased information asymmetry between people with different income levels shape social trust? And is trustworthy behavior affected by any of this?

There could also be interesting mechanisms to investigate in how income inequality may erode formal justice and give rise to corruption, which, according to our findings, appears to be negatively associated with social trust. For example, does relative wealth affect trustworthy behavior more than absolute wealth? That is, does larger income inequality for example increase loss aversion among people, and thus their incentives to involve in corrupt behavior?

A solid micro foundation to the theory of income inequality as determinant of social trust should also include replications of our study in countries with other income inequality levels. Such replications should aim at overcoming our method related limitations, which involve problems with obtaining a random sample in general and selection bias caused by the nature of the dependent variable in particular. If feasible, collecting data using the door knocking method could result in more equal probabilities of being sampled for individuals in the target population. Also, it can be a good priority of resources to make use of translators in the data collection process.

Our study constitutes a part of a micro foundation that can provide valuable implications for future macroeconomic research on how income inequality affects social trust. We suggest such research to aim at investigating aggregate indicators of trustworthy behavior. As the Gini index does not measure skewness, employing (and perhaps developing additional) aggregate measures that are successful in

capturing skewness of an income distribution, for example in relation to equality of opportunity, is another suggestion for future macroeconomic research. Such measure may complement the Gini index in capturing the effects of income inequality on social trust.

REFERENCES

AFDB (2009), Namibia Country Strategy Paper, African Development Bank

Afrobarometer (2008), Afrobarometer Round 4 Survey Namibia, Summary of Results

Alesina, Alberto and Eliana La Ferrara (2002), "Who Trusts Others?" *Journal of Public Economics*, vol. 85, no. 2, pp. 207-234

Andersen, Robert and Tina Fetner (2008), "Economic Inequality and Intolerance: Attitudes toward Homosexuality in 35 Democracies," *American Journal of Political Science*, vol. 52, no. 4, pp. 942-958

Baruch, Yehuda and Brooks C. Holtom (2008), "Survey response rate levels and trends in organizational research," *Human Relations*, vol. 61, no. 8, pp. 1139-1160

Beugelsdijk, Sjoerd, Henri L.F. de Groot and Anton B. T. M. van Schaik (2004), "Trust and Economic Growth: A Robustness Analysis," *Oxford Economic Papers*, vol. 56, no. 1, pp. 118-134

CBS (1996), Namibia Household and Expenditure Survey 1993/1994, Central Bureau of Statistics, National Planning Commission, Windhoek, Namibia

CBS (2006), Preliminary Report, Namibia Household and Expenditure Survey 2003/2004, Central Bureau of Statistics, National Planning Commission, Windhoek, Namibia

CBS (2008), A Review of Poverty and Inequality in Namibia, Central Bureau of Statistics, National Planning Commission, Windhoek, Namibia

CBS (forthcoming), Namibia Household and Expenditure Survey 2009/2010, Central Bureau of Statistics, National Planning Commission, Windhoek, Namibia

Delhey, Jan and Kenneth Newton (2003), "Who trusts?: The origins of social trust in seven societies," *European Societies*, vol. 5, no. 2, pp. 93-137

Economic and Social Data Service (2010), Cross-national survey research topic: Trust, Available [Online]: http://www.esds.ac.uk/international/resources/trust.asp [2011-11-04]

Fehr, Ernst and Klaus M. Schmidt (1999), "A Theory of Fairness, Competition, and Cooperation," *Quarterly Journal of Economics*, vol. 114, no. 3, pp. 817-868

Fukuyama, Francis (1995), "Social Capital and the Global Economy," *Foreign Affairs*, vol. 74, no. 5, pp. 89-103

Glaeser, Edward L., David I. Laibson, José A. Scheinkman and Christine L. Soutter (2000), "Measuring Trust," *Quarterly Journal of Economics*, vol. 115, no. 3, pp. 811-846

Harvey, Paul and Mark J. Martinko (2011), "Attribution Theory and Motivation" in *Organizational Behavior in Health Care*, 2nd edn, Jones and Bartlett Publishers, pp. 147-162

Haughton, Jonathan (2005), "Chapter 6. Inequality Measures" in *Introduction to Poverty Analysis*, The World Bank Institute, pp. 95-105

Jauch, Herbert, Lucy Edwards and Braam Cupido (2009), A Rich Country with Poor People. Inequality in Namibia, Labour Resource and Research Institute (LaRRI), Windhoek, Namibia

Jordahl, Henrik (2007), Inequality and Trust, Working paper No. 715, Research Institute of Industrial Economics, Stockholm, Sweden.

