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Elisa Castagno^{a,b,c,*}, Mariacristina Rossi^{a,b,c,e}, Arthur van Soest^{d,e}

^aUniversity of Turin 8 Via Verdi 10124 Torino Italy

^bCollegio Carlo Alberto 8 Piazza Vincenzo Arbarello 10122 Torino Italy

^cCOVIP 27 Piazza Augusto Imperatore 00186 Rome Italy

^dTilburg University 2 Warandelaan 5037 AB Tilburg The Netherlands

^eNetspar 2 Warandelaan 5037 AB Tilburg The Netherlands

Abstract

We investigate stated household preferences for socially responsible investments (SRI), focusing on the effect of saving regret and personality traits. We rely on data collected in a special ad hoc module of the SHARE dataset in 2019, covering the 50+ population in Belgium, Italy and Spain. We find that the latent interest in SR assets is substantial and much larger than actual ownership would suggest. Our results confirm earlier findings in the literature that highly-educated people and those living in urban areas are more interested in investing in SR assets than their counterparts. The interest in SR assets falls with risk aversion and is higher for those who regret that they did not save less in the past. It increases with openness to new experiences and agreeableness, while it falls significantly with conscientiousness.

Keywords: Personal Finance, ESG Investing, Saving Regret, Big Five

JEL codes: D14, D91, G11, M30

1. Introduction

Neoclassical economics finds its foundation and structure in the concept of *homo economicus* – an individualistic and perfectly rational agent always able to maximize utility by consistently selecting the best available option over time (Markowitz, 1952; Fama, 1970).

*Corresponding author.

Email addresses: elisa.castagno@carloalberto.org (Elisa Castagno, mariacristina.rossi@unito.it (Mariacristina Rossi), A.H.O.vanSoest@tilburguniversity.edu (Arthur van Soest)

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In contrast, the agents defined by more recent theories of behavioral economics and economic psychology are not characterized by perfect rationality; rather, they represent typical humans whose decisions are also influenced by psychological factors, emotions, cognitive errors and behavioral biases. Following this approach, the literature has recently begun to incorporate such factors in models of financial decision making, in order to better understand what drives individuals' economic behavior (Belcher, 2010; Baddeley et al., 2010; Kahneman and Tversky, 2013; Bauer and Smeets, 2015).

Our study adds to the developing stream of literature studying the influence of economic and psychological factors on preferences for socially responsible investments (SRI) – financial products encompassing financial return alongside ethical, social or environmental goals in their structure. We focus on the 50+ population in three European countries, Belgium, Italy and Spain, for which we have information on preferences for SRI in SHARE, the Survey of Health, Ageing and Retirement in Europe. Building on what has already been done in previous studies such as Nga and Ken Yien (2013), Gevorkova et al. (2023), Gutsche et al. (2023) and Rossi et al. (2019), we include the Big Five personality traits, but also economic preference indicators such as risk aversion and a measure of saving regret developed by Börsch-Supan et al. (2023). Specifically, we focus on how economic and non-economic characteristics relate to the individuals' interest in SR products.

Understanding what drives demand for socially responsible investment products is crucial for financial advisors, product providers, and policymakers as the SRI market continues to grow in both Europe and the United States (Eurosif, 2021; US Sif, 2022). Insights into behavioral characteristics can help tailor both SRI products and communication strategies to better match investors' psychological profiles. For instance, integrating short, scientifically validated personality questionnaires into digital platforms allows advisors to efficiently assess individual traits and provide more personalized recommendations. Beyond individual advice, financial institutions, including pension funds, can play a pivotal role by enhancing transparency and offering tailored investment options that align with both financial objectives and social responsibility factors, such as environmental impact and ethical standards. Policymakers can further support this shift by designing educational campaigns that raise awareness and encourage greater participation in socially responsible investing.

In this context, the profiling of social investors in Belgium, Italy and Spain is especially compelling because, even if these countries are characterized by different economic situations, they have all gone through a process of rapid evolution of their retail SRI market in recent years (Eurosif, 2018). In Spain, 82% of the investors belonged to the retail sector in 2017 (Eurosif, 2018), much more than in other countries. In terms of the most recent ESG risk index ranking in 2023,¹ the three countries are all in the top 25, with Belgium in place 17, Spain in place 21, and Italy in 23rd place.² In each of these three countries, the dominating

¹This index combines the domains of environment (30%), human rights (50%), and health and safety (20%); see this [page](#) for details about the definition of the index.

²See this [page](#) for more information.

SR investment strategy is based upon excluding specific industries (Eurosif, 2018). All three countries seem particularly enthusiastic about a focus on water management, renewable energy and climate change (Eurosif, 2018).

Unlike many earlier studies that focus only on households that are active in financial markets or have an account with a bank specializing in sustainable finance, our analysis covers the entire population aged 50 and over, including those who are not active in financial markets, thus providing a more comprehensive view of what shapes households' potential demand for SRI products. In particular, we use a stated preference question from the 2019 SHARE survey to assess preferences for a saving account where the interest is used to support the local community rather than paid out to the investor. Our results show that, in addition to socio-demographic characteristics, several personality traits influence interest in socially responsible products. Openness to experience, agreeableness and regret about past economic decisions are positively associated with SRI interest, while risk aversion and conscientiousness are negatively correlated. These findings are consistent with theoretical expectations and previous empirical evidence and provide insights into the key factors shaping the potential demand for SRI products among the 50+ population.

The rest of the paper is structured as follows. Section 2 summarizes the related literature. Section 3 defines the personality traits and lays out the hypotheses about their effect in determining SRI preferences. Section 4 describes the dataset used. Section 5 outlines the empirical strategy and presents the results. Section 6 concludes.

2. Literature Review

Since the early 2000s, the academic community's interest in socially responsible investments has steadily grown. Scholars and researchers from various disciplines have increasingly focused their attention on the intersection of finance, economics and environmental concerns. Within this literature the personal finance perspective addresses questions such as why households invest in SR assets and what does the typical profile of a socially responsible investor look like.

The answer to the first question is grounded in a theoretical construct in which an individual's utility function is influenced by both financial and non-financial factors. For example, Bollen (2007) studies mutual funds investors and examines potential behavioral disparities between individuals investing in SR products and those investing in traditional funds, finding that the former are more loyal and less sensitive to funds' performance. This result aligns with a multi-attribute utility function according to which investors consider not only the risk-return balance but also directly derive utility from the socially responsible characteristics of the funds in which they invest. This shows that what Ariely et al. (2009) called *intrinsic motivation* plays a significant role.

By conducting a lab experiment, Glac (2009) finds that the way the investment scenario is presented affects the probability of participating in socially responsible investments, as well as the extent to which individuals are willing to forgo returns when opting for SR assets

instead of conventional ones. Døskeland and Pedersen (2016) conduct a field experiment to understand whether wealth framing or moral framing is stronger in inducing investors to engage in SR assets. They find that framing the situation in terms of wealth leads to more choices for SR assets than framing SR products from a moral perspective.

The second question has been answered empirically. Nilsson (2008) finds that female and better-educated investors are more likely to invest a greater proportion of their portfolio in SR products. She also shows that SR investors are not only motivated by altruism but also by the belief that ethical mutual funds offer average or superior performance. Similarly, Junkus and Berry (2010), analyzing data retrieved by surveying a large group of US-based members of the American Association of Individual Investors, show that SR investors are more likely than other investors to be female, young, highly educated and less wealthy. These findings are confirmed by Bauer and Smeets (2015) who use survey data collected from clients of the only two Dutch banks that exclusively offer SR investment products and saving accounts. Hood et al. (2014) profile investors in companies with social concerns and sin stocks. They find that factors such as gender, age, religion and political affiliation play a role.

So far, the profiling of socially responsible investors has primarily revolved around observing attitudes and individual/household socio-economic characteristics. Following the recent trend of incorporating personality to explain economic decisions,³ a few studies have explored the relation between an interest in SRI and personality traits, with mixed findings. Nga and Ken Yien (2013) study the relationship between financial decision making and personality traits relying on a sample of Generation Y people living in Malaysia. They find that only agreeableness positively influences SRI. Gevorkova et al. (2023), conducting a stated choice experiment in an online panel of US respondents, show that individuals who score higher on conscientiousness, openness to experience and agreeableness also have a higher stated preference for sustainable funds. On the other hand, Gutsche et al. (2023) using data from an incentivized online survey experiment in Germany, conducted among respondents who were responsible for financial decisions in their household, find no significant relation between the Big Five personality traits and preferences for SRI.

3. Hypotheses Development

In this section, we discuss the expected associations between our main explanatory variables and a preference for SRI products, based on the existing literature and theoretical arguments.

Personality traits

³See, e.g., Brown and Taylor (2014) on unsecured debt and financial assets, Conlin et al. (2015) on stock market participation, Bucciol and Zarri (2017) on financial risk taking, Bekkers (2005), and Brown and Taylor (2015) on volunteering and donating to charity.

According to the definition given by the American Psychological Association, personality pertains to the enduring traits and behaviors that form an individual’s distinct adaptation to life, encompassing core traits, interests, motivations, values, self-concept, abilities and emotional patterns. Various theories elucidate the structure and development of personality in diverse manners, yet they all concur that personality plays a pivotal role in shaping behavior. Our study uses indexes for the well-known Big Five personality traits: openness, conscientiousness, extraversion, agreeableness, and neuroticism (Digman, 1990; McCrae and Costa Jr., 1997).

One of the most commonly used methods of measuring these traits is called the Big Five Inventory (BFI). In this technique, participants are asked to indicate to what extent they agree with a series of statements, on a scale ranging from one to five. The standard BFI consists of 44 different questions (John and Srivastava, 1999). In our survey, the Big Five personality traits are assessed using the 10-item Big Five Inventory (BFI-10) developed by Rammstedt and John (2007).⁴ This abbreviated measure was specifically designed for surveys where assessment time and questionnaire space are constrained. The Big-Five and their expected association with SR investing can be described as follows (Costa et al., 1992; John and Srivastava, 1999):

- **Openness** to experience: refers to a preference for new experiences over routine. Openness characterizes intellectually curious, creative, adventurous, perceptive, imaginative and artistically gifted individuals. Given that SR investing is a relatively recent phenomenon and that individuals who are more open to experience are more likely to be open to novelty, we hypothesis that:

H1: There is a positive association between openness to experience and interest in SR assets.

- **Conscientiousness**: encompasses traits such as self-control, goal-setting, organization and respect for conventional rules. Given the innovative nature of SRI, conscientious individuals, who often exhibit strong financial self-control and an adherence to traditional norms, might show less interest in SR investments than their less conscientious counterparts. However, it is also plausible that long-term, goal-oriented thinking could draw individuals towards SR products, which are designed to have a lasting impact. Therefore, our hypothesis is that:

H2: The relation between conscientiousness and interest in SR assets is uncertain, as conscientiousness may either diminish or increase interest in SR assets.

- **Extraversion**: relates to a friendly, extroverted, energetic, ambitious and confident character. Extraversion may be associated with a positive view on society and a

⁴Appendix A shows the exact wording of the survey questions.

stronger preference to contribute to society rather than maximizing financial returns. However, since socially responsible investments do not require individuals to engage in collective activities, extraverts might prefer other ways to contribute to society, such as volunteering. Thus, our hypothesis is that:

H3: The relation between extraversion and interest in SRI is ambivalent, as it depends on how individuals balance their social inclinations with their desire for positive social impact.

- **Agreeableness:** determines people’s behavior towards others. It defines someone who is altruistic, empathetic, trustful, modest and cooperative. Considering that investing in a socially responsible product means sacrificing personal financial gains and considering that agreeable individuals are characterized by a high degree of altruism, our hypothesis is that:

H4: More agreeable individuals will be more interested in SRI than their less agreeable counterparts.

- **Neuroticism:** measures the degree of emotional stability and emotional responses to reality. It describes a person that has the tendency to face negative feelings like anxiety, stress, depression and nervousness. Since investing in a socially responsible product involves making a specific choice, while a neurotic individual is characterized by a high level of anxiety that may lead to inaction, we hypothesize that:

H5: More neurotic individuals will be less interested in SRI than their less neurotic counterparts.

Risk Aversion

Risk aversion is not encompassed in the Big Five personality traits – it represents a distinct dimension often addressed independently. The New Palgrave Dictionary of Economics defines it as “the attitude of an individual who prefers an outcome with a lower level of uncertainty over the alternative with a higher level of uncertainty even if the latter grants a higher average monetary outcome”. As a consequence, it shapes how a person responds to situations that give rise to uncertainty or risk (Zhao and Seibert, 2006).

