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Estimating the demand for new social investments in the Netherlands

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Estimating the demand for new social investments in the Netherlands♦

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Abstract

In this paper we analyze actual behavior and stated preferences with respect to social responsible investments. We design a specific questionnaire targeted to a sample representative of the Dutch population. We show that there is a latent demand for these kind of investments which has not been met yet. In particular, our analysis indicates that financial institutions have not managed to monetize the strong interest shown by highly educated individuals, as well as women. We offer suggestive evidence that certain forms of ethical investments may be more (or less) effective in attracting these individuals.

Keywords: Ethical mutual funds; Socially responsible investments

JEL: D14 (Household Saving, Personal Finance);
G11 (Portfolio Choice, Investment Decision);
M30 (Marketing and Advertising)

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Introduction

Financial products, albeit sophisticated, tend to be quite standardised in their features. Investors can decide between different levels of risk of the financial product and their time horizons. In addition to risk, there is an increasing attention to non-strictly financial attributes of the asset, and specifically to the social characteristic of the product. Some investors might want to invest in products that are socially responsible. However, very little is known on what the social component of the investment really means.

Sustainable business practices are greatly debated within the financial market participants. Financial investors show interest in this field: investments in sustainable and responsible market stocks have increased at a fast pace over the past years ((Busch, Bauer, & Orlitzky, 2016), (EUROSIF, 2014)). In particular, the Netherlands is an interesting case-study in this context since they represent the third largest market in the world for SRI after the UK and France (EUROSIF, 2014). Furthermore, the size of this market is constantly growing. However, reality seems to be far from the criteria invoked. Little is discernible, despite the good intention of social investments, little change toward a real sustainable investment is detected (see (Entine, 2003)). In other words, the demand of sustainable investments is in appearance sustained while, on the other side, supply seems to accommodate that request by increasing sustainable investment requirements on papers, rather than on real projects. Supply meets the demand with a formal response rather than a real one (Busch et al., 2016). Our research idea is to further investigate this potential area of latent demand for products that clearly have a social component, embedded in the structure of the return. Are people interested in products more socially oriented and simply there isn't any beyond offering the statement of "socially responsible"?

In this work we want to test the potential for a financial product with a social dimension incorporated into it. Would an investment, be it risk-free or risky, be appealing if the return is explicitly reduced, with respect to the standard one, to incorporate a donation? We call this investment social investment. Within this category, we also want to test the degree of compensation that people might want to have in order "to go social". To this extend two possible products are proposed to a Dutch respondents sample. The first offers a lower monetary return due to the donation component. The second investment compensates more for the social choice, albeit with a non-monetary compensation (in kind).

In a world characterized by low (if not negative) interest rates and high volatility in financial markets, the possibility of attracting investors by going beyond the standard risk-return trade off represents a venue to be better explored and exploited by the financial industry.

Literature Review

A theoretical justification for socially responsible mutual funds is given in (Bollen, 2007) based on a multi-attribute utility function. In other words, he argued that agents may judge investments not only by looking at the risk-return tradeoff, but also by directly getting utility from their socially responsible attribute. Similarly, (Beal, Goyen, & Philips, 2005) and (Glac, 2009) tried to justify the existence of ethical investments and provide three non exhaustive and exclusive motivations for ethical investment: superior financial returns, non-wealth returns, and social change. More generally, corporate social responsibility (CSR) is incorporated in the literature of private provision of public goods by (Kotchen, 2006) and (Besley & Ghatak, 2007). Furthermore, (Bénabou & Tirole, 2010) represents a first attempt to give an economic framework to individual and corporate social responsibility. (Renneboog, Ter Horst, & Zhang, 2008) provide a review of the literature on socially responsible investments. In particular, they emphasize the lack of rigorous empirical evidence showing the willingness of agents to accept lower return in exchange for social or ethical goals.

The advantages (or disadvantages) for firms of adopting corporate social responsibility are discussed in (El Ghoul, Guedhami, Kwok, & Mishra, 2011), (Goss & Roberts, 2011), (Guenster, Bauer, Derwall, & Koedijk, 2011), (Deng, Kang, & Low, 2013), (Di Giuli & Kostovetsky, 2014), (Borgers, Derwall, Koedijk, & Horst, 2015), (Krüger, 2015). In particular, (Wu & Shen, 2013) focused on CSR and financial performances in the banking industry and find that the association is positive in terms of returns on assets, equity, and income, but negative with non-performing loans, thus highlighting strategic motives. Moreover, (Jha & Cox, 2015) study the link between CSR and regional social capital. On the other hand, performances of ethical mutual funds are analyzed by (Bauer, Koedijk, & Otten, 2005), (Jin, Mitchell, & Piggott, 2006), (Renneboog, Horst, & Zhang, 2008), while (Benson & Humphrey, 2008) analyze the investors' behavior and find the SRI fund flows are less sensitive to returns than conventional funds, they are more persistent thus hinting to the difficulty faced by SRI investors in finding alternative investments that meet their non-financial goals.

From a more general perspective, it is interesting to note that in-kind transfers could mitigate moral hazard problems (Burkart & Ellingsen, 2004).

Our paper is also closely related to the literature which has directly looked at the characteristics of the individuals who invest in SR financial assets. For instance, (Pasewark & Riley, 2010) asked individuals to choose between a bond issued by a tobacco company and one issued by a firm outside the tobacco industry concluding that traditional wealth-maximization approaches, by not including the personal values of the investor, fail to capture an important factor affecting investment decisions. (Borgers & Pownall, 2014) look at preferences for environmental and social pension investments in the Netherlands. Always in the Netherlands, (De Silva & Pownall, 2014) looked at individual preferences between environmental sustainability, financial well-being and social welfare with a particular focus on gender and education. Similarly, (Bauer & Smeets, 2015) found high levels of social identification among young, highly-educated and low-

wealth investors, thus supporting the profiling of socially responsible investors done in (Junkus & Berry, 2010). Gender and education were also highlighted in (Nilsson, 2008). In addition to this, the author showed that social investors were driven not only by altruistic motives, by also by the idea that ethical mutual funds have average or higher performances. (Hood, Nofsinger, & Varma, 2014) looked at heterogeneities among socially conscious investors: they stressed the preferences for different social investments across gender, age, religion and political affiliation. This is consistent with (Hong & Kostovetsky, 2012), who showed that Democratic investment managers hold fewer stocks of socially irresponsible firms. It is also worth noting that also some institutional investors are reluctant in selecting "sin" stocks involving tobacco, alcohol and gaming (Hong & Kacperczyk, 2009). Finally, we should mention the growing literature of the economics of charity analyzed, among the others, by (List, 2011), (Dellavigna, List, & Malmendier, 2012), (Smeets, Bauer, Gneezy, Bauer, & Smeets, 2015).

Data

Our data have been collected through an internet survey among participants of the CentERpanel run by CentERdata at Tilburg University. CentERdata is a survey research institute that is specialized in data collection and internet surveys. The CentERpanel consists of about 2000 households. This random sample is representative of the Dutch population. All household members aged 16 or more are invited to complete the questionnaire, although some sections focused only on certain individuals such as the household head. The response rate at the individual level is usually quite high, above 70%. Panel members fill out short questionnaires via the internet on a weekly basis[5]. Annually, panel members provide detailed information for the DNB Household Survey (DHS), supplying researchers with a rich set of background information on the respondents. In fact, the data contain several variables concerning individual characteristics, employment, pensions, living conditions, mortgages, income, assets, loans, health, economic and psychological concepts. A peculiarity of this survey is that all data are collected using an online questionnaire[6]. Additional information about the dataset can be found in (Teppa & Vis, 2012), (CentERdata, 2015a), (CentERdata, 2015b).

Our specific survey was conducted in May 2016[7]. All member of the CentERpanel aged 18 or more received the questionnaire (see Appendix B). Therefore, a total of 2,888 individuals were asked to answer ten questions about alternative investments (socially responsible (SR) investments and crowdfunding[8]). The nonresponse rate was around 20%[9]. The first part of the survey (Q1-Q4 in the questionnaire) contains four questions about actual financial behavior, while in the second part individuals are asked to express their preferences between different investment possibilities for a hypothetical inheritance. In particular, in this paper we have analyzed the answer to four questions. In the first one (Q5 in the questionnaire), individuals were asked how they would allocate the inheritance between savings account at a traditional bank, a SR bank which offers a lower return, and a SR bank which gives a deluxe edition of a book as a gift to new clients, but offers a lower return. In the second one (Q6), the choice is again between savings accounts at a traditional bank, a SR bank which offers a lower return but specifically invest part of return on children vaccination in Africa or microcredit to women in developing

[5] Participants receive a monetary compensation for filling in the questionnaire.

[6] Households without a computer or access to the Internet were provided with a basic computer connected to the Internet. This computer was specifically designed for older people and individuals with low computer skills. Technical assistance is also provided by CentERdata. (Teppa & Vis, 2012) discussed the advantage and disadvantages of self-administered surveys.

[7] In particular, the first round of data collection occurred between May, 6th and May, 10th. Individuals who had not filled in the survey the first time received the questionnaire for the second time between May, 13th and May, 17th.

[8] We have focused here on social investments. The potential market for crowdfunding is going to be investigated in a companion paper.

[9] This is in line with the usual response rate in these surveys. In particular, 574 (19.9%) individuals did not answer the questions. On the other hand, 2,250 (77.9%) individuals completed the task, while 64 (2.2%) individuals answered only to some questions.

countries[10], and a SR bank which gives as a gift to new clients a voucher which allow them to participate to cultural activities, but offers a lower return. In the third one (Q7), individuals are expressly asked what percentages of the inheritance they would allocate between savings accounts at a traditional bank and a SR bank which offers a lower return but specifically invest part of return on children vaccination in Africa or microcredit to women in developing countries. Finally, in the fourth question (Q8) the choice is between a mutual fund linked to the AEX (Amsterdam Stock Exchange) Index, a SR mutual fund which offers a lower return, and a SR mutual fund which gives a book as a gift to new clients, but offers an even lower return.

Inspired by the literature on experimental survey design ((Donkers, Melenberg, & Soest, 2001), (Bellemare, Kröger, & van Soest, 2008), (Von Gaudecker, Van Soest, & Wengström, 2011)), several randomizations are included in the questionnaire in order to investigate potential heterogeneity effects. In particular, for half of the sample the hypothetical inheritance amounted to 5,000€, while for the other half the level was 10,000€. Moreover, the expected return and other details of the available financial investments were also randomized.

Individuals usually took around 5 minutes to complete the survey[11]. At the end of the questionnaire, as usual in these weekly surveys, respondents are asked to give feedback. In particular, it is worth noticing that around 34% of the respondents found the topic interesting[12]. In addition to this, around 35% of the respondent reported difficulties in answering the questions[13]. This percentage is higher among female individuals (42%). Finally, it is reassuring that almost all of the respondents found the questions clear[14].

[10] This is in line with (Berry & Junkus, 2013), where the authors claimed that investors prefer to reward positive social behavior rather than exclude firms based on their products or activities.

[11] In particular, among those who completed the survey, the median duration was around 4.7 minutes. Some individuals (around 5% of the relevant sample) took more than one hour to complete the task. In fact, it is possible to answer the questionnaire in more than one day.

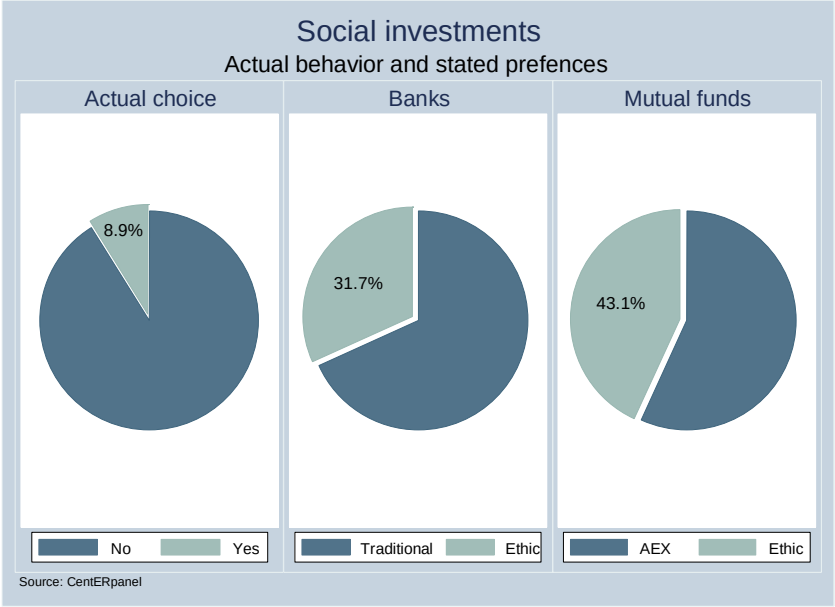
[12] On a scale from 1 (definitely not) to 5 (definitely yes), 21% reported 4, 13% reported 5. The percentages were higher among men (23% and 16% respectively).

[13] 20.3% reported 4, 14.8% reported 5.

[14] Almost 90% reported 3, 4 or 5.

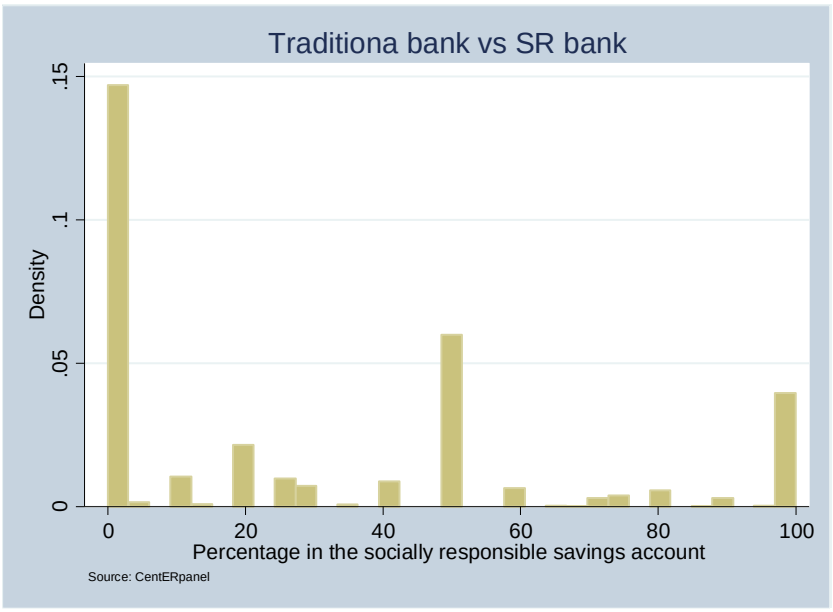
Descriptive statistics

A good starting point for our analysis is Figure 1. As shown in the left pie chart, less than 9% of the respondents have investments in socially responsible mutual funds. When asked why they have not invested in these financial instruments, the main reason was that these mutual funds were not liquid (47.5%), or because households lacked money to save or invest (35%). Very few were discouraged by the low returns or high costs (11%), or wanted to invest only in traditional banks (14.5%). Furthermore, as we will discuss throughout the paper, it is interesting to stress that there is a latent market: almost 10% of the respondents who did not have social investments said that they should do it but they had not gotten to it yet.

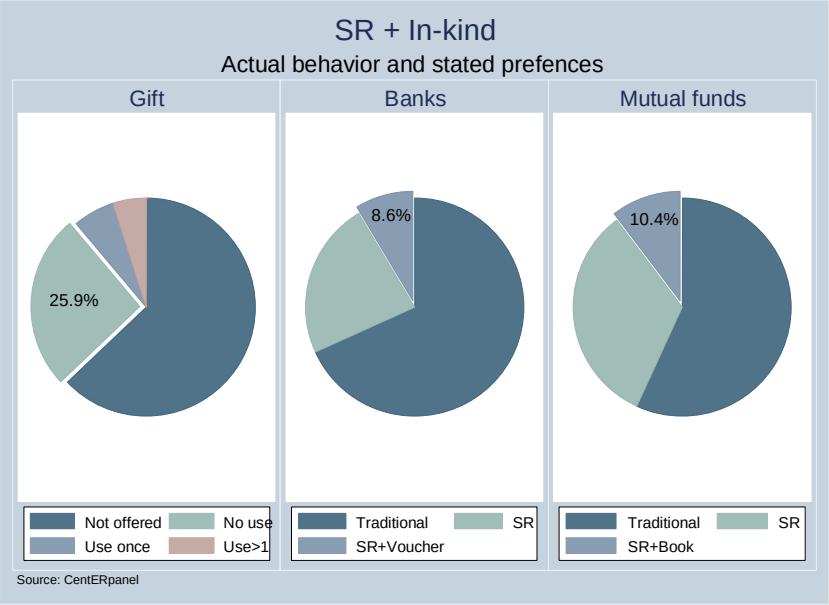


Despite these low levels of actual social investments, and consistently with the last figure, by looking at question Q6 in Appendix B we find that 32% of the respondents would opt for a saving account at a bank, which invests in socially responsible companies instead of a more traditional bank when asked how they would invest an inheritance (In particular, the second option, SR investments for vaccinations/microcredit, and third one , SR investments plus voucher, have been combined in this section). It is even more stunning that more than 43% of the respondents (46% among females) would prefer an ethical mutual fund over one linked to the AEX Index, as from answers to Q8 in Appendix B (In particular, the second option, SR mutual fund, and third one, SR plus book, have been combined in this section).

One of the questions (Q7) allows us to look not only at potential participation rate in social investments, but also at the intensity of the potential investment. Indeed, as mentioned in the previous section, people are asked to allocate the hypothetical inheritance between savings accounts in a traditional bank and a SR one. As shown in the Figure 2, we can see different peaks. The relative majority (44%) would choose to put everything in the traditional bank. Nevertheless, it is interesting to note that 19% of the respondents would allocate more than 50% of the inheritance to the SR bank and that 12% of the individuals would assign the whole amount to such bank. This is even more remarkable considering that the SR bank offers a lower return on its savings account. Last but not least, there is a peak at 50, which may suggest an attempt to (naively) diversify between the two investment options.

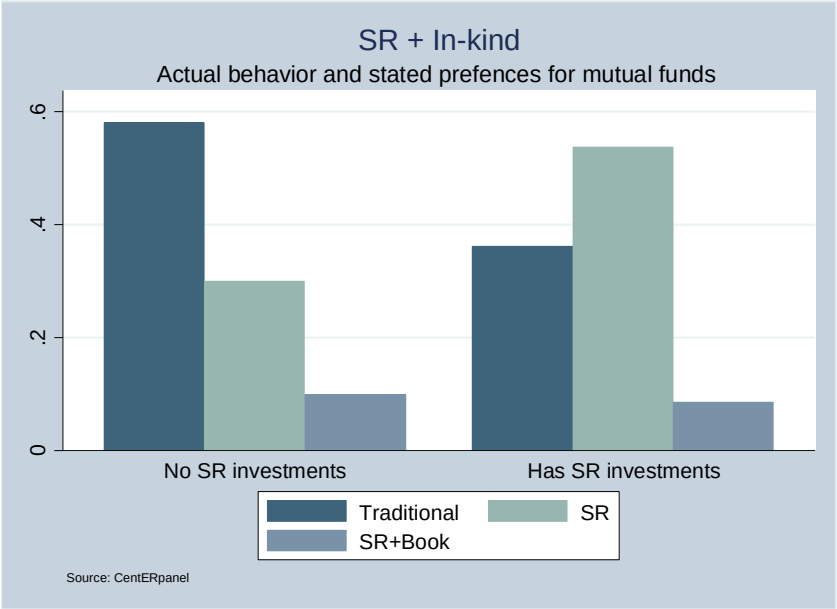


Based on the survey conducted, we can verify whether individuals can be incentivized towards more social responsible investments by providing them with a prize, for example an in-kind transfer or present such as a book or vouchers for attendance to cultural events. A similar approach was followed, for instance, by (Landry, Lange, List, Price, & Rupp, 2006). In fact, around 11% of the respondents reported having received a present from a bank when they opened a new account or invested in a mutual fund. However, it is more surprising that 26% of the individuals (22% among females, 29% among males) received such an offer but they did not use it. Therefore, it seems that such tool is not successful in attracting customers. This is consistent with their elicited preferences. Indeed, among those who preferred a SR bank over a traditional bank (Q6), only 27% of them preferred the SR bank which gives cultural vouchers to new clients[15]. Similarly, among the potential investors for SR mutual funds (Q8), 24% of them preferred the SR fund giving books to new customers. It is interesting to note that such a low interest was also found by (Levin, Levitt, & List, 2016) when they tried to increase donations to university by giving away signed copies of *Superfreakeconomics*.



[15] At this point it should be stressed that, given the possible combination of returns on the different investment possibilities, in all cases choosing the SR bank which also provides voucher to new clients strictly dominates choosing the SR bank without the voucher. Indeed, assume the hypothetical inheritance is 10,000€. In Q6 the first option (traditional bank) guarantees a 1% (100€) return. On the other hand, the return in second option (SR bank) is at most 0.8% (80€). The third option (SR bank + voucher) provides investors with at least a return of 0.5% (50€) plus a voucher whose face value is at least 40€, for a total of 90€. Despite this, very few individuals selected the third option. This may be explained by taking into account that most respondents spent only few minutes on the whole questionnaire, thus they may have not gone over the calculations. An alternative explanation may account for a lower private value assigned by the respondents to the voucher.

In line with the above discussion, in Figure 3 we can start analyzing in more depth this latent demand for social investments. We have divided individuals in two groups: those who already have social investments, and those who do not (Q2). Then, within these two categories, we have shown how respondents would allocate an inheritance between a traditional indexed mutual fund, an ethical mutual fund which offers a lower return, and an ethical mutual fund which offers an even lower return but gives investors a luxury book as a gift (Q8). It is clear that, although in some cases the monetary return may be higher, bundling the ethical mutual fund with the gift does not attract many individuals. Indeed, few respondents selected this option. Furthermore, the take-up rate of this latter option is not dissimilar between the two categories. On the other hand, as expected, most of the investors (55%) who have already some kind of SR assets would select the ethical mutual fund. In addition to this, it is interesting to note that also 31% of those in the other group would allocate the inheritance towards SR investments. Similar results are obtained also by looking at the choice between traditional and SR banks (questions Q5 and Q6). This reinforces our message that SR investments may be increased by offering tailored products, such as SR saving accounts which clearly specify which social projects will be financed, and avoiding costly ineffective gifts. Finally, substantial potential new SR investments may be materialized by targeting certain socio-demographic group, as we will show in the next section.



Multivariate analysis

Participation in social investments

As discussed in the previous paragraph, there is an unexploited interest for SR financial instruments among the Dutch population. The aim of this section is to provide more details on the socio-demographic characteristics of the potential investors[16]. In particular, we have analyzed how respondents would allocate a hypothetical inheritance: would investors be willing to give up some return for "a good cause"? In this way, we are able to assess the preferences for a product clearly embedding a social spill-over, through a foregone part of the return, explicitly stated. We used inheritance as a lump sum to invest so as to isolate a form of asset which is considered a windfall, rather than the consequence of accumulated past savings.

We have started by estimating different linear probability models[17] to capture the features of investors in risky and risk-free social investments. All variables are described in the Appendix A.

In the first column of Table 1 we have looked at the actual behavior of the individuals, i.e. whether or not they have SR investments. From the second column we have focused on the stated preferences. In particular, for the second column the choice was between a savings account in a traditional bank and one in a SR bank[18]. The same has been done in the third column, although here it was clearly specified in which projects the SR bank would have invested part of the return (vaccinations in Africa or microcredit) [19]. Finally, the last column looks at risky investments: here the choice was between a mutual fund linked to the AEX and an ethical mutual fund[20].

The most persistent result concerns education: highly educated individuals invested more often in SR mutual funds and accounts. Moreover, they are between 21 and 24 percentage points more likely to select a SR bank, as well as 14 percentage points more likely to allocate the inheritance to an ethical mutual fund. Inspired by the previous literature, we have tried to include interaction terms between education and gender, but their coefficients were not statistically significant.

Several other patterns can be highlighted from these simple regressions. First of all, there are no relevant gender differences in being socially oriented when investing in saving accounts. Nevertheless, women are more likely to be interested in ethical mutual funds. These different

[16] It should be stressed that here we are just looking at the characteristics of the respondents who showed interest for SR investments. No claim of causality has been made. A detailed description of the variable used in the subsequent multivariate analysis is available in the Appendix.

[17] We follow (Joshua D Angrist, 2001) and (J. D. Angrist & Pischke, 2009) in preferring linear models over nonlinear ones. For the sake of completeness, we have also estimated a Probit model. Results are qualitatively similar. When not reported, tables are available upon request.

[18] Here we have looked at the question Q5 (see the Appendix A). In particular, the second option (SR investments) and third one (SR investments plus book) have been combined in this section.

[19] Here we have looked at the question Q6 (see the Appendix A). In particular, the second option (SR investments) and third one (SR investments plus voucher) have been combined in this section.

[20] Here we have looked at the question Q8 (see the Appendix A). In particular, the second option (SR risky investments) and third one (SR risky investments plus book) have been combined in this section.

gender effects are consistent with (Dellavigna, List, Malmendier, & Rao, 2013): women may give more under some circumstances, but not in other situations. Age also seems to matter: older individuals tended to be more responsive to this kind of investments, although the effect was concave. In addition to this, being the household head, being married, having children in the households and living in a highly urbanized area were all correlated with SR investments, although not in all specifications. In is also interesting to note that the working status did not affect these financial decisions. Similarly, income did not seem to play a crucial role in this context[21]. On the negative effect, another pattern emerges quite clearly: if there are children in the households, or the respondent is a household head, the interest towards a more social product reduces. We could interpret this effect as a displacement effect: when people feel responsible for their household, they reduce their interest into the social cause. Commitments inside the households reduce the incentive to donate outside.

The survey design was constructed in a way that allowed us to change part of the questionnaire for a random sub-sample. Thanks to these randomizations, we can show that the amount of the inheritance does not matter. In fact, the coefficient of A-Random is not statistically significant. This implies that whether the hypothetical inheritance was 5,000€ or 10,000€ did not affect the decision. On the other hand, the coefficient of E-Random is positive and significant, meaning that respondents were more likely to select the SR bank when the institution invested only 20% rather than 40% of the returns in social projects. This result is important to understand how much investors are willing to sacrifice to charity and it is in line with (Barreda-Tarrazona, Matallín-Sáez, & Balaguer-Franch, 2011).

As a consistency check, in the above stated preferences specifications we have added a dummy for the respondent having actually invested in SR activities. Results (available upon request) show that, as expected, its coefficient was positive, highly statistically significant and with a magnitude going from 18 percentage points for the choice on mutual funds to 30 percentage points for the choice on savings accounts.

We have also tried to investigate potential geographical differences, but we have not found significant effects of regional variables.

Finally, it is worth mentioning that researchers have shown in different contexts the advantages of using stated preferences and that they are good predictor of future actual behavior ((Euwals, Melenberg, & van Soest, 1998), (Donkers & van Soest, 1999), (van Soest & Vonkova, 2014)). Moreover, as stressed in (Teppa & Vis, 2012), our survey was conducted online, thus respondents should not be incentivized to give socially desirable answers. Therefore, it is likely that this latent unmet demand for social investments could translate into actual financial choice if the appropriate financial instruments were offered to the individuals.

[21] Income is only marginally significant in the first column for the actual behavior, although the magnitude is rather small. Using net household income or gross individual income instead of net individual income does not alter our conclusions.

Table 1: Participation in social investments - OLS

	(1) Q2	(2) Q5	(3) Q6	(4) Q8
Female	0.000	-0.029	-0.021	0.046*
	(0.015)	(0.023)	(0.025)	(0.026)
Age	0.007**	0.011***	0.009**	0.003
	(0.003)	(0.004)	(0.004)	(0.004)
Age squared	-0.000	-0.000**	-0.000**	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Secondary education	0.037**	0.052**	0.037	0.009
	(0.015)	(0.023)	(0.025)	(0.029)
Tertiary education	0.107***	0.212***	0.235***	0.140***
	(0.018)	(0.024)	(0.026)	(0.029)
Household head	0.000	-0.051*	-0.040	-0.043
	(0.017)	(0.026)	(0.029)	(0.030)
Working	-0.003	0.014	0.031	-0.012
	(0.017)	(0.026)	(0.028)	(0.030)
Married / Living together	0.006	-0.031	-0.066**	-0.021
	(0.016)	(0.026)	(0.029)	(0.029)
Children in the household	-0.004	-0.036	-0.055**	-0.038
	(0.015)	(0.024)	(0.026)	(0.028)
Urban	0.015	0.047**	0.028	0.071***
	(0.014)	(0.020)	(0.021)	(0.023)
Log(Individual Income)	0.005*	-0.008	-0.003	0.001
	(0.003)	(0.005)	(0.005)	(0.006)
A-Random (Inheritance 10K)		0.010	0.024	0.020
		(0.018)	(0.019)	(0.021)
B-Random (Return SR bank)		-0.007		
		(0.018)		
C-Random (Return SR bank /2)		0.063***		
		(0.018)		
D-Random (Book value)		-0.013		
		(0.018)		
E-Random (Return SR bank)			0.040**	
			(0.020)	
G-Random (Vaccine/microloans)			-0.010	
			(0.020)	
H-Random (Return SR bank /2)			0.005	
			(0.019)	
I-Random (Voucher value)			-0.001	
			(0.019)	
J-Random (Return SR fund)				0.025
				(0.021)
Constant	-0.253***	-0.099	0.048	0.224*
	(0.068)	(0.106)	(0.115)	(0.122)
Observations	2055	2225	2223	2198
R^2	0.04133	0.05546	0.06304	0.03257

Standard errors in parentheses. SE clustered at the household level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Source: CentERpanel

Intensity of social investments

Following (Dorfleitner & Nguyen, 2016), we deemed interesting not only to look at whether individual are interested in SR investments, but also how much they are willing to allocate to these SR financial institutions. We have investigated this aspect in Table 2. Our dependent variable is the percentage of the inheritance that the respondents would deposit in a savings account at a SR bank rather than at a traditional bank which provides a higher interest rate. The average choice is 30%, while the median is 20% (Appendix A, question Q7B). We have described the characteristics of these potential investors starting with a linear regression (OLS) in the first column of Table 2. After that, we have taken into account the censoring of the outcome variable by using a Tobit model with upper and lower bound (column 2 reports the coefficients, i.e. the marginal effect on the latent variable, while the marginal effects on the censored variable are shown in column 3).

As in the previous section, the pivotal regressor is education: individuals who completed tertiary education are willing to give 13-15 percentage points more to the SR bank than respondents with lower educational achievements, i.e. roughly between 700€ and 1,500€ more (the inheritance was set at 5,000€ or 10,000€). Among the other regressors, it is interesting to note again that gender, working status, income and household composition are not statistically significant, while older people and those living in urban areas seem to be more altruistic. Furthermore, individuals living with a partner tend to select a lower level of SR investments, and the same can be said about respondents who are the household head.

For half of the sample the hypothetical inheritance was 5,000€, while for the other one was 10,000€. As we see from the coefficient of A-Random, people with higher wealth to invest do not seem to select higher level of SR investment. Similarly to the findings in (Aretz & Kube, 2013), respondents also seem to be indifferent to the choice of social project: whether the financial institution invests part of the return on vaccination for children in Africa or microloans for women in developing countries leads to the same outcome levels (G-Random). However, there is a gender difference if we include an interaction between female and G-Random: women tend to allocate more (12 percentage points) to the SR bank when the related social project is focused to children in Africa. In addition to this, respondents are willing to accept a penalty for SR investments, by they do react to lower profits: they invest more in the SR bank when they receive a return of 0.8% (instead of 0.6%) annually and the remaining 0.2% (0.4%) is invested in social projects (the traditional bank offers a return of 1%).

As expected, if we include among the regressors the respondent's actual behavior, there is a high correlation: those who already have SR investments allocate on average almost 20 percentage points more to the savings account in the SR bank.

One may worry that the assumptions behind the Tobit model are too strong. In particular, as shown in Figure 2, the peak at 50% may push the underlying latent distribution away from a Guassian one. Therefore, as a robustness check, we have estimated the same model without the

observations who allocate exactly half of the inheritance to the SR bank. As shown in the fourth column of Table 2, the estimated coefficients are qualitatively similar to the one for the whole sample reported in the second column. The same can be said about the marginal effects on the censored variables.

Another way to address the tri-modal distribution (with peaks at 0, 50 and 100), as well as the tendency to round percentages, is to estimate an order probit model[22]. In other words, we divide the dependent variable into five intervals: one category for those who allocated 0 to the SR bank, one for 1-45, one for 46-55, one for 56-99, and the last for those who selected 100. The estimated coefficients are reported in the last column of Table 2. From these we can compute the marginal effects of the regressors on the likelihood of selecting the different categories. As before, age, education, living in an urban area, higher returns decrease the probability of selecting zero, while they increase the probabilities of the top categories. On the other hand, being the household head or being married/cohabitating enhances the likelihood of selecting the first category. All in all, we can conclude that the results on the intensity of the SR investment are quite robust across different specifications.

[22] The same conclusions can be obtained by estimating an order logit model or a linear model.

Table 2: Intensity of social investments

	(1) OLS	(2) Tobit	(3) Margins	(4) No 50/50	(5) Oprobit
Female	0.546	3.349	1.559	5.284	0.057
	(1.800)	(3.821)	(1.778)	(6.179)	(0.057)
Age	0.520*	0.935	0.182***	2.271**	0.014
	(0.296)	(0.641)	(0.067)	(1.092)	(0.010)
Age squared	-0.003	-0.005		-0.016	-0.000
	(0.003)	(0.006)		(0.011)	(0.000)
Secondary education	3.065	4.271	1.988	7.922	0.062
	(1.865)	(4.215)	(1.960)	(6.807)	(0.062)
Tertiary education	15.140***	28.817***	13.416***	45.848***	0.415***
	(1.957)	(4.286)	(1.942)	(7.056)	(0.063)
Household head	-5.422***	-12.002***	-5.587***	-17.190**	-0.176***
	(2.067)	(4.422)	(2.050)	(7.030)	(0.065)
Working	2.665	4.439	2.067	7.969	0.055
	(2.136)	(4.627)	(2.153)	(7.443)	(0.069)
Married / Living together	-5.567***	-12.979***	-6.042***	-19.190***	-0.185***
	(2.070)	(4.425)	(2.048)	(7.045)	(0.066)
Children in the household	-2.099	-4.474	-2.083	-8.707	-0.070
	(1.942)	(4.288)	(1.992)	(6.709)	(0.064)
Urban	3.277**	6.002*	2.794*	10.117*	0.091*
	(1.619)	(3.494)	(1.624)	(5.497)	(0.052)
Log(Individual Income)	0.150	0.130	0.061	0.250	0.002
	(0.409)	(0.911)	(0.424)	(1.425)	(0.014)
A-Random (Inheritance 10K)	1.535	4.979	2.318	6.753	0.065
	(1.460)	(3.167)	(1.472)	(5.068)	(0.047)
E-Random (Return SR bank)	4.649***	9.573***	4.456***	13.299**	0.138***
	(1.487)	(3.237)	(1.499)	(5.185)	(0.048)
G-Random (Vaccine/microloans)	-1.111	-1.643	-0.765	-5.007	-0.025
	(1.481)	(3.219)	(1.499)	(5.148)	(0.048)
Observations	2209	2209	2209	1805	2209
R^2	0.05451				

Standard errors in parentheses. SE clustered at the household level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Source: CentERpanel
(d) for discrete change of dummy variable from 0 to 1

In-Kind

The survey conducted allows to investigate whether individuals were more interested in investing in SR saving accounts or mutual funds when such financial tools were bundled with additional gifts such as luxury books or vouchers. Despite the low take-up rates for these options highlighted by the descriptive statistics, it may be interesting to understand the reasons behind respondents' selections. In order to do so, we have estimated three Heckman Probit models (one for each question Q5, Q6, Q8). In the first step, the dependent variable in the selection equation was set to zero if the respondent selected the traditional investment option, while it was equal to one if he or she selected the SR investment option, with or without the additional book/voucher. In the second step, the dependent variable in the main equation was set equal to zero if the respondent selected the SR investment without the gift, one if he or she chose the SR investment with the (in-kind) gift[23]. Table 3 reports the marginal effects on the probability of selecting the in-kind option given that the respondent selected the SR investment in the first stage.

There are not many differences in term of socio-demographic characteristics between those who selected the SR investment without the book/vouchers and those who opted for the gift. Nevertheless, we can point out that, conditional on selecting the ethical mutual fund, highly educated respondents are less likely to select the fund which also provides the luxury book. This may suggest that these individuals are not motivated to invest socially by small material incentives such as a book (or that simply they deem the penalty in term of lower returns too high, or that the book has a lower subject value).

The main drivers behind these choices seem to be the differences in returns. Indeed, in Q5 more people selected the SR investments without the book when such saving account offered a relatively higher return (B-Random). In a specular way, the SR saving account together with the luxury book was selected more often when the return was higher (C-Random). Quite surprisingly, the value of the book does not seem to affect the selection process (D-Random), thus reinforcing the idea that this incentive mechanism did not properly manage to attract customers.

Similarly, in Q6 the SR saving account without the voucher was more attractive when its return was higher (E-Random), while the opposite was true for the return on the SR saving account with the voucher (H-Random). As expected, the value of the voucher seems to be taken into account when choosing between the two social investments (I-Random). In a neo-classical way, this result may suggest that investors are more responsive to this unconstrained money transfer rather than a specific gift such as a book. In addition to this, the pure SR account is selected more

[23] In theory, since the Heckman Probit is a non-linear model, identification could be achieved thanks to the functional form. However, it may be advisable to use an exclusion restriction as well. Therefore, we have added as regressor in the first stage whether the respondent owned already some SR investments, since this should increase the probability of selecting the SR saving account or mutual funds, but it should not affect the choice between the SR investments with or without the voucher/book. We have also obtained similar results by estimating the same model without exclusion restriction.

often when part of the return is used to finance vaccinations in Africa rather than microloans to women (G-Random).

Last but not least, the amount of the inheritance is not relevant in this context except for the ethical mutual fund (A-Random). Indeed, respondents who could allocate a higher inheritance were more likely to select the SR mutual fund without the luxury book (although the coefficient is significant only at a 10-percent level). The same effect has been found among those who already had SR investments. On the other end, increasing the penalty for both SR mutual funds (with or without the book) did not modify the choice between the two options.

Table 3: In-kind - Social Investment - Marginal Effects

	(1) Wild Life Gift Bond	(2) Vaccination Microcredit Bond	(3) Wild Life Gift Stock
Female	-0.013	0.005	-0.008
	(0.046)	(0.039)	(0.038)
Age	0.002	-0.005***	0.001
	(0.002)	(0.001)	(0.001)
Secondary education	-0.033	-0.078	-0.041
	(0.057)	(0.052)	(0.037)
Tertiary education	-0.003	-0.087*	-0.111***
	(0.054)	(0.049)	(0.041)
Household head	-0.020	0.073	-0.003
	(0.054)	(0.047)	(0.047)
Working	0.008	-0.024	-0.054
	(0.050)	(0.047)	(0.041)
Married / Living together	-0.057	0.028	-0.035
	(0.051)	(0.047)	(0.040)
Children in the household	0.101**	0.033	0.064
	(0.048)	(0.041)	(0.040)
Urban	-0.049	0.040	-0.054*
	(0.038)	(0.034)	(0.031)
Log(Individual Income)	0.026**	0.004	-0.013
	(0.011)	(0.011)	(0.008)
A-Random (Inheritance 10K)	-0.047	0.000	-0.050*
	(0.037)	(0.033)	(0.030)
B-Random (Return SR bank)	-0.311***		
	(0.030)		
C-Random (Return SR bank /2)	0.307***		
	(0.032)		
D-Random (Book value)	0.034		
	(0.037)		
E-Random (Return SR bank)		-0.187***	
		(0.031)	
G-Random (Vaccine/microloans)		0.055*	
		(0.032)	
H-Random (Return SR bank /2)		0.165***	
		(0.031)	
I-Random (Voucher value)		0.083**	
		(0.033)	
J-Random (Return SR fund)			0.043
			(0.030)
Has SR investments	-0.012	-0.081	-0.117***
	(0.045)	(0.064)	(0.026)
Observations	2037	2035	2015

These are the conditional marginal effects computed from the Heckman model estimates. The first stage of the Heckman model is not shown for brevity.
Column 1, 2 and 3 reefer to Q5, Q6 and Q8, respectively
Standard errors in parentheses. SE clustered at the household level
Source: CentERpanel
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Discussion and conclusions

Our analysis looks at the potential market for a financial product with a social component. The gist of the paper is to look at whether there are some categories that seem to be the most potentially interested in that segment of investment. For example, women could represent a potential market for risky SR investments which has not been fully exploited yet. In line with (Prast, Rossi, Torricelli, & Sansone, 2015), alternative investment possibilities may increase women participation to risky financial markets.

(Benson & Humphrey, 2008) showed that investors are more likely to reinvest in SR mutual funds that they already own, thus suggesting that there are limited choices available to SR investors. Consistently with their conclusions, our study shows that there are indeed other financial assets which may be offered in order to meet the demand of these investors.

In particular, highly educated individuals have been consistently identified in this analysis as a social group with a substantial latent demand which has not been exploited yet. To give a sense of the amplitude of this potential market, we can start from the marginal effect of education computed in the Tobit estimate (Table 2 Column 3): respondents with tertiary education allocated 13.4 percentage points more to the SR saving account. If we multiply this figure with the average inheritance (7,500€)[24], the percentage of individuals in the Netherlands aged between 25 and 64 with a Bachelor's degree or higher (33% in 2014 according to (OECD, 2015)), and the number of adult individuals (9,006,589 according to (CIA, 2015)), we obtain a potential source of social investments of 3 billion euros. A more conservative approach would take into account that 38% of these highly educated respondents did not allocate anything to the SR saving account. Therefore, the above figure would decrease up to 1.85 billion euros, still a substantial amount. Although it is more extreme, one final simulation could take a different amount. Indeed, instead of the hypothetical inheritance - if we assume that these highly educated individuals would behave similarly with their actual saving - the mean amount in the saving/deposit accounts for these individuals was more than 26,500, thus the potential market would reach 6.6 billion euro.

In addition to this, we have also shown that individuals who already have SR investments are more interested in the proposed new SR investments. Therefore, as also stressed in (Landry et al., 2006), these individuals represent a "warm list", i.e. a large pool of active SR investors which can be contacted by SR financial institutions.

To conclude, in line with (Levin et al., 2016), we hope that this paper have also highlighted the benefits of partnering with academics in the analysis of potential new financial product and markets. Rigorous quantitative methods and innovative survey designs could help financial

[24] We have also tried to estimate the same Tobit model by adding an interaction term between the educational achievement and the inheritance level to verify whether the behavior changed for larger amounts. However, its coefficient is not statistically significant, thus we felt confident in using the average inheritance and the marginal effect from the model without such interaction.

institutions targeting more efficiently potential customers and identifying which tools may (or may not) be use to attract these individuals.

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Appendix A – Summary statistics and variables

Summary statistics

Variable	Obs	Mean	SD	Min	Max
Actual SR investments (Q2)	2,118	0.089	0.284	0	1
SR banks (Q5 - Dummy)	2,289	0.246	0.431	0	1
SR banks (Q5)	2,289	1.339	0.641	1	3
SR banks (Q6 - Dummy)	2,286	0.317	0.465	0	1
SR banks (Q6)	2,286	1.403	0.642	1	3
SR banks (Q7B)	2,272	30.336	34.987	0	100
SR mutual funds (Q8 - Dummy)	2,261	0.431	0.495	0	1
SR mutual funds (Q8)	2,261	1.535	0.675	1	3
Female	2,314	0.485	0.500	0	1
Age	2,314	54	17	18	93
Age squared	2,314	3203	1777	324	8649
Secondary education	2,314	0.323	0.468	0	1
Tertiary education	2,314	0.407	0.491	0	1
Household head	2,314	0.655	0.475	0	1
Working	2,314	0.507	0.500	0	1
Married / Living together	2,314	0.748	0.434	0	1
Children in the household	2,314	0.340	0.474	0	1
Urban	2,290	0.410	0.492	0	1
Log(Individual Income)	2,271	6.794	2.051	0	11.443

Note: these summary statistics refers to the whole sample. The actual observations used in the empirical analysis may be slightly different.
The summary statistics for Q5, Q6, Q7B, Q8 refers to the original answers provided by the respondents (see the questionnaire below). For Q5, Q6 and Q8 we have also used in the empirical analysis dummy variables where the second option (SR investments) and the third one (SR investment plus book/voucher) have been combined.

Variable descriptions

Dependent variables

Actual SR investments (Q2) is an indicator variable equal to one if the respondent (or another household member) had already invested in SR financial assets.

Stated Preferences for Saving Accounts (Q5) - Book. We asked individuals how they would allocate an inheritance across saving accounts in a traditional bank, in a SR bank that guarantees a lower interest rate than the traditional bank, or in a SR bank that guarantees a lower interest rate than the traditional bank but gives a luxury book as a gift to new customers. Only one option could be selected. In the empirical analysis we have often combined the last two options.

Stated Preferences for Saving Accounts (Q6) - Voucher. We asked individuals how they would allocate an inheritance across saving accounts in a traditional bank, in a SR bank that guarantees a lower interest rate than the traditional bank but uses the remaining profits to finance children vaccinations in Africa or microloan to women in developing countries, or in a SR bank that guarantees a lower interest rate than the traditional bank but gives vouchers to attend cultural and sport events as a gift to new customers. Only one option could be selected. In the empirical analysis we have often combined the last two options.

Stated Preference for Saving Accounts (Q7) – Intensity. We asked individuals how they would allocate an inheritance between saving accounts in a traditional bank, and in a SR bank that guarantees a lower interest rate than the traditional bank but uses the remaining profits to finance children vaccinations in Africa or microloan to women in developing countries. Respondents had to specify which percentage of the inheritance they would assign to the SR bank.

Stated Preferences for Mutual Funds (Q8). We asked individuals how they would allocate an inheritance across a mutual fund linked to the AEX index, an ethical mutual funds with an expected lower return than the AEX (but the same risk), or an ethical mutual fund that gives a luxury book as a gift to new customers and has an expected lower return than the AEX (but the same risk). Only one option could be selected. In the empirical analysis we have often combined the last two options.

Regressors

Female is an indicator variable equal to one when the responded identifies herself as woman, zero if he identifies himself as a man.

Age records the age of the respondent (in years).

Primary Education is an indicator variable equal to one if the respondent's highest educational level was "basisonderwijs" (elementary school) or "wmbo" (preparatory middle-level applied education, i.e. non-selective secondary education), zero otherwise. This is the baseline.

Secondary Education is an indicator variable equal to one if the respondent's highest educational level was "havo/vmo" (higher general continued education/preparatory scholarly education, i.e. selective secondary education) or "mbo" (middle-level applied education, i.e. vocational training), zero otherwise.

Tertiary education is an indicator variable equal to one if the respondent's highest educational level was "hbo" (higher professional education, i.e. advanced vocational education) or "wo" (scientific education, taught at research universities), zero otherwise.

Households Head is an indicator variable equal to one if the respondent's name is on the lease or sale contract of the house in which the household members live, zero otherwise. If there are multiple signatories, the household head is the one with the highest income.

Working is an indicator variable equal to one if the respondent's main occupation is paid employment, self-employment or working in a family business, zero in the respondent is retired, a student, a housemaker, unemployed, disabled or similar.

Married / Living Together is an indicator variable equal to one if the household members are two individuals (un)married living together, with or without children. It is set to zero if the respondent is single (with or without children) or the household structure is different from the ones just mentioned.

Children in the household is an indicator variable equal to one if there were one or more children in the household living at home, zero otherwise.

Urban is an indicator variable equal to one if the respondent lives in an area with 1,500 or more addresses per km^2, zero for lower densities.

Log(Individual Income) is the logarithm of the respondent's individual monthly net income. It is equal to zero if such income was zero. It is set to missing if the respondent did not know his/her income, if he/she refused to provide it, or if the question was not answered.

Appendix B - Original questionnaire

The following questions are part of the questionnaire designed for this paper. The whole survey is available upon request.

Actual behavior

account
Financial respondent
0. No
1. Yes

{intro}
Sustainability and corporate social responsibility are receiving a lot of attention. One way in which the citizens themselves can contribute to it is by saving their money in some particular way, for example in a special account or in a special investment fund at a regular bank, or at a special bank that only invests in socially responsible projects. Often this is also made more attractive by receiving a gift when you open a new account or, for example, by receiving a discount on transaction costs.

This questionnaire is actually talking about your behavior and your preferences for socially responsible ways to save your money. For example, do you only looks to return and risk, or do you also consider other things?

If account=1
{finresp}
The following four questions are about you and your financial household. If an account or investment is owned by someone with whom you keep a financial family budget together (your partner or child, for example), add it. You don't need to count an account or investment of someone who owns financial household forms (for example, an adult son or daughter who still lives at home).

If account≠1
selectie
The following four questions are about you and your financial household. If an account or investment is owned by someone with whom you keep a financial family budget together (your partner or child, for example), add it. You don't need to count an account or investment of someone who owns financial household forms (for example, an adult son or daughter who still lives at home).

Do you want or can you not answer to any question? Check the following option:

1 I don't own accounts or investments and I am not aware of the finances of my family

If account=1 or selectie≠1

Q1

Do you (or your household) have any investments in socially responsible mutual funds or in other accounts that invest in environmentally friendly companies or in cultural or other activities that are beneficial to society?

1. Yes
2. No

Q2

If Q1=1

Why did you invest in these? (allow for more than one answer)

a. Because I/we want to contribute in this way to improve society
b. Because I/we have more confidence in the banks and people managing this kind of funds than in the rest of the financial sector
c. Because of the (monetary) returns that I/we think these investments will have
d. Because these accounts are or were (at the time I started this) tax favoured
e. Because I/we responded to a special promotion action promising me a (monetary or nonmonetary) gift for opening such an account or starting to invest in such a fund

If Q1=2

Why did you not invest in these? (allow for more than one answer)

a. I/we should do this, but I do not get to it (yet)
b. I/we have no money to invest or save
c. I/we want to be able to withdraw my savings immediately if necessary
d. Because of the high costs or low expected returns
e. Because I/we only want to invest my money in the traditional banks who only look at expected return and risk

0. No
1. Yes

If account=1 or selectie≠1

Q3

Some banks give you a present, such as a book or a voucher, if you open a new account or start investing or increase your investment in specific mutual funds. Were you (or your household) ever offered this opportunity and if so, did you make use of it?

1. This was never offered to me as far as I know
2. This was offered to me but I did not use this opportunity
3. I once used such an opportunity to allocate (some of) my savings
4. I more than once used such opportunities

Stated preferences

Q5

The following questions are not about facts but about how you would allocate money in an imaginary situation.

Suppose you receive an inheritance of *[if ARandom=0: €5000 / if ARandom=1: €10,000]* but the condition is that you cannot spend the money now but only one year from now at the earliest. You can invest it in some account or mutual fund and receive the money plus net return one year from now.

We ask you how you would invest the money.
Please note that all the possible investment strategies are hypothetical; they do not reflect the returns you can currently get with real investments.

What would you choose you if you had the following possibilities?

a. Put the money in a saving account at a traditional bank and receive an interest rate of 1%.
b. Put the money in a saving account at a bank that only invests in socially responsible companies and receive an interest rate of *[if BRandom=0: 0.6% / if BRandom=1: 0.8%]*.
c. Put the money in a saving account at a bank that only invests in socially responsible companies and receive an interest rate of *[if CRandom=0: 0.5% / if CRandom=1: 0.75%]*. In addition, if you open the account you get a Deluxe Edition of the book "Wildlife in Europe" with a value of *[if DRandom=0: 40/ if DRandom=1: 60]* if you would buy it in a store.

Q6

Suppose you receive an inheritance of *[if ARandom=0: €5000 / if ARandom=1: €10,000]* but the condition is that you cannot spend the money now but only one year from now at the earliest.

What would you choose you if you had the following possibilities?

a. Put the money in a saving account at a traditional bank and receive an interest rate of 1%.
b. Put the money in a saving account at a bank that only invests in socially responsible companies and receive an interest rate of *[if ERandom=0: 0.6% / if ERandom=1: 0.8%]*. The bank guarantees that the remaining *[if ERandom=0: 0.4% / if ERandom=1: 0.2%]* will be used for *[if GRandom=0: vaccinations of children in Africa / if GRandom=1: loans to help women in developing countries to set up their own business]*.
c. Put the money in a saving account at a bank that only invests in socially responsible companies and receive an interest rate of *[if HRandom=0: 0.5% / if HRandom=1: 0.75%]*. In addition, when you open the account, the bank gives you a voucher worth *[if IRandom=0: 40/ if IRandom=1: 60]* that you can spend on theatre visits, cinema tickets, sports events, or concerts in the next twelve months.

Q7
Suppose you receive an inheritance of *[if ARandom=0: €5000 / if ARandom=1: €10,000]* but the condition is that you cannot spend the money now but only one year from now at the earliest.

For example, you can split the amount in two, put part of it in a savings account at a traditional bank with 1% interest rate, and the remaining part in a saving account at a bank that only invests in socially responsible companies, with an interest rate of *[if ERandom=0:0.6% /if ERandom=1: 0.8%]*. The bank guarantees that the remaining *[if ERandom=0:0.4% /if ERandom=1: 0.2%]* will be used for *[if GRandom=0: vaccinations of children in Africa / if GRandom=1: loans to help women in developing countries to set up their own business]*.

How would you choose to allocate the total amount?
0 … 100% in the traditional savings account
0 … 100% in the socially responsible savings account

Q8
Suppose you receive an inheritance of *[if ARandom=0: €5000 / if ARandom=1: €10,000]* but the condition is that you cannot spend the money now but only one year from now at the earliest.

What would you choose you if you had the following possibilities?

a. Put the money in a mutual fund with a return linked to the AEX (Amsterdam Stock Exchange) Index. (The AEX invests in the stocks of the 500 largest companies in the Netherlands)
b. Put the money in a mutual fund investing only in a careful selection of socially responsible companies. Compared to the AEX, this mutual fund has a *[if JRandom=0: 1.0 percentage point / if JRandom=1: 0.5 percentage point]* lower return per year on average, and the same risk.
c. Put the money in a mutual fund investing only in a carefully selected group of socially responsible companies. Compared to the AEX, this mutual fund has a *[if JRandom=0: 1.2 percentage point / if JRandom=1: 0.6 percentage point]* lower return per year on average, and the same risk. In addition, you get a Deluxe Edition of the book “Wildlife in Europe” (with a value of 50 euros if you would buy it in a store).