# Wealth Inequality and Volunteering

# A null finding from the Netherlands

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**1. Abstract**

There are good reasons to believe that wealth inequality negatively affects engagement in volunteering. While an overall increase in wealth is typically associated with an increase in volunteering because citizens have more financial security, an increasingly unequal distribution of wealth is likely to increase social segregation and reduce generalized social trust.

Laboratory experiments have shown negative effects of induced wealth inequality on cooperative choices in a variety of social dilemmas, including charitable giving in dictator games. Moreover, a body of evidence has shown that civic engagement and trust are lower in countries with higher levels of income inequality.

Due to the lack of adequate panel data, however, most of the evidence to date on the association between inequality and charitable giving in non-experimental designs shows differences between countries, but has not shown associations over time. We address these concerns linking detailed longitudinal data from the Giving in the Netherlands Panel Study on volunteering and generalized social trust of 2,747 respondents in the Netherlands to levels of wealth and income inequality within their municipalities.

We find that changes in inequality are not associated with engagement in volunteering. The likelihood of volunteering and the number of hours volunteered do not change in municipalities where wealth inequality increases. In addition, we observe no longitudinal association between changes in income inequality and volunteering. Finally, levels of generalized social trust of individual citizens do not change when income and wealth in their municipality become more unequally distributed.

**2. Introduction[[1]](#footnote-1)**

Economic inequality has increased over the past decades – a trend visible from increasingly skewed country-wide income and wealth distributions around the globe (Atkinson et al*.*, 2011; Alverado et al.*,* 2013; Pikkety & Saez, 2014; Alverado et al*.*, 2018). The publication of these historic trends in resource distribution are frequently associated with negative consequences for society such as increased social tensions and depleted trust (La Ferrara, 2002). The topic has understandably proven to be a poignant one and discussions on its consequences have moved from academic circles into popular debate (Clifford, 2018). Civic engagement – as exercised through voluntarism – is one activity hypothesized to be influenced by changes in economic inequality (Schröder & Neumayr, 2021). In the Netherlands, progressive taxation has worked to dampen a significant increase in post-tax income inequality since the turn of the century (Caminada, Been, Goudswaard, & Graaf-Zijl, 2014). This is reflected in the Netherlands’ comparatively low Gini coefficient for income inequality and in the country’s top post-tax income shares (World Inequality Database, 2022). This picture is entirely different with respect to wealth inequality – the Netherlands’ Gini Coefficient for wealth was valued at 0.77 in 2019 (Centraal Bureau voor Statistiek, 2019). This trend holds true for other European countries with high rates of social spending as well: Sweden, Denmark and Norway all have Gini Coefficients for wealth inequality valued at or above 0.7 as of 2019 (World Inequality Database). These discrepancies between wealth and income inequality imply an uncertainty as to which aspects of economic inequality influence the behaviors and attitudes of individual actors. The vast majority of previous empirical studies have focused exclusively on the social consequences of income inequality (Schröder & Neumayr, 2021). Income represents an individual’s assets while wealth factors in liabilities as well – the extent of an individual’s debt, for instance, would not be reflected in their income (Centraal Bureau van Statistiek, 2019). Research actively centered on the consequences of wealth inequality may thus lead to worthwhile insights that could contribute to enriching political and popular debate. We present one of the first studies that investigates how wealth inequality is related to civic engagement. If wealth inequality indeed diminishes voluntarism and charitable giving, the effectiveness of non-profits that rely on contributions of time and money for the provision of their services is reduced to the detriment of vulnerable recipients. Schröder and Neumayr (2021) summarize the results of empirical research into the relationship between economic inequality and civic engagement and provide an outline of hypotheses used in a coherent literature review. The authors note a lack of consistency in both the use of a theoretical framework and the reported results (Schröder & Neumayr, 2021). The authors additionally note an absence of investigation into the mechanisms that are theorized to explain the relationship (Schröder & Neymayr, 2021). In an attempt to address this gap in the current research, we test one of the identified theoretical explanations: the Social Disintegration Hypothesis. The Social Disintegration Hypothesis argues the increase in status differentials that occurs as a result of an increase in economic inequality leads to a depletion of mutual understanding and acceptance between economic strata (Blau & Blau, 1982; Uslaner & Brown, 2005). This depletion is theorized to be reflected in a decrease of generalized social trust (Rothstein & Stolle, 2003; Uslaner & Brown, 2005; Park & Subramanian, 2012), which in turn is theorized to lead to a decrease in civic engagement (Uslaner, 2002; Uslaner & Brown, 2005; Gesthuizen & Evers, 2011). Generalized social trust is consequently proposed to be the linking mechanism between an increase in wealth inequality and a decrease in civic engagement. A large number of studies investigating the relationship between economic inequality and civic engagement are cross-sectional and analyse the variation between countries (Uslaner & Brown, 2005; Gesthuizen & Evers, 2011; Park & Subramanian, 2012; Lancee & van der Werfhorst, 2012; Karakoc, 2013; Mastromatteo & Russo, 2017; Filetti & Janmaat, 2018). In order to effectively test the relationship between the dependent and independent variable, all other factors related to both variables need to be accounted for (Schmidt-Catran, 2016). Cross-country comparisons, however, are limited in the amount of control variables that can be added to the model by their small sample sizes (Schmidt-Catran, 2016). In addition to this, relevant time-invariant factors that are difficult to measure and thus not included in the model – such as variables relating to a region’s socio-cultural history – are not accounted for, resulting in associations that may be spurious (Ba et al., 2021). We address these concerns by focusing our analysis on individuals within one country (the Netherlands), merging micro-level data from the Giving in the Netherlands Panel Study (n = 2,747) (Bekkers, Boonstoppel & de Wit, 2017) with municipal-level data on wealth and income distributions from Statistics Netherlands (Centraal Bureau voor Statistiek, 2021). We exploit the internal structure of the panel data by using Fixed Effects regression models, investigating the relationship between wealth inequality, trust, and civic engagement exercised through voluntarism over a period of thirteen years (2006-2019). Fixed Effects regression models analyse variation in variables within people – allowing us to control for factors that remain unobserved and are not included in the analysis (Allison, 2009; van Ingen & Bekkers, 2015; Ba et al., 2021). In addition to this, we improve on cross-country comparisons by operationalizing economic inequality as a variable at the municipal level. The mechanism proposed by the Social-Disintegration Hypothesis is more likely to occur within municipalities than within countries. We assume objective wealth inequality is more noticeable for individuals within their own municipality, country-wide wealth distributions are likely less noticeable. As a result of this we assume the decrease in general social trust associated with an increase in wealth inequality is more likely to occur at the municipal level than at the country level.