To measure risk aversion, respondents were asked what level of financial risk they are willing to take when saving or investing. Risk aversion is therefore measured by a categorical variable ranging from one to four, where one indicates that the respondent is a risk taker and four indicates that the respondent is risk averse.⁵

From a purely economic perspective, the choice of how to allocate wealth between two

⁵Appendix A shows the exact wording of the survey question.

saving accounts – one being a traditional saving account that pays out the guaranteed interest, and the other being a socially responsible saving account that uses the guaranteed interest to finance a social project that benefits the community in which the investor lives – should not be influenced by risk aversion. Indeed, since the financial outcomes (i.e., the security of the initial investment and the guaranteed interest) are identical, risk aversion should not play a significant role. However, SR investments go beyond traditional financial metrics to include non-financial factors. These factors can increase the overall utility for individuals who value social contributions. Yet, they may also introduce a perception of complexity or uncertainty, making the SR product appear less straightforward compared to the traditional alternative. Given this interplay between financial certainty and perceived non-financial complexities, risk aversion could indirectly influence the decision-making process. As risk-averse individuals are more likely to prioritize minimizing uncertainty in all aspects of decision-making we hypothesize that:

H6: There is a negative association between risk aversion and the interest in SR products.

Saving Regret

Saving regret, as defined by Börsch-Supan et al. (2023), reflects individuals' satisfaction with their past saving and consumption decisions. It is a subjective measure that captures the extent to which individuals feel they have saved too little or too much for their future financial needs.

To measure saving regret, individuals aged between 60 and 79 were asked whether, in retrospect, they would have saved more, about the same or less earlier in their lives if they had the chance to go back and do it all over again when they were around 45.⁶

The literature on saving regret is still limited. Börsch-Supan et al. (2023), analyzing a sample of US respondents aged 60-79, show that only 40% would not have changed their saving decisions, while 58.5% wished they had saved more and 1.7% wished they had saved less. They also find that this measure correlates in a plausible way with several individual socio-economic characteristics. However, when examining the hypothesis that the wish to have saved more is related to procrastination – because procrastinators save too little and regret it later – they find no clear evidence. Hurwitz and Mitchell (2023), in addition to confirming the high level of saving regret among US respondents, conduct an experiment using the Health and Retirement Study and show that providing information about longevity increases regret about not buying lifetime income. Castaldo et al. (2024) use the information on saving regret collected in SHARE and find that only 20% of Europeans report saving regret. They also find that this feeling is significantly higher among those who retire as early as possible than among those who retire at the state pension age. Despite these findings, no

⁶Appendix A shows the exact wording of the survey questions.

studies have yet explored the relationship between saving regret and interest in SRI.

On the one hand, saving regret can be seen as a sign of deviation from neoclassical rationality, as it implies that individuals may not have maximized their life-time utility or well-being. Since rational individuals make decisions that are consistent with their long-term goals and preferences (taking into account future needs such as retirement or emergencies), saving regret suggests that they have not planned adequately for the future or did not consider the long-term consequences of their spending and saving decisions. Biased longevity expectations are an example of such irrationality (Hurwitz and Mitchell, 2023).

Alternatively, saving regret could result from over or underestimating the probability of future shocks, leading to sub-optimal consumption and saving decisions that are then regretted in the future. In this case, individuals may have acted perfectly in line with rational expectations, but simply experienced negative or positive shocks that, in hindsight, would have led them to save more or less had they known *ex ante*. Table B1 in Appendix B reports the frequency of positive and negative shocks experienced by those who wish they had saved less (column 2), those who wish they had saved more (column 3) and, in general, those who regret their past saving decisions (column 4). Conditional on having saving regret, less than a quarter of our respondents report having experienced a positive shock, while 40% of them report having experienced a negative shock.

Given that socially responsible investing may lead to lower financial returns compared to conventional investments (Renneboog et al., 2008a,b), and that it necessarily involves the inclusion of non-economic factors in the decision-making process, and considering that saving regret can reflect a departure from the concept of neoclassical rationality, our hypothesis is:

H7: Individuals with higher levels of saving regret will be more interested in SRI than their counterparts.

4. Data

We use data from the Survey of Health and Retirement in Europe (SHARE). SHARE is a research infrastructure that, since 2004, has collected data from a representative sample of households with at least one spouse aged 50+ living in Europe or Israel, to study the impact of socio-economic policies (e.g., related to health care, social support, living standards and poverty, or living environment) on older citizens.

Our empirical analysis has been conducted using data drawn from the eighth wave of SHARE, which includes a special ad hoc module carried out in Belgium, Italy and Spain, asking, among other things, about the willingness to invest in SR products. In addition, we rely on previous waves to retrieve some background information. Data were collected through face-to-face computer assisted personal interviews (CAPI). The data collection process started in 2019 and was interrupted in March 2020 due to the outbreak of the Covid-19 pandemic and the subsequent lock-downs enforced by national governments. However, by that time, about 70% of the expected longitudinal interviews had been conducted.

To ascertain the potential demand for SR products, the following question was asked:

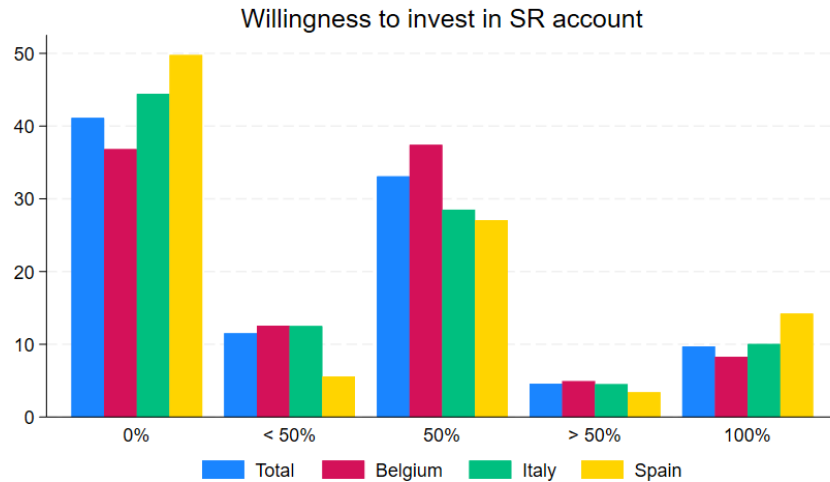


Figure 1: Distribution of the percentage that individuals would be willing to invest in the SR account

Imagine that you can put 10,000 of your wealth in saving accounts. There are two different accounts: a traditional one (account A) where you receive an interest rate of 1% (100 euro after one year) and another one (account B) where you receive no interest but instead the bank uses the interest to fund a project helping the community where you live (e.g., subsidies to help poor or disabled people or to finance the development of hospitals). How much would you invest in these two accounts?

1. *All of it in A (you get 100 euro of interest)*
2. *More than half in A (you get more than 50 euro of interest)*
3. *Half of it in A, half in B (you get 50 euro of interest)*
4. *More than half in B (you get less than 50 euro of interest)*
5. *All in B (interest completely goes to the community project)*
6. *Don't Know*

A total of 6,213 people answered this question, with about 20% of the respondents choosing the “Don’t Know” option. This group was excluded from the analysis. Merging the remaining 4,859 observations with the earlier waves in order to obtain information on the Big Five personality traits and other explanatory variables, reduces our sample to 4,377 households. For the analysis that includes saving regret as an explanatory variable, the sample had to be reduced further, since this question was only asked to those in the age group 60 – 79. For this analysis, the sample size is 2,064.

Table 1: Summary statistics

	Obs.	Mean	Std. Dev.	Min	Max
SRI preferences categorical	4,377	2.194	1.333	1	5
SRI preferences dummy	4,377	0.534	0.499	0	1
Openness	4,377	0.060	0.970	-2.373	1.840
Conscientiousness	4,377	0.006	0.967	-4.188	1.212
Extraversion	4,377	-0.045	0.980	-2.669	1.807
Agreeableness	4,377	0.119	0.972	-3.400	1.674
Neuroticism	4,377	-0.052	0.973	-1.713	2.268
Risk aversion	4,377	3.687	0.616	1	4
Saving regret	2,267	0.213	0.410	0	1
Saved more	2,267	0.142	0.349	0	1
Saved less	2,267	0.071	0.257	0	1
Volunteering	4,367	0.119	0.324	0	1
Female	4,377	0.553	0.497	0	1
Age	4,377	66.114	9.540	50	100
Primary education	4,377	0.273	0.446	0	1
Secondary education	4,377	0.591	0.492	0	1
Tertiary education	4,377	0.136	0.343	0	1
Numeracy	3,682	3.250	1.007	1	5
Political orientation	3,874	4.987	2.398	0	10
Living in a big city	4,338	0.126	0.332	0	1
Living in the suburbs of a city	4,338	0.098	0.298	0	1
Living in a large town	4,338	0.145	0.352	0	1
Living in a small town	4,338	0.631	0.483	0	1
Ln hh income	4,377	9.223	2.378	0	14.381
Ln hh wealth	4,353	11.586	2.423	0	15.888
Invest	4,283	0.218	0.413	0	1
Belgium	4,377	0.296	0.456	0	1
Italy	4,377	0.593	0.491	0	1
Spain	4,377	0.111	0.314	0	1

Risk aversion is a categorical variable: 1 means being risk seeker while 4 means being risk averse. Saving regret is a dummy with value 1 if the individual, in hindsight, would have preferred to save more or to save less at around age 45. Volunteering is a dummy for having done voluntary or charity work. Numeracy is based on 4 questions on the ability to perform numerical operations, where 5 corresponds to the highest level of ability. Politics is an ordered categorical variable: 0 corresponds to very left-wing, while 10 corresponds to extreme right-wing. Ln hh income and Ln hh wealth are set to zero if individual income/net financial wealth is zero or negative. Invest is a dummy for having any investment in bonds, stocks or mutual funds.

Figure 1 shows the distribution of the answers to the stated preferences question for the overall sample and separately for each country (excluding the “Don’t Know” answers). The majority of the population aged 50 and above living in Belgium, Italy and Spain would be willing to invest at least part of the amount in the SR account. Spain is the most polarized of the three countries – 50% of its respondents would choose to invest everything in the traditional account (while in Italy and Belgium only the 44.44% and the 36.82% would choose this option) and almost 15% of the Spanish would make the opposite choice and invest everything in the SR account (compared to only 10.04% of the Italians and 8.28% of the Belgians). Moreover, we observe that in all three countries there is a peak around the choice of equally splitting the total amount between a traditional and a SR account. In this regard, Belgium exhibits a unique pattern, as this option is the most common choice (37.45%), whereas in Spain and Italy, less than 30% of the participants chose the equal split.

All in all, the patterns observed in the Italian and Spanish samples are qualitatively in line with the choices observed by Rossi et al. (2019) for Dutch households, using somewhat different stated choice questions on SR versus traditional investments. Among other questions, the survey of Rossi et al. (2019) asked participants to choose how they would invest a hypothetical inheritance that they can only use one year from now at the earliest. They could choose between a saving account in a traditional bank or at a bank that only invests in socially responsible companies, which offers a lower interest rate. Rossi et al. (2019) found that 42.7% of the Dutch population would not invest at all in the SR product, while 12.2% of them would invest the total inheritance in this product.

Descriptive statistics for all variables used in the regressions are shown in Table 1. Our sample is 55% female. The average age is 66 and 14% of the people in our sample have a university degree. More than 60% of individuals live in small towns or villages and 22% report that they own bonds, stocks or mutual funds ($invest = 1$).

Based on the saving regret question, we define two dummy variables that take the value one if respondents report that they wish they had saved more ($saved_more$) or less ($saved_less$) in the past, and zero otherwise. We also use a third dummy which only records saving regret without taking into account the sign – the sum of the other dummies $saved_more$ and $saved_less$. The proportion of individuals with saving regret (21%) is much lower than the 60.2% documented in the US by Börsch-Supan et al. (2023). Furthermore, the composition of those who regret past decisions differs significantly between our sample and their US sample. In our sample, 14.2% wish they had saved more and 7.1% wish they had saved less, while in the US these percentages were 58.5% and 1.7%, respectively. The large differences with the US are plausibly due to the different welfare state models in Europe and the US. In Europe, where social spending and public pensions are higher, individuals may feel less pressure to save extensively for their future, leading to lower levels of saving regret. Conversely, in the US, a less comprehensive welfare state places greater responsibility on individuals for their own financial security, which in turn may lead to greater regret about past economic decisions and a stronger desire to have saved more as people age and want to retire.

5. Empirical analysis

We first estimate an equation explaining whether individuals are willing to invest a positive share of their wealth in the SR account or not. Here we have a dichotomous outcome variable – a dummy equal to one if individuals are willing to invest at least part of their wealth in the SR product and zero for those who want to invest everything in the traditional account. We use the standard Probit model:

$$y_i^* = \alpha + X_i\beta + \epsilon_i, \quad y_i = \begin{cases} 1 & \text{if } y_i^* > 0 \\ 0 & \text{if } y_i^* \leq 0 \end{cases} \quad (1)$$

where y_i^* is a latent variable and y_i is the observed dummy variable for investing a positive share in the SR product. The vector X_i includes standard demographic and socio-economic controls and additional individual characteristics (gender, age, education level, numeracy level, political orientation, whether currently living in an urban area, country of residence dummies, the logarithms of household net income and household net worth, a dummy for investing in the financial markets and a variable capturing whether or not the respondent engages in volunteering). Depending on the specification, we add a vector of the Big Five personality traits, a variable measuring the level of risk aversion of the respondents and a variable assessing their level of saving regret. The error term ϵ_i is assumed to follow a standard normal distribution, independent of X_i .

From the descriptive statistics, it can be observed that the majority of our respondents indicate an interest in investing at least part of their wealth in the SR account. [Table 2](#) reports the estimation results of the multivariate analysis. In the first column we only include the Big Five personality traits and the risk aversion measure, in the second column we also include the socio-economic control variables. In column 3 we add the saving regret variable while in column 4 we include the two dummy variables assessing whether respondents wish to have saved more or less in the past. Since information about saving regret are only available for respondents of at least 60 years of age, the last two specifications use a much smaller sample.

From the first specification we observe that our results are similar to those found by Brown and Taylor (2015) when analyzing the effect of personality traits on monetary donations in the UK and to those found by Gevorkova et al. (2023) who analyses the impact of personality traits on SRI decisions of a sample of US retail investors. Indeed, the former found that agreeableness, extraversion and openness to experience have a significant and positive correlation with donations to charitable causes. While the latter provide empirical evidence of a higher stated preference for SRI of individuals who are more agreeable, conscientious, open to experience and less neurotic.

We find that openness to experience and agreeableness are significantly positively related to SRI preferences while conscientiousness is negatively correlated with it. Open people are defined as individuals who are very curious and interested in innovation (McCrae and Costa,

Table 2: Willingness to participate in social investments

	(1)	(2)	(3)	(4)
	Interest in SRI	Interest in SRI	Interest in SRI	Interest in SRI
Openness	5.109*** (0.738)	2.459*** (0.919)	1.826 (1.142)	1.855 (1.142)
Conscientiousness	-2.116*** (0.771)	-1.208 (0.909)	-1.898* (1.115)	-1.910* (1.116)
Extraversion	-0.619 (0.768)	-0.800 (0.903)	-0.277 (1.097)	-0.280 (1.095)
Agreeableness	2.210*** (0.768)	2.913*** (0.899)	2.402** (1.103)	2.377** (1.104)
Neuroticism	-0.555 (0.763)	-0.677 (0.904)	-0.446 (1.117)	-0.464 (1.118)
Risk aversion	-6.416*** (1.313)	-5.614*** (1.593)	-5.299*** (1.944)	-5.340*** (1.943)
Saving regret			6.246** (2.760)	
Save less				9.378** (4.676)
Save more				4.883 (3.244)
Volunteering		11.134*** (2.232)	10.917*** (2.716)	10.857*** (2.719)
Female		2.769 (1.784)	2.462 (2.182)	2.464 (2.182)
Age		0.112 (0.105)	0.053 (0.196)	0.043 (0.196)
Secondary education		6.155*** (2.362)	8.531*** (2.848)	8.506*** (2.848)
Tertiary education		13.329*** (3.089)	14.699*** (3.832)	14.691*** (3.829)
Numeracy		1.078 (0.981)	1.440 (1.198)	1.406 (1.198)
Political orientation		-1.327*** (0.386)	-1.357*** (0.471)	-1.370*** (0.472)
Suburbs		-5.196	-2.616	-2.758

		(3.336)	(4.148)	(4.147)
Large town		-3.778	-3.042	-3.145
		(3.228)	(3.964)	(3.963)
Small town		-12.800***	-9.960***	-10.101***
		(2.661)	(3.380)	(3.379)
Ln hh income		-0.388	-0.352	-0.342
		(0.441)	(0.515)	(0.515)
Ln hh wealth		-0.008	0.087	0.035
		(0.530)	(0.656)	(0.657)
Invest		-0.463	0.375	0.164
		(2.155)	(2.665)	(2.678)
Italy		3.487	3.253	3.218
		(2.656)	(3.159)	(3.159)
Belgium		6.300**	5.628*	5.770*
		(2.791)	(3.388)	(3.391)
Obs.	4,377	3,130	2,064	2,064
Psd. R-sqr.	0.016	0.047	0.049	0.049

Probit estimation models. Marginal effects in percentage points reported. Robust standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

2008; Mondak, 2010). Therefore, they are more likely to choose SR products that provide them with the opportunity to engage in new forms of investment. The positive relation with agreeableness, already found by Nga and Ken Yien (2013), aligns with the characterization of agreeable individuals as altruistic, compassionate and caring (Costa and McCrae, 1999). Indeed, according to the definition given by Finkelstein et al. (2005) and Finkelstein and Brannick (2007), agreeable individuals are expected to have a prosocial orientation and therefore, to engage in volunteering and charitable activities out of benevolence. Thus, scoring high on this trait significantly correlates with the likelihood of choosing the SR option which allows to directly finance projects that help the community. The negative correlation between conscientiousness and stated preferences for socially responsible investments can be explained by the inclination of highly conscientious individuals to prioritize financial stability and traditional investment criteria over social considerations. As pointed out by Donnelly et al. (2012), conscientious people are characterised by thoroughness, a high degree of financial self-control and adherence to conventional norms. Consequently, they tend to adopt a more rational approach, aiming to maximize their financial returns and placing greater emphasis on traditional performance measures rather than social factors.

The remaining two personality traits are not statistically significant and their magnitude is very close to zero. The inverse relation between neuroticism and willingness to select a SR product is coherent with the definition of a neurotic individual. As described by McCrae and Costa Jr. (1997) and Young et al. (2012), a neurotic person has a higher level of anxiety and

is more afraid of taking risky decisions and will therefore be less inclined to seek investment opportunities. The essentially zero effect of extraversion can be explained by the fact that people scoring higher on this trait are characterized by being more friendly, sociable and talkative. Therefore, they will be more interested in taking part to actions and activities that entail social interaction such as volunteering activities rather than simply donating money (Bekkers, 2005; Carlo et al., 2005).

Overall, we find strong support for hypothesis H1 and hypothesis H4: openness to experience and agreeableness are significantly positively associated with an interest in SR assets. The significant and negative relation with conscientiousness shows that the self-control component is the prevailing one (hypothesis H2). The insignificant coefficient on extraversion is not fully unexpected, since the theory did not give an unambiguous prediction in these cases (hypothesis H3). The negative association with neuroticism was also expected, but we expected it to be significant, since here the theory unambiguously predicts a negative association (hypothesis H5). As Riedl and Smeets (2017), we find that the correlation between risk aversion and preferences for SRI is statistically significant and negative, possibly indicating that investors perceive SRI as more complex or uncertain products. This result means that hypothesis H6 is supported.

Considering column 2, which adds the demographic controls, we see that the associations with the Big Five personality traits in the baseline specification remain virtually the same for three of five traits (extraversion, agreeableness and neuroticism), while for the remaining two the associated magnitude is halved. In terms of demographic characteristics our results seem to be in line with those from previous literature. Like Rossi et al. (2019) we find that education and degree of urbanization of the residence are strongly correlated with households' interest in SRI. In particular, respondents with university education are 13.33 percentage points more likely to invest in the SR asset than their lower educated counterparts. The effect of education appears to be monotonic and respondents who have attained a secondary level of education are already 6.16 percentage points more likely to invest in the SR asset than those with a lower level of education, *ceteris paribus*. The numeracy index, which measures the respondent's ability to perform mathematical calculations, has a small but statistically insignificant positive association with the probability of investing in the SR asset. Participants residing in urban areas exhibit a higher stated interest in SR products compared to others. People living in small towns are about 13 percentage points less likely to invest in the SR asset than city people, while for those living in suburbs or larger towns the difference, although not significant, is about 5 and 3.8 percentage points respectively.

Contrary to Gutsche et al. (2023), we find that the gender difference is not statistically significant, though the point estimate suggests that women are more interested in SR assets than men are, *ceteris paribus*. In line with Rossi et al. (2019) and Gutsche et al. (2023) our results show that household income and household wealth do not significantly contribute to predicting SR investment – their associated coefficients are also very small in magnitude.

Being involved in voluntary work is significantly and positively related to the probability of investing in the SR asset. Specifically, individuals who report having volunteered their

time are 11 percentage points more likely to allocate at least part of their their hypothetical investment into an ethical rather than a traditional account. Volunteers, who tend to be actively engaged with their communities, may possess a greater awareness of the needs and benefits of local projects. Consequently, investing in products that support these initiatives can be seen as an extension of their community engagement. This result is consistent with the findings of Riedl and Smeets (2017) and Brodback et al. (2019) that more altruistic individuals are also more likely to choose SRI; indeed, the former show that socially responsible investors give more to charity than conventional investors, while the latter find that altruistic values are positively correlated with the relative importance of social responsibility.

Confirming previous evidence (Gevorkova et al., 2023), political orientation is associated with a stated preference towards SR investment: respondents who are more inclined towards left-wing political beliefs are significantly more likely to invest in the SR asset than their right-wing counterparts. This relationship may be attributed to the alignment between left-leaning ideologies and the principles underlying socially responsible investments. Individuals with left-wing political beliefs often prioritize social equity, environmental sustainability, and corporate accountability – core tenets of SR assets. Consequently, these individuals may prefer investment options that reflect their commitment to these values. In contrast, right-leaning individuals might prioritize economic growth and personal financial returns over social and environmental considerations, leading to a lower propensity to choose SR products.

Looking at the country dummies, we see that there is a difference in the level of interest in SRI between countries. In particular, the positive and statistically significant coefficient suggests that Belgians are more likely to choose the socially responsible alternative. This heterogeneity reflects differences in cultural attitudes. In fact, as shown by the CAF World Giving Index, a report produced by the Charities Aid Foundation (CAF) which ranks countries according to the proportion of people who participate in a series of activities (helping a stranger or someone they do not know who needs help, giving money to a charity, and volunteering their time to an organization), Belgians are more generous than people living in Italy and Spain (Charities Aid Foundation, 2019).

The last specification (column 3) also includes the variable capturing saving regret. For the other variables, the results largely align with previous findings. The only notable difference is that openness to experience is no longer significant, likely due to the reduced sample size since saving regret is only measured for individuals aged between 60 and 79. Saving regret is positively and significantly related to the decision to invest in the SR account, supporting hypothesis H7. If saving regret is an indicator of irrational behavior in the sense that non-economic factors play a role in financial decisions, then we can expect respondents with saving regret to make decisions based not only on profit maximization but also on other aspects such as social acceptability.

Finally, looking at column 4, where the direction of regret is further taken into account, the effect seems to be mainly driven by individuals who regret having saved too much. Those who perceive their accumulated wealth as excessive may be more willing to trade financial returns for social benefits. This behavior suggests a departure from purely economically rational

decision making, as it may reflect a desire to find greater meaning in financial decisions, or to channel resources towards meaningful causes rather than financial optimization. While it is plausible that altruistic tendencies – such as a willingness to give back or support societal well-being – play a role in motivating these decisions, the available data do not allow us to determine whether altruism is the main driver of this pattern.

In [Table 2](#), we only analyzed the decision to invest something in the SR asset or not (the extensive margin). Following [Dorfleitner and Nguyen \(2016\)](#) and [Rossi et al. \(2019\)](#), the next step is to explore the intensive and the extensive margins together, by examining the ordered variable that is the answer to the stated preference question, reflecting which share of the total amount of wealth the respondents would invest in the SR product where interest is redirected by the bank to fund a community-oriented project in their place of residence, while the remaining share is put on a traditional account that yields annual interest payouts. Since the possible answers are discrete with a natural ordering (from one, investing 0% of the amount in a SR account, to five, investing 100% of the amount in a SR account), we estimate the following Ordered Probit model:

$$\begin{aligned}
 y_i^* &= \alpha + X_i\beta + \epsilon_i \\
 y_i = j &\quad \text{if } m_{j-1} \leq y_i^* < m_j \quad j = 1, \dots, 5
 \end{aligned}
 \tag{2}$$

where y_i^* is a latent variable and y_i is the observed categorical outcome on the share invested in the SR asset (B) rather than the traditional asset (A): (1) all of it in A (you get 100 euro of interest), (2) more than half in A (you get more than 50 euro of interest), (3) half of it in A, half in B (you get 50 euro of interest), (4) more than half in B (you get less than 50 euro of interest) and (5) all of it in B (interest completely goes to the community project). The explanatory variables and the assumptions on the error term ϵ_i are the same as before. The estimated marginal effects on the category probabilities are reported in [Table 3](#). We only present the results that also include demographics, risk aversion and the saving regret dummy (cf. column 3 in [Table 2](#)).

As shown by previous results the pivotal personality traits are openness to experience, agreeableness and conscientiousness. Specifically, a one standard deviation increase in openness and agreeableness is associated with an increase in the probability of allocating the entire investment to the SR account of approximately 1.1 and 0.9 percentage points, respectively. Conversely, a one standard deviation increase in conscientiousness reduces this probability by 0.8 percentage points.

In line with the results in [Table 2](#), risk aversion is negatively related with the probability of investing anything in the SR account, *ceteris paribus*. It is significantly negatively related to putting 50% or more of the investment in the SR account. Like the results in [Table 2](#), this suggests that respondents may see the SR asset as more risky, even though it is presented as a simple risk-free saving account. Perhaps respondents are unfamiliar with this type of savings and risk averse respondents tend to go for the familiar saving account which they trust more to not go bankrupt and fulfill its obligations.

Table 3: Willingness to participate in social investments - intensive and extensive margin

	(1) 0% in SRI	(2) Positive but less than 50% in SRI	(3) 50% in SRI	(4) More than 50% but less 100% in SRI	(5) 100% in SRI
Openness	-2.540** (1.038)	-0.070** (0.035)	1.112** (0.456)	0.351** (0.145)	1.147** (0.475)
Conscientiousness	1.751* (0.982)	0.048 (0.030)	-0.766* (0.432)	-0.242* (0.138)	-0.791* (0.444)
Extraversion	-0.254 (0.994)	-0.007 (0.027)	0.111 (0.435)	0.035 (0.137)	0.115 (0.449)
Agreeableness	-1.894* (0.980)	-0.052* (0.030)	0.829* (0.430)	0.261* (0.138)	0.855* (0.444)
Neuroticism	0.548 (0.995)	0.015 (0.028)	-0.240 (0.436)	-0.076 (0.138)	-0.248 (0.449)
Risk aversion	3.556** (1.574)	0.097* (0.050)	-1.556** (0.692)	-0.491** (0.222)	-1.606** (0.715)
Saving regret	-7.287*** (2.399)	-0.200** (0.087)	3.189*** (1.058)	1.006*** (0.350)	3.291*** (1.093)
Volunteering	-11.331*** (2.208)	-0.310*** (0.104)	4.960*** (0.992)	1.564*** (0.340)	5.118*** (1.022)
Female	-1.012 (1.901)	-0.028 (0.053)	0.443 (0.833)	0.140 (0.262)	0.457 (0.859)
Age	-0.232 (0.173)	-0.006 (0.005)	0.101 (0.075)	0.032 (0.024)	0.105 (0.078)
Secondary education	-8.833*** (2.668)	-0.022 (0.083)	4.257*** (1.358)	1.167*** (0.359)	3.431*** (0.971)
Tertiary education	-14.236*** (3.399)	-0.337** (0.169)	6.402*** (1.571)	1.960*** (0.506)	6.211*** (1.522)
Numeracy	-0.175 (1.060)	-0.005 (0.029)	0.076 (0.464)	0.024 (0.146)	0.079 (0.479)
Political orientation	1.294*** (0.433)	0.035** (0.015)	-0.566*** (0.192)	-0.179*** (0.062)	-0.585*** (0.197)
Suburbs	3.934 (3.383)	0.244 (0.226)	-1.505 (1.283)	-0.577 (0.502)	-2.096 (1.831)
Large town	5.731* (3.329)	0.314 (0.215)	-2.266* (1.296)	-0.831* (0.496)	-2.947* (1.765)
Small town	8.239*** (2.927)	0.369* (0.208)	-3.393*** (1.123)	-1.175*** (0.450)	-4.040** (1.592)
Ln hh income	-0.068 (0.430)	-0.002 (0.012)	0.030 (0.188)	0.009 (0.059)	0.031 (0.194)
Ln hh wealth	0.209 (0.541)	0.006 (0.015)	-0.092 (0.237)	-0.029 (0.075)	-0.095 (0.245)

Invest	0.016 (2.211)	0.000 (0.061)	-0.007 (0.968)	-0.002 (0.305)	-0.007 (0.999)
Italy	1.627 (2.932)	0.054 (0.106)	-0.695 (1.243)	-0.227 (0.411)	-0.759 (1.385)
Belgium	2.347 (3.007)	0.072 (0.104)	-1.013 (1.279)	-0.326 (0.421)	-1.080 (1.413)
Obs.	2,064	2,064	2,064	2,064	2,064

Ordered probit estimation models. Marginal effects in percentage points reported. Robust standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Saving regret is significantly associated with a higher probability of choosing the account that uses accrued interest to finance projects that help the community and negatively associated with the probability of choosing the traditional account. Compared to [Table 2](#), the relation between saving regret and investing in the SR account is even somewhat stronger: saving regret reduces the probability to not invest anything in SR by 7.3 percentage points, ceteris paribus (cf. 6.2 percentage point in [Table 2](#)). The probability to invest everything in the SR account increases by 3.3 percentage points and the probability to split the amount in equal parts increases by almost the same.

[Table 3](#) also shows that the demographic characteristics of people who prefer a SR account to a traditional one are in line with those presented in [Table 2](#). In fact, the coefficients associated with gender, age and numeracy are not statistically significant, nor are those for household income and wealth. The correlation with education is monotonic: respondents with a tertiary education are 6.2 percentage points more likely to have all their investments in a SR account and those with a secondary education are 3.4 percentage points more likely to have this type of investment than their less educated counterparts. People living in cities are more likely to invest in the SR product than in the traditional account. Those who say they do not volunteer and those with more right-wing political views are significantly less likely to invest in SRI.

6. Conclusions

In this paper we empirically study the link between personality and the potential interest in SR investment. In particular, we focus on identifying segments of the population that exhibit a strong inclination towards this market, taking into account both socio-economic attributes and personality traits. There are two reasons that motivated our choice. First, personality has been found to be an important factor in financial decision making (i.e., [Chitra and Sreedevi, 2011](#); [Oehler et al., 2018](#)). Second, socially responsible investing has experienced a remarkable growth in both European and American financial markets in recent years ([Eurosif, 2021](#); [US Sif, 2022](#)).

To understand the driving forces behind the demand for these products and to explore their potential market, we utilize data from the eighth wave of the SHARE dataset which

includes an ad hoc module containing information about the willingness to invest in socially responsible products. Our sample comprises a representative group of individuals aged at least 50, residing in Belgium, Italy and Spain.

Our hypothesis is that personality traits can help explaining the willingness to invest in SRI. In particular we posit that people considered to be more open to experience, agreeable and with a higher level of saving regret are more interested in choosing socially responsible products while individuals who are more neurotic and risk averse are less interested in them. To address this hypothesis, we start by estimating a Probit model. Then, in a second step, we also look at the combined intensive and extensive margin relying on an Ordered Probit model.

We find that agreeableness and openness to experience are significantly and positively correlated with the willingness to invest in SR products, while risk aversion and conscientiousness are negatively correlated. In addition, our results also suggest that emotions and cognitive errors may influence individuals' decisions to invest in SR products. In fact, regret over past financial decisions is also significantly and positively correlated with the stated interest in SR products.

Overall, the results of our econometric analysis do not permit us to estimate the causal effects of personality on preferences for SR assets, as we only have cross-sectional data. However, they have important insights for financial advisors and investment firms. Given that personality traits and emotions have been found to play a role in SR decision making, advisors and firms can use this knowledge to better tailor sustainable investment recommendations based on individual differences, thereby increasing engagement with SR products. For instance, more agreeable individuals, who are typically more cooperative and empathetic, may find information about the positive societal impact of SRI more persuasive than data on financial returns and risks. By recognizing and leveraging such personality-driven preferences, financial advisors can help clients feel more connected to and motivated by the investment options available to them.

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Appendix A – Survey questions

Big Five personality traits:

Openness

1. I see myself as someone who has few artistic interests. Do you...
 - Disagree strongly
 - Disagree a little
 - Neither agree nor disagree
 - Agree a little
 - Agree strongly
2. I see myself as someone who has an active imagination. Do you...
 - Disagree strongly
 - Disagree a little
 - Neither agree nor disagree
 - Agree a little
 - Agree strongly

Conscientiousness

1. I see myself as someone who tends to be lazy. Do you...
 - Disagree strongly
 - Disagree a little
 - Neither agree nor disagree
 - Agree a little
 - Agree strongly
2. I see myself as someone who does a thorough job. Do you...
 - Disagree strongly
 - Disagree a little
 - Neither agree nor disagree
 - Agree a little

- Agree strongly

Extraversion

1. I see myself as someone who is reserved. Do you...

- Disagree strongly
- Disagree a little
- Neither agree nor disagree
- Agree a little
- Agree strongly

2. I see myself as someone who is outgoing, sociable. Do you...

- Disagree strongly
- Disagree a little
- Neither agree nor disagree
- Agree a little
- Agree strongly

Agreeableness

1. I see myself as someone who is generally trusting. Do you...

- Disagree strongly
- Disagree a little
- Neither agree nor disagree
- Agree a little
- Agree strongly

2. I see myself as someone who tends to find fault with others. Do you...

- Disagree strongly
- Disagree a little
- Neither agree nor disagree
- Agree a little
- Agree strongly

Neuroticism

1. I see myself as someone who is relaxed, handles stress well. Do you...
 - Disagree strongly
 - Disagree a little
 - Neither agree nor disagree
 - Agree a little
 - Agree strongly
2. I see myself as someone who gets nervous easily. Do you...
 - Disagree strongly
 - Disagree a little
 - Neither agree nor disagree
 - Agree a little
 - Agree strongly

Risk Aversion

When people invest their savings they can choose between assets that give low return with little risk to lose money, for instance a bank account or a safe bond, or assets with a high return but also a higher risk of losing money, for instance stocks and shares. Which of the statements on the card comes closest to the amount of financial risk that you are willing to take when you save or make investments?

- Take substantial financial risks expecting to earn substantial returns
- Take above average financial risks expecting to earn above average returns
- Take average financial risks expecting to earn average returns
- Not willing to take any financial risks

Saving Regret (respondents were randomly allocated between these two questions)

1. Please think back to when you were around 45 years old. Suppose you could re-do your spending and saving from then to now, would you...
 - Save more over the years
 - Save about the same over the years

- Save less over the years
2. Please think back to when you were around 45 years old. Suppose you could re-do your spending and saving from then to now, would you...
- Spend less and save more over the years
 - Spend and save about the same over the years
 - Spend more and save less over the years?

Shocks earlier in life

1. Sometimes people experienced surprises earlier in life that help their finances turn out better than expected. Did any of the following happen to you?
- My salary or earnings were higher than expected
 - My spouse's salary or earnings were higher than expected
 - I retired later than expected
 - My spouse retired later than expected
 - Household spending was lower than expected
 - My/our investments or business performed better than expected
 - Received financial help from family (self or spouse)
 - Received an inheritance (self or spouse)
 - Pension benefits were higher than expected (self or spouse)
 - Other
2. Sometimes people experienced surprises earlier in life that cause their finances to turn out worse than expected. Did any of the following happen to you?
- Bad health that affected the ability to work (self or spouse)
 - Large unexpected health expenses (self or spouse)
 - Unemployment (self or spouse)
 - Retired earlier than expected (self or spouse)
 - Salary or earnings were less than expected (self or spouse)
 - My/our investments or business performed worse than expected
 - Needed to provide financial help to family members (self or spouse)
 - Divorce or separation

- Death in the family
- Large expenses other than health expenses (self or spouse)
- Pension benefits were lower than expected (self or spouse)
- Other

Appendix B – Saving Regret

Table B1: Saving regret and negative/positive shocks (percentage)

	Save less	Save more	Total
<i>Panel A - Positive shock</i>			
Higher salary	2.29	1.93	4.21
Higher salary - spouse	0.11	1.02	1.12
Retired later	0.10	1.17	1.27
Retired later - spouse	0.04	0.97	1.00
Spending less	0.01	0.57	0.58
Good investments	0.61	0.18	0.79
Received financial help	0.78	4.71	5.48
Received inheritance	5.32	4.20	9.52
Higher pension	0.41	1.37	1.78
Other shocks	0.40	0.68	1.08
Any positive shock	7.76	13.89	21.65
<i>Panel B - Negative shock</i>			
Bad health	3.98	7.53	11.51
Unexpected health expenses	2.47	6.80	9.27
Unemployment	0.30	13.67	13.96
Retired earlier	0.44	3.34	3.78
Lower salary	0.04	9.19	9.23
Bad investments	1.39	1.76	3.14
Provided financial help	1.57	1.56	3.13
Divorce	0.68	7.44	8.11
Death in the family	2.17	3.64	5.81
Spending more	1.12	5.53	6.66
Lower pension	1.78	4.56	6.34
Other shocks	0.00	0.41	0.41
Any negative shock	9.84	32.77	42.61

Questions used to assess whether respondents have experienced shocks affecting their financial situation in the past are reported in [Appendix A](#).