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Does Social Policy Crowd Out or Crowd In Social Trust? The Perspectives of Transfer Share, Low-Income Targeting, and Universalism

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Does Social Policy Crowd Out or Crowd In Social Trust?

The Perspectives of Transfer Share, Low-Income Targeting, and Universalism*

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October 8, 2023

Abstract

In recent decades, a great deal of international comparative research has examined whether social policy crowds out or crowds in social trust. Although previous studies have made significant advances, we still have much to learn. First, the proxies of social policy adopted by earlier publications may confound the levels and distribution of welfare provisions. Second, little research has explored whether two important distribution patterns of welfare provisions—low-income targeting and universalism—crowd out or crowd in social trust in international comparative analysis. Against this backdrop, this study focuses on the distinctive roles of three dimensions of welfare transfers, such as transfer share, low-income targeting, and universalism, in social trust. For the analysis, the present study utilizes data from the Luxembourg Income Study (LIS) Database, merged data from the World Values Survey (WVS) and the European Values Study (EVS), and the two-way fixed-effects model. Through an international

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comparative analysis, this study clarified that low-income targeting crowds out social trust, while universalism crowds in social trust. These results suggest that (1) low-income targeting may have a side effect on social trust and (2) universalism and social trust may partly explain the self-perpetuating process of the welfare state.

KEYWORDS: welfare transfers, social trust, crowd out, crowd in, two-way fixed-effects model

INTRODUCTION

In recent decades, the determinants of social trust have received considerable global attention in a wide variety of research fields in the social sciences. Social trust can be defined as “the belief or confidence that someone or something is reliable, trustful and honest” (Moore and Kawachi 2017:513) and has been regarded as a crucial aspect of the notion of “social capital” since social trust provides many positive consequences for society and citizens (Kumlin, Stadelmann-Steffen, and Haugsgjerd 2018). For example, previous studies clarified that social trust promotes economic growth, enhances health and happiness, and makes democracy work by facilitating cooperation and collective action among citizens (Helliwell et al. 2020; Kim et al. 2011; Larsen 2007; Putnam 1993, 2000; Zak and Knack 2001). Hence, significant numbers of studies have conducted international comparative analyses to clarify the determinants of social trust by focusing on macroscale characteristics by country (Bjørnskov 2007; Delhey and Newton 2005).

On this topic, many scholars have been interested in social policy as one of the vital factors in social trust for the following reasons. First, the arguments around the ‘Nordic puzzle’ have raised the question of why Nordic countries with generous and universal welfare programs tend to have higher social trust than other countries (Larsen 2007; Rothstein 2001, 2008).

Second, in addition to the above discussions, as several debates in terms of communitarianism and the ‘third way’ politics aiming at the ‘enabling welfare state’ have been raised in welfare state discussions, the association between social policy and social capital has become one of the pivotal issues in social policy research (Ferragina 2017; Giddens 1998; van Oorschot and Arts

2005). These discussions have led to a renewed interest in the classic question of whether social policy crowds out or crowds in social capital across various disciplines (Brewer, Oh, and Sharma 2014; Hooghe and Stolle 2003). Within this issue, the crowding-out argument has suggested that the encompassing welfare state reduces social capital, whereas the crowding-in argument has discussed that the extensive welfare state causes social capital to flourish (Rostila 2013; Rothstein 2001). In particular, many international comparative studies have focused on the association between social policy and social trust because social trust has been viewed as an important condition for maintaining the welfare state (Brewer et al. 2014; Rostila 2013; Rothstein 2008; van Oorschot and Arts 2005).

Although previous studies have made significant advances in research on social policy and social trust, we still have much to learn. First, earlier publications in social policy studies discussed three approaches to compute the proxies of social policy, such as the social expenditure approach, the social rights approach, and the approach building on benefit reciprocity data (Otto and van Oorschot 2019; van Oorschot 2013).¹ However, the literature on the association between social policy and social trust has employed social spending based on the social expenditure approach and the decommodification index building on the social rights approach as measures of social policy (Brewer et al. 2014; Ferragina 2017; Rostila 2013; van

¹ Although earlier publications have discussed three approaches in the context of the dependent variable problem, this discussion can be adapted for the discussion of the independent variable (Otto 2018a, 2018b; Otto and van Oorschot 2019; van Oorschot 2013).

Oorschot and Arts 2005). Hence, the third approach based on benefit reciprocity data may be helpful to elucidate the new consequences of social policy for social trust.

Second, the proxies of social policy utilized in previous research, such as social expenditures and the decommodification index, may jumble two aspects of social policy: the levels and the distribution of welfare provisions (Öktem 2020; Otto 2018a, 2018b; Pacek and Radcliff 2008a). However, as Korpi and Palme's ground-breaking work has discussed, it is important to distinguish the effects of the levels and distribution of welfare provisions to identify the consequences of social policy on several outcomes (Brady and Bostic 2015; Korpi and Palme 1998). Furthermore, in terms of the distribution of welfare provisions, the question of whether our societies should adopt a low-income targeting policy or universal welfare policy has been continually debated in social policy research (Jacques and Noël 2018; Korpi and Palme 1998). In line with this debate, prior studies have also suggested that low-income targeting and universal policies may play differing roles in building social trust (Kumlin and Rothstein 2005; Rothstein 2008; Rothstein and Uslaner 2005). Therefore, it is also preferable to capture both low-income targeting and universalism separately in the distribution of welfare provisions.

To overcome these limitations, this study employs a third approach based on benefit reciprocity data, such as those archived in the Luxembourg Income Study (LIS) Database, to compute three dimensions of welfare transfers as measures of social policy: transfer share, low-income targeting, and universalism (Brady and Bostic 2015; Korpi and Palme 1998). In doing so, it is possible to distinguish the effects of the levels and the distribution of welfare provisions on

social trust and to examine both low-income targeting and universalism as two facets of the distribution of welfare provisions. Via an international comparative analysis with three dimensions of welfare transfers, the present study reveals the new consequences of social policy on social trust. Moreover, this analysis is also helpful to clarify the new determinants of social trust. With pooled data from the World Values Survey (WVS) and the European Values Study (EVS) from 1981 to 2022 and the two-way fixed-effects model, this study tackles the association between the three dimensions of welfare transfers and social trust.

SOCIAL POLICY AND SOCIAL TRUST

Since the pioneering research on welfare regimes written by Esping-Andersen (1990, 1999), a host of studies have addressed the consequences of welfare state configurations for a wide variety of outcomes (Flavin, Pacek, and Radcliff 2014; Pacek and Radcliff 2008a; Rostila 2013). In this strand of research, it is widely recognized that the association between social policy and social trust is one of the vital issues in social policy research because, according to Rothstein, social trust may be an important variable in the self-perpetuation of the welfare state. Concretely, generous and universal welfare programs may stimulate social trust among citizens, which in turn may enhance support for redistribution, and therefore lead to an extensive welfare state (Rothstein 2008; Rothstein and Uslaner 2005). To reveal this ‘feedback mechanism,’ numerous social policy studies have approached the association between social policy and social trust (Bergh and Bjørnskov 2011, 2014; Brewer et al. 2014).

The impact of social policy on social trust has been discussed from two perspectives. The first is the crowding-out argument. This classic argument assumes that as more generous and universal welfare benefits and services are provided, it becomes less necessary for citizens to trust, cooperate, and help each other. Consequently, social trust is inversely proportional to the social welfare provided by the state (Etzioni 1993; Fukuyama 2000; Janowitz 1976; Scheepers, Grotenhuis, and Gelissen 2002; Wolfe 1989). From the crowding-out perspective, Coleman (1982) argued that welfare programs make citizens dependent on public assistance, decrease interdependence among the members of society, and therefore corrupt social cohesion and mutual assistance. On this issue, Fukuyama also noted that if the state covers a wide variety of tasks in society, “people will become dependent on it and lose their spontaneous ability to work [and cooperate] with one another” (Fukuyama 2000:15). According to Künemund (2008), the general idea that welfare effort crowds out social capital among citizens can be traced back to Tönnies ([1887] 2002) and Durkheim (1933). Based on these discussions, the crowding-out argument claims that “welfare retrenchment” is a solution to revitalize social trust and cohesion (van Oorschot and Arts 2005).

In contrast, the second perspective based on the crowding-in argument holds an opposite position to the crowding-out argument by arguing that comprehensive welfare policies facilitate social trust because it improves the condition to thrive social capital for the following reasons. First, generous and universal welfare policy provides welfare benefits and services that restore time and resources to citizens. It enhances social cohesion among citizens and therefore

promotes social trust (Brewer et al. 2014; Hooghe and Stolle 2003; Rostila 2013). Second, earlier publications have also suggested that because universal welfare policies postulate equal treatment, they reinforce the perception of citizens that they are equally treated and therefore boosts the motivation to cooperate and trust each other (Rothstein 1998, 2001, 2005, 2008; Rothstein and Uslaner 2005). The crowding-in argument supposes that citizens have a natural inclination to connect, cooperate, and trust each other. Hence, it is not surprising that citizens help and trust each other when social policies remove the obstacles to social cohesion, such as poverty and lack of time (Brewer et al. 2014; Rostila 2013). For these reasons, the crowding-in argument contends that “welfare retrenchment” can be a risk factor for attenuating social cohesion and social trust (van Oorschot and Arts 2005).

Building on the above discussions from the crowding-out and crowding-in perspectives, a voluminous amount of literature has produced empirical analyses of the roles of social policy in changing social capital. In terms of social trust, some empirical studies have supported the crowding-out arguments (van Oorschot and Arts 2005; van Oorschot, Arts, and Gelissen 2006). For example, by analyzing data from the EVS, van Oorschot and Arts (2005) and van Oorschot et al. (2006) reported that although social spending crowds in some dimensions of social capital, such as family and civic participation, social spending is negatively associated with social trust. In contrast, many studies on social policy and social trust have found that, in line with the crowding-in argument, extensive welfare provisions enrich social trust (Brewer et al. 2014; Gelissen, van Oorschot, and Finsveen 2012; Kääriäinen and Lehtonen 2006; Rostila 2013;

Rothstein 2001). For instance, Gelissen et al. (2012) and Rostila (2013) have adopted data from the Eurobarometer and the European Social Survey and revealed that social spending is positively correlated with social trust in Europe. In addition, by analyzing pooled data from the WVS with multiple rounds and the two-way fixed-effects model, Brewer et al. (2014) found that total social expenditures facilitate social trust.

