ORIGINAL PAPER

The Philanthropic Poor: In Search of Explanations for the Relative Generosity of Lower Income Households

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Abstract In this study we investigate the relationship between income and charitable giving. Previous research shows inconsistent findings regarding both the effect of income on the probability of giving and the proportion of income spent on charitable giving. We test hypotheses with the Giving in The Netherlands Panel Study 2003 ($N = 1,316$). We do not find an effect of income on the probability of giving, but a consistent negative effect of income on both total and religious donations as a proportion of income. This effect cannot be explained by stronger religious affiliation of lower income groups, or by other differences such as age, and price of giving. We find evidence in favor of a giving standard: Norms concerning the level of donations in specific situations that people in different income groups share, leading lower income groups to donate a higher proportion of their income.

Résumé Dans cette étude nous allons analyser la relation entre le revenu et les dons charitables. Des recherches qui ont été menées auparavant montrent des résultats inconsistants concernant à la fois l'effet du revenu sur la probabilité des dons et la proportion du revenu accordé aux dons charitables. Nous testons les hypothèses des dons des Pays-Bas en 2003 (N=1,316). Nous ne trouvons pas un effet du revenu sur la probabilité des dons, mais un effet négatif consistant du revenu sur à la fois les donations totales et donations religieuses en tant que proportion du revenu. Cet effet ne peut pas être expliqué par l'affiliation religieuse plus forte des groupes aux revenus les plus bas ou par d'autres différences comme l'âge et le montant de la donation. Nous trouvons des preuves qui vont dans le sens d'un standard du don: Les normes à propos du niveau des donations dans des situations spécifiques indiquent que parmi les personnes appartenant à différents

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groupes de revenu, les groupes aux revenus les plus bas tendent à donner une proportion plus importante de leur revenu.

Zusammenfassung   In dieser Studie wird die Beziehung zwischen Einkommen und der Bereitschaft zu wohltätigen Spenden untersucht. Vorherige Untersuchungen führten zu inkonsistenten Ergebnissen hinsichtlich der Auswirkung des Einkommens auf die Wahrscheinlichkeit der Spendenbereitschaft und des für wohltätige Spenden aufgebrachten Einkommensanteils. Es werden Hypothesen anhand einer Studie von 2003 zur Spendenbereitschaft in den Niederlanden (N=1.316) (Giving The Netherlands Panel Study 2003) überprüft. Dabei ist kein Zusammenhang erkennbar zwischen dem Einkommen und der Wahrscheinlichkeit der Spendenbereitschaft, wohl aber eine konsistent negative Auswirkung des Einkommens auf religiöse Spenden und Spenden insgesamt als Teil des Einkommens. Diese Auswirkung lässt sich nicht anhand erhöhter Religionszugehörigkeit der Bevölkerungsgruppen mit geringerem Einkommen erklären oder auf sonstige Unterschiede zurückführen, wie Alter oder Spendenhöhe. Es gibt Anhaltspunkte für einen Spendenstandard: Maßstäbe hinsichtlich der Spendenhöhe in spezifischen Situationen, die für Personen aus unterschiedlichen Einkommensgruppen gleich sind, führen dazu, dass Gruppen mit geringerem Einkommen einen größeren Anteil ihres Einkommens spenden.

Resumen   En este estudio analizamos la relación entre la renta y las donaciones de caridad. Anteriores investigaciones apuntan a resultados inconsistentes en cuanto al efecto de la renta sobre la probabilidad de donar y la proporción de la renta destinada a donaciones de caridad. Probamos diversas hipótesis con el Estudio del Panel 2003 de Donaciones en los Países Bajos (N=1,316). No hemos encontrado que la renta afecte la probabilidad de donar, pero sí hemos observado un efecto negativo y consistente de las rentas altas tanto en las donaciones totales como religiosas en cuanto a la proporción. Este efecto no puede explicarse por una afiliación religiosa más fuerte de los grupos con rentas más bajas, ni por otras diferencias como la edad o la cantidad donada. Hemos encontrado pruebas que apoyan un patrón de donación: las normas sobre el nivel de las donaciones en situaciones específicas compartidas por personas de distintos grupos de renta hacen que los grupos con rentas más bajas donen una proporción más alta de su renta.

Introduction

In The Netherlands—as well as in other Western countries—philanthropy is a big business. The total household contribution made to charity is estimated at 1,899 million Euro in 2003 (Schuyt et al. 2007). Not less than 95% of the Dutch households contributed to this total, donating on average €306. What makes people donate their money so generously to philanthropic causes?

A very basic but promising explanation for higher levels of charitable giving can be found in the availability of financial resources. In order to give money away, access to at least some level of income and wealth is necessary. The argument is simple: The more and better access to financial resources, the higher the charitable donations people can—and to some extent will—make. The absolute effect of financial resources on the level of charitable giving is indeed that straightforward. Higher levels of income and more wealth lead to higher donations (Auten and Rudney 1990; Bekkers 2004; Rooney, Steinberg, and Schervish 2001; Schlegelmilch et al. 1997). The wealthy give more. However, and this is the puzzling topic we consider in this study, philanthropic researchers fail to present consistent findings regarding both the effect of income on the probability of giving and the proportion of financial resources people spend on charitable giving.

In the United States (US), research on the relationship between income and the probability of giving has produced inconsistent results. For example, Rooney, Steinberg, and Schervish (2001) and Smith et al. (1995) found that people do not differ with respect to the likelihood of donating to charitable causes when they are in different income categories. Contrary to these findings, Regnerus et al. (1998) report that people in higher income categories are more likely to donate to "organizations that help poor and needy people." Schervish and Havens (1995a), McClelland and Brooks (2004), and Banks and Tanner (1999) also find that (both for the United States and Great Britain) the probability of giving is higher among people in high-income groups than among people in low-income groups. Bivariate results for The Netherlands show a small positive effect of income on whether or not a donation is made (Schuyt 2003).