Kumlin, Staffan and Bo Rothstein (2010), "Questioning the New Liberal Dilemma. Immigrants, Social Networks, and Institutional Fairness," *Comparative Politics*, vol. 43, no. 1, pp. 63-89

Lindqvist, Erik and Robert Östling (2010), "Political Polarization and the Size of Government," *American Political Science Review*, vol. 104, no. 3, pp. 543-565

March, James G. and Johan P. Olson (1989), *Rediscovering Institutions: The Organizational Basis of Politics*, New York: The Free Press

Miller, David (1992), "Distributive Justice: What the People Think," *Ethics*, vol. 102, no. 3, pp. 555-593

NPC (2004), 2001 Namibia Population and Housing Census for Khomas Regional Profile, National Planning Commission, Windhoek, Namibia

NPC (2012), Namibia 2011 Population and Housing Census Preliminary Results, National Planning Commission, Windhoek, Namibia

Newbold, Paul, William L. Carlson and Betty Thorne (2006), *Statistics for Business and Economics*, 6th edn, Pearson Education International

Newton, Kenneth (1999), "Social capital and democracy in modern Europe" in *Social Capital and European Democracy*, eds. van Deth, Jan, Marco Maraffi, Ken Newton and Paul Whiteley, London: Routledge, pp. 3-24

Nolan, Brian, Ive Marx and Wiemer Salverda (2011), Inequalities' Impacts. Gini State of the Art Review 1, Amsterdam Institute for Advanced labour Studies, Amsterdam, The Netherlands

North, Douglass C. (1991), "Institutions," *The Journal of Economic Perspectives*, vol. 5, no. 1, pp. 97-112

Ostrom, Elinor (2000), "Collective Action and the Evolution of Social Norms," *Journal of Economic Perspectives*, vol. 14, no. 3, pp. 137-158

Putnam, Robert D. (2000), *Bowling Alone: The Collapse and Revival of American Community*, New York: Simon & Schuster

Rawls, John (1971), *A Theory of Justice*, Cambridge, Massachusetts: The Belknap Press of Harvard University Press

Rosenberg, Morris (1956), "Misanthropy and Political Ideology," *American Sociological Review*, vol. 21, no. 6, pp. 690-695

Roth, Felix (2009), "Does Too Much Trust Hamper Economic Growth?" *Kyklos*, vol. 62, no. 1, pp. 103-128

Rothstein, Bo and Dietlind Stolle, (2008), "The State and Social Capital: An Institutional Theory of Generalized Trust," *Comparative Politics*, vol. 40, pp. 441-467

Rothstein, Bo and Eric M. Uslaner (2005), "All for All: Equality, Corruption, and Social Trust," *World Politics*, vol. 58, no. 1, pp. 41-72

Uslaner, Eric M. (2002), *The Moral Foundations of Trust*, Cambridge: Cambridge University Press

Uslaner, Eric M. (2008), "The Foundations of Trust: Macro and Micro," *Cambridge Journal of Economics*, vol. 32, no. 2, pp. 289-294

Williamson, Oliver E. (1993), "Calculativeness, Trust, and Economic Organization," *Journal of Law and Economics*, vol. 36, no. 1, pp. 453-486

Wooldridge, Jeffrey M. (2008), *Introductory Econometrics. A Modern Approach*, 4th edn, Canada: South-Western Cengage Learning

World Bank (2012a), Gini Index, Available [Online]: http://data.worldbank.org/indicator/SI.POV.GINI?page=1 [2011-09-05]

World Bank (2012b), GDP per capita (current US$), Available [Online]: http://data.worldbank.org/indicator/NY.GDP.PCAP.CD/countries [2012-02-20]

WVS (2005), Root Version of the WVS 2005 questionnaire, World Values Survey Association, Available [Online]: http://www.worldvaluessurvey.org/wvs/articles/folder_published/survey_2005/files/WVSQuest_RootVers.pdf [2012-01-10]