In addition to the above studies, more recent publications have shown more complicated results. In particular, Ferragina (2017) employed data from the EVS and two indicators of social policy, such as social expenditures and the decommodification index, to explore the association between social policy and social capital. In more detail, the decommodification index builds on the concept of decommodification defined by Esping-Andersen as “the degree to which individuals or families can uphold a socially acceptable standard of living independent of market participation” (Esping-Andersen 1990:37) and mainly reflects the generosity and universality of pensions, sickness benefits, and unemployment compensation (Esping-Andersen 1990, 1999; Patek and Radcliff 2008a, 2008b; Scruggs and Allan 2006; Scruggs, Detlef, and Kuitto 2017). Via an international comparative analysis of the EVS, Ferragina (2017) uncovered that, in accordance with van Oorschot and Arts (2005) and van Oorschot et al. (2006), social expenditures reflecting the size of the welfare state have a negative association with social trust, whereas the decommodification index is positively correlated with social trust. In other words, social policy has both crowding-out and crowding-in effects on social trust depending on the

aspects considered. Moreover, Lee (2020) analyzed data from the WVS and revealed that social expenditures do not have a significant impact on social trust in Asian countries.

Although previous studies have provided significant advances in social policy research, there are some limitations. First, earlier publications suggested that the two indicators of social policy utilized by previous studies do not necessarily mirror the actual reality of welfare provisions that citizens receive. For instance, although the approach based on social expenditure data is popular due to the accessibility and usefulness of data in international comparative analyses of social policy (Green-Pedersen 2007; Öktem 2020; van Oorschot 2013), studies have suggested that social expenditures reflect not the reality of welfare provisions but budgetary effort because social expenditures elucidate the cost outcomes of welfare policies (Otto 2018b, 2018b). Moreover, the approach based on social rights data builds on the concept of citizenship discussed by Marshall (1950) and adopts several indicators concerning the generosity of social rights in granting welfare benefits (Öktem 2020; Otto 2018b; Otto and van Oorschot 2019). On this issue, earlier publications have also noted that the generosity index, like the decommodification index, draws on the legislative “paper reality” of social rights, which does not necessarily translate into “benefit reality” (Otto 2018a, 2018b).

Second, social expenditures and the decommodification index may mingle the levels and distribution of welfare provisions, making it difficult to distinguish their effects on social trust (Öktem 2020; Otto 2018a; Pacek and Radcliff 2008a, 2008b; van Oorschot 2013). Furthermore, although several important publications in social policy have discussed the distinctive roles of

low-income targeting and universalism in social trust, little research has directly examined the association between these two distributional aspects of social policy and social trust in the context of international comparative analysis (Kumlin and Rothstein 2005; Rothstein and Stolle 2003; Rothstein 2008; Rothstein and Uslaner 2005). Therefore, it is preferable to employ proxies of social policy, which enable us to capture their differing effects.

THREE DIMENSIONS OF WELFARE TRANSFERS: THEORY AND HYPOTHESES

To overcome these limitations, this study adopts the third approach, building on benefit reciprocity data, to calculate three dimensions of welfare transfers—transfer share, low-income targeting, and universalism—as proxies of social policy. According to Otto and van Oorschot (2019), although the idea of adopting benefit reciprocity data is not new, this approach has received surprisingly little attention compared with approaches based on social expenditures and social rights data. However, the benefit reciprocity data approach has several advantages to complement the other two approaches, as follows.² First, because benefit reciprocity data include information on how individuals receive benefits from the state, this approach can more directly mirror the reality of welfare provisions than other approaches (Otto and van Oorschot 2019; van Oorschot 2013). Second, by using the benefit reciprocity data for individuals, it is possible to

² Although previous studies have noted that there are two types of benefit reciprocity data, such as record-based reciprocity data and social survey-based reciprocity data, this analysis utilizes social survey-based reciprocity data because record-based reciprocity data mainly cover European countries and the number of countries and years covered by this record is limited, while state records include precise information (van Oorschot 2013). In contrast, social survey-based reciprocity data cover a wide variety of countries and years, even though social survey-based reciprocity data have limitations related to over- and underreporting of benefit amounts (van Oorschot 2013).

capture both the levels and the distribution of welfare provisions in more detail (Otto 2018a, 2018b). In what follows, we describe the details of the three dimensions of welfare transfers and provide hypotheses in this study.

Transfer share is the share of public welfare provisions in household income and reflects the extent of the welfare state as part of the household income (Brady and Bostic 2015; Korpi and Palme 1998). Therefore, transfer share mirrors the levels of welfare provisions. Whereas this proxy tends to be highly correlated with other proxies of the welfare state, such as social expenditures as a percentage of GDP, by using household data on welfare transfers, transfer share can more precisely gauge welfare effort than social expenditures (Brady and Bostic 2015).³ For this reason, transfer share has been employed by recent publications to analyze the impact of welfare provisions on several outcomes. For example, previous studies found that transfer share is negatively associated with income inequality and the poverty rate (Brady and Bostic 2015; Ferrarini, Nelson, and Palme 2016; Korpi and Palme 1998). However, the association between transfer share and social trust has been largely overlooked.

It is plausible that transfer share improves social trust among citizens for the following reasons. First, as the crowding-in argument suggests, welfare provisions provide resources and time, facilitate basic human capabilities to cooperate and help each other, and therefore, may enhance social trust (Brewer et al. 2014; Hooghe and Stolle 2003; Rostila 2013). Second, insofar as transfer share decreases inequality and poverty, which are crucial determinants of violent

³ There are some critiques that several measures related to the degree of welfare effort may partially reflect the composition of the population in need (Esping-Andersen 1990; Gilbert 2009).

crime (Hooghe et al. 2011; Patterson 1991), transfer share may make society safer and therefore promote social trust among citizens. Building on these discussions, we can formulate the following hypothesis:

Hypothesis 1: Transfer share crowds in social trust.

In addition to the levels of welfare provisions, the existing welfare state literature has also discussed whether the distribution of welfare provisions, such as targeting and universal social policies, crowd out or crowd in social trust (Kumlin and Rothstein 2005; Rothstein and Stolle 2003; Rothstein 1998, 2008; Rothstein and Uslaner 2005). On this point, Kumlin and Rothstein noted that the “relation between the welfare state and social capital [including social trust] is primarily a question not of welfare-state size but of welfare-state design” (Kumlin and Rothstein 2005:343). Hence, this study also focuses on the association between the distribution strategies of welfare provisions, such as low-income targeting and universalism, and social trust.

According to Brady and Bostic, low-income targeting is “the disproportionate concentration of welfare transfers in low-income households” (Brady and Bostic 2015:272-273). Logically, a low-income targeting policy may be justified because a selective policy can concentrate scarce resources for citizens in need and is supposed to be efficient in reducing poverty (Brady and Bostic 2015). However, recent studies have suggested that low-income targeting may not be helpful in reducing poverty for the following reasons (Brady and Burroway 2012; Korpi and Palme 1998; Marx, Salanauskaite, and Verbist 2013, 2016). First, low-income targeting with means-testing may disincentivize the disadvantaged from earning salaries higher

than the cut-off criteria of means-testing (Brady and Bostic 2015). Second, because a selective social policy requires screening based on means-testing, low-income targeting divides citizens into givers and receivers and therefore may stigmatize beneficiaries (Brady and Bostic 2015; Korpi and Palme 1998; Stuber and Schlesinger 2006). As a result, people in need may hesitate to apply for the benefits of a targeted policy. Theoretically, Brady and Bostic (2015) noted that the opposite of low-income targeting is not universalism but high-income targeting.

In terms of the association between low-income targeting and social trust, earlier publications have argued that low-income targeting lowers social trust among citizens for the following reasons (Coleman 1982; Kumlin and Rothstein 2005; Rothstein and Stolle 2003; Rothstein 1998, 2008; Rothstein and Uslaner 2005). First, as stated above, although rich citizens shoulder the burden of the cost of selective social policies, low-income citizens tend to receive benefits provided by the selective program (Korpi and Palme 1998; Kumlin and Rothstein 2005). As a result, high-income citizens may become exasperated with disadvantaged citizens, and disadvantaged citizens who receive welfare benefits may be stigmatized. Consequently, low-income targeting may divide citizens into givers and receivers, and therefore, it is difficult for citizens to trust each other. Second, the means-testing process in selective social policy itself may contain the source of mistrust. In the procedure for means-testing, public employees must interpret the regulations that qualify each citizen in need of selective programs. As a result, low-income targeting with means-testing may include processes in which public workers may arbitrarily qualify or disqualify the needy based on stigmatized stereotypes about citizens in

need. In contrast, disadvantaged citizens may try to cheat the system to receive benefits, such as showing false information (Rothstein 1998, 2008). In this process, rich citizens may be afraid of spending tax revenue on anyone who cheats to receive benefits. For these reasons, low-income targeting may spread mistrust among a wide range of citizens. Although some studies have suggested that the experiences of receiving benefits from means-tested policy enhance mistrust among citizens (Kumlin and Rothstein 2005), little research has analyzed this issue in the context of international comparative research. Based on these discussions, the current study formulates the following hypothesis for this international comparative analysis:

Hypothesis 2: A low-income targeting policy crowds out social trust.