The start of the scientific debate on giving as a proportion of income can be traced back to the early eighties of the twentieth century. During that time, Clotfelter and Steuerle (1981) presented the first evidence for a U-shaped curve that describes the relationship between income and proportion of income donated in the US. This U-shape curve indicates that both the lower and the higher income households donate the largest proportion of income to charitable organizations. All the way to the mid-nineties, the U-shaped curve continued to be the main relationship found to describe giving as a proportion of income (Andreoni 2004; Hodgkinson and Weitzman 1996; Jencks 1987; Schervish and Havens 1995a; 1995b).

In 1994, however, Hoge and Yang showed a different relationship specifically for the proportion of income spent on religious giving: America's poorest households donated the largest proportion of their income to the church, and those with the highest income donated the smallest proportion. Not much later, this negative relationship between income and giving as a proportion of income was also found for total and secular giving in the US (Independent Sector 2002; McClelland and Brooks 2004), as well as in Great Britain (Breeze 2004), and The Netherlands (Wiepking 2004). To make matters more complicated, in 2007 James and Sharpe again reported a U-shaped relationship for total giving as a proportion of income in the United States.

One major shortfall in most studies on the relationship between income and charitable giving is the lack of (empirical testing of) explanations for this

relationship. However, ad hoc explanations are numerous. For example the high proportional donations of those with a lower income are said to be caused by the religious poor, who donate disproportional amounts to their church (Jencks 1987; Schervish and Havens 1995a). Or, as mentioned by Andreoni (2004), among those with a lower income there might be many younger people, who expect their income to rise in the near future, and hence feel that they can afford to give a larger proportion of their income.

In this study we both describe and explain the relationship between income and charitable giving in The Netherlands. We examine the effect of income on total giving and religious giving separately, as religious giving seems to be a special case when studying the relationship between income and giving, as shown by Hoge and Yang (1994). In the next section we formulate hypotheses on the different effects of income on both the probability of giving and the proportion of income donated. We do not extensively examine the effect of income on the absolute amount donated, as it is clear from previous research that income has an undisputed positive effect on the absolute amount donated to both religious and total charitable giving (Auten and Rudney 1990; Bekkers 2004; Rooney et al. 2001). However, we will provide some descriptive results for the relationship between income and absolute level of giving. We empirically test the hypotheses with the Giving in The Netherlands Panel Study 2003 (GINPS03 2003), in which 1,316 respondents answered questions about their donating behavior in 2003. The availability of the GINPS03 data is the main reason for studying The Netherlands, as GINPS03 provides very detailed information on charitable giving, and a large range of financial and social background characteristics. However, we believe the explanatory results can be generalized to other Western countries, as conditions that differ between countries (such as taxation) are controlled for. The object of our analysis are households, rather than individuals, as we consider charitable giving an act that involves all adult members of a household (Andreoni et al. 2003; Wiepking and Bekkers 2006).

Theoretical considerations

Financial resources and the probability of giving

In order to give money away, at least some financial resources are necessary. However, the simple act of charitable giving need not be affected by someone's income or wealth. Charitable donations can be as low as one Euro or even ten cents, for example given at the cash register after receiving change. Of course, someone receiving a state pension cannot donate such an amount that the university library is named after him or her. It is, however, hard to imagine a financial barrier for sliding one Euro into a collection canister benefiting the Cancer Foundation. Because of the possible variation in the amounts that people can donate, we formulate the hypothesis that household income and wealth do not influence the probability of giving to all charitable organizations.

However, the story is somewhat different when we consider donations to religious or faith-based organizations. When people in different income groups

differ in their religious affiliation, it is likely that this affects the probability of donations to religious organizations. People with a stronger religious affiliation donate more often money to faith-based organizations (Hoge and Yang 1994). And in the US, lower income households are more often religiously affiliated, hence they donate more often towards religious causes than higher income households (Feldstein 1975; Hood et al. 1977; Schervish and Havens 1995b). In the United States, no less than 82% of the population attends church (Davis et al. 2003). This is quite different in the secularized Dutch society, where only 20% goes to church on a regular basis (CBS 2004). When these select Dutch church members are disproportionately more often representatives of lower income groups, it is likely that households with a lower income donate more often to religious organizations than households with a higher income. Therefore, we formulate the hypothesis that lower income households have a higher probability of making donations to religious organizations.

Financial resources and the proportion of income donated

As argued in the introduction, there is no consensus among philanthropic researchers with respect to the effect of income on the proportion of income donated. Some argue that this relationship is U-shaped (Andreoni 2004; Hodgkinson and Weitzman 1996; James III and Sharpe 2007; Jencks 1987; Schervish and Havens 1995a; 1995b), while others are convinced there is a negative relationship (Breeze 2004; Hoge and Yang 1994; Independent Sector 2002; McClelland and Brooks 2004). In our previous study on the matter, we found a negative effect of income on proportion of income donated. Lower income households donated the highest proportion and higher income households donated the lowest proportion of income in The Netherlands in 2001 (Wiepking 2004). In this study we use more recent data, but in line with the previous results we expect that there is a negative effect of income on proportion of income donated in The Netherlands. In addition, we investigate the more pressing question of how this negative effect of income on proportion of income donated can be explained.