WVS 2005 Official Data File v.20090901 (2009), World Values Survey Association, Available [Online]: http://www.wvsevsdb.com/wvs/WVSData.jsp [2012-01-10]

WVS (2012), World Values Survey – Organization, Available [Online]: http://www.worldvaluessurvey.org/index_organization [2012-05-05]

You, Jong-Sung (2005), Corruption and Inequality as Correlates of Social Trust: Fairness Matters More Than Similarity, Working Paper No.29, The Hauser Center for Nonprofit Organizations and The John F. Kennedy School of Government Harvard University

You, Jong-Sung and Sanjeev Khagram (2005), "A Comparative Study of Inequality and Corruption," *American Sociological Review*, vol. 70, no. 1, pp. 136-157

Zak, Paul J. and Stephen Knack (2001), "Trust and Growth," *The Economic Journal*, vol. 111, no. 470, pp. 295-321

APPENDIX 1: COMPUTED INCOME BY LIVING STANDARD*

Table A1. Correlation between living standard and household income

Income group	Household income**	Households in the three strata of Windhoek city			Total
		High standard	Middle standard	Low standard	
1	0-1,000	39	363	3,250	3,652
2	1,001-4,000	755	7,880	17,861	26,496
3	4,001-7,000	1,335	7,501	4,589	13,425
4	7,001-10,000	1,541	3,949	1,264	6,754
5	10,001-13,000	2,439	3,586	518	6,543
6	13,001-16,000	2,011	2,183	273	4,467
7	16,001-19,000	1,762	1,155	0	2,917
8	19,001-22,000	1,706	403	0	2,109
9	22,001-25,000	1,918	211	252	2,381
10	25,000+	8,166	476	61	8,703
	Total	21,672	27,707	28,068	77,447

Note: To illustrate correlation between income group and living standard strata, the strata are colored with three nuances of grey. For each income group, the stratum with the largest share of households has the darkest nuance, the stratum with the second largest share of households has the second darkest nuance and the stratum with the lowest share of households has the lightest nuance of grey.

*Living standard is a subjective measure used in CBS's sampling frame for the stratification of Windhoek areas.

**Computed household income is "derived as the sum of total consumption and non-consumption expenditures such as for livestock, motor vehicle license, house and land. Savings are not included in computed household income" (CBS, forthcoming).

APPENDIX 2: KEYWORDS TRANSLATED TO OSHIWAMBO

1. household
2. income
3. employed
4. trust
5. take advantage of somebody
6. fair
7. quite much
8. not so much
9. people in general
10. treated worse than others
11. treated better than others
12. skills
13. most important reason
14. rule
15. allocate
16. incomes
17. equally
18. advantage
19. disadvantage
20. different
21. ethnicities
22. cultural groups
23. justifiable
24. ok under certain circumstances
25. acceptable
26. seldom
27. often
28. bribe
29. equal

APPENDIX 3: PILOT STUDY QUESTIONNAIRE

0. Interview date

Day_____ Month_____ Year_____

1. Questionnaire number _____

2. Sample Denomination:

Strata: _____ Supermarket:_____

3. Type of day

Weekday 1

Weekend 2

4. Day of the week

M	T	W	T	F	S	S
1	2	3	4	5	6	7

5. Time of day

9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20
1	2	3	4	5	6	7	8	9	10	11

6. Number of persons contacted in order to obtain this interview

1 2 3 4 5 6 7 8 9 10

7. Reason for not participating in survey

	1	2	3	4	5	6	7	8	9	10
Not interested										
Not time										
Never participates in surveys										
Distrusts us										
Language barrier										
Exogenous factor										

Peer pressure										

(Introduction by interviewer)

Hello. I am a student from the Stockholm School of Economics in Sweden. Me and my colleague are conducting a study for our Bachelors' thesis on the levels of trust in Windhoek. I'd like to ask your views on a number of different subjects, it should take no more than 10 or so minutes. Your identity will remain anonymous and your answers are confidential, nothing is audio recorded. Your participation will contribute to a better understanding of the situation and the attitudes of people in Windhoek.

Note: Code in margin but do not read out, here and throughout the interview:

1 – Don't know 2 – No answer 3 – Not applicable

Q 8. *(Code the respondent's sex by observation):*

1 Male 2 Female

Q 9. Can you tell me your year of birth, please? 19_____ (write the last two digits)

(If born 1995 or later, stop the interview and thank the person for his/her time.)