Furthermore, according to Brady and Bostic, universalism can be defined as “homogeneity across the population in benefits, coverage, and eligibility” (Brady and Bostic 2015:274). Because universal programs are nonselective and do not include means-testing in arbitrary procedures to qualify recipients, universalism provides equivalent benefits for all based on procedural justice and fairness (Fernández and Jaime-Castillo 2018; Gugushvili and van Oorschot 2020). Hence, although the high overall cost is a drawback, universal social policy does not divide citizens into givers and receivers, does not stigmatize the needy, and therefore facilitates a sense of equal opportunity and the belief that citizens share common values (Rothstein 1998, 2008). Prior studies have suggested that, in contrast to low-income targeting, which underpins citizen survival by helping citizens after they fall into poverty, universal programs support citizens across various aspects of life and therefore may prevent citizens from

falling into poverty (Brady and Bostic 2015; Brady and Burroway 2012). In line with these discussions, several studies have reported that universalism is helpful in reducing poverty (Jacques and Noël 2018, 2021).

Regarding the association between universalism and social trust, the voluminous literature on this issue has suggested that universal social policy reinforces social trust because universal programs do not divide citizens into givers and receivers and do not use means-testing with arbitrary procedures to qualify applicants, which are sources of mistrust (Korpi and Palme 1998; Laenen and Gugushvili 2021). Additionally, universal social policy emphasizes equal treatment and offers universal benefits and insurance programs for all to address heterogeneous risks across various aspects of life as a precaution (Brady and Burroway 2012; Fernández and Jaime-Castillo 2018; Laenen and Gugushvili 2021). Via these experiences, universalism may enhance a shared sense of fairness and therefore activate social trust among citizens (Kumlin and Rothstein 2005; Rothstein 2008). Indeed, Rothstein (1998, 2005, 2008) has highlighted that universalism revitalizes social trust as the core notion of self-perpetuating mechanisms for the welfare state because social trust may boost support for redistribution and the willingness to pay higher taxes for generous and universal welfare policies (Daniele and Geys 2015; Habibov et al. 2019). On this issue, although Kumlin and Rothstein (2005) reported that universal welfare programs have a positive association with social trust through the analysis of data from social surveys in western Sweden, it is still not known whether universalism crowds out or crowds in social trust in the context of international comparative analysis. Given these discussions

suggesting the positive impact of universalism on social trust, this study also formulates the following hypothesis:

Hypothesis 3: Universalism crowds in social trust.

In addition to the main effects of the three dimensions of welfare transfers on social trust, the current study also examines how the associations between the three dimensions of welfare transfers and social trust vary depending on income position. Previous studies have suggested that the meaning of social policy may differ between net financial contributors and other citizens (Fernández and Jaime-Castillo 2018; Korpi and Palme 1998; Kumlin and Rothstein 2005; Ono and Lee 2013). On this point, there is the possibility that the association between social policy and social trust may be stronger among high-income citizens than low-income citizens because high-income citizens who mainly finance welfare transfers may be more knowledgeable about social policy and monitor the procedures and consequences of welfare transfers more sensitively (Fernández and Jaime-Castillo 2018). Based on these assumptions, it is feasible that transfer share enriches social trust among high-income citizens, who may more strongly recognize the consequences of transfer share, such as a reduction in inequality and poverty, a decrease in violent crime, and an increase in human capabilities, which make citizens trustworthy enough to cooperate and help each other (Brewer et al. 2014; Hooghe and Stolle 2003; Hooghe et al. 2011; Patterson 1991). Moreover, it is reasonable that low-income targeting deteriorates social trust among rich citizens because they cannot receive benefits even if they mainly finance these welfare policies. As a result, financial contributors may keep a close watch on cheating among

benefit recipients and have the suspicion on citizens in need. Finally, universalism raises social trust among high-income citizens because, based on the above assumption, citizens mainly financing universal policy may be more knowledgeable about social policy, carefully identify the consequences of universal programs (Fernández and Jaime-Castillo 2018), and therefore be more influenced by the moral argument for universalism, such as treating citizens equally, enhancing the sense of fairness, and enriching social trust. For these reasons, this study formulates the following hypotheses:

Hypothesis 4: Transfer share crowds in social trust, especially among high-income citizens.

Hypothesis 5: A low-income targeting policy crowds out social trust, especially among high-income citizens.

Hypothesis 6: Universalism crowds in social trust, especially among high-income citizens.

DATA AND METHODS

Data

This study employs pooled data from the WVS and the EVS from 1981 to 2022 because these international surveys are one of the few worldwide that contain key variables in this analysis, such as social trust, and cover countries on various continents (EVS 2022; Inglehart et al. 2022). For these reasons, previous studies have utilized these data to discuss the crowding-out or

crowding-in effects of social policy on social capital (Brewer et al. 2014; Hackl, Halla, and Pruckner 2012). Hence, we have combined individual data from the WVS and the EVS with information concerning country characteristics. After listwise deletion, this analysis includes 31 countries, 21 years, 131 country-years, and 158,266 individuals.⁴

Dependent Variable

The dependent variable in this analysis is social trust. The WVS and the EVS measure social trust based on the following question: “Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?” The two response options are as follows: “1. Most people can be trusted,” or “2. Need to be very careful.” In accordance with earlier publications, this study utilized a dummy variable for social trust (1 = “Most people can be trusted”) (Brewer et al. 2014; Delhey, Newton, and Welzel 2011).

Macrolevel Key Variables

This study employs three dimensions of welfare transfers as macrolevel key variables: transfer share, low-income targeting, and universalism. In particular, this analysis is based on Brady and Bostic (2015) and computes the values of these variables in each country in each year by adopting survey-based benefit reciprocity data from the Luxembourg Income Study (LIS) Database (LIS 2023). Because the LIS Database provides nationally representative and cross-

⁴ The countries and years included in this analysis are shown in Table A1 in the Online Appendix.

nationally harmonized individual-level datasets and includes detailed information on disposable household income and welfare transfers, it enables us to calculate the macrolevel proxies regarding both the levels and the distribution of welfare provisions.

First, transfer share is computed as the mean of the share of public transfers as a percentage of disposable household income. Hence, this measure ranges from 0 to 100. This indicator reflects the levels of welfare provisions to households in detail (Brady and Bostic 2015; Korpi and Palme 1998). Second, as the proxy for low-income targeting, this analysis adopts the Kakwani concentration coefficient for the distribution of transfers (Besley 1990; Brady and Bostic 2015; Korpi and Palme 1998). This measure ranges from -1 to 1. When all public transfers are concentrated among citizens with the lowest household income, the value of this index is -1. In contrast, the value of this variable is +1 when all public transfers are concentrated among citizens with the highest household income. In accordance with Korpi and Palme (1998) and Brady and Bostic (2015), this study uses the reverse score of this index to capture the degree of low-income targeting. Third, building on Brady and Bostic (2015), the score for universalism is calculated as 1 over the coefficient of variation in terms of the absolute amount of transfers to reflect the degree of the homogeneity of public transfers provided among the population. Hence, a higher score indicates a higher degree of universalism.⁵

⁵ In accordance with previous research, the missing values of transfer share, low-income targeting, and universalism are linearly extrapolated (Fernández and Jaime-Castillo 2018). In the data adopted in this analysis, the percentage of extrapolated values for the three dimensions of welfare transfers is 51.9 percent. The Pearson correlation coefficients between transfer share and low-income targeting, between low-income targeting and universalism, and between transfer share and universalism are .595, .410, and .805, respectively.

Individual-Level Key Variable

The individual-level key variable in this analysis is household income. In accordance with previous studies (Brewer et al. 2014; Ferragina 2017; van der Meer, Scheepers, and te Grotenhuis 2009; van Oorschot et al. 2006), this study utilizes relative household income for the following reasons. First, the literature has reported that relative income is more strongly correlated with social trust than absolute income (Fischer and Torgler 2006, 2013). Second, one of the main focuses of this study is the differences in the impact of social policy on social trust between the financial contributors as givers and the disadvantaged as receivers. This issue is more related to relative income position than absolute income. For these reasons, in line with several international comparative analyses, household income is standardized (z scored) for the country-year units (Flavin et al. 2014; Ono and Lee 2013; van der Meer et al. 2009).

Control Variables

Following prior studies related to international comparative analysis on social policy and social capital (Brewer et al. 2014; Rostila 2013; van Oorschot and Arts 2005), this analysis controls for several individual-level variables: gender (1=female, 0=male), age, age squared,⁶ education (primary, secondary, and tertiary), employment status (employed, unemployed, retired, and other

⁶ When we compute age squared, age is centered by the grand mean. Because 82 years old or older are recorded as 82 in official data from the EVS 2017-2020 (82 = 82 or older), to be consistent, the present study recorded 82 years old or older in the WVS and the other rounds in the EVS as 82.

status), the dummy for marital status (married=1), the number of children, and church attendance (1=once a month or more).

In addition to the individual-level control variables, referring to the literature, this analysis also incorporates macrolevel controls concerning country characteristics, such as economic development, inequality, unemployment rate, urban population, and population size. Previous studies suggested that these variables are correlated with social policy and social trust and therefore controlled for these macrolevel country characteristics (Bjørnskov 2007; Brewer et al. 2014; Ferragina 2017; van Oorschot and Arts 2005). First, as a proxy of economic development, this analysis controls for the logarithm of GDP per capita adjusted for the purchasing power standard (PPS). The values for GDP per capita (PPS) in each country in each year were obtained from OECD Stat (OECD 2023). Additionally, this analysis includes the Gini coefficient as an indicator of inequality. The values of the Gini coefficient in each country in each year were obtained from the Standardized World Income Inequality Database (Solt 2020). Moreover, this analysis also controls for unemployment rate, urban population, and the logarithm of population size. The values of these variables in each country in each year were obtained from the World Bank (World Bank 2023). Descriptive statistics of the variables in this analysis are shown in Table 1.

