

**The effect of the welfare state on private charitable giving: A cross-country comparison of behavior in Dictator Games.**

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Bachelor Thesis

Date: 15-06-2017

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# Abstract

Governments have become increasingly interested in how philanthropy can take over part of their tasks in taking care of welfare provision, and what their role in this process could be. According to the crowding-out hypothesis, overly generous welfare states would discourage their citizens to engage in giving behavior. This paper therefore explores to what extent the government as a provider of welfare does indeed influence individual altruistic behavior of its citizens. A cross-country study of the public expenditure of governments, tax burden and individual decisions in Dictator Games was performed. The analysis provided a first insight in the micro-macro relationship between government expenditures and individual altruistic behavior, and some tentative evidence was found for the crowding-out hypothesis. However, no definite conclusions could be drawn.

# Table of contents

[Abstract 1](#_Toc485109570)

[Table of contents 2](#_Toc485109571)

[List of Tables and Figures 3](#_Toc485109572)

[1. Introduction 4](#_Toc485109573)

[2. Literature review 7](#_Toc485109574)

[2.1 Pure and impure altruism 7](#_Toc485109575)

[2.2 Dictator Games 8](#_Toc485109576)

[2.3 Welfare states 10](#_Toc485109577)

[3. Methodology 11](#_Toc485109578)

[3.1 Data 11](#_Toc485109579)

[3.2 Procedure 13](#_Toc485109580)

[4. Results 15](#_Toc485109581)

[5. Discussion and conclusion 19](#_Toc485109582)

[References 22](#_Toc485109583)

[Appendix A: Dictator games used for analysis 25](#_Toc485109584)

[Appendix B: Data set 27](#_Toc485109585)

# 

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# List of Tables and Figures

Table 1: Types of Dictator Games 9

Table 2: Effect(s) of different variables on the outcome of a Dictator Game 9

Table 3: Data Summary 13

Table 4: Regression Coefficients 14

Graph 1: Welfare state behavior and average donations

of individuals in a dictator game 15  
Graph 2: Welfare state behavior and the number of times people donate non-zero

amounts in a dictator game 16

# 1. Introduction

Since the Great Recession governments of many developed societies have looked at the role of charitable organizations to take over part of their tasks in taking care of socially vulnerable groups (Pennerstorfer & Neumayr, 2016). This increasingly larger interest in the role of philanthropy in financing public goods raises the question whether and how the voluntary sector can succeed in replacing parts of the state. To answer this question, we need to know what motivates and discourages charitable behavior and which, if any, differences exist between countries. Therefore, this paper will study whether the degree of government involvement in the welfare state influences private altruistic behavior of its citizens.

There are many variables that may influence philanthropic behavior within and across countries. The study of this behavior has been rather extensive, as the question of philanthropy has been a common one in economics: why do self-interested individuals engage in selfless behavior? By looking at charitable giving, several explanations have been found. These explanations can be divided in micro (individual) and macro (contextual) level explanations.

Most research on philanthropic behavior concerns the individual level, both by looking at differences in giving behavior caused personal characteristics (for example socio-economic status, age, gender), and by considering incentives, such as social status (Holländer, 1990; Harbaugh, 1998; Andreoni, 2006; Bekkers & Wiepking).

On the micro level, philanthropic behavior may not be unselfish at all. As explained by Andreoni (2006), people may give with the expectation to somehow benefit from their donation. Others focus on the role of prestige (Harbaugh, 1998) or social approval (Holländer, 1990) that people derive from giving. Another explanation of philanthropic behavior that frequently occurs in economic literature is altruism, or “the preference for the good of some other people in itself” (Kolm, 2000, p.6). Altruism explains that although people are self-interested, they are not necessarily selfish. Rather, altruism says that individuals are solely concerned with the total contribution to the public good, regardless through which means this is provided (Andreoni, 2006). From this train of thought the crowding-out hypothesis can be derived: An increase in donations to the public good by one person will lead to a decrease in donations to the same public good by another.

Applying this hypothesis on a larger scale, allows for cross-country comparison: how do governments of a country and its citizens interact? Does an increase in government expenditure to the public good lead to a decrease in private donation to the same public good?