Q 10. Do you live in Windhoek?

1 Yes 2 No

(If No, stop the interview and thank the person for his/her time.)

Q 11. For how many years have you lived in Windhoek? _____ (round answer to nearest full year)

(If less than a year, stop the interview and thank the person for his/her time.)

Q 12. What is the name of the suburb (or area) in Windhoek where you live? (show card)

1. Academia	6. Eros Park	11. Katutura	16. Olympia	21. Windhoek
2. Ausblick	7. Goreangab	12. Khomasdal	17. Otjomuise	22._____
3. Brakwater	8. Hakahana	13. Klein Windhoek	18. Pioneers Park	23._____
4. Cimbebasia	9. Havana	14. Kleine Kuppe	19. Rocky Crest	
5. Dorado Park	10. Hochland Park	15. Okuryangava	20. Wanaheda	

Q 13. What is the highest educational level that you have attained? *(NOTE: If the person indicates to be a student, code the highest level s/he expects to complete)*:

	Respondent
No formal education	1
Incomplete primary school	2
Complete primary school	3
Incomplete secondary school	4
Complete secondary school	5
Some university-level education, without degree	6
University-level education, undergraduate	7
University-level education, post-graduate	8

Q 14. Considering your mother, what is the highest educational level that she has attained? Considering your father?:

	Mother	Father
No formal education	1	1
Incomplete primary school	2	2
Complete primary school	3	3
Incomplete secondary school	4	4
Complete secondary school	5	5
Some university-level education, without degree	6	6
University-level education, undergraduate	7	7
University-level education, post-graduate	8	8

Q 15. On this card is an income scale on which 1 indicates the lowest income group and 10 the highest income group in Namibia. I would like to know in what group your household is. Please, specify the appropriate number, counting all wages, salaries, pensions and other incomes that come in to your household, pre taxes:

Lowest group Highest group

1 2 3 4 5 6 7 8 9 10

Q 16. What is your mother tongue?

1	Saan	6	Oshiwambo	11	Afrikaans
2	Caprivi	7	Tswana	12	German

3	Otjiherero	8	English	13	Other European language
4	Kavango	9	Portuguese	14	Other African language
5	Nama/Damara	10	Dutch	15	Other language

Q 17. Have you immigrated to Namibia? Have your mother and/or your father?

	Immigrated	Not immigrated
Respondent	1	2
Mother	1	2
Father	1	2

Q 18. Are you currently employed or studying or are you currently unemployed?

Currently unemployed 1 Currently employed 2

Q 20. To what religion do you belong?

1	No religion	4	Islam	7	Judaism
2	Lutheran/Protestantism	5	Hinduism	8	Other _____
3	Catholicism	6	Buddhism		

Q 21. Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?

1 Most people can be trusted.

2 Need to be very careful.

Q 22. Do you think most people would try to take advantage of you if they got a chance, or would they try to be fair? Please answer on a scale from 1 to 10, where 1 means that "people would try to be fair", and 10 means that "people would try to take advantage of you":

People would try to be fair People would try to take advantage of you

1 2 3 4 5 6 7 8 9 10

I'd like to ask you how much you trust people from various groups. For each one, could you tell me how much you trust them on a scale from 1 to 4, where 1 means that you trust completely and 4 means that you don't trust them at all:

	Completely	Somewhat	Not very much	Not at all
Q 23. People in general	1	2	3	4
Q 24. Your family	1	2	3	4
Q 25. Your neighborhood	1	2	3	4
Q 26. People you know personally	1	2	3	4
Q 27. People you meet for the first time	1	2	3	4

I am going to name a number of organizations. For each one, could you tell me how much you trust them on a scale from 1 to 4, where 1 means that you trust completely and 4 means that you don't trust them at all:

		Completely	Somewhat	Not very much	Not at all
Q 30	The health system	1	2	3	4
Q 31	The defence system	1	2	3	4
Q 34	The police	1	2	3	4
Q 35	The legal system	1	2	3	4
Q 36	The government	1	2	3	4
Q 37	Political parties	1	2	3	4
Q 38	The Parliament	1	2	3	4
Q 39	Schools	1	2	3	4

Q 40. If you look back on your own personal contact with public authorities and services during the last twelve months, to what extent does the following statement fit with your own experience?
"I was treated worse than most others"

Fits well	Fits rather well	Fits rather poorly	Fits very poorly	Have not been in contact
1	2	3	4	5

Q 41. I'd like to ask you of your views on a couple of issues. In your opinion, what is the most important reason why a rich person is rich? Please grade the following options from 1 to 5, with 1 as the most important reason.