--TABLE 1 ABOUT HERE--

Analytical Strategy

This study conducts an international comparative analysis of social trust by adopting survey data from the WVS and the EVS. During the last few decades, by adopting two-level multilevel modeling and international comparative survey data with one period, many scholars have revealed the determinants of various outcomes with a focus on both macrolevel country characteristics and individual-level factors (van der Meer et al. 2009; van Oorschot and Arts 2005; van Oorschot et al. 2006). On this issue, more recent studies have suggested that this approach may have some limitations, such as omitted variable bias, because the conventional approach with two-level multilevel modeling and international comparative survey data with one round can control for only a few macrolevel country characteristics due to the limitation of the degrees of freedom (Yu 2015). As a result, the conventional approach may provide biased results stemming from omitted variables.

To overcome this limitation, this analysis employs international comparative data with multiple rounds and a two-way fixed-effects model including dummies for countries and years. Recent studies have recommended adopting this approach because by including country dummies, it is possible to estimate within-country effects of time-variant country characteristics by controlling for time-constant country characteristics (Brewer et al. 2014; Flavin et al. 2014; Hackl et al. 2012; Yu 2015). This is helpful to reduce omitted variable bias (Yu 2015). The regression of social trust (ST) of individual i in country c in year t in this analysis is as follows:

$$ST_{ict} = \alpha + \beta_1 TS_{ct} + \beta_2 LT_{ct} + \beta_3 U_{ct} + \Gamma C_{ct} + \Theta I_{ict} + \zeta_c + \eta_t + \varepsilon_{ict}$$

where α is the intercept and β_1 to β_3 are the coefficients of three dimensions of welfare transfers, i.e., transfer share (TS), low-income targeting (LT), and universalism (U), in country c in year t .

The variables C_{ct} include the control variables in terms of the time-variant country characteristics, including GDP per capita, the Gini coefficient, unemployment rate, urban population, and population size for country c in year t . Moreover, the variables I_{ict} incorporate the individual-level variables for individual i in country c in year t . To control for unobserved time-constant country characteristics and common time trends across countries, this regression contains country fixed effects ζ_c for the 31 countries and year fixed effects η_t . By doing so, this model takes the nonindependence of observations within a country and year into consideration. Finally, ε_{ict} is the error term.

This study employed a linear regression, namely, a linear probability model. Whereas the normality of the dependent variables is famously one assumption of linear regression analysis, simulation studies have noted that in large samples with more than 500 observations, linear regression analysis is valid for any distribution of the dependent variable, including binary or ordered categories, because of the central limit theorem (Lumley et al. 2002). On these grounds, recent international comparative analyses have also utilized linear regression models for analysis with a binary variable or a Likert-scale variable as the dependent variable (Hackl et al. 2012; Méon and Tojerow 2019). In accordance with previous studies conducting international comparative analysis with the two-way fixed-effects model, this analysis adopts cluster-robust standard errors, adjusted for clustering by country (Flavin et al. 2014; Méon and Tojerow 2019).

Moreover, following Giesselmann and Schmidt-Catran (2019), this analysis contains the interaction terms of the country dummies and household income when we estimate the cross-level interaction effects of three dimensions of welfare transfers and household income on social trust. Giesselmann and Schmidt-Catran (2019) called this model the country fixed-effects and slopes model (cFES). cFES makes it possible to examine the within-country effects of the cross-level interactions by controlling for the effect heterogeneity of household income among countries. It is helpful to evaluate the cross-level interaction effects more properly.⁷

RESULTS

Tables 2 and 3 indicate the results obtained from the two-way fixed-effects model of social trust with dummies for countries and years.⁸ In Tables 2 and 3, the results are shown without either individual-level controls or control variables for macrolevel country characteristics. The results containing all variables in the analysis are shown in Tables A2 and A3 in the Online Appendix. Models 1 to 5 in Table 2 focus on the main effects of household income and three dimensions of welfare transfers on social trust. Model 1 includes all individual-level variables and depicts that household income is positively associated with social trust (.040, $p < .001$).

--TABLE 2 ABOUT HERE--

⁷ According to Giesselmann and Schmidt-Catran, '[i]n our replication, it turned out that controlling for effect heterogeneity in the individual-level variable...had a huge effect on the estimated interaction effect, while controlling for effect heterogeneity in the country-year-level variable did not provide substantially different results compared with standard cFE. ...In such situations, controlling for country effect heterogeneity in the individual level variable may be sufficient' (Giesselmann and Schmidt-Catran 2019:211).

⁸ The analyses in the present study were estimated using Stata 17.0.

--TABLE 3 ABOUT HERE--

Models 2 to 4 in Table 2 add the main effect of one of the welfare transfer variables on social trust as well as other time-variant country characteristics to Model 1. Model 2 evaluates the main effect of transfer share to test Hypothesis 1 that transfer share crowds in social trust. The results of Model 2 show that the coefficient of transfer share is not significant, hence, Hypothesis 1 is not supported. In addition, Model 3 analyzes the main effect of low-income targeting on social trust and explores Hypothesis 2, which suggested that low-income targeting crowds out social trust. The results of Model 3 reveal that low-income targeting is negatively associated with social trust ($-.628, p < .01$). Therefore, Model 3 contends that low-income targeting diminishes social trust among citizens and thus that Hypothesis 2 is supported. Furthermore, Model 4 in Table 2 scrutinizes the relationship between universalism and social trust and Hypothesis 3 that universalism crowds in social trust. The results in Model 4 indicate that the association between universalism and social trust is significantly positive ($.273, p < .05$); therefore, Hypothesis 3 is supported.

Model 5 in Table 2 investigates the main effects of three dimensions of welfare transfers at the same time by controlling for each other and other time-variant country characteristics. Model 5 shows that low-income targeting is significantly and negatively correlated with social trust ($-.467, p < .05$), while other dimensions of welfare transfers, such as transfer share and universalism, are not significantly associated with social trust.

Additionally, Table 3 provides the results in terms of the cross-level interactions of the three dimensions of welfare transfers and household income on social trust by employing cFES with the interaction terms of country dummies and household income. Models 6 to 8 include the main effect of each variable related to welfare transfers and the cross-level interaction of each variable concerning welfare transfers and household income on social trust. In Model 6, we analyzed the main effect of transfer share and the cross-level interaction of transfer share and household income on social trust to test Hypothesis 4, which suggested that transfer share crowds in social trust among high-income citizens. The results in Model 6 show that the cross-level interaction of transfer share and household income on social trust is not significant, and thus, Hypothesis 4 is not supported. Moreover, Model 7 incorporates the main effect of low-income targeting and the cross-level interaction of low-income targeting and household income on social trust to examine Hypothesis 5, which suggested that low-income targeting crowds out social trust among rich citizens. In Model 7, the cross-level interaction of low-income targeting and household income on social trust is not significant. Therefore, Hypothesis 5 is not supported. In the same vein, Model 8 explored the main effect of universalism and the cross-level interaction of universalism and household income on social trust to test Hypothesis 6, which suggested that universalism crowds in social trust among high-income citizens. It is apparent from Model 8 that the coefficient regarding the cross-level interaction of universalism and household income on social trust is positive and significant (.039, $p < .05$). The results of the cross-level interaction effect obtained from Model 8 are summarized in Figure 1, showing that

the association between universalism and social trust is stronger among high-income citizens than among low-income citizens. Hence, Hypothesis 6 is supported. In addition, Models 9 to 11 in Table 3 include the main effects of three dimensions of welfare transfers simultaneously, along with the interaction effect of each one separately and household income on social trust. From the results in Table 3, it can be seen that the results of cross-level interaction in Models 9 to 11 are essentially similar to those in Models 6 to 8.

--FIGURE 1 ABOUT HERE--

Robustness and Validity Checks

To check robustness, this study conducts further analyses. First, because Giesselmann and Schmidt-Catran have recommended employing cFES to control “for effect heterogeneity [between countries] of one or both interacted variables” (Giesselmann and Schmidt-Catran 2019:211), the present study also examines additional models to add the interaction terms of the dummies for countries and interacted variables regarding welfare transfers to Table 3. Models 12 to 17 in Table A4 in the Online Appendix include the same variables as Models 6 to 11 in Table 3: the interaction terms of the country dummies and each of the welfare transfer variables. In terms of the cross-level interactions, Models 12 to 14 reported results similar to Models 6 to 8. In addition, the results of Models 15 to 17 in Table A4 in the Online Appendix regarding the interaction effects are not substantially different from those of Models 9 to 11. On the whole,

regarding the cross-level interactions, Hypothesis 6 is supported, while Hypothesis 4 and Hypothesis 5 are not.

Second, because the dependent variable regarding social trust in this analysis is a dummy variable (Brewer et al. 2014), for the robustness check, the current study also adopts the logistic regression with dummies for countries and years to cope with the nonindependence of observations within a country and year as follows:

$$\text{logit}(ST_{ict}) = \alpha + \beta_1 TS_{ct} + \beta_2 LT_{ct} + \beta_3 U_{ct} + \Gamma C_{ct} + \Theta I_{ict} + \zeta_c + \eta_t + \varepsilon_{ict}$$

The results obtained from the logistic regression with dummies for countries and years are displayed in Tables A5-7 in the Online Appendix. Specifically, Models 1 to 5 in Table A5 include the same variables as Models 1 to 5 in Table 2 that evaluate the main effects of household income and the three dimensions of welfare transfers on social trust with a logistic regression model. Model 1 in Table A5 shows that household income is significantly associated with social trust (.199, $p < .001$). In addition, Models 2 to 4 in Table A5 show the results of the main effect for each of the welfare transfer variables on social trust. From the results of Models 2 to 4, it can be seen that the main effect of transfer share is not significant. In contrast, although the coefficient of low-income targeting is significantly negative (-3.120, $p < .01$), that of universalism is positive and significant (1.223, $p < .05$). Moreover, Model 5 in Table A5 contains the three dimensions of welfare transfers at once and illustrates that low-income targeting is negatively correlated with social trust even after controlling for other welfare transfer variables (-2.330, $p < .05$); the other two variables related to welfare transfers are not.