First, the costs of donating vary between low- and high-income households. This can influence the relationship between income and giving as a proportion of income. An important factor that influences differences in costs for making donations is a country's tax regulation. Tax regulations cause the financial costs of charitable donations to vary between households with different incomes (Jencks 1987). In some countries, such as The Netherlands and the United States, giving to charitable causes is tax deductible (Wet op de Inkomstenbelasting 2001—Income Tax Act). In The Netherlands, the amount of money donated to charitable causes above 1% of annual yearly income (with a minimum of €60) can be deducted from taxable income. As a consequence, the real cost of a donation is smaller than the donation itself. If people receive more tax benefits from their donation, they are inclined to give more money. The Dutch tax system—as well as the American tax system—stimulates charitable behavior in such a way that people with a higher income are given more incentives to donate high amounts of money than people with a lower income. After all, people in higher tax categories "benefit" more when they make a

donation than people in the lower tax categories. The higher a household's income, the lower the costs for making charitable donations. When investigating proportional giving between different income groups, it is therefore very important to control for the "price of giving": the effective cost of charitable donations. We expect that the effect of income on the proportion of income donated becomes stronger negative when the effect of price of giving is taken into account. This argument is depicted in Fig. 1 (below).

The effect of price of giving on the level of giving as a proportion of income is negative. The higher a household's price of giving, the larger proportion of the gift the household pays for, and hence the smaller the proportion of income that will be donated. The effect of income on price of giving is also negative, as a higher income leads to higher levels of income tax, which leads to the possibility of larger tax deductions for charitable donations. Those two negative effects enhance the effect of income on charitable giving as a proportion of income. When this effect is negative as we predicted, taking the price of giving into account will lead to a stronger negative effect of income on the level of giving as a proportion of income.

Consequently, accounting for the costs and benefits of donations in the form of the price of giving does not explain the expected lower proportional donations from higher income households. We expect that there are two other—conflicting—arguments that can explain why low- and high-income households differ in charitable giving as a proportion of income: the giving standard and religious affiliation.

First, we consider the possibility that there is something like a "giving standard" which determines the amount people donate to charitable causes in specific circumstances (Andreoni 2004; Harbaugh 1998). According to the giving standard there are social and internalized norms regarding the amount of money households prefer to donate to charitable causes in specific circumstances. These social and internalized norms are comparable to the norms people for example have about restaurant tipping (Conlin et al. 2003). What determines this giving standard?

When deciding how much to donate, people think about the amount they feel that is "right" to donate in specific circumstances. This right amount is influenced by the amount people believe others will donate in the same circumstances. Several researchers have conducted experiments regarding people's adjustment to donate according to their belief about others' donations. Fischbacher et al. (2001), and Frey
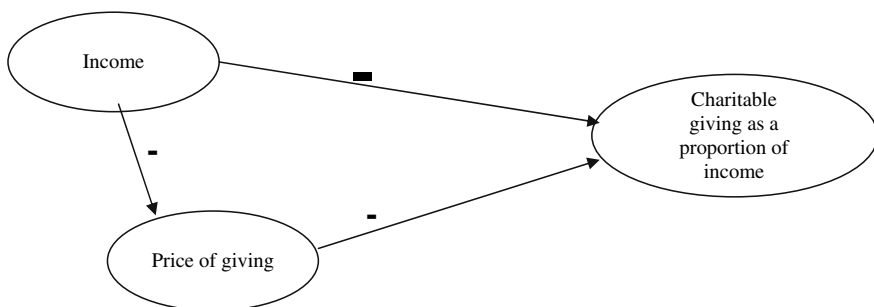
Fig. 1 Effect of income and price of giving on charitable giving as a proportion of income

and Meier (2004) for example show that many people are "conditionally cooperative": They will contribute more often to a public good when they have information that others also contributed. Shang and Croson (2005) even show that people are sensitive to social influences about the amount other donors contributed. Information about the size of other donors' contributions influences donations made by new donors. In addition, Bekkers (2006) finds that people adjust the amount they donate according to their beliefs about the donations of others. People donate more when they believe others will also donate more. Hence, they do not only care about the public good that is provided, they also care about the level of their own contribution to that public good. Economists argue this is because of feelings of "warm glow" people experience when making charitable donations, implying that donors are "impure altruists" rather than pure altruists (Andreoni 1989; Simmons and Emanuele 2004).

When people donate according to a giving standard, this implies that when deciding how much to donate people think of an absolute amount, rather than a relative amount. Information about charitable household donations in The Netherlands concurs with this reasoning. When people donate by responding to a direct mail appeal, over 80% of the households donate between €5 and €25, and in a door-to-door collection over 90% of the households donate an amount below €10 (own calculations GINPS03).[1] Other exemplifications of a giving standard are the donations made by households to the victims of the Tsunami in December 2004 and to those of the earthquake in Kashmir in September 2005. In both cases the majority of households donated €25 (TNS-NIPO 2005a, 2005b).

The giving standard seems to be equal for households with either high or low incomes: Household income does not influence the norms about what is "right" to donate. And when the total amount households donate to charitable causes is to a large extent determined by a giving standard, this total amount will be a larger proportion of income for lower income households than for higher income households. The giving standard implies that there is a persistent negative direct effect of income on proportion of income donated, that cannot be explained by other factors, such as age (as argued by Andreoni 2004) or religion (argued by Jencks 1987; Schervish and Havens 1995a). From the giving standard we deduct the hypothesis that there is a strong and persistent negative direct effect of income on the proportion of income donated to charitable causes in the case of both total and religious donations.