**3. Theory and hypotheses**

*3.1 Explanations of the relationship between inequality and volunteering*

Scholars from multiple social science disciplines have investigated the influence of economic inequality on socioeconomic outcomes (Thorbecke & Charumilind, 2002). Higher levels of economic inequality have been associated with higher crime rates (Blau & Blau, 1982; Kang, 2016), negative health outcomes like higher rates of infant mortality and lower life expectancy (Pickett & Wilkinson, 2015), and reduced levels of political interest, discussion, and participation (Solt, 2008). Economic inequality has also been hypothesized to influence levels of volunteering. Explanations of the hypothesized relationship and the mechanisms through which it operates, however, differ considerably. We distinguish two types of explanations: psychological and neo-materialist explanations.

Psychological explanations focus on the effects of economic inequality on the mental state of individuals. The *social disintegration hypothesis* anticipates the increase in the heterogeneity of income or wealth levels leads to an erosion of ties between different economic strata (Schröder & Neumayr, 2021). The increased distance between income or wealth groups in turn leads to a decrease in general social trust, reducing individuals’ inclination to contribute to their community through cooperative acts like voluntarism (Uslaner & Brown, 2005; Alesina & La Ferrara, 2000). The *relative power hypothesis* assumes an increased distance between income or wealth groups at opposite ends of the resource distribution is also reflected in the distribution of power (Schröder & Neumayr, 2021). Individuals at the top end of the economic resource distribution have more power relative to individuals at the bottom end of the resource distribution in a context with more economic inequality (Schattschneider, 1960; Karakoc, 2013; Filetti & Janmaat, 2018). This disparity is theorized to influence individuals at the bottom end of the resource distribution by instilling a sense of perceived powerlessness, causing them to withdraw from civic life and withhold from participating in activities like voluntarism (Solt, 2008; Karakoc, 2013).

Neo-materialist explanations focus on the effects of resource distribution on opportunities and material resources for civic engagement depending (Solt, 2008; Karakoc, 2013). Areas with more economic inequality are assumed to have a greater disparity in the allocation of material resources between citizens (Lynch et al., 2000) – resulting in lower levels of participation for groups at the lower end of the income or wealth distribution (Solt, 2008; Lancee & van der Werfhorst, 2012). This hypothesis is primarily applied to political engagement (Solt, 2008; Karakoc, 2013; Filetti & Janmaat, 2018), a form of engagement that cannot necessarily be equated directly with civic engagement (Uslaner & Brown, 2005). Nevertheless, it has been used by some authors to explain the variance in charitable giving and volunteering, often as a supplementary explanation to the influence of perceived powerlessness (Lancee & van der Werfhorst, 2012; Veal & Nichols, 2017).

Empirical studies have focused almost exclusively on income inequality as a measure of economic inequality. Few studies have investigated wealth inequality. Studies based on survey data routinely use cross-country comparisons to test their hypotheses (Schröder & Neumayr, 2021). Few studies track changes over time. In addition, even fewer studies directly test the mechanism through which economic inequality may influence levels of civic engagement. Country comparisons using data from one point in time generally find a negative relationship between income inequality and civic engagement through either charitable giving (Gesthuizen et al., 2008; Gesthuizen et al., 2009; Evers & Gesthuizen, 2011; Mastromatteo & Russo, 2017) or voluntarism (van Oorschot & Arts, 2005; Karakoc, 2013; Veal & Nichols, 2017). These studies do not demonstrate how civic engagement changes over time in response to changes in inequality. Though most explanations predict a negative relationship, results from studies conducted on smaller geographic units of analysis such as municipalities, metropolitan areas, and neighborhoods are mixed. Two studies do report negative coefficients (Rothwell, 2012; Rotolo & Wilson, 2014). On the other hand, three report positive coefficients (Oliver, 1999; Clark & Kim, 2012; Godfrey & Cherng, 2016), and four report coefficients that are not statistically different from zero (Smith, 2012; Clark & Kim, 2012; Collins & Guidry, 2018; Fladmoe & Steen-Johnsen, 2018). Though empirical results are mixed and though there is virtually no evidence on the relationship between wealth inequality and volunteering, the logic of the psychological and neo-materialistic explanations remains strong. Therefore, we formulate the following hypothesis:

H1: As wealth inequality increases, volunteering will decrease.

*3.2 Explanations of the relationship between wealth inequality and trust*

A core concept in the relationship between economic inequality and volunteering according to psychological theories is generalized social trust - an increase in economic inequality is theorized to lead to a decrease in generalized social trust (Schröder & Neumayr, 2021). Generalized social trust is the belief that most people can be trusted, including people one does not know well (Uslaner, 2002). Whereas trust between individuals that are familiar with one another may take on strategic characteristics geared towards the realization of mutually beneficial outcomes, generalized social trust does not take on a strategic character (Bjornskov, 2008). Individuals with a high level of generalized social trust tend to trust unfamiliar others despite a lack of information – they believe trusting others is important, regardless of reciprocity (Reeskens, 2013).

It has been argued that an increase in economic inequality erodes generalized social trust by shrinking an individual’s radius of trust (Bjornskov, 2008): the number of people to whom an individual’s cooperative norms apply (Fukuyama, 2001). A narrow radius of trust limited to familiar others reflects low levels of generalized social trust, while a large radius of trust reflects high levels of generalized social trust. The argument is that an increase in wealth inequality increases the social distance between citizens at the higher end of the wealth distribution and those at the lower end of the wealth distribution. The increased distance is argued to make it more difficult for groups at opposite ends of the wealth distribution to relate to economic out-groups’ experiences (Uslaner & Brown, 2005). The inability to understand economic out-groups in turn is argued to increase suspicion of each other’s motives, ultimately reflected through an exclusion of these out-groups from an individual’s trust radius (Bjornskov, 2008). Increased social distance may also enhance tensions between economic strata and class conflict (Hastings, 2018). As wealth inequality increases, the wealthy have more to lose and the less wealthy have more to gain – increasingly pitting the interests of both groups against one another and deteriorating generalized social trust. Increased social distance can increase resentment among those at the bottom end of the wealth distribution, decreasing levels of generalized social trust (Fairbrother & Martin, 2013). Those at the top end of the wealth distribution reciprocate with distrust as they become wary of the resentment among those at the bottom end of the distribution (Fairbrother & Martin, 2013).

Empirical studies on the effects of wealth inequality on generalized social trust are rare. In the only study we could find, Dai et al. (2020) report that increases in housing asset inequality in China are associated with lower generalized social trust. Using behavioral measures of trust in economic games, several experiments show that participants are less trusting when their endowments are more unequally distributed. Bejerano, Gillet & Rodriguez-Lara (2018) and D’Amato, O’Higgins & Stimolo (2022) find that participants endowed with different initial levels of wealth are less trusting in a trust game than participants with equal initial wealth. Cardenas (2003) finds that Colombian villagers are less cooperative in repeated common pool resource dilemmas when they are made aware of pre-existing wealth inequality through face-to-face communication between rounds. Markussen et al. (2021) find that Vietnamese villagers are investing less in a public goods game when endowed with different levels of wealth, especially in areas characterized by higher corruption. Based on the theoretical arguments we formulate our second hypothesis:

H2: As wealth inequality increases, generalized social trust will decrease.

*3.3 Explanations of the relationship between trust and volunteering*

Generalized social trust is often theorized to relate positively to an individual’s voluntary activity – people with higher levels of generalized social trust are expected to be more likely to volunteer and volunteer more (Uslaner, 2000; Uslaner, 2002a; Uslaner & Brown, 2005; Taniguchi, 2013; Taniguchi & Marshall, 2014).

Scholars provide various arguments to explain this positive relationship. A first explanation argues people with higher degrees of generalized social trust have a more optimistic view of humanity and of the world in general (Uslaner, 1998; Yang, 2022; Liu et al., 2021). People with an optimistic worldview are less likely to see bad experiences with strangers as indicative of whether or not people in general can be trusted, leading to higher scores on questions measuring generalized social trust (Uslaner, 1998). The optimism inherent to generalized social trust may be reflected in a tendency to believe that a person’s individual contribution of time will effectively help the recipients of their contribution (Yang, 2022; Taniguchi & Marshall, 2014; Uslaner, 2002). For the average person, choosing to engage in voluntarism is likely to involve some uncertainty about how effective a voluntary organization is at allocating the human resources they have at their disposal. An additional uncertainty is reflected in prospective volunteers’ knowledge of how effective their co-volunteers are at carrying out their tasks and collaborating with others. All other variables remaining equal, individuals with different levels of generalized social trust may respond differently to this uncertainty. If voluntarism is seen as an activity where individuals cooperate with others belonging to an “out-group” to contribute to the collective good, people with higher levels of generalized social trust may be more likely to participate in voluntary activity than those with less faith in unfamiliar others (Uslaner, 2000). People with more generalized social trust may be more likely to have faith in the good intentions of their co-volunteers and the employees involved in the management of the voluntary association (Sonderskov, 2008b; Taniguchi, 2013). They may be less likely to assume their co-volunteers will take advantage of their voluntary efforts (Sonderskov, 2011; Taniguchi, 2013) by, for example, scaling back their personal contribution based on others’ contributions. This expectation of effective collaboration and management may lead people with higher degrees of generalized social trust to anticipate their voluntary contribution will effectively help the recipient while incurring less costs (Sonderskov, 2011; Yamagishi & Yamagishi, 1994). As individuals are likely more inclined to volunteer when they believe their contribution will be effective (Bekkers, 2010), individuals with more generalized social trust may be more likely to volunteer and may volunteer more hours than their less-trusting counterparts.

A second explanation argues individuals with more generalized social trust are more likely to volunteer because they are more likely to be asked (Taniguchi & Marshall, 2014; Hommerich, 2015; Yang, 2022). As more generalized social trust translates to a larger radius of trust (Fukuyama, 2001), trusting people are willingly exposed to a larger group of people. People that are regularly in contact with a large and diverse group of their peers may be more likely to have someone in their social environment that will ask them to volunteer, exposing them to more opportunities wherein they are able to engage in volunteering (Sonderskov, 2011; Bekkers, 2012; Taniguchi & Marshall, 2014; Hommerich, 2015).

Empirical evidence on the relationship between generalized social trust and volunteering is relatively sparse. In Japan, Taniguchi found a significant and positive relationship between generalized social trust and irregular volunteering (Taniguchi, 2013), but did not find a statistically significant relationship between generalized social trust and regular volunteering (Taniguchi, 2013; Taniguchi & Marshall, 2014). Studies focused on the Netherlands have generally found a significant positive relationship between trust and volunteering (Bekkers & Schuyt, 2008; Bekkers, 2012; van Ingen & Bekkers, 2015?), indicating more people that are more trusting are more likely to volunteer. Despite a lack of empirical evidence, the theoretical logic still holds. Hence, our third hypothesis reads:

H3: A decrease in general social trust will lead to a decrease in an individual’s propensity to volunteer and the number of hours they spend volunteering.

**4. Data**

In this study, we focus on data from the Netherlands and combine two data sources. Micro-level data were obtained from the Giving in the Netherlands Panel Survey (GINPS) – a panel survey focused on assessing the giving behavior of respondents in the Netherlands (Bekkers R. , Schuyt, Gouwenberg, de Wit, & van Teunenbroek, 2021). Municipal-level data were drawn from a data source containing information on wealth and income per household quintile, region, and year provided by the Dutch Central Bureau for Statistics’ (CBS) open data platform (Centraal Bureau voor Statistiek, 2021; Centraal Bureau voor Statistiek, 2022).

The CBS dataset detailed household characteristics across Dutch municipalities, spanning a period from 2006 to 2019. Context-level data obtained for the years that respondents in the GINPS reported about. As a result of this the analysis was limited to data from the 2006, 2008, 2010, 2012, 2014, 2016, and 2019 waves. The CBS municipal level data provide measures of the wealth and income distribution and the demographic composition of the population of Dutch municipalities through the covered years. In addition to context-level data on wealth and income distribution, data on context-level control variables such as the average municipal home value and municipal educational attainment (Centraal Bureau voor Statistiek, 2022).

*4.1 Dependent Variables*

The incidence of volunteering was measured through 20 sectors – respondents were asked whether they volunteered in a sector in the past 12 months. Answers were accumulated into a dichotomized variable *Volunteering or Not* – with 0 representing respondents who did not volunteer at all in the relevant year and 1 representing respondents who volunteered in one or more of the sectors provided.

The hours spent volunteeringwere measured through the statement *Hours spent volunteering per month*, after which respondents were able to fill in their respective hours spent volunteering. The variable was recoded so as to include respondents who did not volunteer in the past year, given the value 0 in the new variable. A small number of respondents reported an unrealistically high number of hours spent volunteering. To prevent these values from influencing the analysis, the variable was winsorized at the 99th percentile. A variable measuring the propensity to volunteer was included in the analysis by recoding this variable into a dichotomous variable. Individuals who spent no hours volunteering were assigned the value 0.

### *4.2 Independent Variables*

#### Context-level: Wealth inequality

Measurements of wealth distribution at the municipal level refer to “the sum of all assets and debts” – with assets being defined as “financial assets, real-estate, and business assets” (Centraal Bureau voor Statistiek, 2022). The dataset contained information on the presence of households within each municipality relative to the national wealth distribution. For each quintile of national wealth, the proportion of households in a municipality within that quintile was used to measure wealth inequality. A municipality with a distribution of wealth similar to the national wealth distribution would see each quintile populated by 20% of households. Deviations from 20% indicate a skewed distribution. Figure 1 shows the distribution of households in three extreme municipalities. For the city of Roosendaal, a municipality where wealth is distributed in a way that closely resembles the distribution of wealth in the entire country of the Netherlands, there are approximately 20% of households in each quintile. The sum of all absolute deviations from 20% (1, 1, 3, 1, 3) is the resulting inequality score of 9. In the municipality with a low average level of wealth, the city of Rotterdam, 36% of households are in the bottom quintile of the national wealth distribution. 10% is in the top quintile. The total inequality score is 42. In the municipality with the highest level of wealth, a small town called Rozendaal, only 6% of households are in the bottom quintile, and 57% are in the top wealth quintile – generating a comparatively high inequality score of 76.

Figure 1. Wealth inequality for three example municipalities

The wealth inequality score represents a relative measure indicating how much more wealth inequality there is among households in a municipality than in the country as a whole. Thus the value of 0 does not represent perfect equality, as in a Gini-coefficient. Nevertheless, an increase in the wealth deviation score from one year to the next does represent an increase in wealth inequality within a municipality relative to total wealth inequality in the country.

#### Individual-level: Generalized social trust

Generalized social trust was measured via respondent’s answers to two statements: a positive statement “in general, most people can be trusted” and a negative statement “you can’t be too careful in your dealings with people”. Both items were developed by Rosenberg to quantify an individual’s misanthropy (Bekkers et al., 2022; Rosenberg, 1956). Respondents were asked to indicate their agreement with the statements via a five-point Likert-scale ranging from 1 (totally disagree) to 5 (totally agree) (Bekkers et al., 2022). We generated a variable based on the summative scores of the two items. The scale’s Cronbach’s alpha was .653.

*4.3 Control Variables*

A number of individual- and context-level control variables that could have an influence on the relationship between the dependent and independent variables were included in the multivariate analyses. At the individual-level, demographic characteristics like gender, religion, age, and education - known from previous research to be correlated with volunteering – were included to ensure any found relationships between the independent and dependent variables were not spurious (Einolf & Chambré, 2011). Age was measured in years while education was represented via seven categories ranging from 1 (primary school) to 7 (Master’s degree) representing the highest education a respondent achieved. In addition to a dichotomous “religious” variable, we include church attendance as a control variable to serve as an additional measure of an individual’s religiosity. We control for income through two variables: household income (measured as a ratio variable) and a household’s place along the income distribution, measured in five quintiles – income is expected to be negatively related to volunteering by rational choice theorists, while empirical results vary in their findings (Wilson, 2000). The measure for relative placement along the income distribution is only available after 2010, so it is not included in the analyses for 2006 and 2008. Controlling for wealth is difficult as most respondents prefer to skip questions asking for specific figures, leading to a lot of missing values. To provide some semblance of control for wealth, we included a dichotomous variable indicating whether or not the respondent and their partner receive income from wealth. An additional control is provided through a variable representing home ownership and a variable representing home value. We recoded the latter so as to include the cases that answered “no” to home ownership under the value “0”. In addition to this we control for self-rated financial security – individuals who feel more financially secure may be more inclined to altruism through voluntarism. An individual’s working hours may influence the amount of time they have to volunteer, so we control for working hours and whether or not an individual has a job through a ratio measure and a dichotomous variable. We recoded the variable representing working hours to include individuals that answered “no” to job status, and winsorized the variable at 1% (for the highest percentile) when the highest values were over 70 hours per week. Healthier individuals are more likely to volunteer and economic inequality has been linked to lower health rates, so we control for health using a variable measuring self-rated health (Pickett & Wilkinson, 2015). At the municipal level, we control for income inequality using the same measure as the one constructed for wealth inequality. Putnam argues ethnic heterogeneity in communities deplete both trust and voluntarism, so I control for this using the percentage of non-Western migrants in a community (Gesthuizen, van der Meer, & Scheepers, 2009). Smaller communities often have more active volunteers – possibly due to stronger norm enforcement – so we include community size as an additional control (Wilson, 2000). I control for communal educational attainment by including a variable that sums up the percentages of highly educated (higher vocational education or higher) in a community – a higher number denoting a higher percentage of highly educated residents. Finally, we control for communal housing prices by including a variable denoting the average municipal housing price.

**5. Results**

Table 2 displays the results for the three FE models for propensity to volunteer. Model one investigates the relationship between the variables with fixed-effects at the municipal level and for time. Wealth inequality is not significantly associated with the propensity to volunteer in this model. Trust appears significantly associated with the propensity to volunteer, indicating individuals that are more trusting are more likely to engage in voluntarism than individuals that are less trusting of unfamiliar others. Interestingly, income inequality appears to be positively associated with the propensity to volunteer – indicating individuals in municipalities with an household income distribution that is more skewed than the national income distribution are more likely to volunteer. Model two in table 2 investigates the relationship between the variables with fixed-effects at the level of individuals. An increase in the skew of municipal wealth distribution compared to the national wealth distribution is not associated with an increase in the propensity to volunteer. A change in trust is similarly not significantly associated with a change in the propensity to volunteer. As changes in both wealth distribution and trust are not associated with an increase in trust, trust cannot mediate the relationship between a municipality’s wealth distribution and an individual’s propensity to volunteer. Model three in table 2 displays the results for the FE analysis that included both individual and time fixed-effects. A change in a municipality’s wealth distribution is once again not significantly associated with changes in an individual’s likelihood to volunteer. Changes in trust are similarly not significantly associated with changes in an individual’s likelihood to volunteer. As both variables are once again not significant, it is unlikely that trust mediates the relationship between the wealth inequality and the propensity to volunteer.

Table 3 shows the results from the FE regression on the number of voluntary hours. Model one shows the results for the relationship between the two variables with fixed effects at the level of municipalities. Divergences in a municipality’s wealth distribution are not significantly associated with an higher number of voluntary hours. Trust appears to have a positive association with the number of voluntary hours – indicating individuals that are more trusting are more likely to volunteer for more hours than individuals that are not trusting. Model two shows the results of an investigation of the variables with fixed-effects at the level of individuals. Changes in a municipality’s wealth distribution as compared to the national wealth distribution are not associated with changes in the number of voluntary hours. Changes in an individual’s trust are similarly not significantly associated with changes in the number of voluntary hours – indicating once again that trust cannot mediate the relationship between municipal wealth distribution and the number of voluntary hours. Model three shows the results of an analysis with fixed-effects at the level of individuals and years. Changes in the municipal wealth distribution compared to the national wealth distribution are not significantly associated with changes in the number of voluntary hours. Changes in an individual’s trust are also not significantly associated with changes in the number of voluntary hours. As both variables are once again not significant, there can be no mediation.

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| --- | --- | --- | --- | --- |
|  |  |  |  |  |
|  |  | 1. Municipal FE | 2. Individual FE | 3. Individual and time FE |
| Constant |  | -.087 | (0.327) | 1.728\* | (0.677) | -1.776 | (1.569) |
| Wealth Inequality  |  | .004 | (.004) | -.003 | (.005) | -.004 | (.002) |
| Trust |  | .063\*\*\* | (.008) | .029 | (.017) | .022 | (.012) |
| Age  |  | -.001 | (.001) | -.018\* | (.007) | -.001 | (.001) |
| Female  |  | -.047\*\*\* | (.015) |  |  | -.047\*\* | (.015) |
| Religion  |  | .023 | (.019) | -.032 | (.045) | .023 | (.019) |
| Church attendance |  | .109 | (.009) | .049 | (.030) | .109 | (.009) |
| Household income |  | <.000 | (<.000) | <.000 | (<.000) | <.000 | (<.000) |
| Working hours |  | -.003\*\*\* | (<.000) | -.001 | (.001) | -.003\*\*\* | (<.000) |
| Income from wealth |  | -.004 | (.025) | -.012 | (.045) | -.004 | (.025) |
| Home value  |  | .008\*\*\* | (.002) | .006 | (.008) | .008\*\*\* | (.002) |
| Place along income distribution |  |  |  | -.018 | (.022) |  |  |
| Self-rated health  |  | .032\*\*\* | (.009) | .022 | (.021) | .032\*\*\* | (.009) |
| Financial security |  |  |  | -.010 | (.008) |  |  |
| Income inequality |  | .010\* | (.004) | -.004 | (.005) | .010\* | (.004) |
| Percentage nonwestern migrants |  | .033\* | (.016) | -.007 | (.012) | .033\* | (.016) |
| Average municipal education |  | .131 | (.148) | .009 | (.134) | .131 | (.148) |
| Community Size |  |  |  | .014 | (.053) |  |  |
| Average municipal housing value |  | -.001 | (.001) | -.001 | (.001) | -.001 | (.001) |
| Year  |  |  |  |  |
| 2008 |  | .009 |  |  | .09 | (.040) |
| 2010 |  | .006 |  |  | .06 | (.048) |
| 2012 |  | -.056 |  |  | -.056 | (.042) |
| 2014 |  | -.085\* |  |  | -.085\* | (.039) |
| 2016 |  | -.089\* |  |  | -.089\* | (.043) |
| 2019 |  | -.172\* |  |  | -.172\* | (.067) |
| Individual fixed effects |  | No | Yes | Yes |
| Year fixed effects |  | Yes | No | Yes |
| Municipal fixed effects |  | Yes | No | No |
| Number of observations |  | 5004 | 5004 | 5004 |  |
| Number of groups |  | 271 | 2333 | 271 |  |
| R2 (Within) |  | .098 | .017 | .098 |  |
| R2 (Between) |  | .005 | .004 | .005 |  |
| R2 (Total) |  | .012 | .003 | .012 |  |
|  |  |  |  |  |  |

Figure 2. Fixed effects analysis on the propensity to volunteer

Notes: Sig.:. \*\*\* *p* < 0.001; \*\* *p* < 0.01; \* *p* <0.05

Figure 3. Fixed effects analysis on the number of voluntary hours

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
|  |  | 1. Municipal FE | 2. Individual FE | 3. Individual and time FE |
| Constant |  | -.206 | (13.042) | 84.577\*\* | (28.953) | 20.708 | (64.810) |
| Wealth Inequality  |  | -.222 | (.153) | -.003 | (.191) | -.153 | (.096) |
| Trust |  | 1.105\*\* | (.329) | .029 | (.724) | .221 | (.478) |
| Age  |  | .079\*\* | (.023) | -1.016\*\* | (.319) | -.158 | (1.399) |
| Female  |  | -2.623\*\*\* | (.617) |  |  |  | (1.197) |
| Religion  |  | -.959 | (.752) | .235 | (1.975) | -.917 | (.679) |
| Church attendance |  | 3.160\*\*\* | (.341) | 1.147 | (1.312) | 3.160\*\*\* | (.341) |
| Household income |  | <.000 | (<.000) | <.000 | (<.000) | <.000 | (<.000) |
| Working hours |  | -.137\*\*\* | (.021) | -.196 | (.061) | -.146\*\*\* | (.038) |
| Income from wealth |  | -.404 | (1.002) | 1.610 | (1.916) | 2.904\* | (1.313) |
| Home value  |  | .090 | .085 | .039 | (.347) | .106 | .207 |
| Place along income distribution |  |  |  | -.566 | (.930) |  |  |
| Self-rated health  |  |  |  | .038 | (.892) | .522 | (.533) |
| Financial security |  |  |  | .451 | (.351) |  |  |
| Income inequality |  | .280 | (.165) | .048 | (.201) | -.007 | (.134) |
|  |  |  |  |  | (.533) |  |  |
| Percentage nonwestern migrants |  | .658 | (.656) | -.303 | (.484) | .146 | (.210) |
| Average municipal education |  | -2.851 | (5.813) | -5.225 | (5.566) | -2.523 | (3.678) |
| Community Size |  |  |  | 1.603 | (2.180) |  |  |
| Average municipal housing value |  | .010 | (.039) | -.076 | (.051) | -.015 | (.031) |
| Year  |  |  |  |  |
| 2008 |  | .859 (1.617) |  |  | 3.188 | (3.061) |
| 2010 |  | 2.501 (1.920) |  |  | 4.852 | (5.820) |
| 2012 |  | .491 (1.679) |  |  | 4.439 | (8.532) |
| 2014 |  | -1.661 (1.549) |  |  | 3.211 | (11.388) |
| 2016 |  | -2.354 (1.688) |  |  | 1.499 | (14.267) |
| 2019 |  | -4.005 (2.692) |  |  | 1.118 | (18.469) |
| Individual fixed effects |  | No | Yes | Yes |
| Year fixed effects |  | Yes | No | Yes |
| Municipal fixed effects |  | Yes | No | No |
| Number of observations |  | 4612 | 2565 | 4611 |  |
| Number of groups |  | 270 | 1435 | 2222 |  |
| R2 (Within) |  | .0698 | .0698 | .0698 |  |
| R2 (Between) |  | .0478 | .0478 | .0478 |  |
| R2 (Total) |  | .0417 | .0417 | .0417 |  |

Notes: Sig.:. \*\*\* *p* < 0.001; \*\* *p* < 0.01; \* *p* <0.05

**6. Conclusion and Discussion**

This study attempted to establish whether there was a relationship between wealth inequality and volunteering. In order to answer my research question. By exploiting the hierarchical structure of the panel data, we attempted to draw inferences based on changes across respondents, comparing these results with the results from the cross-sectional analyses to reduce the influence of omitted variables that could lead to incorrect conclusions. Based on the results of these analyses we found no evidence that changes in wealth inequality result in a changes in voluntarism. An interesting additional finding of the analyses is that, in the case of trust, it was not possible to establish a relationship between changes in levels of individual trust and voluntarism. We found a positive relationship between trust and voluntarism in the model with fixed-effects at the level of municipalities – indicating individuals that are more trusting are more likely to volunteer, but that individuals that experience a change in trust do not volunteer more or less than in years when they were more or less trusting. This finding is consistent with other research into the influence of trust on voluntarism.

The findings with regards to wealth inequality and voluntarism stand in contrast to the findings from cross-sectional country and state comparisons. Although these studies focused on inequality in income rather than wealth, no clear evidence was found indicating income inequality had an influence on voluntary behavior either. Even the cross-sectional analyses rarely found a significant relationship between the two variables. These discrepancies could be the result of differing units of analysis. No clear theoretical arguments exist stipulating at what geographical unit economic inequality should manifest in order to affect individuals’ voluntary behavior. Wealth inequality at the municipal level may not affect individuals in the same way that wealth or income inequality affects individuals at the country-level. Results may also diverge as a result of different measures for wealth inequality. Deviations from an even distribution of households across quintiles are not likely to capture developments in wealth inequality as accurately as a Gini-coefficient. An analysis using a measure for wealth inequality that is able to accurately reflect the wealth distribution of households may yield different results.

The differing results could also be caused by cross-sectional country comparisons not considering the unobserved heterogeneities that exist at the national level. Country comparisons – even when they are conducted across multiple time waves – often use random-effects models that assume no correlation between unobserved effects and the independent variables (Ba, Berrett, & Coupet, 2021). As a result, unobserved heterogeneities that may have an influence on the dependent variable and are correlated with variables like wealth inequality and income inequality – like national history – are omitted from the analysis when they are not operationalized. Additionally, the cross-sectional design of most country and state comparisons do not track changes in respondents throughout the years. Decreases in voluntarism arising out of increases in income or wealth inequality may be incorrectly attributed to the variable while they are actually the result of the new composition of the sample.

This study had a number of important limitations that should be noted. The first series of limitations are related to limitations in the sample composition of the GINPS data. The GINPS sample suffers from an under sample of ethnic minorities – respondents are primarily of an ethnic Dutch background. In addition to this, the first wave featured an oversample of protestants – we did not control for this oversample, instead compiling any religious affiliation into the dichotomous variable “religion”. I also did not control for respondents who could have moved municipalities in between waves – ideally these individuals should not have been included in the analysis. At the municipal level, I did not include variables denoting municipal wealth or municipal income. I also did not include variables measuring municipal religiosity. A third important limitation is the operationalization of wealth and income inequality. The variable denoted changes in the household distribution across economic quintiles – any change was assumed to denote an increase in economic inequality. The distribution across quintiles did not necessarily accurately reflect the distances between levels of wealth or income. Municipalities with the same household distribution may not necessarily have the same level of inequality. If inequality is seen as the difference between different economic groups – municipalities with higher amounts of wealth or income may have larger gaps between households at the top end of the wealth distribution and households at the bottom end of the wealth or distribution than municipalities with lower amounts of wealth. In addition to this, the influence of economic inequality on something like trust may be limited to municipalities wherein there is residents that are struggling economically are confronted by the wealth of very wealthy residents. This aspect is not reflected in the inequality score: a municipality like Rozendaal has a high inequality score, but is populated primarily by wealthy households. Rotterdam has a lower inequality score, but has a larger percentage of households in the lower quintiles of the Dutch household wealth distribution. The type of wealth inequality that characterizes Rotterdam may have more of an influence on trust than the wealth inequality that characterizes Rozendaal, despite Rozendaal having a higher inequality score. A limitation of the conducted FE analyses is that they did not incorporate temporal dependence (Ba, Berrett, & Coupet, 2021). A change in wealth inequality from one time period to the next may not be associated with variation in volunteering in that same time period. A time period of two years may not be enough for wealth inequality to have an influence on voluntarism or trust. It could also be the case that a change in wealth inequality from one year to the next is not enough to have an influence on individuals – persistent wealth inequality may instead be better suited to explaining the variation in voluntarism.

To our knowledge, this is the first study that examines the relationship between wealth inequality at the municipal level and volunteering in the Netherlands. This is also the first study that examines the relationship between wealth inequality and volunteering that makes use of a longitudinal design. Regardless of whether or not the analyses were carried out correctly, using repeated measures to examine the influence of wealth inequality on individuals is an important first step to moving beyond associations and correlations between variables and towards a clearer picture of causality. The majority of studies focusing on the relationship between economic inequality and individual-level variables employ cross-sectional designs. Many theories on economic inequality and volunteering have been taken for granted on the basis of results that could be attributed to unobserved heterogeneities or ecological fallacies. Future research into the individual-level influences of economic inequality utilizing repeated measures is an important next step in attempting to falsify leading theories on the relationship between the two variables.

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1. This paper is based on a bachelor thesis. The introduction, theory section, and data & methods section have been revised. The results, conclusion, and discussion are largely the same. The paper is a work in progress. [↑](#footnote-ref-1)