Furthermore, Table A6 provides results from Models 6 to 11 containing the same variables as Table 3 to explore the cross-level interactions of the three dimensions of welfare transfers and household income on social trust by controlling for the interaction terms of country dummies and household income. From the data in Table A6, it is apparent that the cross-level interaction of universalism and household income on social trust is significantly positive (.183, $p < .05$ in Model 8; .182, $p < .05$ in Model 11), and the cross-level interactions of other dimensions of welfare transfers, such as transfer share and low-income targeting, and household income on social trust are not significant. Finally, Models 12 to 17 in Table A7 add the interaction terms of country dummies and one of the welfare transfer variables in Table A4 to check robustness of the cross-level interactions of welfare transfer variables and household income on social trust. In Table A7, the results of Models 12 to 17 show that, as with Table A4, the cross-level interaction of universalism and household income on social trust is significant and positive (.231, $p < .01$ in Model 14; .232, $p < .01$ in Model 17), and the cross-level interactions of other welfare transfer variables, including transfer share and low-income targeting, and household income are not significant. In sum, the additional analyses that use logistic regression for the robustness check reported similar results to those in Tables 2, 3, and A4.

DISCUSSION

Summary of the Argument and Results

In social policy research, the question of whether social policy crowds out or crowds in social capital is one of the pivotal issues. Hence, many researchers have conducted international comparative analyses to tackle the association between social policy and social trust. Social trust has been regarded as a central aspect of social capital and an important condition for retaining the welfare state. On this issue, there are some limitations in earlier publications. First, in terms of the proxies of social policy, although previous international comparative research on social trust adopted measures based on the social expenditure approach and the social rights approach, few studies in this field have focused on the approach building on benefit reciprocity data. Second, the literature may jumble the levels and the distribution of welfare provisions when exploring the association between social policy and social trust. To overcome these limitations, the current study utilized a third approach drawing on benefit reciprocity data, such as the LIS Database, to compute three dimensions of welfare transfers, namely, transfer share, low-income targeting, and universalism, to distinguish the levels and the distribution characteristics of welfare provisions. By employing merged data from the WVS and the EVS and the two-way fixed-effects model, this study examined the association between the three dimensions of welfare transfers and social trust.

Through the analysis of the two-way fixed-effects regression, this study obtained two main results. First, the results in Table 2 clarify that for the whole population, low-income targeting is negatively associated with social trust, while the association between universalism

and social trust is significant and positive. Thus, Hypotheses 2 and 3 are supported, whereas Hypothesis 1 is not.

Second, in terms of the cross-level interactions, this analysis explored whether the three dimensions of welfare transfers cause social trust to flourish or diminish among citizens with high income. The results in Table 3 report that the cross-level interaction of universalism and household income on social trust is significantly positive, whereas the cross-level interactions of other dimensions of welfare transfers and household income do not have a significant effect on social trust. In Figure 1, there is a clear trend of the positive association between universalism and social trust among high-income citizens. Hence, Hypothesis 6, but not Hypotheses 4 and 5, is supported. Because financial contributors may carefully observe the consequences of universal programs more than other citizens (Fernández and Jaime-Castillo 2018), several possible influences of universalism, which include the equal treatment of citizens, stimulating a sense of fairness, and thus promoting social trust, may be stronger among financial contributors than among others (Kumlin and Rothstein 2005; Rothstein 2008).

Implications for the Study of Social Policy and Social Trust

The results of this analysis have several implications for the study of social policy and social trust. First, this study revealed both the crowding-out and the crowding-in effects of social policy on social trust. In international comparative research on social policy, the evidence is inconsistent whether social policy crowds out or crowds in social trust (Brewer et al. 2014;

Ferragina 2017; van Oorschot and Arts 2005). Against this backdrop, this analysis adopted three dimensions of welfare transfers, i.e., transfer share, low-income targeting, and universalism, to analyze their impacts on social trust. The findings clarified that transfer share, which reflects the level of welfare provisions, is not associated with social trust, whereas two distribution patterns for welfare provisions have distinctive roles in social trust. Concretely, although low-income targeting crowds out social trust, universalism crowds in social trust. In sum, by dividing several aspects of social policy, this study elucidated both the crowding-out and crowding-in effects of social policy on social trust, identifying new consequences of social policy and new determinants of social trust. This study significantly widened the scope of the study of social policy and social capital research.

Second, in particular, the present study revealed the unintended consequence of social policy that occurs when low-income targeting crowds out social trust. One interpretation is that, as stated above, low-income targeting may divide citizens into givers and receivers (Brady and Bostic 2015; Korpi and Palme 1998). For givers, although they shoulder the burden of paying taxes to retain selective programs, they cannot receive benefits from low-income targeting policies proportionate to the tax burden (Korpi and Palme 1998). This situation may be the source of dissatisfaction with the disadvantaged among high-income citizens. Moreover, in such a situation, receivers of selective benefits may be stigmatized (Moffitt 1983; Stuber and Schlesinger 2006). As a result, mistrust may spread between givers and receivers. In addition, because of the arbitrary process by which public workers may qualify the needy by stereotypes

and incentives among citizens to cheat to receive benefits, the process of means-testing itself may also spread mistrust among citizens. For these reasons, low-income targeting diminishes social trust among citizens. Although Korpi and Palme (1998) elucidated the paradox of redistribution, which insisted that low-income targeting does not contribute to poverty reduction, the results in the present study may suggest another unintended consequence of low-income targeting for its association with social trust.

Implications for Policy Making

Moreover, this study has policy implications for redistribution policies. First, the current study includes a suggestion for the recent trend in social policy. Since the Great Recession that began in 2008, welfare retrenchment and low-income targeting have become key issues in welfare state discussions (Ferrarini et al. 2016; Van Oorschot et al. 2017). Although low-income targeting with means-testing is supposed to increase the cost-efficiency of social policy (Ferrarini et al. 2016; Nelson 2011), this study suggests that there are negative consequences of using low-income targeting with means-testing for social trust. When the government considers adopting a targeted policy for low-income citizens, it is important to note the negative consequences on social trust. As a vital aspect of social capital, social trust has been identified as a crucial factor in several outcomes, such as subjective well-being, health, economic growth, and the persistence of democracy and the welfare state (Helliwell et al. 2023; Putnam 1993, 2000; Rostila 2013; Rothstein 1998, 2005; Whiteley 2000). Hence, this study suggests that governments should be

careful when expanding a targeted policy with means-testing; it must consider additional policies to buffer the crowding-out effect on social trust.

Second, based on the finding of the impact of universalism on social trust among high-income citizens, this study may partly explain how universal policies contribute to the mechanisms sustaining the welfare state. Based on the theory of self-interest, low-income citizens as receivers are more likely to support redistribution, while high-income citizens as givers tend to be less supportive of redistribution (Linos and West 2003; Meltzer and Richard 1981). In this respect, the literature has noted that it is crucial to facilitate support for redistribution among high-income citizens because they are the main financial contributors to the welfare state. On this issue, prior publications have also reported that social trust facilitates support for redistribution and the willingness to pay taxes (Daniele and Geys 2015; Habibov et al. 2019). With these discussions in mind, it is feasible that universalism facilitates social trust, especially among the rich, stimulates support for redistribution and encourages a willingness to pay taxes among financial contributors, and therefore, it may be helpful to maintain universal welfare policies. Although Rothstein (1998, 2008) has suggested the above theoretical mechanisms to retain the welfare state in the association between universal welfare policies and social trust, the results in this analysis may partly support the role of these mechanisms in international comparative analysis.

Limitations and Suggestions for Future Research

Although this study revealed several important findings on these issues, similar to all studies, this research is not without limitations. First, this analysis does not include all aspects of social policy as independent variables. Because the accumulation of benefit reciprocity data enables us to compute the proxies of social policy more flexibly, this study recommends that future studies adopt this approach to clarify the impacts of other aspects of social policy on the wide variety of outcomes. It is helpful to widen the scope of social policy research. Second, although the present study utilized international comparative data with multiple rounds and a two-way fixed-effects model to analyze the within-country effects of three dimensions of welfare transfers and cross-level interactions by controlling for unobserved time-constant country characteristics and effect heterogeneity, this analysis could not take reverse causality into consideration. Hence, this study recommends that future studies employ causal inference methods, including the instrumental variable approach, in the international comparative analysis of social policy. Third, because it is also important to reexamine the international comparative analysis with data including additional rounds, this study also recommends that future studies analyze the association between social policy variables in this analysis and social trust by using additional waves of data from the WVS and the EVS.

Notwithstanding these limitations, this study extends our knowledge of the association between social policy and social trust. In particular, by building on benefit reciprocity data, the present study has shed contemporary light on the contentious issue of the crowding-out or crowding-in effects of social policy on social trust in international comparative research.

Because the benefit reciprocity data approach is applicable to a wide variety of issues, more research is required to develop a deeper understanding of the consequences of social policy. We hope that this paper draws more attention to this topic.