To challenge the giving standard hypothesis, we examine whether stronger religious affiliation can explain (part of) the effect of income on proportion of income donated. Jencks (1987) and Schervish and Havens (1995a) argued that lower income households are disproportional more often stronger religiously affiliated than higher income households, which can explain higher proportional donations to religious causes by these households. In contrast to the giving standard hypothesis, we formulate the religious affiliation hypothesis: The negative effect of income on

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[1] Door-to-door collections are very common in The Netherlands; no less than 91% of the households made a donation in 2003 by means of a door-to-door collection (Schuyt and Gouwenberg 2005).

religious donations as a proportion of income can (partly) be explained by stronger religious affiliation of lower income households.

In addition, we control for age in order to see whether the higher proportional donations of lower income households are due to an overrepresentation of younger people in these households. These younger people might expect their income to rise in near future, and hence feel that they can afford to give a larger proportion of their income, as argued by Andreoni (2004).

Data: The Giving in The Netherlands Panel Study 2003

In order to test the hypotheses, we use data from the second wave of the Giving in The Netherlands Panel Study 2003 (GINPS03). In May 2004, 1,587 respondents were questioned about their donating behavior in 2003, using Computer Assisted Self-Administered Interview procedures (CASI). Respondents were randomly selected by TNS-NIPO (Dutch Institute for Public Opinion and Market Research) from a pool of 72,000 respondents participating regularly in marketing and opinion research. Some 83% of these respondents ($N = 1,316$) completed the questionnaire.[2] The data are representative for the Dutch population with regard to age, sex, and urbanization.

Donating behavior

The four dependent variables in our research are: (1) whether or not a household made at least one donation in 2003, further referred to as the *probability of giving*; (2) whether or not a household made at least one religious donation in 2003, further referred to as the *probability of religious giving*; (3) the natural logarithm of the ratio between the total amount of money donated by a household to charity in 2003 and annual after-tax household income, further referred to as *total charitable giving as a proportion of income*; and (4) the natural logarithm of the amount of money donated to religious causes divided by annual after-tax household income, further referred to as *religious giving as a proportion of income*. In GINPS03, donations to 10 different categories of charitable causes are measured separately, among which religious causes.[3] First, respondents were questioned about which method they used to make a donation, for example, a donation canister or a credit

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[2] The high response rates can be explained by the general high compliance rate among respondents participating in the TNS-NIPO panel. The use of this panel also has a downside, as it is likely that people who voluntary register to regularly participate in survey research are likely to have more pro-social characteristics, related to the dependent variable in our research, charitable giving. The GINPS sample is therefore likely to be selective to some extent on pro-social characteristics. Although this affects the descriptive results, it is unlikely that the multivariate results are biased.

[3] These ten categories of charitable causes are: Religion, Health, International Aid, Environment/Nature Protection, Animal Protection, Education/Research, Culture, Sports/Recreation, Public/Social Benefits, and Other (unspecified, including Service Clubs).

slip. After that, for each category of charitable causes, respondents were asked whether or not their household had made a donation. Third, for all categories given a positive answer by respondents, the exact amount of money the household donated in 2003 was asked for. This way of questioning is called the "Method + Area"-module. This stepwise questioning module leads to a better recollection of donations and to less biased results compared to asking people directly for the total amount they donated over the course of a year (Bekkers and Wiepking 2006; Rooney et al. 2001).

Of the 1,316 respondents that completed the questionnaire, 303 (23%) indicated to have made a donation to one or more specific sub-sector(s), but failed to specify the exact amount. This could be either because they forgot how much they donated to that charitable sub-sector or because they do not want to reveal this information in a questionnaire. In these cases, the missing amounts were imputed independently for each charitable sub-sector. One problem with using multiple imputation in giving data is that the missing values are not Missing at Random (MAR), an assumption that needs to be satisfied when imputing missing data (Allison 2002). This is problematic, but multiple imputation seems the best solution for dealing with missing values in giving data. (See Brooks [2004] for more information on solutions for missing values in charitable giving data.) Multiple imputation can result in negative donations. This appeared to be a minor problem, as after imputation only 1% of the donations were negative. In line with Schafer (1997) we substituted all donations below 1 with a donation of 1 Euro.

To construct total and religious charitable giving as a proportion of income, we divided both the summed amount of money donated to all charitable causes and the amount donated to religious causes by annual after-tax household income. In order to have somewhat larger coefficients to interpret, we multiplied the proportional donations by 100. This ratio variable is much skewed. Many households donate a very small proportion of their income to charity.[4] Therefore, we used the natural logarithm of the proportional donation.

As 53% ($n = 698$) of the households did not make any donation to a religious organization in 2003, we used Heckman Two-Stage regression analysis, to avoid problems with truncation or a selection bias (Heckman 1979). Because of this large proportion of non-donors in the case of religious giving, performing Ordinary Least Squares regression would produce upwardly biased results (Rooney et al. 2001). Only 65 (5%) households did not make any charitable donation in 2003, but for reasons of comparability we also performed Heckman Two Stage regression analysis on total giving as a proportion of income. (See Smith et al. [1995] and Buis and Wiepking [2005] for a discussion on the use of sample selection models in the analysis of donating behavior).

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[4] There are also some very large proportional donors in the GINPS03 data. Two households indicated to have donated more than 20% of their income to all charitable organizations, and six households donated more than 20% to religious organizations. We performed the Heckman Two Stage also without these most generous households; this did not alter the conclusions. We did exclude these households from the bivariate statistics (Figs. 2 and 3).

Predictor variables

Annual after-tax household income is measured by asking the respondents about their and (if appropriate) their partners' monthly after-tax income, and multiplying this by twelve. Some 20% of the respondents did not answer this question. For these respondents we estimated annual after-tax household income with an adjustment of gross annual yearly household income (13%; $n = 148$) if available, or with the mean income of their social class (7%; $n = 80$).[5] In the analyses, we used the natural log of income.[6]

For each household, we calculated the price of a charitable donation using the following formula:

$$P = 1 - (t*d)$$

In which P is the *price of giving*, t is the household's marginal tax rate, and d is whether a household deducted its philanthropic gifts (1 if yes). Because of the available factual information about whether or not a household deducted gifts, information about the threshold of 1% is not used. It is important to take into account whether people deduct their donations, because in The Netherlands some people do not know about this possibility or are principally against deducting charitable donations. In that case they pay a higher price of giving. If a household did not deduct its gifts, it has value 1 on the price of giving, stating that they paid for the whole gift. If a household with a marginal tax rate of .52 deducted philanthropic gifts in 2003, its value on the price of giving is .48. This household only paid for 48% of their charitable donations.

Respondents were asked how many times they had visited church during the previous half year. Responses were recoded to *church attendance* in times a month. *Age* of the respondent is included in three categories, with aged between 35 and 65 as reference category. Household income is not the only indicator that can be used for a household's financial resources. Therefore we also include three dichotomous variables indicating whether or not the respondent was a *home owner* in 2003, whether or not the respondent received income from *wealth* in 2003, and whether or not the head of the household held a *private health insurance* in 2003. In order to control for differences in necessary financial household expenses we use *household size* as a control variable. Household size has seven categories: (1) one household member; (2) two household members… up to (7) seven household members or more.

Other control variables which are known to influence donating behavior (Bekkers 2004) that were included in the analyses are: *Education*, which is measured on a seven-point scale, with: (1) only primary education; (2) primary education and some

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[5] Annual yearly household income is multiplied by .69 in order to estimate after-tax household income. This is an estimated gross-net transfer formula for Dutch income data (Goudswaard et al. 2004).

[6] We are aware of the potential problems caused by respondents not reporting their after-tax income. Therefore we performed analyses with: (a) annual gross yearly household income in 2003; (b) annual yearly household income in 2001 (with GINPS01; containing data about household donating behaviour in 2001); and (c) average annual yearly household income between 2001 and 2003 as a measure of permanent income. These analyses yielded similar results (results available from the author).

vocational school; (3) lower secondary education; (4) middle secondary education; (5) higher secondary education; (6) higher vocational education; and (7) higher tertiary education. The dichotomous variable *volunteer* indicates whether or not the respondent participated in volunteering activities in 2003, and *female* indicates the gender of the respondent. Finally, the variable *requests for donations* counts the methods with which a respondent was asked to make a donation in the two weeks prior to the interview. We asked whether respondents were asked for a gift by means of 13 different methods, including—but not limited to—a direct mail letter, a door-to-door collection, a church collection, a street collection, and a request for donations on television. Respondents who indicated that they had not been asked for a donation in these two weeks were assigned the value 0 on this variable. Table 1 contains a descriptive overview of all variables used in the analyses.

Results

The bivariate relationship between income and donating behavior to all charitable causes and to religious causes in particular is shown in Table 2 and depicted in Figs. 2 and 3.

On average, 95% of the Dutch households made at least one donation to any charitable cause in 2003. There is a very small difference between low- and high-income households in whether or not they made any donation to charitable causes.

Table 1 Descriptive overview of all variables (GINPS03)

	n	Lowest	Highest	Mean	S.E.
Dependent variables					
Probability of giving	1,316	0	1	0.95	–
Probability of religious giving	1,316	0	1	0.47	–
ln (total giving as a proportion of income)	1,250	−6.70	1.69	−0.82	1.69
ln (Religious giving as a proportion of income)	611	−9.12	1.80	−0.79	1.80
Predictor variables					
Ln (annual after-tax household income)	1,316	7.09	12.1	10.02	0.59
Price of giving	1,316	0.48	1	0.93	–
Church attendance (times/month)	1,316	0	8.67	0.92	2.15
Aged under 35	1,316	0	1	0.26	–
Aged over 65	1,316	0	1	0.19	–
Home owner	1,316	0	1	0.63	–
Private health insurance	1,316	0	1	0.33	–
Income from wealth	1,316	0	1	0.09	–
Household size	1,316	1	7	2.59	1.24
Educational level	1,316	1	7	3.86	1.66
Volunteer	1,316	0	1	0.46	–
Female	1,316	0	1	0.52	–
Requests for donations	1,316	0	8	1.22	1.40

Note: Descriptive results obtained with the first imputed dataset

Table 2 Percentage of households that made any donation or a religious donation, and mean proportional total or religious donation per household for ten income groups in The Netherlands in 2003 (GINPS03; $n = 1,310$)

Annual after-tax household income	n	All respondents		Donors only			
		% that made donation	% that made religious donation	Mean total donation (in Euro)	Mean religious donation (in Euro)	Mean total donation as a proportion of income (in %)	Mean religious donation as a proportion of income (in %)
<€8,000	54	93	50	101	96	2.58	1.80
€8,000–€11,000	59	92	47	121	117	1.30	1.29
€11,000–€15,000	95	95	37	203	273	1.54	2.04
€15,000–€18,300	182	98	51	297	296	1.77	1.77
€18,300–€24,000	278	94	45	259	270	1.20	1.25
€24,000–€28,600	246	95	51	309	309	1.15	1.15
€28,600–€35,000	164	96	42	307	325	0.93	0.98
€35,000–€42,000	98	99	52	446	510	1.19	1.37
€42,000–€48,000	70	99	47	540	626	1.23	1.43
>€48,000	64	95	50	510	416	0.85	0.72
Total	1,310	95	47	306	320	1.31	1.34

Notes: The respondents that indicated to have donated over 20% of their yearly after-tax household income in 2003 ($n = 6$) were excluded from the descriptive analyses (Table 2, Figs. 2 and 3); Descriptive results obtained with the first imputed dataset

When examining the different income categories, we find that between 92% and 99% of the households in all income groups donated money. The small differences in percentage charitable donors between the 10 different income groups are not statistically significant χ^2 (9, $n = 1,310$) = 13.72, $P = .133$. Fewer households donate to religious causes, on average 47% of the Dutch households made at least one donation to a religious cause in 2003. The bivariate differences between income groups in probability of religious giving are also not statistically significant χ^2 (9, $n = 1,310$) = 10.07, $P = .345$.

The mean donation of all donating Dutch households to all charitable organizations in 2003 is €306. In general, the tendency is that a higher income corresponds with higher donations, although there are some fluctuations.[7] For example, the highest income households donate on average €30 less than those in one income category lower. For most income categories, the amount donated specifically to religious charities resembles the amount donated to all charitable donations. When only donors are considered, we find that religious donations are on average somewhat larger than total donations. There are three income categories in

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[7] The mean total and religious donations for the different income groups were calculated using only donors (non-donors were excluded). This is, for example, why the mean religious donation for households with an income between €11,001 and €15,000 is higher than the mean total donation for this income category (their mean religious donation among religious donors is €273, compared to a mean total donation of €203 among all donors).
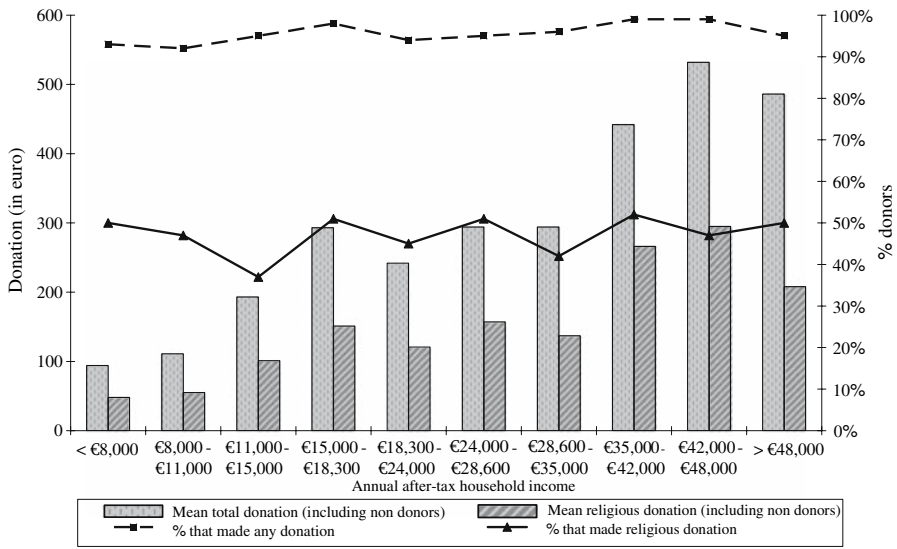
Fig. 2 Mean total and religious household donation in Euros and percentage of households that made a donation in The Netherlands in 2003 ($n = 1,310$)
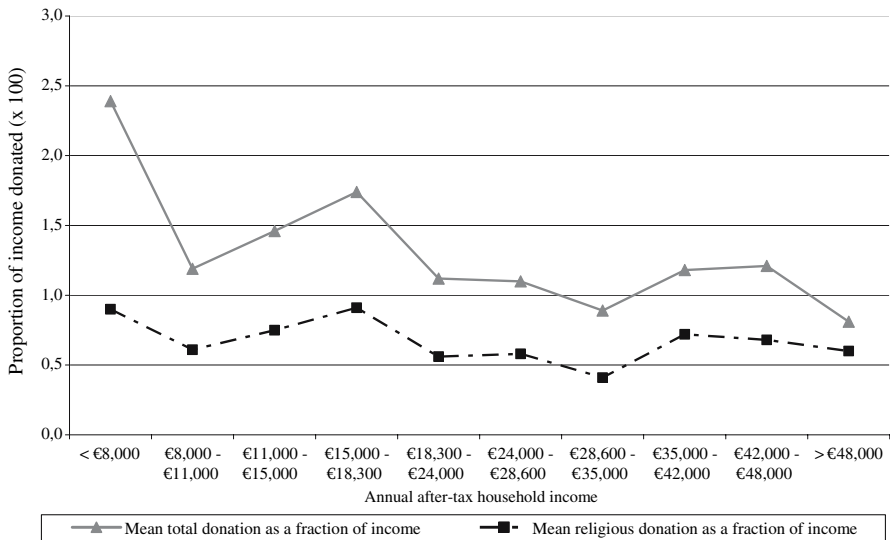

Fig. 3 Mean total and religious donation as a proportion of income for households in The Netherlands in 2003 (including non-donors; $n = 1,310$)

which the average religious donations are substantially larger than the total donations (among donors). This is the case for households with an income between €11,000 and €15,000, for households with an income between €35,000 and €42,000,

and for households with an income between €42,000 and €48,000. Households in the highest income category donate on average less to religious charities.

Figure 3 shows the mean donation as a proportion of income for the different income categories (both for total and religious donations; non-donors are included). In the case of total charitable donations the lowest income group donates the highest percentage of their income: 2.58%. Households with the highest incomes (over €42,000) donate relatively the least, only 0.85% of their annual after-tax household income. All households donate on average 1.31% of their income. Bivariately, there appears to be a negative relationship between income and proportion of income donated, although between €8,000 and €18,300 there is an increase in the proportion of income donated. With respect to religious giving, religious donations as a proportion of income are comparable to total donations (on average 1.34%), with the exception for households with the lowest incomes. In the case of total donations as a proportion of income, those with an income below €8,000 donate a significantly higher proportion. This is not the case for religious donations: In that case, the lowest income group donates a similar proportion of income to religious organizations as other lower income groups. But the question remains whether these results hold when we examine the effect of income on proportion of income donated with multivariate methods.

Table 3 shows the results of the Heckman Two-Stage regression analyses of total and religious giving as a proportion of income. Important to note is that in the second stage of Heckman Two-Stage regression analysis, the dependent variable is a latent variable, in this case latent charitable giving as a proportion of income. This is interpretable as the proportion of income that a household would want to donate, even when they did not make a donation. The first stage models the likelihood to donate.

Model 1 (in Table 3) presents the results for the effect of income on total charitable giving as a proportion of income, when the price of giving is not taken into account. Clearly, there is no effect of income on the probability of making any donation (see the selection stage), but there is a strong negative effect of income on the level of charitable donations as a proportion of income. When a household's income rises with 10%, their total charitable donation as a proportion of income declines with 6.7%.

In Model 2 (in Table 3), we consider the effect of income on total donations as a proportion of income, when the price of giving is taken into account. We predicted that this would enlarge the negative effect of income. The results support our hypothesis: In Model 2 a 10% increase in income leads to a 7.2% decrease in total charitable donations as a proportion of income. The effect of price of giving is negative, as predicted. When an itemizing household's marginal tax rates would decrease from 52% to 42% (implicating an increase in the price of giving from .48 to .58), their total charitable donations decrease with not less than 28%. For itemizing households, tax incentives are important for the proportion of income they will donate. But when the price of giving is taken into account, there still is no effect of income on the probability of making any donation.

In addition we turn to the results of religious giving as a proportion of income, as represented in Model 3 (in Table 3). In this model, we examined the effect of

Table 3 Heckman Two-Stage regression analysis of the natural log of total and religious giving as a proportion of after-tax income (GINPS03; $N = 1,316$; based on nine imputed datasets)

	(1) ln (total charitable donations as a proportion of after-tax income)[a]		(2) ln (total charitable donations as a proportion of after-tax income)[a]		(3) ln (religious donations as a proportion of after-tax income)[b]		(4) ln (religious donations as a proportion of after-tax income)[b]	
	B	*S.E.*	*B*	*S.E.*	*B*	*S.E.*	*B*	*S.E.*
Second stage[c]								
Ln (annual after-tax household income)	−0.673**	0.081	−0.718**	0.079	−0.860**	0.131	−0.839**	0.121
Price of giving	–		−2.751**	0.283	−4.008**	0.552	−2.246**	0.380
Church attendance	0.292**	0.020	0.193**	0.022	–		0.217**	0.030
Home owner	0.147	0.097	0.118	0.093	0.073	0.150	0.175	0.138
Income from wealth	0.129	0.147	0.100	0.141	−0.052	0.214	0.063	0.198
Private health insurance	0.352**	0.099	0.322**	0.096	0.313*	0.154	0.260	0.143
Household size	0.022	0.038	0.036	0.037	0.187**	0.065	0.101	0.062
Aged under 35	−0.363**	0.110	−0.303**	0.107	−0.220	0.178	−0.361*	0.165
Aged over 65	0.497**	0.118	0.456**	0.115	0.513**	0.190	0.377*	0.173
Educational level	0.100**	0.028	0.078**	0.027	−0.023	0.045	0.003	0.041
Volunteer	0.212*	0.098	0.153	0.095	0.187	0.153	0.026	0.135
Female	0.093	0.084	0.114	0.081	−0.006	0.138	−0.090	0.126
Requests for donations	0.214**	0.031	0.188**	0.030	0.133*	0.062	0.030	0.049
Constant	4.582**	0.816	7.797**	0.860	10.439**	1.375	8.888**	1.300
First (selection) stage[d]								
Ln (annual after-tax household income)	0.116	0.108	0.117	0.108	−0.071	0.071	−0.073	0.074
Price of giving	-		−0.395	0.829	−2.866**	0.301	−1.663**	0.365
Church attendance	0.192	0.104	0.181	0.104	-		0.798**	0.102
Home owner	0.238	0.143	0.241	0.143	0.123	0.089	0.193*	0.095
Income from wealth	−0.102	0.305	−0.107	0.306	0.097	0.145	0.136	0.152
Private health insurance	0.161	0.174	0.157	0.175	0.018	0.091	0.009	0.097
Household size	−0.008	0.062	−0.007	0.062	0.068*	0.034	0.025	0.037
Aged under 35	−0.158	0.157	−0.156	0.157	0.079	0.099	0.029	0.104
Aged over 65	0.128	0.217	0.123	0.217	0.372**	0.108	0.295*	0.116
Educational level	0.066	0.046	0.066	0.046	0.026	0.026	0.040	0.027
Volunteer	0.391*	0.157	0.393*	0.156	0.341**	0.078	0.221**	0.084
Female	0.093	0.144	0.091	0.144	0.108	0.080	0.091	0.085
Requests for donations	0.308**	0.084	0.306**	0.084	0.234**	0.030	0.179**	0.033
Constant	−0.372	1.065	0.006	1.380	2.378**	0.756	1.186	0.809
Athrho	−.196	0.231	−0.209	0.219	−0.111	0.222	−0.365**	0.128
Lnsigma	0.298**	0.029	0.260**	0.031	0.393**	0.041	0.317**	0.042

Table 3 continued

	(1)		(2)		(3)		(4)	
	ln (total charitable donations as a proportion of after-tax income)[a]		ln (total charitable donations as a proportion of after-tax income)[a]		ln (religious donations as a proportion of after-tax income)[b]		ln (religious donations as a proportion of after-tax income)[b]	
	B	S.E.	B	S.E.	B	S.E.	B	S.E.
Censored observations[e]	65		65		698		698	
Uncensored observations[e]	1251		1251		618		618	

Notes: * $P \leq .05$; ** $P \leq .01$

[a] ln ([total donation/after-tax household income]* 100)

[b] ln ([religious donation/after-tax household income]* 100)

[c] Parameters in the second stage represent unstandardized intended donations

[d] Parameters in the first (selection) stage represent unstandardized Probit coefficients

[e] Censored and uncensored observations based on first imputation

income on religious donations as a proportion of income, without taking church attendance into account. The effect of income on religious giving as a proportion of income is stronger than the effect on total charitable giving as presented in Model 2: A 10% increase in income leads to an 8.6% decrease in religious donations as a proportion of income. The negative effect of income on religious giving as a proportion of income does not change much after the inclusion of church attendance in Model 4. When a household's income increases with 10%, their religious donations as a proportion of income now decrease with 8.4%. Going to church more often does increase a household's religious donation. The effect of income on the probability of making a religious donation is not significant in either Model 3 or 4, contrary to our expectations.

The effect of the control variables included in the analyses, resemble results found in other Dutch research with the amount that households donate as the dependent variable (Bekkers 2005; Schuyt and Gouwenberg 2005). In Model 2 in Table 3 there is a positive effect of volunteering and receiving more requests for donations on the probability of making any donation. The probability of making a religious donation is positively influenced by a lower price of giving, church attendance, home ownership, being over 65, volunteering, and requests for donations (see Model 4 in Table 3).

In Model 2 in Table 3 there is a positive effect of church attendance, private health assurance, age, education, and the number of requests for donations on the level of total charitable donations. In Model 4, the level of religious donations is negatively influenced by price of giving and positively influenced by age.

Conclusion and discussion

The main conclusion that can be drawn from this study is that there is a persistent negative effect of income on charitable donations as a proportion of income, irrespective of whether these donations are total donations or religious donations. The higher a household's income, the smaller the proportion of income a household donates. Additionally, the costs of donations are important in studying the effect of income on charitable giving as a proportion of income: When the price of giving is taken into account, the negative relationship between income and giving as a proportion of income becomes even more negative. These results are in line with the giving standard hypothesis. People in higher income groups donate only slightly higher absolute amounts than people in lower income groups in the same specific situations, leading to total donations that consist of a larger proportion of the income of lower income households than of higher income households.

However, the results presented in this study do not provide conclusive evidence for the giving standard hypothesis. It is clear that differences in religious affiliation between lower and higher income groups, as well as differences in age and other characteristics, cannot explain the direct negative effect of income on giving as a proportion of income. But there is always the possibility that the negative effect of income on proportion of income donated can be explained by other characteristics, not included in these analyses. We do not have any hypotheses on what these characteristics could be, but encourage other scholars to provide more challenges for the giving standard.

In addition, one should note that this research is based upon a representative sample of the Dutch population. As a result, only a very limited number of high-income donors are included in this sample.[8] This limitation implies that we can only formulate conclusions about charitable giving by the general Dutch population, and make no specific statements about giving by the highest income groups. Future research with other data sources is needed to decide whether the negative effect of income on proportional donations holds when these highest income households are also represented.

Another conclusion that can be drawn from this study is that the negative effect of income on proportion of income donated is stronger for religious donations than for total donations. A 10% increase in after-tax household income leads to an 8.4% decrease in religious donations as a proportion of income, compared to a 7.2% decrease in total donations as a proportion of income. However, this stronger negative effect cannot be explained by a stronger religious affiliation of lower income households, as hypothesized by the religious affiliation hypothesis. Controlling for religious affiliation does not substantially decrease the effect of income on proportion of income donated to religious organizations. Note that the results of the Heckman Two-Stage regression analysis differ from the bivariate findings as displayed in Fig. 3. Figure 3 showed no clear relation between income and proportion of income donated to religious organizations. However, from the

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[8] In GINPS03 there are five households (less than 1%) that have an after-tax income of over €100,000 a year.

Heckman Two-Stage regression analyses we know that there are other variables such as price of giving that have to be taken into account in order to fully understand the effect of income on donations as a proportion of income. This is why it is important to not only study bivariate statistics when investigating the effect of income on proportional donations, as some other researchers have done in previous studies. Because of correlations between independent variables, using bivariate statistics can easily lead to drawing false conclusions.

The results of the Heckman Two-Stage regression analysis do not show an effect of income on the probability of giving, not in the case of total donations (as expected) and not in the case of religious donations (not expected). Household income and wealth do not matter for the act of giving money to charitable organizations (with the exception of home ownership in the case of religious donations). What does matter are requests for donations and volunteering, both in the case of total and religious donations. In addition, people over 65, those attending church more often, those with a lower price of giving, and those being home owner have a higher probability of specifically making religious donations, but not total donations. As most people donate, it is not surprising that we do not find many predictors of the probability of total giving.

The results of this study with respect to the giving standard can be of importance to fundraisers. If people with a higher income understand how miserly their gifts compare to the donations of people with lower incomes, it is possible that they are prepared to donate more substantial amounts. The giving standard implies that people think in absolute amounts when deciding on donations. Fundraisers should take advantage of this knowledge and not so much use relative examples of how much people should donate (for example 2% of their income), but more often use absolute amounts in their requests for donations. It can be useful to provide potential donors with a range of exemplary absolute amounts that are considered appropriate donations in a specific situation.

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