On the macro level, contextual factors that may influence charitable giving have been examined. This research includes the effect of government subsidies, tax benefits (Eckel & Grossman, 2003) and fundraising (Andreoni & Payne, 2011) on giving behavior.

Although there is a rather extensive literature on micro and macro determinants of philanthropic behavior, only a limited number of papers concerns a connection between these two levels. Pennerstorfer & Neumayr (2016) were the first to examine the relation between government expenditures on the welfare state and private charitable giving in Europe. They did so by building upon the crowding-out hypothesis, which they tested by examining the relationship between government involvement and the country’s citizens “inclination to donate”. By doing so, they established a first link between the macro variable ‘government involvement’ and the micro outcome ‘inclination to donate’. However, because their research did not concern any real endowment, actual giving behavior may be different.

Therefore, this paper will build upon and extend their research by further exploring the relationship between government involvement in the welfare provision in a country and individual altruistic behavior of its citizens. It will do so by combining data on government expenditures on the welfare state with data on individual altruistic behavior measured by Dictator Games. A Dictator Game is an experiment in experimental economics, which is used to measure to what extent individuals display altruistic behavior. In short, a dictator game is played by situating two players of whom one gets assigned the role of dictator. This person receives or earns an endowment, which (s)he can divide between the two players. The percentage that the dictator gives away, can be used as an indicator of altruistic behavior (Engel, 2011).

In order to study this connection between the welfare state and private altruistic behavior of its citizens, hypotheses will be derived from the crowding out hypothesis. Previously, this hypothesis was already applied on a larger scale, raising the question how governments and their citizens interact when it comes to charitable giving behavior. This paper will combine the crowding-out hypotheses on the micro and macro level by focusing on both the behavior of the welfare state and the behavior of individuals in a dictator game.

The null hypothesis assumes that the size of the welfare state does not influence individual behavior in dictator games. Alternative hypotheses state that there is a negative relation between the size of the welfare state and dictator games. The exact formulation of the hypotheses can be found in the methods section of this paper. The null hypothesis assumes that altruism does not play a role in decision making. Therefore, rejection of the hypothesis may suggest a role for altruism in giving behavior.

In order to study the connection between the behavior of the welfare state and individual behavior in dictator games, the second chapter of this paper will display a more in-depth overview of existing literature on altruism, dictator games and welfare states.

This chapter first focuses on the role of altruism in charitable giving by defining the concept and distinguishing between pure and impure altruism. Second, it elaborates further on Dictator Games by reviewing the different designs of the experiment and by discussing some general findings. Lastly, the concept of the welfare state is clarified and the variables that were used to measure the size of the welfare state are defined.

The third chapter describes the methods that were used to test the hypotheses. It explains how and which data was collected, and elaborates on the statistical methods that were used to test the hypotheses. The fourth chapter displays and interprets the results. Lastly, the fourth and the fifth chapter discusses the results and its implications, and draw conclusions from this.

# 2. Literature review

## 2.1 Pure and impure altruism

The literature on philanthropy defines two main theories for charitable giving: pure and impure altruism (Andreoni, 2006; Schmitz, 2016). Pure altruism explains that the only aspect in the utility function of people is the total amount of contributions to the public good, which implies that people are indifferent to the sources of charitable donations, or the means through which these donations are provided. According to this perspective, the only thing that matters is the total contribution to the public good (Andreoni, 2006)

From this theory, complete crowding out is predicted. Complete crowding out implies that in increased contribution to a certain cause by one person or institution will lead to a decrease in the contribution of another person or institution by the same amount (Andreoni, 1993). This implies that an increase in government spending leads to a decrease in private donations with the same amount. Thus the crowding out hypothesis would predict that a very generous welfare state would discourage its citizens to engage in charitable giving behavior.

However, complete crowding out of public donations by government spending is not commonly observed. The hypothesis has been tested several times, both in laboratory experiments and field studies. Most studies find incomplete crowding out (Abrams & Schitz, 1978; Andreoni, 1993; Khanna, Posnett & Sandler, 1995; Schmitz, 2016), some even find a crowding-in effect (Pennerstorfer & Neumayr, 2016) and there are few to none that find evidence for complete crowding out.

Andreoni (2006) argues that, although complete crowding out is not commonly observed, there is certainly a role for altruism in donating to the public good. He does so by acknowledging that people do not only give to increase the total contribution to the public good, but also derive private utility from giving. The understanding that donors are not indifferent to the source of donations and that their main preference is that a donation comes from themselves may explain why an increase in government expenditure is usually not accompanied by a decrease in private donations by the same amount.

The notion that donors are not indifferent to the source of donations is characterized by the concept of impure altruism. Impure altruism describes that donors experience a ‘warm-glow’ when they give, which explains that donors do not only increase the total contribution to the public good by giving, but that they also increase their own utility.

Such a warm glow is explained by Andreoni (2006) by recognizing that “humans are moral - they enjoy doing what is right… they also enjoy gratitude and recognition …., and they feel relieved from guilt when they become a giver” (Andreoni, 2006, p. 19). Because donors receive the private good of a warm glow, this contribution is not perfectly interchangeable to a donation by somebody else (Andreoni, 1989; Ottoni-Welhelm, Vesterlund & Xie, 2014). Therefore, people would not be indifferent to the means through which public goods are provided (Andreoni, 1989; Andreoni, 2006).

## 2.2 Dictator Games

In experimental economics, a standard game to test the extent to which individual subjects are altruistic, is the Dictator Game. In the most basic version of this game, two people are linked to each other and one of the two (‘the dictator’) receives an endowment, such as an amount of money. The dictator can split this endowment between him/herself and the other person. For example, the dictator can be endowed with €10, which (s)he can choose to divide: €10/€0, €5/€5, €8/€2, or any other division. The percentage that is given away, is used as an indicator for altruistic behavior.

There are many different versions of Dictator Games, which are displayed in Table 1. Examples are anonymous versus non-anonymous games, giving endowment away versus taking endowment from someone, and games in which dictators receive the money versus in which they have to earn it (Oxoby & Spraggon, 2008; Engel, 2011). It is shown that no matter the version, dictators donate on average between 20 and 30 percent of their endowment. Also, dictators are unlikely to donate more than 50% of their endowment (List, 2007; Engel, 2011). Next to this, it is demonstrated that the divisibility, nor the amount of money significantly influences the percentage of endowment that is donated (List, 2007; Engel, 2011; Bao, Tian & Yu, 2016).

**Table 1: Types of Dictator Games**

|  |  |
| --- | --- |
| Anonymous | Non-anonymous |
| Dictator receives endowment | Dictator has to earn endowment |
| Dictator gives endowment away | Dictator takes endowment |
| One-shot game | Repeated game |
| Students | Population representative sample |

Source: Engel (2011)

Although there are many factors that have no significant influence on the outcomes of dictator games, there are also several that do. An overview of the different variables and their effect(s) is found in Table 2. There is, for example, a difference in gender. Women donate more than men, and they also receive more. In addition, there is a strong effect of age on the percentage of endowment that people donate. Children tend to give less than half of their endowment and are more likely to give nothing compared to students and middle-aged people. Also, elderly are least likely to give nothing and most likely to give everything (Engel, 2011).

**Table 2: Effect(s) of different variables on the outcome of a Dictator Game.**

|  |  |
| --- | --- |
| Variable | Effect(s) |
| Gender | Women give more than men  Women receive more than men |
| Anonymity | Dictators give more to a non-anonymous person |
| Race of the dictator | No effect |
| Age | Children are most likely to donate <0.5  Students are most likely to give 0  Middle aged people are likely to donate 0.5  Elderly are most likely to donate 1 |

Source: Engel (2011)

If indeed altruistic behavior differs among different age groups and genders, there may be some important implications. For example, aged populations may show more generous giving behavior on the individual level than younger populations with a similar welfare state. Assuming that most countries have a male/female ratio of about 50/50, gender differences will not have much of an impact among societies. However, dictator games that concern a group of subjects that deviate a lot from this 50/50 ratio, may not give a good indication of the actual population.

## 2.3 Welfare states

In order to go into more detail on the effects of the welfare state on individual behavior in Dictator Games, it is first necessary to determine what a welfare state is. In this section, the concept of the welfare state will be clarified and the variables that were used to measure the size of the welfare state will be defined. A welfare state is a system in which the government of a country provides it citizens with a certain level of social and economic protection, that would otherwise be privatized and regulated through the market. This is done by financing social services, such as health care, pensions, unemployment benefits and education through taxation. The extent to which governments provide these services differs hugely. Some states only focus on the provision of basic social security for the very poorest in society, whereas other states also provide services for everybody in society (Esping-Andersen, 1989).

The differences among states make it especially challenging to compare different welfare states to each other. For example, many countries as the United Kingdom and Australia count education, health services, and social security benefits (pensions, disability benefits, unemployment benefits and child benefits) under their welfare budgets (Castles, 2009; Arthur, 2015; ONS Digital, 2016), whereas the United States also include defense and international security assistance as part of their welfare budget (CBPP, 2016; US Government Spending, 2017).

Therefore, a better approach to take when testing the crowding out hypothesis, may be to examine the tax burden. This is the percentage of the total income that people pay, which may differ according the height of this income. For this paper, the tax burden for the average wage will be used. By using this as a variable, it may be possible to determine whether an increase in government expenditure leads to a decrease in donations in a dictator game. However, it will be hard to say something about the generosity of the welfare state, as tax burden does not necessarily indicate how much of this tax money is spent on welfare. Another variable that will be considered, is the difference in tax burden between 1 ⅓ of the average wage and ⅔ of the average wage. A big difference between these two numbers may indicate a progressive tax system, which may indicate a higher degree of income redistribution. A higher degree of income redistribution may indicate a bigger welfare state.

# 3. Methodology

In order to study the connection between the degree of government expenditures on the welfare state and the private altruistic behavior of citizens of a country, public expenditures by governments and individual decisions in Dictator Games will be examined in a cross-country study.

## 3.1 Data

*Dictator Games*

Data from Dictator Games that were played and documented over the past 10 years in economic literature were used. To collect articles published in the time period 2008-2011, a meta-study on dictator games was used (Engel, 2011). To collect articles that were published in the time period 2012-2017, a google scholar search was performed. All papers about dictator games that were published in an economic journals have been included in the dataset. In total, 40 articles have been included in the initial dataset. Several articles concerned adapted/manipulated dictator games. In these cases, only the data on the control group(s) were examined.

Most Dictator Game experiments have been performed among students and there are only few experiments that concern a representative sample of the population. To determine whether these student samples and representative samples could be analyzed simultaneously, a t-test was performed. This test showed that the difference in average donations between students and the representative sample was significant at a P < 0.01 level. Also, there were few experiments performed that concerned a population representative sample. Therefore, only the experiments that were performed among a student sample were examined. Thus, the articles that have been excluded in this paper either had a non-student sample, or concerned manipulated dictator games with no information on a control group. This leaves 27 papers that were used for the eventual analysis.

*Welfare state behavior*

The behavior of the welfare state was measured by looking at three different variables. The first variable is the percentage of the GDP that is spent on education, health services and social security services. Defense was not included in this variable, because this is generally not considered to be part of a welfare state expenditure (Castles, 2009). The data on government expenditures were obtained from databases from the OECD (2017a, 2017b, 2017c).   
The second variable is the tax burden for those earning an average wage. A higher tax burden may imply more government involvement in welfare services. A third variable is the difference in tax burden for those earning 1 ⅓ of the average wage and those earning ⅔ of the average wage. A big difference between these two may indicate a progressive tax system (a bigger difference in tax burden between the higher and the lower incomes), which may indicate a higher degree of income redistribution. This may indicate a “bigger” welfare state. A similar correlation between these variables on the welfare state and data on individual behavior in dictator games may strengthen the outcomes of the analyses. A different correlation indicates that there may be other variables that influence these outcomes. The data on tax burden are obtained from the OECD (2017d) database.

## 3.2 Procedure

The following hypotheses were formulated based on the crowding-out hypothesis:

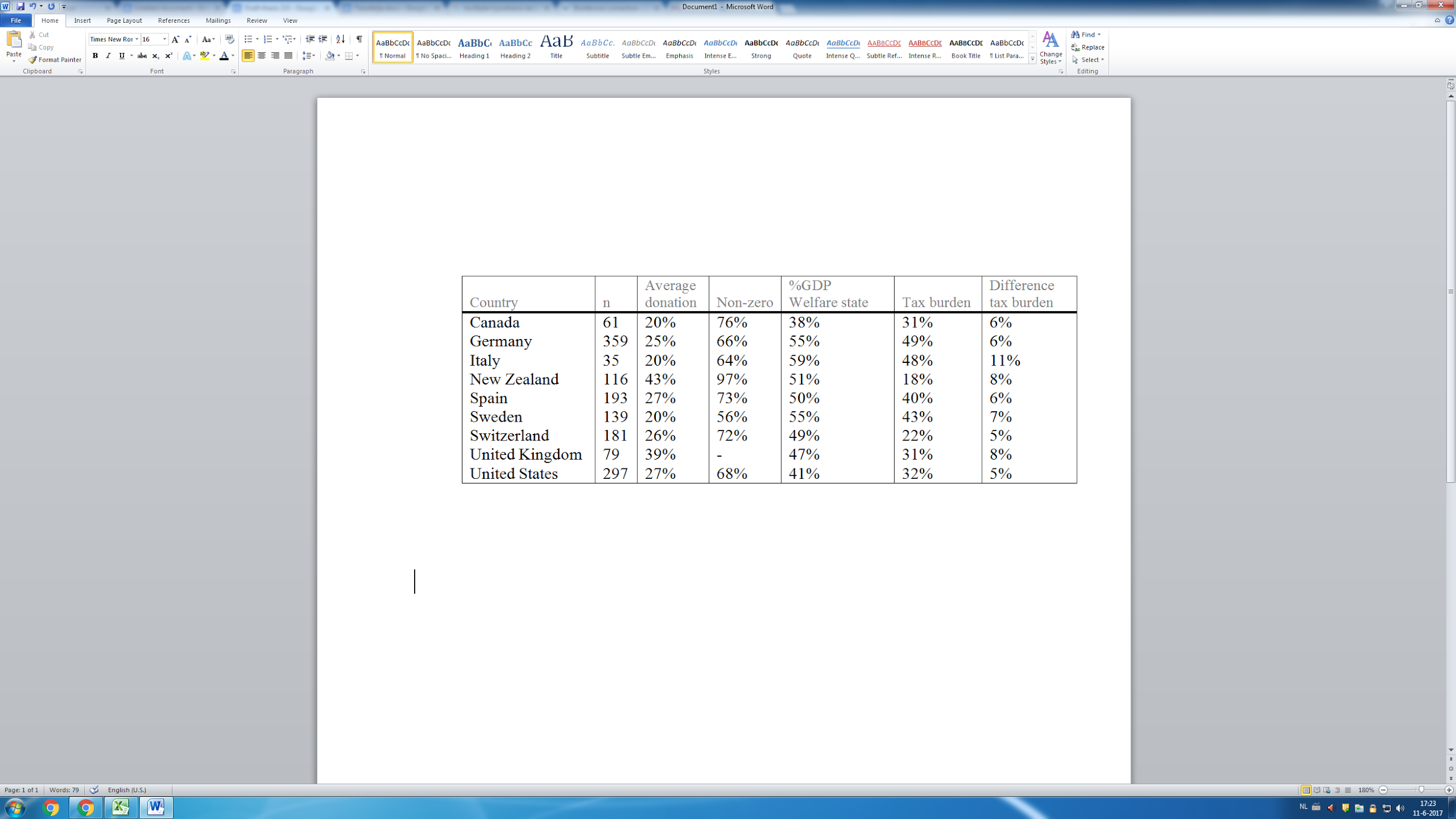
H0 (null-hypothesis): The size of the welfare state does not influence individual behavior in dictator games.

H1a (alternative hypothesis): The bigger the size of the welfare state, the lower the average percentage of endowment individuals assigned the role of dictator give.

H1b (alternative hypothesis): The bigger the size of the welfare state, the lower the percentage of individuals assigned the role of dictator that give positive (non-zero) amounts.

H0 assumes that altruism does not play a role in decision making. Therefore, rejection of H0 may suggest a role for either pure or impure altruistic behavior. H0 was tested according to the following procedure:

Firstly, the different dictator games that were played in the same country were combined. In order to do so, the outcomes of these games were weighed and combined (e.g. the outcomes of a game with 100 observations was weighed ten times as much as the outcomes of a game with only ten observations). For each country the number of observations, the average donation (% of endowment during a dictator game), and the average percentage of people that donated a nonzero amount were determined. Also, the percentage of GDP that is being spent on the welfare state was determined, as well as the tax burden for the average wage and the difference in tax burden for those who earn 1 ⅓ of the average wage and those who earn ⅔ of the average wage. A summary of these data can be found in Table 3.

**Table 3: Data summary**

In order to analyze the data, regression coefficients were computed by relating each variable determining the size of the welfare state separately to the variables describing individual giving behavior. Each country was taken into consideration once, regardless of the number of observations. This is a rather conservative statistical approach, as for some countries there are more observations than for others. However, the number of observations for every country is sufficient to be reliable enough. The only country that has a questionable amount of observations is Italy. Because this country is no outlier, the decision was made to stick with this conservative approach.

# 4. Results

Table 4 displays the regression coefficients for the different dependent and independent variables. The independent variables are those indicating the behavior of the welfare state, whereas the dependent variables are individuals’ behavior in a dictator game. The majority of the coefficients indicate an non-significant negative relation between welfare state involvement and individual altruistic behavior in a dictator game. Only one of the coefficients denotes significance at the 10% level.

**Table 4: regression coefficients**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Variable | Average Donation (n=9) | | | Nonzero (n=8) | | |
|  | (1)  -0.091 (0.463) | (2)  -0.626\*  (0.224) | (3)  0.091  (1.643) | (4)  -0.283  (0.659) | (5)  -0.759  (0.276) | (6)  0.006 (2.477) |
| GDP Welfare |
| Tax Burden |
| Diff Tax Burden |
| R² | 0.0083 | 0.3924 | 0.0099 | 0.0799 | 0.5758 | 0.00004 |

Standard Error in parentheses

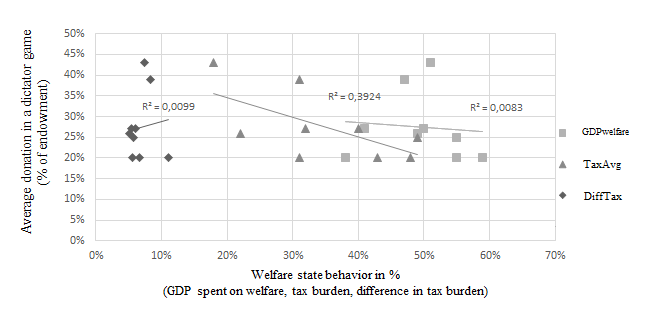
\* Denotes significance at the 10% level  
 \*\* Denotes significance at the 5% level  
 *Dependent variable: Average Donation.*

Coefficient (1) indicates a very small negative relation between the percentage of GDP spent on the welfare state and the average donation of individuals in a dictator game. This may imply that an increase in government expenditure on the welfare state is indeed associated with a decrease in private charitable behavior. However, the coefficient is very small and there is no statistical significance. The second coefficient denotes significance at the 10% level. This implies that a higher level of tax burden is in this sample associated with a higher probability that individuals will donate less in dictator games. The third coefficient shows a small positive relation between the difference in tax burden and the average donation of individuals in a dictator game, which may indicate that people who live in a country with a more progressive tax system are more likely to give away more of their endowment in a dictator game. Nonetheless, this coefficient is also fairly small and statistically not significant.

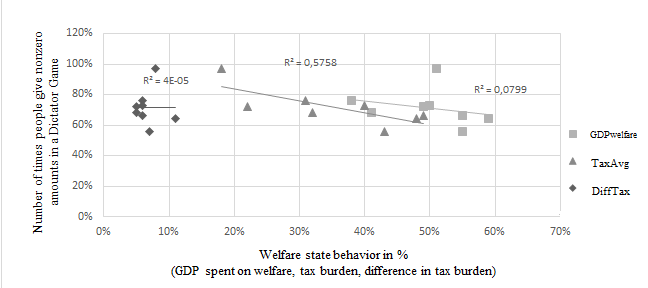
*Dependent variable: Nonzero donations*

Coefficient 4 shows a negative relation between the percentage of GDP spent on the welfare state and the percentage of times individuals donate something in a dictator game. This may imply that an increase in government spending is associated with a decrease in the amount of people that donate something in a dictator game, although the relation is not statistically significant. The fifth coefficient shows a rather strong, yet non-significant negative correlation, indicating that an increase in tax burden is accompanied by a decrease in the number of people who donate something. The sixth coefficient indicates a very small positive relation between the difference in tax burden and the number of times people donate something. However, because this coefficient is almost zero, it is not possible to derive any implications from it.

**Graph 1: Welfare state behavior and average donations of individuals in a dictator game.**



Graph 1 and 2 give a visual representation of the dataset, and R-squared is included for all relations. Here it is shown that the R-squared between the tax burden of the average wage and the amount of times that people give nonzero amounts is 0.5758. This is rather high and therefore a significant relation could be expected. However, due to the low number of observations (n=8), no significant relation is found. Both graphs show a similar pattern for the tax burden of the average wage and behavior in a dictator game. This strengthens the assumption that these two variables are indeed somehow related, although not both relations are statistically significant.

**Graph 2: Welfare state behavior and the amount of times people donate non-zero amounts in a dictator game.**

Because five out of six variables are not statistically significant, H0 cannot be rejected. The only variables that could reject H0 at the 10% level is the tax burden of the average wage related to the average donation in a dictator game. However, because this concerns only one of the six variables and because it only shows significance at a 10% level, there is no conclusive evidence.

Although statistically not significant, the majority of the variables show a negative relation between welfare state involvement and individual behavior in Dictator Games. This negative relation is in line with the crowding-out hypothesis when applying it on a larger scale. If a government is more involved in the provision on public goods, its citizens may be less likely to engage in giving behavior, which could then be displayed in a dictator game by a decrease in the percentage of endowment that is donated, as well as a decrease in the number of people who donate something.

However, pure altruism would predict absolute crowding out, which would be indicated by a regression coefficient of -1. This is clearly not the case in this data set, which can be explained by the fact that this data set concerns two levels: a macro level (government involvement) and a micro level (individual behavior on a dictator game), which are not directly related to each other. In other words, an investment by the government in a certain public good may not directly be related to the percentage of endowment that an individual donates in a Dictator Game. Nevertheless, individuals’ giving preferences in the real world may be displayed in Dictator Games. Therefore, the negative relations that are found in this data set, may indicate a role for pure or impure altruism when addressing the question on what the influence of government involvement in the welfare state is in individual giving behavior.

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# 5. Discussion and conclusion

Since the recession, many developed countries have looked at the role of philanthropy to take over part of their tasks in taking care of socially vulnerable groups. “Too generous” welfare states would, according to the crowding-out hypothesis lead to less incentives for individuals to engage in giving behavior. Starting from this assumption, this paper has explored the relation between the behavior of welfare states and individual altruistic behavior of its citizens. By doing so, it has tried to explain cross-country differences in individual altruistic behavior.

All in all, some tentative evidence was found for the crowding-out hypothesis. A slight negative relation was seen between the percentage of GDP spent on the welfare state and the average donation in dictator games, as well as the number of times that people give non-zero amounts. A possible explanation for this negative relationship could be that inhabitants of countries with a more extensive welfare state rely more on institutions and the government to take care of the needy and may thus be less used to donating money via private ways. However, no statistical significant relationship between either of the two variables was found.

This contrasts the research by Pennerstorfer & Neumayr (2016), who found some evidence for crowding-in, rather than crowding-out, as they find a positive relation between the size of welfare states and private philanthropic behavior. This crowding-in is in contrast with theories of altruism, but it can be explained by focusing on the role of governments in motivating its citizens to donate. For example, a charity that is partly funded by the government may have more opportunities to engage in fundraising which may motivate citizens to donate more to that charity. Contrarily, if a government would donate a lot to a charity, a crowding-out effect rather than a crowding-in effect may be found (Brooks, 2000).

This relation may be interesting to consider for further research: how much government involvement stimulates charitable giving and how much discourages it instead? Other interactions that may be interesting to examine in further research are those between the welfare state and individual behavior, as this does not have to be a one-way relationship. The way individuals behave in a dictator game may be influenced by the degree of government involvement in the welfare state, yet the degree of government involvement in the welfare state may also be shaped by personal (altruistic) preferences of the citizens. Next to using a Dictator Game as an indicator of individual altruistic behavior, the outcomes may also reflect differences among welfare states. As most welfare states are built up differently, they most likely (at least somewhat) reflect the preferences of their citizens. Different social contracts within Europe or among Europe and the United States may result from these differences (Esping-Andersen, 1989). Most likely, people that live in these areas will play a dictator game differently. Therefore, a different outcome in a dictator game may reflect an underlying difference in preferences among the countries.

Although most of the relations did not show statistical significance, a significant negative relationship between the tax burden for citizens earning an average wage and an average donation in a dictator game was found. Because the tax burden had a rather large regression coefficient with both Dictator Game variables, an implication may be that the height of taxes in a country is associated with the extent to which the people in these countries display altruistic behavior. However, this would not necessarily be related to government involvement in welfare provision, but more with government expenditures in general. This is because taxes are not necessarily spent on welfare services.

Also, the decision to use Dictator games as an indicator of altruistic behavior could be questioned. A main critique to the use of Dictator Games as an indicator of altruism is that the participants are subject to social norms in the experimental setting. As a result, a Dictator Game may not translate directly into insights about behavior outside of the experimental setting (Bardsley, 2008). Therefore, this paper would ideally consider both Dictator Game data and data on giving behavior in the field (for example the amount of donations to the Red Cross department in the concerned countries, or other data on private donations) would be examined in order to establish whether the behavior during experiments in the laboratory is similar to behavior in the field. However, these field data were only available for few countries that were included in the dataset and were therefore not included in this paper. Nonetheless, although the outcomes of Dictator Games may not translate directly into behavior in the field, they may still give an indication of how the “level” of altruism differs per country. Accordingly, the outcomes of Dictator Games may still be a good indicator for this explorative research, despite its limitations.

Furthermore, there are several factors that may have influenced the results of this research. Firstly, there may have been a selection bias, as the only dictator game papers that have been used are those mentioned in Engels’ (2011) paper and those that showed up at Google Scholar. Although all articles that were found have been considered in this paper to minimize this selection bias, it cannot be excluded that there are probably more papers written that concern dictator games in the period 2007-2017. Furthermore, the relatively small number of countries considered in this paper makes the outcome of this research less reliable than when a bigger sample of countries would have been included. Another bias may be caused by the decision to only incorporate dictator games that have been played among students. Students are not a representative sample of the population, neither with regard to socio-economic status, nor with regard to age. However, because these variables have been eliminated for all countries, the influences of the welfare state may actually be seen, as the “students” are more or less similar in all countries.

In conclusion, this paper has provided a first insight in the relationship between micro-level data of individual giving behavior and macro-level outcomes in welfare state behavior. The results in this paper point in the direction that supports the crowding out hypothesis on an individual level, but it has found no conclusive evidence. Therefore, there are no implications yet for an optimal (welfare) state regime for those countries that want to increase the role of philanthropy in welfare service provision. Further research could extend this research set by including dictator games played in other countries, or by examining other micro-macro connections by considering other variables that may determine the outcomes of dictator games, such as socio-economic history, political regime, culture, overall welfare or welfare distribution.

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# Appendix A: Dictator games used for analysis

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# Appendix B: Data set