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TABLES

Table 1. Descriptive Statistics of Variables Included in This Analysis

| Variable | N | Mean | SD | Minimum | Maximum |
|----------------------------------|----------|-------------|-----------|----------------|----------------|
| Individual-level characteristics | | | | | |
| Social trust | 158,266 | .385 | .487 | .000 | 1.000 |
| Female | 158,266 | .525 | .499 | .000 | 1.000 |
| Age | 158,266 | 47.188 | 17.142 | 18.000 | 82.000 |
| Primary or less | 158,266 | .352 | .478 | .000 | 1.000 |
| Secondary education | 158,266 | .472 | .499 | .000 | 1.000 |
| Tertiary education | 158,266 | .176 | .381 | .000 | 1.000 |
| Employed | 158,266 | .504 | .500 | .000 | 1.000 |
| Unemployed | 158,266 | .055 | .229 | .000 | 1.000 |
| Retired | 158,266 | .215 | .411 | .000 | 1.000 |
| Other | 158,266 | .225 | .418 | .000 | 1.000 |
| Household income (z-score) | 158,266 | .000 | 1.000 | -2.786 | 3.742 |
| Married | 158,266 | .601 | .490 | .000 | 1.000 |
| Number of children | 158,266 | 1.651 | 1.380 | .000 | 8.000 |
| Religious attendance | 158,266 | .283 | .451 | .000 | 1.000 |
| Country characteristics | | | | | |
| Transfer share | 131 | 32.734 | 11.580 | .570 | 50.160 |
| Low-income targeting | 131 | .392 | .115 | -.020 | .590 |
| Universalism | 131 | .705 | .216 | .150 | 1.150 |
| GDP per capita | 131 | 37466.380 | 15129.410 | 9273.730 | 112465.400 |
| Gini coefficient | 131 | 30.816 | 6.684 | 22.500 | 51.200 |
| Unemployment rate | 131 | 7.380 | 3.999 | 2.050 | 22.670 |
| Population size (million) | 131 | 39.338 | 56.434 | 0.277 | 325.122 |
| Urban population | 131 | 76.282 | 10.511 | 50.730 | 97.600 |

Table 2. Results of Two-Way Fixed-Effects Regression on Social Trust

| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
|-----------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Intercept | .346*** (.024) | 1.731 (4.263) | 5.149 (4.120) | 3.275 (4.054) | 5.604 (4.221) |
| Individual characteristics | | | | | |
| Household income | .040*** (.004) | .040*** (.004) | .039*** (.004) | .040*** (.004) | .040*** (.004) |
| Country characteristics | | | | | |
| Transfer share | | .004 (.003) | | | -.002 (.003) |
| Low-income targeting | | | -.628** (.187) | | -.467* (.181) |
| Universalism | | | | .273* (.123) | .247 (.150) |
| Individual level controls | Yes | Yes | Yes | Yes | Yes |
| Country-year level controls | No | Yes | Yes | Yes | Yes |
| Country fixed effects | Yes | Yes | Yes | Yes | Yes |
| Year fixed effects | Yes | Yes | Yes | Yes | Yes |
| R-squared | .164 | .164 | .165 | .165 | .165 |
| N_{country} | 31 | 31 | 31 | 31 | 31 |
| N_{year} | 21 | 21 | 21 | 21 | 21 |
| $N_{\text{country-year}}$ | 131 | 131 | 131 | 131 | 131 |
| $N_{\text{individual}}$ | 158,266 | 158,266 | 158,266 | 158,266 | 158,266 |

Note: Cluster-robust standard errors in parentheses.

* $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests)

Table 3. Results of Two-Way Fixed-Effects Regressions on Social Trust with Cross-Level Interactions

| | Model 6 | Model 7 | Model 8 | Model 9 | Model 10 | Model 11 |
|----------------------------------|------------------|-------------------|------------------|------------------|------------------|------------------|
| Intercept | 1.704 (4.250) | 5.127 (4.107) | 3.261 (4.041) | 5.579 (4.208) | 5.580 (4.208) | 5.580 (4.208) |
| Individual characteristics | | | | | | |
| Household income (HI) | .045** (.013) | .064** (.019) | .034* (.012) | .046** (.013) | .064** (.019) | .034* (.013) |
| Country characteristics | | | | | | |
| Transfer share | .004 (.003) | | | -.002 (.003) | -.002 (.003) | -.002 (.003) |
| Low-income targeting | | -.628** (.187) | | -.466* (.182) | -.466* (.182) | -.466* (.182) |
| Universalism | | | .275* (.123) | .249 (.150) | .249 (.150) | .249 (.150) |
| Cross-level interaction | | | | | | |
| Transfer share x HI | .000 (.000) | | | .000 (.000) | | |
| Low-income targeting x HI | | -.008 (.040) | | | -.008 (.040) | |
| Universalism x HI | | | .039* (.019) | | | .038* (.019) |
| Individual level controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Country-year level controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Country fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Year fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Interactions of countries and HI | Yes | Yes | Yes | Yes | Yes | Yes |
| R-squared | .167 | .168 | .168 | .168 | .168 | .168 |
| N_{country} | 31 | 31 | 31 | 31 | 31 | 31 |

| | | | | | | |
|---------------------------|---------|---------|---------|---------|---------|---------|
| N_{year} | 21 | 21 | 21 | 21 | 21 | 21 |
| $N_{\text{country-year}}$ | 131 | 131 | 131 | 131 | 131 | 131 |
| $N_{\text{individual}}$ | 158,266 | 158,266 | 158,266 | 158,266 | 158,266 | 158,266 |

Note: Cluster-robust standard errors in parentheses.

* $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests)

FIGURE

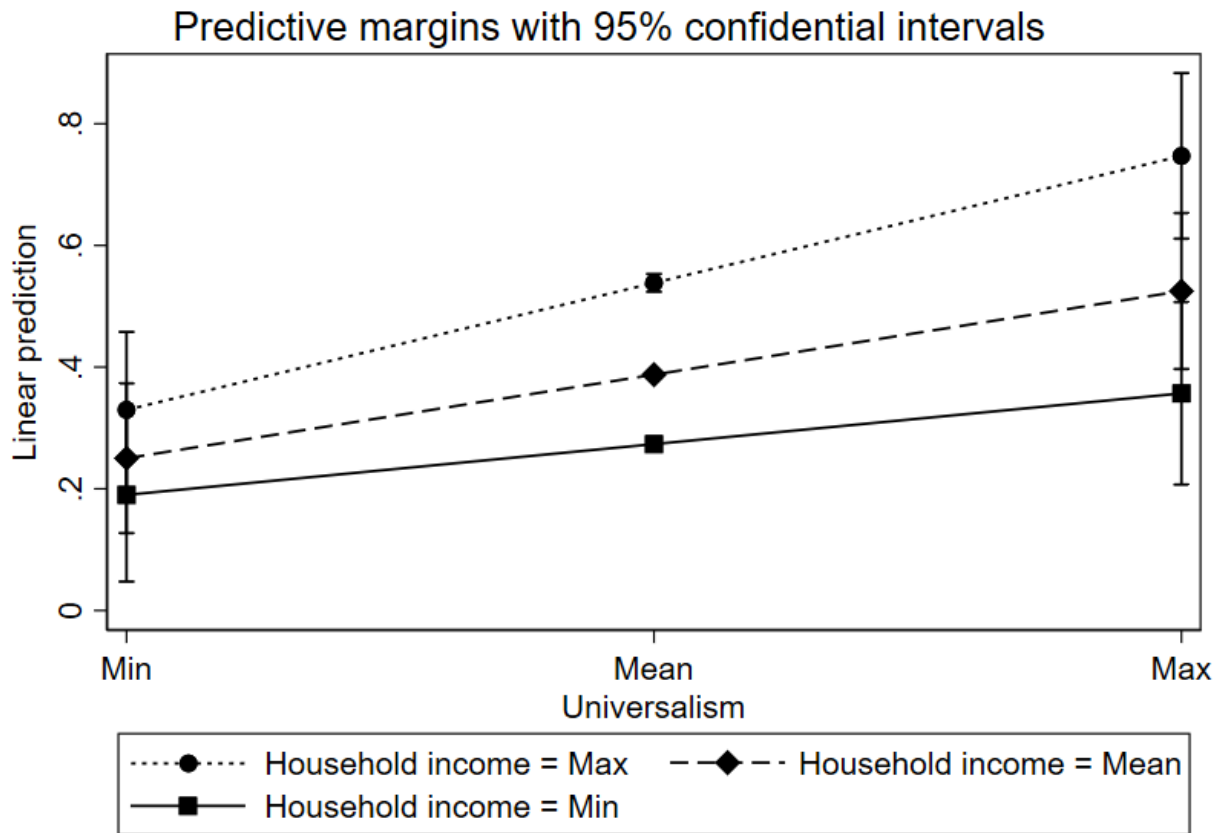


Figure 1. Linear Predictions of the Cross-Level Interaction of Universalism and Household Income on Social Trust

APPENDIX**Table A1. List of All Country-Years Contained in This Analysis**

| Country | Year | N | Country | Year | N |
|-----------|------|------|---------|------|------|
| Australia | 1995 | 1705 | Finland | 1996 | 886 |
| | 2005 | 1238 | | 2000 | 794 |
| | 2012 | 1001 | | 2005 | 894 |
| | 2018 | 1610 | | 2009 | 955 |
| | | 2017 | | 1043 | |
| Austria | 1999 | 1129 | France | 1999 | 1211 |
| | 2008 | 1198 | | 2006 | 870 |
| | 2018 | 1355 | | 2008 | 1338 |
| Belgium | 1999 | 1368 | 2018 | 1686 | |
| | 2009 | 1345 | Germany | 1997 | 1569 |
| Canada | 2000 | 1684 | | 1999 | 1459 |
| | 2006 | 1726 | | 2006 | 990 |
| | 2020 | 3997 | | 2008 | 1681 |
| Chile | 1996 | 907 | | 2013 | 1888 |
| | 2000 | 1088 | 2017 | 1801 | |
| | 2006 | 879 | 2018 | 1419 | |
| | 2012 | 844 | Greece | 1999 | 796 |
| | 2018 | 862 | | 2008 | 1223 |
| | | 2017 | | 1113 | |
| Colombia | 1998 | 2976 | Hungary | 1999 | 921 |
| | 2012 | 1415 | | 2008 | 1256 |
| | 2018 | 1498 | | 2009 | 944 |
| Czechia | 1998 | 875 | 2018 | 1163 | |
| | 1999 | 1649 | Iceland | 1999 | 842 |
| | 2008 | 1298 | | 2009 | 657 |
| | 2017 | 1299 | | 2017 | 1443 |
| | 2022 | 1171 | Ireland | 1999 | 803 |
| Denmark | 1999 | 820 | | 2008 | 534 |
| | 2008 | 1075 | Italy | 1999 | 1386 |
| | 2017 | 3075 | | 2005 | 611 |
| Estonia | 1996 | 966 | | 2009 | 879 |
| | 1999 | 819 | | 2018 | 1577 |
| | 2008 | 1302 | | | |
| | 2011 | 1463 | | | |
| 2018 | 1136 | | | | |