Luck/coincidence	Hard work	Cheating/corruption	Connections	Born rich
_____	_____	_____	_____	_____

Q 42. In your opinion, what is the most important reason why a poor person is poor? Please grade the following options from 1 to 5, with 1 as the most important reason.

Bad luck	Laziness	Born poor	Affected by unfair system	Difficult to escape poverty in Namibia
_____	_____	_____	_____	_____

Q 47 How would you place your views on this scale? 1 means you agree completely with the statement that incomes should be made more equal; 10 means you agree completely with the statement that we need larger income differences as incentives for individual effort; and if your views fall somewhere in between, you can choose any number in between.

Incomes should be made more equal We need larger income differences as incentives for individual

effort

1 2 3 4 5 6 7 8 9 10

I will name a couple of actions. Please tell me for each action to what extent you think it is justifiable on a scale from 1 to 10, where 1 means never justifiable and 10 means always justifiable: _____Never justifiable Always justifiable										
Q 43.Claiming government benefits to which you are not entitled	1	2	3	4	5	6	7	8	9	10
Q 44. Stealing property	1	2	3	4	5	6	7	8	9	10
Q 45. Cheating on taxes if you have a chance	1	2	3	4	5	6	7	8	9	10
Q 46. Someone accepting a bribe in the course of their duties	1	2	3	4	5	6	7	8	9	10

APPENDIX 4: FINAL SURVEY QUESTIONNAIRE

1. Interview date

Day_____ Month_____ Year_____

2. Questionnaire number _____

3. Sample Denomination:

Strata: _____ Supermarket:_____

4. Type of day

Weekday 1

Weekend 2

5. Day of the week

M	T	W	T	F	S	S
1	2	3	4	5	6	7

6. Time of day

9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20
1	2	3	4	5	6	7	8	9	10	11

7. Number of persons contacted in order to obtain this interview

1 2 3 4 5 6 7 8 9 10

8. Reason for not participating in survey

	1	2	3	4	5	6	7	8	9	10
Not interested										
Not time										
Never participates in surveys										
Distrusts us										
Language barrier										
Exogenous factor										

Peer pressure										

Note: Code in margin but do not read out, here and throughout the interview:

1 – Don't know 2 – No answer 3 – Not applicable

9. *(Code the respondent's sex by observation):*

1 Male 2 Female

10. *(Code the respondent by observation):*

1 Black 2 White 3 Other

11. Can you tell me your year of birth, please? 19_____ (write the last two digits)

(If born 1995 or later, stop the interview and thank the person for his/her time.)

12. Do you live in Windhoek?

1 Yes 2 No

13. For how many years have you lived in Windhoek? _____ (round answer to nearest full year)

14. What is the highest educational level that you have attained? *(NOTE: If the person indicates to be a student, code the highest level s/he expects to complete)*:

	Respondent
No formal education	1
Primary education (grade 1-7)	2
Secondary education (grade 8-12)	3
Tertiary education (undergraduate, post-graduate, diploma)	4

15. Considering your mother, what is the highest educational level that she has attained? Considering your father?:

	Mother	Father
No formal education	1	1
Primary education (grade 1-7)	2	2

Secondary education (grade 8-12)	3	3
Tertiary education (undergraduate, post-graduate, diploma)	4	4

16. What is the name of the suburb (or area) in Windhoek where you live?

6. Academia	8. Eros Park	14. Katutura	20. Okuryangava	26. Suiderhof
7. Ausblick	9. Goreangab	15. Khomasdal	21. Olympia	27. Wanaheda
8. Avis	10. Greenwell Matongo	16. Klein Windhoek	22. Otjomuise	28. Windhoek C
9. Brakwater	11. Hakahana	17. Kleine Kuppe	23. Pioneers Park	29. Windhoek N
10. Babylon	12. Havana	18. Ludwigsdorf	24. Prosperita	30. Windhoek W
11. Cimbebasia	13. Hochland Park	19. Luxury Hill	25. Rocky Crest	31. _____
12. Dorado Park				

17. On this card is an income scale on which 1 indicates the lowest income group and 10 the highest income group in Namibia. I would like to know in what group your household is. Please, specify the appropriate number, counting all wages, salaries, pensions and other incomes that come in to your household, pre taxes:

Lowest group Highest group

1 2 3 4 5 6 7 8 9 10

18. How many people live in your household? _____

19. What is your mother language?

1	Saan	6	Oshiwambo	11	Afrikaans
2	Caprivi	7	Tswana	12	German
3	Otjiherero	8	English	13	Other European language
4	Kavango	9	Portuguese	14	Other African language
5	Nama/Damara	10	Dutch	15	Other language

20. Have you immigrated to Namibia? Have your mother and/or your father?

	Immigrated	Not immigrated	Not immigrated & do not live in Namibia
Respondent	1	2	
Mother	1	2	3
Father	1	2	3

21. During the past year, have you been mostly unemployed, mostly employed or mostly studied?

Mostly unemployed 1 Mostly employed 2 Mostly studying 3

22. Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?

1 Most people can be trusted.

2 Need to be very careful.

23. Do you think most people would try to take advantage of you if they got a chance, or would they try to be fair?:

1 Most people would try to be fair.

2 Most people would try to take advantage of you.

I'd like to ask you how much you trust people from various groups and how much you trust various organizations. For each one, could you tell me how much you trust them on a scale from 1 to 4, where 1 means that you trust them completely, 2 means that you trust the quite much, 3 that you trust them not so much and 4 means that you don't trust them at all:

	Completely	Quite much	Not so much	Not at all
24. People in general	1	2	3	4
25. Your family	1	2	3	4
26. Poor people	1	2	3	4
27. Your neighborhood	1	2	3	4
28. People you know personally	1	2	3	4
29. Rich people	1	2	3	4
30. The health system	1	2	3	4
31. The defence system	1	2	3	4
32. The police	1	2	3	4
33. The legal system	1	2	3	4
34. The government	1	2	3	4
35. Political parties	1	2	3	4
36. The Parliament	1	2	3	4
37. Schools	1	2	3	4

If you look back on your own personal contact with public authorities and services during the last twelve months, which of the following statement/alternatives matches your personal experience?

	I know I was treated **worse** than most others	**I think** I was treated **worse** than most others	**I think** I was treated **better** than most others	**I know** I was treated **better** than most others	Have not been in contact

38. Health system	1	2	3	4	5
39. Police	1	2	3	4	5
40. Legal system	1	2	3	4	5
41. Schools	1	2	3	4	5

42. In your opinion, what is the most important reason why a rich person is rich? Please rank the following options from 1 to 4, with 1 as the most important reason and 4 as the least important reason.

Hard work Cheating/corruption Is skilled Born rich

_____ _____ _____ _____

43. In your opinion, what is the most important reason why a poor person is poor? Please rank the following options from 1 to 4, with 1 as the most important reason and 4 as the least important reason.

Laziness Born poor Not enough well paid jobs in Namibia Has no skills

_____ _____ _____ _____

44. What do you think is the fairest rule for allocating incomes to people? Please rank the following options from 1 to 3, according to how fair you think they are, with 1 as the fairest rule and 3 as the least fair rule.

To each one based on their skills and effort _____

To each one based on their needs _____

To each one equally _____

45. How many friends that speak a different mother language than you do you have?

Many Quite many A few None

1 2 3 4

46. Do you think there are mostly advantages or mostly disadvantages with having people with many different ethnicities living in the same city?

Mostly advantages 1

Mostly disadvantages 2

I will name a couple of actions. Please tell me for each action to what extent you think it is justifiable on a scale from 1 to 4, where 1 means never justifiable, 2 means seldom justifiable, 3 means often justifiable and 4 means always justifiable:

	Never	Seldom	Often	Always
47. Claiming government benefits to which you are not entitled	1	2	3	4
48. Stealing	1	2	3	4

49. Cheating on taxes	1	2	3	4
50. Someone accepting a bribe	1	2	3	4
51. Violence against other people	1	2	3	4

Which of the following things have you done during the past year for reasons of security?

	Yes	No
52. Didn't carry much money	1	2
53. Preferred not to go out at night	1	2
54. Carried a knife, gun or other weapon	1	2

55. In your opinion, should the income distribution in Namibia be…

Completely equal 1

More equal than now 2

The same as now 3

More unequal than now 4

APPENDIX 5: EXPLANATION OF CONTROL VARIABLES

Table A2. Explanation of control variables

Control variable	Explanation
Short specification:	
Male	The respondent is a man
Black	The respondent is black
Age	The respondent's age
Agesq	The respondent's age to the power of two
Minority	The respondent belongs to a minority group
Windhoekyrs	The number of years the respondent has lived in Windhoek
Motherprimary	The respondent's mother completed some primary education
Mothersecondary	The respondent's mother completed some secondary education
Mothertertiary	The respondent's mother completed some tertiary education
Long specification also includes:	
Noeduc	The respondent has no formal education
Primary	The respondent completed some primary education
Secondary	The respondent completed some secondary education
Employed	The respondent was employed during most of the past year
Student	The respondent studied during most of the past year
Pensioner	The respondent was a pensioner during most of the past year
Immigrant	The respondent immigrated to Namibia
Hhsize	The number of persons in the respondent's household

APPENDIX 6: COMPLETE REGRESSION RESULTS

Table A3. Econometric results for the complete regression specification

Dependent Variable: Social Trust					
Complete spec.	**Variable**	$\boldsymbol{\beta}$	**(Rob.Std.Err.)**	**[95% Conf. Interval]**	
	Intercept	0.816**	(0.304)	0.216	1.416
Short spec.	Male	0.085	(0.055)	-0.024	0.194
	Black	-0.280*	(0.113)	-0.504	-0.056
	Age	-0.014	(0.014)	-0.042	0.014
	Age^2	0.000	(0.000)	-0.000	0.001
	Minority	-0.187*	(0.074)	-0.333	-0.041
	Windhoekyrs	-0.002	(0.003)	-0.007	0.004
	Motherprimary	0.138	(0.081)	-0.021	0.297
	Mothersecondary	0.237*	(0.095)	0.049	0.424
	Mothertertiary	0.478***	(0.128)	0.225	0.731
Long spec.	Noeduc	0.384*	(0.178)	0.032	0.735
	Primary	0.390*	(0.183)	0.029	0.751
	Secondary	0.040	(0.073)	-0.104	0.184
	Student	-0.436***	(0.092)	-0.617	-0.255
	Employed	-0.179*	(0.085)	-0.348	-0.011
	Pensioner	-0.005	(0.283)	-0.564	0.553
	Immigrant	-0.095	(0.091)	-0.274	0.084
	Hhsize	-0.005	(0.006)	-0.018	0.007
H1	Rule1equality	0.289	(0.209)	-0.124	0.702
	Idequality	0.096	(0.073)	-0.047	0.239
	Rule1equality*idequality	-0.343	(0.215)	-0.766	0.081
H2	Midinc	0.029	(0.071)	-0.111	0.170
	Highinc	-0.060	(0.111)	-0.279	0.158
H3	Reason1corruption	-0.235***	(0.057)	-0.348	-0.122
R^2: 0.41					

Note: Sample size: 183 individuals. Robust standard errors are in parentheses. One-sided p-values are reported for hypotheses variables and two-sided p-values are reported for control variables.

* p<0.5, ** p<0.01, *** p<0.001

APPENDIX 7: SIMPLE CORRELATIONS

Table A4. Simple correlations between dependent variable and variables of interest

	Social Trust	*Rule1equality*	*Idequality*	*Rule1equality *idequality*	*Midinc*	*Highinc*	*Reason1-corruption*
Social Trust	1.00						
Rule1equality	-0.08	1.00					
Idequality	0.02	0.10	1.00				
Rule1euqality idequality*	-0.10	0.89	0.30	1.00			
Midinc	-0.04	0.05	-0.06	0.04	1.00		
Higinc	0.15	-0.23	-0.00	-0.24	-0.48	1.00	
Reason1-corruption	-0.30	-0.00	0.02	0.06	0.05	-0.04	1.00