Table A1. (continued)

| Country | Year | N |
|-------------|------|------|
| Japan | 2000 | 1009 |
| | 2005 | 873 |
| | 2010 | 1708 |
| | 2019 | 1112 |
| Luxembourg | 1999 | 546 |
| | 2008 | 1145 |
| Mexico | 1996 | 1122 |
| | 2000 | 1091 |
| | 2005 | 1335 |
| | 2012 | 1851 |
| | 2018 | 1612 |
| Netherlands | 1999 | 920 |
| | 2006 | 664 |
| | 2008 | 1266 |
| | 2012 | 1568 |
| | 2017 | 1965 |
| | 2022 | 1487 |
| Norway | 1996 | 1032 |
| | 2007 | 927 |
| | 2008 | 981 |
| | 2018 | 1049 |
| Poland | 1999 | 1030 |
| | 2005 | 887 |
| | 2008 | 1054 |
| | 2012 | 890 |
| | 2017 | 1047 |
| Slovakia | 1998 | 854 |
| | 1999 | 1193 |
| | 2008 | 1070 |
| | 2017 | 944 |
| | 2022 | 1147 |
| Slovenia | 1999 | 619 |
| | 2005 | 917 |
| | 2008 | 797 |
| | 2011 | 972 |
| | 2017 | 910 |

| Country | Year | N |
|----------------|------|---------------|
| South Korea | 1996 | 1167 |
| | 2001 | 1186 |
| | 2005 | 1165 |
| | 2010 | 1142 |
| | 2018 | 1245 |
| Spain | 1995 | 833 |
| | 1999 | 756 |
| | 2000 | 781 |
| | 2007 | 1047 |
| | 2008 | 913 |
| | 2011 | 1003 |
| Sweden | 2017 | 873 |
| | 1996 | 888 |
| | 1999 | 1855 |
| | 2006 | 904 |
| | 2009 | 854 |
| | 2011 | 1080 |
| Switzerland | 2017 | 1079 |
| | 1996 | 860 |
| | 2007 | 1029 |
| | 2008 | 944 |
| | 2017 | 2795 |
| United Kingdom | 1999 | 577 |
| | 2005 | 756 |
| | 2009 | 997 |
| | 2018 | 1525 |
| United States | 1995 | 1293 |
| | 1999 | 1111 |
| | 2011 | 2124 |
| | 2017 | 2485 |
| Total | | 158266 |

Table A2. Results of Two-Way Fixed-Effects Regressions on Social Trust Including All Variables in Table 2

| | MODEL 1 | MODEL 2 | MODEL 3 | MODEL 4 | MODEL 5 |
|--|---------------------|---------------------|---------------------|---------------------|---------------------|
| Intercept | .346 *** (.024) | 1.731 (4.263) | 5.149 (4.120) | 3.275 (4.054) | 5.604 (4.221) |
| Individual characteristics | | | | | |
| Gender (1=female) | -.000 (.004) | -.000 (.004) | -.000 (.004) | -.000 (.004) | -.000 (.004) |
| Age | .001 ** (.000) | .001 ** (.000) | .001 ** (.000) | .001 ** (.000) | .001 ** (.000) |
| Age squared | .000 (.000) | .000 (.000) | .000 (.000) | .000 (.000) | .000 (.000) |
| Education (Primary degree or less as ref.) | | | | | |
| Secondary education | .079 *** (.010) | .079 *** (.010) | .080 *** (.010) | .079 *** (.010) | .079 *** (.010) |
| Tertiary education | .181 *** (.015) | .182 *** (.016) | .182 *** (.015) | .182 *** (.015) | .182 *** (.015) |
| Employment status (Employed as ref.) | | | | | |
| Unemployed | -.050 *** (.009) | -.048 *** (.009) | -.048 *** (.010) | -.048 *** (.009) | -.048 *** (.010) |
| Retired | -.028 *** (.007) | -.027 *** (.007) | -.027 *** (.007) | -.026 ** (.007) | -.027 *** (.007) |
| Other | -.002 (.005) | -.002 (.005) | -.003 (.005) | -.002 (.005) | -.002 (.005) |
| Household income | .040 *** (.004) | .040 *** (.004) | .039 *** (.004) | .040 *** (.004) | .040 *** (.004) |
| Married | .002 | .002 | .002 | .002 | .002 |

| | | | | | |
|-------------------------|----------|----------|----------|----------|----------|
| | (.004) | (.004) | (.004) | (.004) | (.004) |
| Number of Children | -.001 | -.001 | -.001 | -.001 | -.001 |
| | (.002) | (.002) | (.002) | (.002) | (.002) |
| Religious attendance | .034 *** | .034 *** | .034 *** | .034 *** | .034 *** |
| | (.007) | (.007) | (.007) | (.007) | (.007) |
| Country characteristics | | | | | |
| Transfer share | | .004 | | | -.002 |
| | | (.003) | | | (.003) |
| Low-income targeting | | | -.628 ** | | -.467 * |
| | | | (.187) | | (.181) |
| Universalism | | | | .273 * | .247 |
| | | | | (.123) | (.150) |
| GDP per capita | | .004 | -.012 | -.046 | -.049 |
| | | (.113) | (.097) | (.117) | (.098) |
| Gini coefficient | | .007 | .004 | .011 | .009 |
| | | (.007) | (.007) | (.007) | (.007) |
| Unemployment rate | | -.004 | -.000 | -.004 | -.002 |
| | | (.003) | (.003) | (.003) | (.003) |
| Population size | | -.069 | -.235 | -.146 | -.261 |
| | | (.219) | (.202) | (.198) | (.203) |
| Urban population | | -.007 | -.007 | -.006 | -.006 |
| | | (.004) | (.004) | (.003) | (.004) |
| Country fixed effects | Yes | Yes | Yes | Yes | Yes |
| Year fixed effects | Yes | Yes | Yes | Yes | Yes |
| R-squared | .164 | .164 | .165 | .165 | .165 |

| | | | | | |
|---------------------------|---------|---------|---------|---------|---------|
| N_{country} | 31 | 31 | 31 | 31 | 31 |
| N_{year} | 21 | 21 | 21 | 21 | 21 |
| $N_{\text{country-year}}$ | 131 | 131 | 131 | 131 | 131 |
| $N_{\text{individual}}$ | 158,266 | 158,266 | 158,266 | 158,266 | 158,266 |

NOTE: Cluster-robust standard errors in parentheses.

* $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed test)

Table A3. Results of Two-Way Fixed-Effects Regressions on Social Trust Including All Variables in Table 3

| | MODEL 6 | MODEL 7 | MODEL 8 | MODEL 9 | MODEL 10 | MODEL 11 |
|--|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Intercept | 1.704 (4.250) | 5.127 (4.107) | 3.261 (4.041) | 5.579 (4.208) | 5.580 (4.208) | 5.580 (4.208) |
| Individual characteristics | | | | | | |
| Gender (1=female) | .000 (.004) | .000 (.004) | .000 (.000) | .000 (.004) | .000 (.004) | .000 (.004) |
| Age | .001 ** (.000) | .001 ** (.000) | .001 ** (.000) | .001 ** (.000) | .001 ** (.000) | .001 ** (.000) |
| Age squared | .000 (.000) | .000 (.000) | .000 (.000) | .000 (.000) | .000 (.000) | .000 (.000) |
| Education (Primary degree or less as ref.) | | | | | | |
| Secondary education | .081 *** (.010) | .081 *** (.010) | .080 *** (.009) | .081 *** (.010) | .081 *** (.010) | .081 *** (.010) |
| Tertiary education | .184 *** (.014) | .183 *** (.015) | .183 *** (.015) | .183 *** (.015) | .183 *** (.015) | .183 *** (.015) |
| Employment status (Employed as ref.) | | | | | | |
| Unemployed | -.046 *** (.009) | -.047 *** (.009) | -.046 *** (.009) | -.046 *** (.009) | -.047 *** (.009) | -.046 *** (.009) |
| Retired | -.024 ** (.006) | -.024 *** (.006) | -.023 ** (.006) | -.024 ** (.006) | -.024 *** (.006) | -.024 *** (.006) |
| Other | -.001 (.005) | -.001 (.005) | -.000 (.005) | -.001 (.005) | -.001 (.005) | -.001 (.005) |
| Household income (HI) | .045 ** | .064 ** | .034 * | .046 ** | .064 ** | .034 * |

| | | | | | | |
|-------------------------|----------|----------|----------|----------|----------|----------|
| | (.013) | (.019) | (.012) | (.013) | (.019) | (.013) |
| Married | -.003 | -.002 | -.003 | -.003 | -.003 | -.003 |
| | (.004) | (.004) | (.004) | (.004) | (.004) | (.004) |
| Number of Children | -.001 | -.001 | -.001 | -.001 | -.001 | -.001 |
| | (.002) | (.002) | (.001) | (.001) | (.001) | (.001) |
| Religious attendance | .033 *** | .033 *** | .033 *** | .033 *** | .033 *** | .033 *** |
| | (.007) | (.007) | (.007) | (.007) | (.007) | (.007) |
| Country characteristics | | | | | | |
| Transfer share | .004 | | | -.002 | -.002 | -.002 |
| | (.003) | | | (.003) | (.003) | (.003) |
| Low-income targeting | | -.628 ** | | -.466 * | -.466 * | -.466 * |
| | | (.187) | | (.182) | (.182) | (.182) |
| Universalism | | | .275 * | .249 | .249 | .249 |
| | | | (.123) | (.150) | (.150) | (.150) |
| GDP per capita | .004 | -.012 | -.046 | -.049 | -.049 | -.049 |
| | (.113) | (.097) | (.117) | (.098) | (.098) | (.098) |
| Gini coefficient | .007 | .004 | .011 | .009 | .009 | .009 |
| | (.007) | (.007) | (.007) | (.007) | (.007) | (.007) |
| Unemployment rate | -.004 | -.000 | -.004 | -.002 | -.002 | -.002 |
| | (.003) | (.003) | (.003) | (.003) | (.003) | (.003) |
| Population size | -.067 | -.234 | -.145 | -.259 | -.259 | -.259 |
| | (.218) | (.201) | (.198) | (.202) | (.202) | (.202) |
| Urban population | -.007 | -.007 | -.006 | -.006 | -.006 | -.006 |
| | (.004) | (.004) | (.003) | (.004) | (.004) | (.004) |
| Cross-level interaction | | | | | | |

| | | | | | | |
|----------------------------------|----------------|---------|---------|----------------|---------|---------|
| Transfer share x HI | .000 (.000) | | | .000 (.000) | | |
| Low-income targeting x HI | | | | | | |
| | | | | | | |
| Universalism x HI | | | | | | |
| | | | | | | |
| Country fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Year fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Interactions of Countries and HI | Yes | Yes | Yes | Yes | Yes | Yes |
| R-squared | .167 | .168 | .168 | .168 | .168 | .168 |
| N_{country} | 31 | 31 | 31 | 31 | 31 | 31 |
| N_{year} | 21 | 21 | 21 | 21 | 21 | 21 |
| $N_{\text{country-year}}$ | 131 | 131 | 131 | 131 | 131 | 131 |
| $N_{\text{individual}}$ | 158,266 | 158,266 | 158,266 | 158,266 | 158,266 | 158,266 |

NOTE: Cluster-robust standard errors in parentheses.

* $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed test)

Table A4. Results of Two-Way Fixed-Effects Regressions on Social Trust Adding Interaction Terms of Country Dummies and Variables Related to Welfare Transfers to Table 3

| | Model 12 | Model 13 | Model 14 | Model 15 | Model 16 | Model 17 |
|---|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Intercept | 14.403* | 12.934* | 13.411 | 13.980* | 13.094* | 15.171* |
| | (6.518) | (5.894) | (7.110) | (6.545) | (5.688) | (6.675) |
| Individual characteristics | | | | | | |
| Household income (HI) | .045** | .064** | .034* | .045** | .064** | .034* |
| | (.013) | (.019) | (.013) | (.013) | (.019) | (.013) |
| Country characteristics | | | | | | |
| Transfer share | -.017 | | | -.020** | .000 | .005 |
| | (.007) | | | (.007) | (.004) | (.004) |
| Low-income targeting | | -2.906* | | .165 | -3.180* | .010 |
| | | (1.143) | | (.132) | (1.421) | (.261) |
| Universalism | | | -.786 | .147 | .080 | -1.189* |
| | | | (.431) | (.108) | (.189) | (.493) |
| Cross-level interaction | | | | | | |
| Transfer share x HI | .000 | | | .000 | | |
| | (.000) | | | (.000) | | |
| Low-income targeting x HI | | -.008 | | | -.008 | |
| | | (.040) | | | (.040) | |
| Universalism x HI | | | .038* | | | .038* |
| | | | (.019) | | | (.019) |
| Individual level controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Country-year level controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Country fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Year fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Interactions of countries and HI | Yes | Yes | Yes | Yes | Yes | Yes |
| Interactions of countries and Welfare transfers | Yes | Yes | Yes | Yes | Yes | Yes |

| | | | | | | |
|---------------------------|---------|---------|---------|---------|---------|---------|
| R-squared | .171 | .171 | .171 | .171 | .171 | .171 |
| N_{country} | 31 | 31 | 31 | 31 | 31 | 31 |
| N_{year} | 21 | 21 | 21 | 21 | 21 | 21 |
| $N_{\text{country-year}}$ | 131 | 131 | 131 | 131 | 131 | 131 |
| $N_{\text{individual}}$ | 158,266 | 158,266 | 158,266 | 158,266 | 158,266 | 158,266 |

Note: Cluster-robust standard errors in parentheses.

* $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests)

Table A5. Results of Logistic Regressions on Social Trust with Dummies for Countries and Years and All Variables in Table 2

| | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
|-----------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Constant | -.737*** (.108) | 15.732 (24.709) | 32.691 (23.575) | 22.674 (23.534) | 35.908 (24.553) |
| Individual characteristics | | | | | |
| Household income | .199*** (.017) | .199*** (.016) | .199*** (.016) | .199*** (.016) | .199*** (.016) |
| Country characteristics | | | | | |
| Transfer share | | .013 (.017) | | | -.013 (.015) |
| Low-income targeting | | | -3.120** (.947) | | -2.330* (.954) |
| Universalism | | | | 1.223* (.616) | 1.254 (.745) |
| Individual level controls | Yes | Yes | Yes | Yes | Yes |
| Country-year level controls | No | Yes | Yes | Yes | Yes |
| Country fixed effects | Yes | Yes | Yes | Yes | Yes |
| Year fixed effects | Yes | Yes | Yes | Yes | Yes |
| Pseudo R-squared | .131 | .132 | .132 | .132 | .133 |
| N_{country} | 31 | 31 | 31 | 31 | 31 |
| N_{year} | 21 | 21 | 21 | 21 | 21 |
| $N_{\text{country-year}}$ | 131 | 131 | 131 | 131 | 131 |
| $N_{\text{individual}}$ | 158,266 | 158,266 | 158,266 | 158,266 | 158,266 |

Note: Cluster-robust standard errors in parentheses.

* $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests)

Table A6. Results of Logistic Regressions on Social Trust with Dummies for Countries and Years and All Variables in Table 3

| | Model 6 | Model 7 | Model 8 | Model 9 | Model 10 | Model 11 |
|----------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Constant | 15.751 (24.736) | 32.712 (23.568) | 22.833 (23.574) | 36.029 (24.600) | 36.057 (24.560) | 36.048 (24.597) |
| Individual characteristics | | | | | | |
| Household income (HI) | .163** (.060) | .265* (.125) | .109* (.053) | .155* (.061) | .264* (.127) | .110* (.054) |
| Country characteristics | | | | | | |
| Transfer share | .013 (.017) | | | -.013 (.015) | -.013 (.015) | -.013 (.015) |
| Low-income targeting | | -3.114** (.947) | | -2.327* (.952) | -2.318* (.953) | -2.323* (.951) |
| Universalism | | | 1.225* (.617) | 1.268 (.746) | 1.266 (.745) | 1.262 (.746) |
| Cross-level interaction | | | | | | |
| Transfer share x HI | .002 (.002) | | | .003 (.002) | | |
| Low-income targeting x HI | | -.063 (.262) | | | -.061 (.267) | |
| Universalism x HI | | | .183* (.079) | | | .182* (.079) |
| Individual level controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Country-year level controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Country fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Year fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Interactions of countries and HI | Yes | Yes | Yes | Yes | Yes | Yes |
| Pseudo R-squared | .133 | .134 | .134 | .134 | .134 | .134 |
| N_{country} | 31 | 31 | 31 | 31 | 31 | 31 |

| | | | | | | |
|---------------------------|---------|---------|---------|---------|---------|---------|
| N_{year} | 21 | 21 | 21 | 21 | 21 | 21 |
| $N_{\text{country-year}}$ | 131 | 131 | 131 | 131 | 131 | 131 |
| $N_{\text{individual}}$ | 158,266 | 158,266 | 158,266 | 158,266 | 158,266 | 158,266 |

Note: Cluster-robust standard errors in parentheses.

* $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests)

Table A7. Results of Logistic Regressions on Social Trust with Dummies for Countries and Years and All Variables in Table A4

| | Model 12 | Model 13 | Model 14 | Model 15 | Model 16 | Model 17 |
|---|---------------------|----------------------|--------------------|---------------------|---------------------|---------------------|
| Constant | 71.604* (33.784) | 78.118* (35.115) | 78.494 (40.392) | 68.550* (34.401) | 77.266* (33.924) | 83.068* (37.553) |
| Individual characteristics | | | | | | |
| Household income (HI) | .131* (.064) | .311** (.129) | .077 (.057) | .130* (.064) | .312* (.128) | .076 (.057) |
| Country characteristics | | | | | | |
| Transfer share | -.078* (.036) | | | -.094** (.033) | -.011 (.019) | .020 (.023) |
| Low-income targeting | | -17.151** (5.763) | | .838 (.853) | -16.866* (6.754) | -.043 (1.431) |
| Universalism | | | -4.467* (2.147) | .741 (.520) | .609 (.868) | -5.893** (2.187) |
| Cross-level interaction | | | | | | |
| Transfer share x HI | .004 (.002) | | | .004 (.002) | | |
| Low-income targeting x HI | | -.162 (.271) | | | -.164 (.271) | |
| Universalism x HI | | | .231** (.084) | | | .232** (.084) |
| Individual level controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Country-year level controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Country fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Year fixed effects | Yes | Yes | Yes | Yes | Yes | Yes |
| Interactions of countries and HI | Yes | Yes | Yes | Yes | Yes | Yes |
| Interactions of countries and Welfare transfers | Yes | Yes | Yes | Yes | Yes | Yes |
| Pseudo R-squared | .137 | .136 | .137 | .137 | .136 | .137 |

| | | | | | | |
|---------------------------|---------|---------|---------|---------|---------|---------|
| N_{country} | 31 | 31 | 31 | 31 | 31 | 31 |
| N_{year} | 21 | 21 | 21 | 21 | 21 | 21 |
| $N_{\text{country-year}}$ | 131 | 131 | 131 | 131 | 131 | 131 |
| $N_{\text{individual}}$ | 158,266 | 158,266 | 158,266 | 158,266 | 158,266 | 158,266 |

Note: Cluster-robust standard errors in parentheses.

* $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests)