Preferences for Sustainable and Responsible Funds
- a choice experiment with Swedish private investors

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Abstract

This study addresses the issue of sustainable and responsible investment (SRI) funds and private investors' trade-offs between fund attributes. Few previous studies have examined preferences of private investors to see which attributes that are most preferable for SRI funds. The purpose of this study was therefore to, in an exploratory manner, examine which preferences private investors have for fund attributes and what type of sustainability strategy and aspect that affect the fund choice. Moreover, an investigation of the importance that private investors place on screening criteria was made. The data was collected from private investors in Sweden by distributing a questionnaire. The trade-offs were determined by conducting a discrete choice experiment. The results indicate that private investors prefer sustainable funds, with lower risk, low management fees and a higher return. Furthermore, the most preferred sustainability strategy is sustainability themed followed by negative screening whilst engagement and voting is the least preferred strategy. Additionally, environment is the preferred sustainability aspect over governance. The present study adds to the existing body of research by eliciting the different trade-offs that private investors make between fund attributes. Thus, a greater understanding of private investors preferences can emerge, and the communication can be tailored accordingly. Furthermore, this study contributes by improving the understanding of the importance of screening criteria in relation to SRI funds.

Sammanfattning

Denna studie adresserar hållbara investeringar och investerares avvägningar mellan olika fondattribut. Få studier har undersökt preferenser hos privata investerare för att se vilka attribut som privata investerare föredrar i hållbara fonder. Den här studien syftar därmed till att undersöka vilka preferenser som privata investerare har för fondattribut och vilken typ av hållbarhetsstrategi och aspekt som påverkar fondvalen. Även en undersökning om vikten av screeningkriterier utfördes. Genom att göra ett valexperiment kunde avvägningar för fondattribut tas i beaktning och data samlades in via en enkät. Resultatet indikerar att privata investerare föredrar hållbara fonder med lägre risk, lägre fondavgifter och högre avkastning. Den hållbarhetsstrategi som föredras i högst utsträckning är tema-investeringar följt av negativ screening och den strategi som har minst intresse bland respondenterna är aktiv påverkan. Privata investerare föredrar miljörelaterade aspekter över ägande och styrning. Studien bidrar till existerande forskning genom att undersöka vilka avvägningar som görs mellan de olika fondattributen, vilket utökar förståelsen för privata investerares preferenser för fondattribut och hur kommunikationen av fonder kan förbättras.

Abbreviations

DCE: Discrete choice experiment
ESG: Environmental, social and governance
Eurosif: European Sustainable Investment Forum
LR-test: Likelihood Ratio test
MNL model: Multinomial logistic regression
MSCI: Morgan Stanley Capital International
OECD: Organisation for Economic Co-operation and Development
PRI: Principles for Responsible Investments
RUT: Random utility theory
SDGs: Sustainable Development Goals
SLU: The Swedish University of Agricultural Sciences
SRI: Sustainable and Responsible investments
Swesif: Swedish Sustainable Investment Forum
UN: United Nations

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1 Introduction

This section includes the problem background and the problem statement, followed by the aim of the study and its delimitations. The disposition concludes the section.

1.1 Problem background

Climate change affects regions around the world and its impacts are expected to escalate in the following decades (European Commission, 2019). Extreme weather events, melting polar ice shields and rising sea levels are already happening, which puts both ecosystems and human well-being at risk. The damages caused by climate change on infrastructure and human health imposes large costs on society and the economy (ibid.). In fact, financial losses due to extreme weather disasters increased with 86 per cent between 2007 and 2016 in Europe (European Commission, 2018). As these effects pose a real threat to the financial stability and lead to large economic losses, financial markets become a crucial player in the mitigation process of climate change, as major investments are needed to transform the economy to be able to reach the sustainable development goals (ibid.). In fact, it will require a shift of 5 trillion business-as-usual investments to greener investments per year up to 2030 (World Economic Forum, 2013). Today, countries within Europe lacks approximately 180 billion euros in funds required to reach its climate goals of 2030 and the Paris Agreement (ibid.). To be able to close the gap in climate related finance it becomes vital to mobilizing private capital into sustainable finance (UNPRI, 2019). In order to achieve this aim, the financial sector has to provide investment options to private investors that are allocated to the climate goals targets. Climate change along with shifting demographics and the revolution of technology are reshaping values and how individuals invest (European Commission, 2018).

The financial industry in collaboration with the United Nation supported initiative: *Principles for Responsible Investments* (PRI)*,* have developed guidelines for investments that can be considered sustainable (UNPRI, 2019). Sustainable and Responsible Investments (SRI) is an investment approach that aims to incorporate sustainability aspects such as environmental, social and governance (ESG) factors in investment decisions. By including these non-financial criteria, financial markets are able to generate long term and sustainable returns that have a positive impact on society and the environment. To incorporate these sustainability aspects fund managers can utilize different sustainability strategies and screening criteria that guide them in the choice of companies to invest in.

In the past decades, SRIs has showed exceptional growth (Eurosif, 2018). In 2015, the number of stock funds with an SRI profile outweighed the number of funds that do not consider any ESG factors (Eurosif, 2016). Between 2015-2017 SRI assets under management increased with 25 per cent within Europe. In contrast, SRI assets increased with almost 150 per cent in Sweden during the same period of time (ibid.). Today a large part of the Swedish population saves in funds. In fact, eight out of ten Swedes saves in either private funds or indirect via the Swedish pension system (Fondbolagens förening, 2019). Such a high proportion of fund savings does not occur in any other country in the world (ibid.). Even if most of the capital that are invested in SRI today originates from institutional actors (Sjöström, 2014), surveys in Sweden have shown that sustainability aspects are important for private investors and that a majority are willing to invest sustainably (Swedbank, 2018). However, only a small portion states that they actually save sustainably today (ibid.).

1.2 Problem statement

SRI and ethical decision-making in finance has been an increasingly debated topic both in public discussions as well as the academic literature over the past decades (Wallis and Klein, 2015). A body of literature within this research area has focused on the understanding of the motives behind private investors decision to invest in SRI funds and whom invest sustainably (Cheah, Jamali, Johnson and Sung, 2011; Dorfleitner and Nguyen, 2016; Junkus and Berry, 2010; Nilsson, 2009; Nilsson, 2008; Pérez-Gladish, Benson and Faff, 2012). Moreover, existing research has focused on whether SRI is profitable compared to conventional investments (Clark, Feiner and Viehs 2015; Friede, Busch and Bassen, 2015; Sahut and Pasquini-Descomps, 2015). Earlier research has also addressed the development of SRI over time and provides an overview of different terms and definitions (Sparkes, 2001; Sparkes and Cowton, 2004; Wallis and Klein, 2015).

Investigations about the trade-offs between different fund attributes have also been done, where economic- and sustainability performance has been weighed against each other (Berry and Yeung, 2013; Glac, 2009). However, important to bear in mind is that private investors consider more attribute than these two when choosing the optimal fund. For example, an investigation made by the Swedish Investment Fund Association (2018) revealed that management fee, risk, sustainability and investment objective are the most important. This discrepancy between what previous trade-off studies have taken into account and the actual trade-offs that private investors are faced with require further investigation. Such an investigation could lead to better understanding of the preferences of private investors and how they make trade-offs between more fund attributes. Furthermore, there are contradictions in the current academic field on the importance of different screening criteria for SRI (Wins and Zwergel, 2016; Pérez-Gladish et al. 2012; Berry and Junkus, 2013). This motivates further research of the importance that private investors place on different screening criteria. Thus, by investigating both private investors preferences regarding fund attributes in a different way and the importance of screening criteria this study is of theoretical relevance. Additionally, this study is of empirical relevance as well as it aims to create a greater understanding of private investors preferences, which could help practitioners design and communicate SRI funds in a better way to increase the level of investments in SRI funds.

1.3 Aim

The study aims at developing the field of sustainable investment behaviour since there is a lack of knowledge of private investor preferences for fund attributes. A fraction of previous literature has used different type of trade-off methods (Berry and Yeung, 2013; Glac, 2009; Apostolakis, Kraanenb and Van Dijk, 2016) to distinguish investors' preferences. The study aims at expanding the existing trade-off literature within SRI behaviour by including more attributes and looking at different SRI strategies and aspects. The inclusion of more attributes besides return and sustainability performance, allows the study to give a more representative picture of the attributes that investors consider and a clearer picture of the trade-offs that investors make. Moreover, there are inconsistencies within the current academic field as to which sustainability strategy (Wins and Zwergel, 2016; Dorfleitner and Nguyen 2016; Berry and Junkus, 2013; McLachlan and Gardner (2004) and aspect (Wins and Zwergel, 2015; Pérez-Gladish et al. 2012; Berry and Junkus, 2013; Apostolakis et al. 2016) that private investors prefer. Such information could help facilitate the design of SRI funds to match the preferences of private investors. Furthermore, insights into the preferences of Swedish investors are needed as this market has received little attention (Nilsson, 2008) and since Swedes have the highest proportion of savings in funds in the world (Fondbolagens förening, 2019). Additionally, investigating the screening criteria is also important, as there is no consensus in the current

academic field on the importance private investor place on different criteria (Wins and Zwergel, 2016; Pérez-Gladish et al. 2012; Berry and Junkus, 2013). A greater understanding of the importance that private investors place on screening criteria could therefore contribute to the academic field as well as guide practitioners on which criteria they should prioritize and include in their screening process. The purpose of this study is thus: to investigate private investors' preferences for funds attributes and which screening criteria that are most important. The purposes have emanated into the following questions:

1. Which preferences does private investors have for fund attributes?
2. What type of sustainability strategy and aspect are most preferred?
3. Which screening criteria are most important?

1.4 Delimitations

Previous research has explored the investment behaviour when it comes to SRI in two parallels strands, one focus on the investment behaviour of professional investors or fund managers and one on the private investors (Palacios-Gonzalez and Chamorro-Mera, 2018). This study belongs to the latter category, since it aims at exploring the behaviour of private investors. Furthermore, the study only focus on equity funds and therefore does not include other financial products such as shares, pensions, mixed funds and bonds. An additional limitation has to do with the study's geographical focus, which is on the Swedish market.

1.5 Disposition

The study is divided into seven sections. The first section is the introduction, which is followed by a background section that covers the definition of sustainability and SRI funds. Section three introduces the literature review of the field of sustainable investment behaviour, focusing on the literature that deals with the decision of private investors. The fourth section includes the methodological approach. In section five the results of the regression and the econometric analysis is presented, the main findings are then discussed in greater detail in section six. The last section concludes the study and gives suggestion on further research.

2 Extended background and concepts

In this section the sustainability concept is described and defined more thoroughly, followed by a section describing Sustainable and Responsible Investments (SRI) and its strategies.

2.1 Sustainability

The word *sustainability* varies in both definition and scope depending on the source. One of the most famous definitions is the one coined by the Brundtland Commission: *"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs"* (UN, 1987, p. 41). In more recent years the UN has put forward the Sustainable Development Goals (SDGs), which builds on the Brundtland commission and provides governments, businesses and civil society with clear goals that aim at achieving a sustainable development (UN, 2019). These goals take a range of topics into consideration such as poverty, education, consumption, water- and land use, innovation, peace, climate and health (ibid.). Furthermore, the goals are in line with another definition of sustainability, which is 'triple bottom line'. The triple bottom line was put forward by Elkington (1999) and it emphasizes that in order to be sustainable one need to consider economic, social as well as environmental aspects. Traditionally, the financial market has placed a large emphasis on the economic aspect and very little on the environmental and social impact. Nevertheless, this has begun to change as politicians all over world have tried to regulate the financial markets in order to steer capital flows into more sustainable alternatives (UNPRI, 2019).

2.2 Sustainable and responsible investments

The difficulty of defining SRI has become both a debate and a deep-rooted issue within sustainable finance sphere during the past years (Eurosif, 2018). The lack of consensus about definitions has resulted in different terminology when discussing the phenomena, such as ethical investments, socially responsible investments, sustainable and responsible investments and green investments (Sparkes and Cowton, 2004). Ethical investment is an older term and denotes investors representing the church who were the first to set ethical preferences on investment portfolios. As time has passed the name ethical investments slowly began to be replaced by Socially Responsible investments (Ibid.). In recent years, environmental aspects as well as ethical considerations has been used more frequently in asset management, such management often gets labelled as a green investment (Sparkes, 2001). Generally, the different terminology can be used interchangeably, but there might be differences depending on source of information, as there are inconsistencies in both public discussions and academic literature (Sparkes and Cowton, 2004). Therefore, the challenge to reach an agreement as to what "sustainable" or even "sustainability related" investments is still remains.

The UN supported Principles for Responsible Investments (see Appendix 1) where created to act as a framework to support the development of the SRI industry and provide guidance for investors (UNPRI, 2019). These Principles are voluntary and aspirational (but still widely used) to offer some possible actions for incorporating Environmental, Social and Governance (ESG) issues into investment practice (ibid.). As an illustration, Table 1 display ESG factors according to Morgan Stanley Capital International (2019).

Table 1. ESG Factors

Environmental (E)	**Social (S)**	**Governance (G)**
Climate change	Human capital	Corporate governance
Carbon emissions	Labour standards	Diversity
Natural resources	Health and safety	Executive pay
Water stress	Privacy and data security	Ownership and control
Pollution and waste	Product liability	Corporate behaviour
Green building	Stakeholder opposition	Business ethics
Renewable energy	Social opportunities	Tax transparency
Clean tech		Corruption and instability

(MSCI, 2019)

To provide further guidance for the financial industry, the Board of European Sustainable Investment Forum (Eurosif) have reached a consensus on the following definition of SRI (Eurosif, 2018, p. 12): "*Sustainable and responsible investment (SRI) is a long term oriented investment approach which integrates ESG factors in the research, analysis and selection process of securities within an investment portfolio. It combines fundamental analysis and engagement with an evaluation of ESG factors in order to better capture long term returns for investors, and to benefit society by influencing the behavior of companies*". Thus, the ESG factors provide a framework for fund managers to make a sustainable decision (Eurosif, 2018). In this study, Eurosif's definition is used to denote what is considered a sustainable and responsible investment.

2.2.1 Sustainability strategies

To be able to integrate the ESG factors fund managers can adopt a variety of sustainability strategies that guide them in the selection of companies to include in the portfolio (Sparkes and Cowton, 2004; Sjöström, 2014). *Exclusion* is the oldest SRI strategy, which systematically exclude countries, sectors or companies from the investment universe based on certain criteria. These criteria may vary depending on investor, as the view of what is ethical or not can differ. However, typical sectors to exclude are those who manufacture or sell weapons, tobacco, alcohol and pornography (Eurosif 2018; Sjöström, 2014). Another one is *Norms-Based screening*, which is a screening of businesses that violates international standards and norms (Eurosif, 2018). The international norms focus on environmental protection, human rights, labour standards and anti-corruption principles, which are set by OECD and UN Global Compact (ibid.). In this study these two strategies will be bundled together under the name *Negative screening*.

Positive Screening is another strategy, which allows asset managers to invest in businesses that have a high ESG-score in different sectors. By identifying business that perform both financially and sustainably the asset managers do not need to divest from certain sector, but rather invest in the best performing companies (Sjöström, 2014). *Engagement and voting* is the second most used strategy within SRI strategies after negative screening, which is the most common strategy. Within the engagement and voting strategy, fund managers have the possibility to influence policies and future development of businesses within the portfolio by participating on annual general meetings or planned meetings with the Board of Directors/Management Group Level (ibid.). *Sustainability themed* is an investment strategy that focuses on a specific sustainability related issue (Eurosif, 2018). To exemplify, funds could be connected to themes such as renewable energy, sustainable transport or agriculture. This is the least common strategy at the Swedish market out of the four strategies presented (ibid.).

3 Literature review

In this section the theories and findings of previous literature that comprise the literature review will be presented. First, the section of more traditional neoclassical assumptions will be presented, followed by literature exploring sustainable investment behaviour.

3.1 Investment behaviour

A common assumption among rational decisions theorists is that investment decisions are made rationally and are based on selfish motives (Miller and Modigliani, 1961; Statman, 2005). Hence financial considerations such as return, risk and liquidity are the only basis for an investment decision (Markowitz, 1959). Further assumptions state that a rational investor would reduce the amount of portfolio risk by diversification, up until the point where the only remaining risk is the market risk. However, if an investor includes moral considerations in the investment process certain stocks would be excluded and the investor would have a less diversified and thus, a riskier portfolio (ibid.). Moral considerations are therefore considered to be inefficient and not in line with rational behaviour (Michelson, Wailes, Van der Laan and Frost, 2004). Therefore, traditional neoclassical assumptions on rationality argue that moral considerations are not taken into account when making an investment decision (Hofmann, Penz and Kirchler, 2009; Statman, 2014). However, the validity of these assumptions has been questioned by Statman (2005) who instead proposes that investors are affected by cognitive biases and emotions when investing, and that they care about more aspects than the expected return and risk of a portfolio. Statman (2014) further argues that investors get additional benefits, besides return, from investments such as positive emotions linked to the act of doing good and that investments can make a statement of what type of person the investor is e.g. SRI funds express environmental responsibility. These assumptions explain why individuals might want to invest in an SRI fund. Thus, the assumption of purely rational behaviour when it comes to investments needs to be challenged.

3.2 Sustainable investment behaviour

The increasing market demand for SRI indicates that investment decisions are influenced not only by financial benefits but also additional factors (Hofmann, et al. 2009). Previous research within the field has addressed several areas related to SRI investment behaviour, such as socio-demographic variables, attitudes and beliefs, trade-offs between attributes and sustainability strategies.

3.2.1 Sociodemographic variables

One way to analyse what type of person that invest in SRI funds is to investigate if there are some socio-demographic variables that are more likely to determine the behaviour of SRI investors. There has been a fair amount of research within this area and a great deal of studies has confirmed that women have a higher tendency to invest in SRI funds than men (Cheah et al. 2011; Nilsson; 2009; Wins and Zwergel, 2016; Junkus and Berry, 2010; Escrig-Olmedo, Muñoz-Torres and Fernández-Izquierdo, 2013). Another variable that seem to predict SRI investment behaviour is the level of education, as individuals with a higher education tend to invest in SRI funds (Cheah et al. 2011; Nilsson, 2009; Nilsson, 2008; Junkus and Berry, 2010; Escrig-Olmedo et al. 2013). In addition, those with high income seem to regard SRI investments as important (Cheah et al. 2011; Escrig-Olmedo et al. 2013). However, some variables do not have the same consensus regarding their impact on SRI behaviour. Wins and Zwergel (2016) found that those who were married or parents are more likely to invest sustainably. Junkus and Berry (2010) on the other hand found that singles are more likely to invest in SRI funds. The age of the investor also seem to matter, but the findings are not conclusive as some research

suggest that younger investors are more favourable to SRI (Junkus and Berry, 2010; Cheah et al. 2011; Dorfleitner and Nguyen, 2016) while some state that middle age have a higher tendency (Pérez-Gladish et al. 2012; Escrig-Olmedo et al. 2013). There is not a large step from finding out what demographic variables that influence SRI behaviour to segment based on these variables (Nilsson, 2009). Nilsson (2009) did such a segmentation and found that there were three different segments of private investors: (1) socially responsible and return driven, (2) primarily concerned about profit and (3) primarily concerned about social responsibility. However, previous studies have concluded that demographic variables explained little of who the SRI investor where (Dorfleitner and Utz, 2014) but rather attitudes and lifestyle choices could explain the SRI investor to a larger extent (Hofmann et al. 2009; Wins and Zwergel, 2016).

3.2.2 Attitude and beliefs

Some research has focused more on *why* investors choose to invest in SRI funds and what attitudes, beliefs and motives that drives the behaviour (Wins and Zwergel, 2015). Previous research has focused a lot of attention on theory of planned behaviour, which predicts that attitudes determine intention and behaviour (Ajzen, 1991). Research on investment decision has shown that individuals that have pro-social attitudes and values the issues addressed by SRI funds have a higher tendency to invest in SRI funds (Wins and Zwergel, 2016; Nilsson, 2008). Furthermore, individuals that already engage in sustainable consumption behaviour and habits are also more likely to invest sustainably (Hofmann et al. 2009). These individuals also tend to have a frequent membership in social engagement groups (Glac, 2009). In that sense individuals that invest sustainably seem to apply their social beliefs and values in the area of their economic life as they tend to view investing as an extension of their lifestyle or identity (ibid.). Additionally, previous findings suggest that if individuals perceive that their investment can have an effect and make a difference, they are more likely to invest sustainably (Palacios-Gonzalez and Chamorro-Mera, 2018; Nilsson, 2009; Wins and Zwergel, 2016). Moreover, those who believe that an SRI fund corresponds with their ethical values are more loyal and as a result the fund has a more patient investment capital (Peifer, 2014).

3.2.3 Trade-off between risk, return and sustainability concerns

Previous literature has found that it is not only the attitudes that are important when it comes to investment in SRI funds, but also the subjective perceptions about the funds (Riedl and Smeets, 2017). A lot of investigation has been done on how investors perceive that SRI funds would perform compared to conventional funds in relation to risk and return, which can be seen in the literature review by Wins and Zwergel (2015). In traditional neoclassical fashion investors are perceived to be rational and the only variables they consider when choosing a fund is risk and return (Statman, 2005). It is therefore a number of studies that investigates whether or not an SRI investor deviates from the rational behaviour and show altruistic tendencies or if an SRI investment is rational, i.e. it only occurs when an SRI fund has the same risk and return as a conventional one (Wins and Zwergel, 2015). There are some research that show that the latter might be true since SRI investors are more positive about the performance of SRI funds than conventional investors (Riedl and Smeets, 2017) and those who think that the SRI funds will do better than conventional will invest a larger portion in SRI funds (Dorfleitner and Utz, 2014; Nilsson, 2008). When it comes to risk, previous studies have shown that SRI funds and conventional funds are perceived to have similar amount of risk or slightly less risky (Nilsson, 2008; Wins and Zwergel, 2016). Thus, investment behaviour when it comes to SRI funds should not be confused with charity or altruism since the ones investing are expecting a long term return on their investment and considers risk and return when investing (Nilsson, 2008).

Previous studies also challenge the rationality of investor, as Wins and Zwergel (2016) found that all investors, even those investing in SRI funds, believed that they would perform worse. A rational investor would never invest in a fund that he thought would perform worse, this suggests that SRI funds would have some sort of utility besides financial return that outweigh the financial loss (Wins and Zwergel, 2016). This is supported by the findings of Berry and Yeung (2013) who did a conjoint analysis to investigate the trade-off between financial performance and sustainability considerations. Their findings suggest that SRI investors gain more utility from an improvement in sustainability performance than financial performance and that the amount of utility that SRI investors' gain from sustainability improvements varies between individuals (ibid.).

An interesting finding by Glac (2009) reveals the struggle to make trade-offs between social and financial returns. It investigated the effect of return level on a conventional investment option when investors had to choose between conventional and SRI funds. The result states that as return for conventional investments increased, a larger part of private investors did not choose SRI. Consequently, individuals may not feel that they can afford to sacrifice returns even though they may want to invest sustainably and care about such beliefs (ibid.). Other research reveals that it is common for people to invest both in ethical and conventional funds (Michelson et al. 2004). Thus it is not a straightforward trade-off between investors' values and their desire for financial return. Michelson et al. (2004) states that this is unsurprising as financial return is an important criterion for investors, irrespective of the level of sustainability of the fund. Hofmann et al. (2009) state that SRI investors wants to gain a profit but also provide other reasons for investing in SRI funds such as promoting companies, a clear conscience and protecting the environment and other human beings.

3.2.4 Sustainability strategies

Besides subjective perception, attitude and beliefs and socio-demographic variables a strand of literature investigate if private investors have any preferences regarding how SRI funds are designed and what criteria that are important. Previous research within the field has shown that positive screening was preferred over negative screening (Wins and Zwergel, 2016; Dorfleitner and Nguyen 2016; Berry and Junkus, 2013). In contrast, McLachlan and Gardner (2004) divided their sample into SRI investors and conventional investors and found that SRI investors rated negative and social screening almost equally, whilst conventional had a strong preference for positive screening. Their findings also suggest that the least popular strategy for both conventional and SRI investors was engagement and voting (ibid.). On the contrary, Dorfleitner and Nguyen (2016) findings showed that men and older investors actually prefer the engagement strategy, when dividing their sample by socio-demographic variables. Wins and Zwergel (2015) claims that investors actually prefer a combination of the two screening strategies where the fund managers use a negative screen in combination with a positive. Anyhow, as Berry and Junkus (2013) observe, there seems to be a mismatch between what the market offers, which is overwhelmingly negative screening, and what the private consumers actually want, which is positive screening or positive screening in combination with negative screening.

Considering the fact that investors might prefer a combination of positive and negative screening it also becomes important to understand what criteria that investors think are the most important. The findings regarding this are inconclusive (Wins and Zwergel, 2015). Pérez-Gladish et al. (2012) found that investors tend to focus more on social issues instead of environmental when investing in funds. Berry and Junkus, (2013) on the other hand claim that the environmental criterion is the most important. A study done by Apostolakis et al. (2016) states that promotion of companies with good employee relationships and human rights practices are the most important positive screening criteria. When it comes to negative screening the exclusion of companies related to social issues such as child labour, not exploiting people and racisms and sexisms (Wins and Zwergel, 2016). Other findings suggest that the most important issues to exclude are human rights violations and the arms industry (Apostolakis et al. 2016). They further argue that women on average place a larger importance on both positive and negative screening criteria than men (ibid.).

However, Berry and Junkus (2013) suggest that negative screening is not how investors themselves judge a company's sustainability performance. They would rather look at the company from a holistic point of view and judge the company from what it does rather than what it avoids doing. Entine (2003) also put forward critic of the negative screening method both as a concept and how it is used in a research. The researcher states that it is a biased concept that are dependent on the researcher and that the criteria are based on culture, conservative religious beliefs and liberal notions.

4 Method

The following section presents the methodological approach of this study and includes description of literature review, experimental design, the design of the questionnaire, a discussion on data collection and quality and the tools used to analyse the data.

4.1 Literature review

A comprehensive review of previous research within the field of SRI research was conducted. To ensure a high quality of the articles included in the literature review five restriction criteria were used. (1) The databases that were used to find sources of information was Google Scholar and Primo and thusly only included the databases they have access to. (2) Only peer-reviewed journals were included and additional sources such as working papers and books were excluded. (3) The keywords used to find relevant articles, included sustainable and responsible investments, SRI, ESG, investment behaviour, pro-social behaviour, preferences, trade-offs and screening criteria. (4) The articles were also investigated and deemed relevant based on whether the abstract included the keywords and the article investigated private investors behaviour in relation to funds. (5) If the abstract of the paper was deemed to be relevant, the article was then read more thoroughly to further ensure the alignment of the research to the literature review and the purpose of the study. By conducting a thorough literature review the theoretical field was thoroughly explored for relevant research. During the process, potential research questions were continuously discussed and adjusted along with the literature reviewed.

4.2 Experimental design

The study uses a deductive approach as the set of research questions originates from theoretical considerations and previous literature and will be tested for empirical viability (Bryman and Bell, 2015). In order to do so the study will use a combined quantitative and qualitative research strategy, a mixed method research, to get an understanding of private investors' preferences for fund attributes and the importance of screening criteria. The quantitative part of the study is the Discrete Choice Experiment (DCE), which was distributed via an online survey. A quantitative study was deemed appropriate as it aims to investigate and quantify how much the preferences differ between the SRI strategies and sustainability aspects and the importance of the different screening criteria. A DCE was chosen, as it is a trade-off methodology that is good at testing utility and is consistent with economic demand theory (Louviere, Flynn and Carson, 2010). Furthermore, it is based on a random utility theory (RUT), which is a well-tested theory of choice behaviour (ibid.).

The qualitative part of the study was conducted prior to the survey and experimental design. As qualitative studies can provide in-depth knowledge of social context that aids the design of surveys and facilitates correct measurements (Bryman and Bell, 2015). When conducting a DCE it is necessary to define what attributes and levels to include. There is no consensus within the academic field of the best way of defining attributes but a common method is to use qualitative in-depth interviews (Louviere et al. 2010; Hoyos, 2010). Therefore, the attributes used in the study where defined based on an in-depth semi-structured interview with two representatives from the Swedish Investment Fund Association (Fondbolagens förening) and a representative from a Swedish bank which is motivated by Rubio, Berg-Weger, Tebb, Lee and Rauch (2003) to ensure content validity and to reduce the probability of false assumptions.

In this study the basis of inclusion depended on what attributes that most investors considered when making their investment decision. The interviews facilitated the process of choosing which attributes to include. The representatives were presented with an array of attributes

identified as important when scanning the Swedish fund market, which acted as an interview guide, and were then asked to identify the ones to include. Additionally, the assumptions of the entire experiment such as time frame and the amount of savings were also defined. The results from the interview with the representatives from the Swedish Investment Fund Association was later presented to an ESG specialist from a Swedish bank during an additional in-depth interview to further elicit additional attributes and assumptions. In both cases the interview process was flexible and the focus was placed on the interviewees opinions and views in order to gain access to their knowledge and expertise within the area. Furthermore, Bryman and Bell (2015) recommends consulting expert opinion since it verifies the process and results. This process was conducted since it is crucial to ensure that the DCE captures the most relevant attributes for the majority of investors, so that concerns for omitted attributes are avoided (Hoyos, 2010).

4.2.1 Attributes

The following attributes and levels (see overview in Table 2) were determined during the interviews with the Swedish Investment Fund Association and an ESG specialist from a Swedish bank and included in the study. Too see how the attributes were presented and described to participants, see Appendix 2.

Table 2. Overview of attributes and levels

Attribute	Levels
Management fee	1,1%; 0,4%
Risk indicator	5; 6; 7
Sustainability strategy	Negative screening; Positive screening; Engagement and voting; Sustainability themed; None
Investment objective	Sweden; Global
Sustainability aspect	Environment; Social; Governance; None
Expected performance	7%; 13%; 19%

Management fee - Funds usually utilizes two main investment strategies to generate returns; active asset management or passive asset management (AMF, 2017). This study does not include the fund management and management fees as separate attributes, they are instead merged due to their strong correlation. Since a strong correlation between attributes could render insignificant parameters for their coefficients in DCE experiments (Franses and Montgomery, 2002). Management fee was deemed to be the more important attribute and was therefore used as the primary attribute. The average management fee for actively managed equity funds are 1,1% and for passive asset management 0,4% (AMF, 2017).

Risk - 45% of Swedish private investors think that risk is very important when making an investment decision (Fondbolagens förening, 2018a). During the discussion with the Swedish Investment Fund Association a strong preference for using the synthetic risk and reward indicator (SRRI) where expressed. The indicator shows the uncertainty of future return by a scale from 1-7. Where funds ranked at 1 typically have a lower risk and return compared to funds ranked 7 (CESR, 2010). However, in the survey only the risks 5-7 were included as equity funds are normally within this span.

Sustainability strategy - In the study the following strategies where included: negative screening, positive screening, sustainability themed and engagement and voting. The decision to include or exclude strategies where based on the discussion with the ESG specialist and the

Swedish Investment Fund Association who thought that the chosen strategies were the ones that best represented the Swedish market.

Investment objective - Were also deemed important by the ESG specialist and the Swedish Investment Fund Association. The levels included in the study are the most popular investment objectives for equity funds in Sweden, which are a Swedish investment objective and global investment objective (Fondbolagens förening, 2018b).

Sustainability aspect - To disentangle which part of the ESG screening that the private investors find most important all three aspects are included; environment, social and governance. The inclusion of a separate E, S and G is well suited for a stated preference (SP) survey as they are particularly good at revealing preferences for something that would be hard to investigate in the real world (Franses and Montgomery, 2002). Fund managers rarely separate the E, S and G and by doing this it allows to investigate the preference for each sustainability aspect.

Expected performance - Similarly to Drescher, Roosen and Marette (2014) this study uses expected performance. This attribute is based on Morningstar average return for the past ten years for funds with both a Swedish investment objective as well as global investment objective, which is 13% (Morningstar, 2019). The standard deviation is 12,55 and is the average standard deviation for the past ten years (Morningstar, 2019). The two other levels used in the study is 7% and 19% which is plus/minus half a standard deviation from 13%. The usage of half a standard deviation is based on the fact that the differences should not be to great and that the participants would place a too large emphasis on the expected performance attribute, which can be a result if one attribute is to prominent compared to the rest (Franses and Montgomery, 2002).

4.2.2 Assumptions
In order to get more conclusive answers a couple of assumptions were needed to ensure that the participants had a similar frame of reference. First of all, the participants needed a fixed sum that they would invest and the most common amount of monthly savings for Swedes is approximately 1000-2000 SEK (Fondbolagens Förening, 2018a). The first assumption was therefore that the participants were facing a situation were they would invest 1500 SEK monthly in the fund of their choosing. Secondly, to simplify the experiment, only equity funds were included in the survey as the participants would have less parameters to include in their trade-off. Equity funds are also the most common fund to invest in Sweden (Fondbolagens förening, 2018b). Since equity funds carry a higher risk than mixed funds and fixed income funds a third assumption was necessary. The third assumption is that the investor should adopt a long-term perspective when conducting their trade-offs. This allowed the participants to be in the same mind-set, since the results otherwise may have been skewed towards fast return. Additionally, by trying to replicate as feasible alternatives as possible the assumptions used in the study aims at avoiding infeasibility problems, i.e. that the options presented are not compatible with the participants' frame of reference or experience (Louviere et al. 2010).

4.3 Discrete choice experiment
After deciding how many attributes and levels that were going to be included in the study, the combinations of these needed to be defined. Bateman, Carson and Day (2004) highlights the importance of designing a statistically efficient subset of possible alternative combinations in DCE experiments. Ngene (Hensher, Rose and Greene, 2005) was used to be able to create a Bayesian design with two blocks with six choice sets and three choice alternatives, respectively.

Table 3 illustrates a choice set used in the DCE. Restrictions where used to eliminate unrealistic combinations such as the combination of low management fee (passively managed funds) and engagement and voting. To improve the efficiency of the design, Bayesian priors were estimated and used to update the original design based on a pilot sample of 150 participants. By using Bayesian priors, the design can be improved, as the estimation provides insight into the distribution of parameters (Kessels, Jones, Goos and Vandebroek, 2011).

4.4 Choice set
In the survey, the attributes where presented to the participants with a series of descriptions ensuring that each participant understood what each attribute and level represented (see Appendix 2). The participants reveal their preferences (utility) for the different attributes by choosing which one out of three different funds they would invest in, for an example see Table 3. In this sense the study uses a stated preference model since it lets the participants of the survey state their preferences for the different fund alternatives and in that sense their real preferences are not revealed (Louviere et al. 2010).

Table 3. Example of choice set

Attribute	Fund 1	Fund 2	Fund 3
Management fee	1,1%	1,1%	0,4%
Risk indicator	Risk indicator 5 +/- 15% performance per year	Risk indicator 7 +/- 35% performance per year	Risk indicator 6 +/- 25% performance per year
Investment objective	Sweden	Sweden	Global
Type of fund	Fund with no focus on sustainability	Fund that focus on sustainability	Fund that focus on sustainability
Sustainability strategy	None	Positive screening The fund actively include companies that are proactive with sustainability	Negative screening The fund exclude countries, sectors or companies that are not considered sustainable
Sustainability aspect	None	Environment E.g. climate change, CO_2 emissions, renewable energy and clean tech	Governance E.g. diversity and inclusion, executive pay, ownership and control and tax transparency
Expected return	13%	19%	7%
Which fund do you choose?	☐	☐	☐

4.5 The questionnaire
After the description of attributes and the DCE a series of questions followed that regarded the participants' investment habits and their demographic profile. For a full description of the questionnaire see Appendix 2. Furthermore, questions were mainly adapted from previous research since this increases the reliability (Bryman and Bell, 2015). For example, questions were adapted from a study done by Apostolakis et al. (2016) that sought to delimitate the participants' attitudes, social concerns and risk aversion. When the survey was developed, a careful pre-testing of 155 individuals was also done to evaluate the questionnaire and efforts to ensure logical question ordering. The main purpose of the pre-test was to identify and correct

potential problems that can arise from a DCE experiment such as omitted variables and task complexity as the number of attributes are to large prior to the main survey (Hoyos, 2010).

To bear in mind, self-completed questionnaires may have some drawbacks. Bryman and Bell (2015) highlights that it could be that the respondents do not understand difficult questions, may skip questions and so on. However, most of the questions in the study are based on choices and closed questions and these are according to Bryman and Bell (2015) easier to process. However, there could be a concern regarding the validity of the results when doing DCEs, in particular, the hypothetical nature of the experiments. To reduce the risk of hypothetical bias in the choice experiment a cheap-talk was added into the survey. Since it has proven to decrease the degree of inflated values when conducting a DCE (Carlsson, Frykblom and Lagerkvist, 2005). The cheap-talk that were presented under each fund choice were the following: '*Observe that a fund's historical performance is not a guarantee for future returns. The value of your fund units can both increase and decrease as a result of the market's development.*'

4.6 Data collection and quality

There could be a concern about the quality of the collected data in quantitative studies (Bryman and Bell, 2015). Therefore, the data collection and its quality are discussed below to highlight the reliability and validity of the data collection method. Further, to allow the reader to judge the reliability for herself, the study is described in detail with full transparency, which favours replication (Bryman and Bell, 2015). To facilitate similar studies, the survey is attached in Appendix 2.

When collecting the data for the study, the usage of an online survey as well as a third-party distributor that selected participants from a consumer panel was deemed appropriate, since web-based and self-administered surveys are frequently used when conducting DCE (Hoyos, 2010). Furthermore, this would reach the investigated target audience, namely individuals in Sweden who invest in equity funds. To decrease sampling error and to some extent generalize the study's findings to the population a sample size above 500 was deemed appropriate (Bryman and Bell, 2015). Additionally, two screening criteria were used. The first was based on age, as the sample should not consist of individuals below 18 or above 75. Since you are less likely to invest in funds if you are above 75 and in Sweden you are not allowed to buy funds yourself if you are below 18. This criterion may have resulted in a small difference between the sample and population that were selected, but our object of analysis was individuals who invest in funds. The second criteria, was that participants that work within advertising, PR, journalism and marketing or market surveys was screened out. This was done to improve the quality of the data since those working within these fields are more likely to understand what the aim of the study is and thus give biased answers.

In terms of measurement validity, which is described as the assessment that assume a measure is reliable (Bryman and Bell, 2015), this study used similar questions as the previous studies by Apostolakis et al. (2016), to limit the risks of not measuring the intended purpose. By operationalizing definitions and sort out the most important attributes the study should capture the concepts it intends to. Further, the study used commonly used scales for all concepts where such were available. When it comes to ecological validity, which refers to how well the methods, materials and settings of the study approximate the real world that is being examined (Bryman and Bell, 2015), the study takes several attributes into account compared to earlier studies and thus gives a more realistic picture of the fund choice. Moreover, branch experts verified the fund attributes included in the study, which increases the ecological validity. However, a constraint to the ecological validity is the amount of funds to choose from in the

DCE. Normally, private investors have more options than three when deciding which fund to put their monthly savings into.

External validity on the other hand, is connected to whether the results of a study can be generalized beyond a scientific context and addresses the issue of how people or organizations are selected to participate within the study (Bryman and Bell, 2015). In this study, the number of participants was 559 between the ages of 20 years old to 75 and consisted of relatively equal number of men and women (see Table 4). These people were spread across the whole country living in both larger cities to thinly populated areas with different educational levels and household incomes. The participants were also randomly selected based on an online survey. It can therefore be argued, with this base of participants, that the study has strong external validity as it could both be generalized to a larger population due to the number of respondents. An overview of the complete composition of the sample is presented in Table 4.

Table 4. Demographics

Characteristics	N = 559
Gender	
Man	278
Female	279
Other	2
Age	
18-35	147
36-45	101
46-55	106
56-65	111
65-75	94
Household members	
One person	168
Two persons	237
Three persons	83
Four persons	52
Five persons or more	19
Residence	
More than 150 000 inhabitants	211
50 000 - 150 000 inhabitants	143
Less than 50 000 inhabitants	135
Thinly populated area	66
Do not know	4
Educational level	
Elementary school or equivalent	51
High school or equivalent	221
University up until three years	103
University more than three years	148
Other post high school education	35
Other	1
The household's monthly income	
Less than 10 000	24
10 001 - 20 000	74
20 001 - 30 000	90
30 001 - 40 000	81
40 001 - 50 000	75
50 001 - 60 000	45
60 001 - 70 000	39
More than 70 0000	44
Don't want to tell	87

In the questionnaire, it was also deemed necessary to ask whether the participants save monthly or not. In Table 5, an overview of the participants' savings is presented. This information was deemed important since the study assume a monthly saving of 1 500 SEK when the participants conducted the trade-offs, and therefore wanted to investigate how the participants save in the real life. The participants got channelled to certain questions depending on the answer in the questionnaire (therefore the number of respondents may shift as they receive different questions if they save monthly or not).

Table 5. Overview of savings

Characteristics	Number of respondents
Monthly savings	**N = 559**
Yes	341
No	218
Amount SEK each month	**N = 341**
Less than 500 SEK	64
500 - 1 000 SEK	111
1 001 - 2 000 SEK	66
2 001 - 5 000 SEK	66
More than 5 000 SEK	34
Doing one-time deposits	**N = 218**
Yes	142
No	76
Distribution of savings (average in %)	**N = 483***
Savings account	50
Direct savings in funds	16
Investment savings account	14
IPS/Private fund insurance	5
Endowment insurance	6
Shares	9
Type of fund they invest in (average in %)	**N = 327****
Equity funds	42
Mixed funds	27
Interest funds	12
Do not know/other	19

* Number of respondents that state they have some kind of savings

** Number of respondents that state they save in funds (not only in savings account and shares)

4.6.1 Ethical considerations

When conducting research it is important to consider how individuals are studied and treated (Bryman and Bell, 2015). Ethical considerations imply that participants should be informed about the intended purpose of the study and know how the results will be used. Issues regarding ethics is thereby covered by principles of anonymity, confidentiality, integrity and voluntarily (ibid.). In this study, participants were informed that they took part in a study that investigated savings and got a comprehensive explanation of each step within the survey. They also received information regarding how their answers would be utilized in the study. Moreover, all participants were anonymous which ensure both the confidentiality as well as censorship of their names and answers. Additionally, the participants took part in the study voluntarily and gave their consent. However, to reduce the risk of social-desirability response bias, the study did not reveal that the key investigation area were SRI behaviour and preferences. This choice could somewhat be questioned from an ethical point of view, but was considered necessary to get as valid and unbiased answers as possible.

4.6.2 Social-desirability response bias

Research conducted on ethical subjects and sensitive topics shows that there is a mismatch between the stated attitudes by participants in studies and their actual behaviour (Roberts, 1996). Also, there is tendency for participants to gravitate towards the socially correct answer when asked questions about their attitudes. This phenomenon is called social-desirability response bias and it is more likely to occur when the topics are sensitive, or the answers are not anonymous (King and Bruner, 2000). In this study, measures have been taken to reduce the effect of social-desirability response. First, the participants were anonymous. Secondly, the study did not disclose that the aim of the study was to investigate SRI behaviour, but rather presented it as investigating investment behaviour in relation to funds in general. In hope that

this would make participants more inclined to give answers more representative of their true attitudes. However, when interpreting the results, the attitude behaviour gap must still be taken into account and the answers should not be interpreted as direct results of behaviour but rather as estimations.

4.7 Data analysis

The data from the DCE experiment and the screening criteria was analysed by using SPSS, which was chosen as it is a common statistical program for business studies in the social sciences according to Bryman and Bell (2015). When the data was collected from the third part distributor, it was summarised in an excel file and thereafter sent to the researchers. The excel file was then converted into a data file in the software in order to reduce the amount of human error.

The data from the *DCE experiment* was analysed by conducting a multinomial logit model (MNL). To further investigate the findings in the MNL model are robust and to check the internal validity, further statistical analysis was conducted. The purposes of these test was:

1. To test the fit of the MNL model the for the attributes *sustainability strategy* and the *sustainability aspects* attribute were restricted to be equal, this was done by using a likelihood ratio test.
2. To investigate if there were heterogeneity in the preferences for different attributes and whether or not the results are similar when using a different model. To do so a mixed logit model was estimated.

To test the importance of the *screening criteria* two different t-tests was conducted, the purpose of these tests were:

1. To estimate whether or not the average importance of the screening criteria was statistically different from each other. In order to do so a paired sample t-test was used.
2. To investigate if the average importance that the participants placed on the screening criteria was statistically significant between genders, which was done by performing an independent sample t-test.

4.7.1 Random utility theory

DCEs are commonly used as a tool to elicit consumer preference for different attributes and are based on Random Utility theory (RUT) (Louviere, 2006). The model is good when estimating the trade-offs that individuals make between attributes (ibid.). RUT calculates the preferences for each set of funds based on the utility that the individuals get from each different alternative. The RUT states that there is a latent construct of utilities that exist in each individual's head, which is unobservable to researchers (Louviere et al. 2010). The utility is the result of two components, (1) a systematic component which is explainable, and (2) a random component which is unexplainable. The systematic component consists of attributes that compromise the difference between alternatives and covariates that explain the differences in individuals' choices. The random component, on the other hand, is the sum of all unidentified factors that affect the choice (ibid.). The equation for random utility is:

$$U_{in} = V_{in} + \varepsilon_{in}$$

where U is the random utility, V is the systematic component and ε is the random component that the individual n associates with the choice option i. Since there is a random component in the equation the end result is expressed in probabilities that the individual n will choose option i and not in absolute term and the exact option that the individual will choose (Louviere et al.

2010). Thus, it is possible to investigate how the probability to choose one option responds to changes in different attributes and if certain attributes are preferred above others. The equation for the probability for an individual n to choose option i from a range of different options are:

$$P(i|C_n) = P\big[(V_{in} + \varepsilon_{in}) > Max(V_{jn} + \varepsilon_{jn})\big]$$

Where j represents all other options and C_n is all the available choice sets. As illustrated the probability to choose one option is determined by a comparison of the other alternatives in the choice set, i.e. the choice is thereby determined by differences between utilities and not absolute utilities (Louviere et al. 2010). The term ε_{in} accounts for the differences in preferences that are random in nature. DCE models can be derived from the equation depending on the assumption on the distribution of ε_{in}. Generally speaking, a probit model assumes that ε_{in} is normally distributed and a logit model assumes that ε_{in} is independently and identically distributed (McFadden, 1973). In this study a multinomial- and mixed logit model is used which builds on the RUT calculations.

4.7.2 Multinominal logit model
The multinomial logit (MNL) model is used to analyse the preferences for the various attributes. The utility function for the logit estimation originates from the random utility component but adds an additional variable β. The equation is:

$$Y_{ni} = \beta_i x_n + \varepsilon_{ni}$$

Where x is the vector for the fund attributes included in the survey, the observed variables. The coefficient vector β is the preference that each person n has for alternative i. The choice probability is:

$$P_{ni} = \frac{exp(x_n\beta_i)}{\sum_{j=1}^{J} exp(x_n\beta_j)}$$

Where j is the total number of alternatives, β is the probability estimation that person n chooses alternative i and x is the fund attributes included in the survey. Since the vector x_n in this study is represented by the attributes the following variables are included: management fee (MF), risk (R), sustainability strategy (SS), investment objective (IO), sustainability aspect (SA) and expected return (ER). Where sustainability strategy (SS), investment objective (IO), sustainability aspect (SA) acts as vectors for the levels included in that attribute. Since it is the difference in utility that matter, β is going to be $\beta = 0$ for one of the levels to elicit the difference in preference between the levels. Management fee (MF), risk (R) and expected return (ER) are in this model assumed to have a linear relationship and therefore only have one variable and thus are not vectors. This results in the following regression:

$$Y_j= \beta_{j1}+ \beta_{j2}MF_n+ \beta_{j3}\,R_n+ \beta_{j4}\,SS_n+ \beta_{j5}\,IO_n+ \beta_{j6}SA_n+ \beta_{j7}ER_n + \varepsilon_{nj}$$

4.7.3 Likelihood ratio test
The likelihood ratio test (LR-test) was conducted, as the aim is to ensure that the fit of the model is as good as possible. This is done to investigate if the β for the sustainability strategy attribute and the sustainability aspects are equal. In the MNL model the levels of the attributes sustainability strategy attribute and the sustainability aspects were separated. When conducting the likelihood ratio test the attributes were restricted to be equal (i.e. include a single variable

that is the sum of all the sustainability strategy and aspect variables) to investigate if this improved the fit of the model. The LR-test investigates the fit of the model by estimating a restricted MNL model and comparing the log likelihoods of the restricted model to the unrestricted. If the results are significant (the LR statistics is less than the significance level), the unrestricted model has a better fit and is preferred over the more restrictive option. The LR-test statistic distributed chi-squared and the degrees of freedom are equal to the number of parameters that are constrained and are calculated by using the LL-value in the following way:

$$LR = 2(LL(Unrestricted\ model) - LL(Restricted\ model)$$

4.7.4 Mixed logit model

To explore if there is unobserved heterogeneity in preferences and to check the robustness of the findings, a mixed logit model was estimated, where all parameters are specified with normal distributions. The mixed logit model equation is:

$$Y_{njt} = \beta x_{njt} + \varepsilon_{njt}$$

Where x_{njt} is the vector for the attributes included in the survey, the observed variables. The coefficient vector β, was estimated and the error terms are identically distributed with a type I extreme value distribution. ε_{njt} is an unobservable and random term that is distributed independently of β and x_{njt}. Depending on β the logit probability estimation that person n chooses alternative i in period t:

$$L_{nit}(\beta) = \frac{exp(x_{nti}\beta)}{\sum_{i=1}^{I_n} exp(x_{ntj}\beta)}$$

However, in the mixed logit model specification β is assumed to be normally distributed. Since the mean and variance of the betas are unknown the unconditional probability is the integral of the choice probability, which depends on θ, which is the mean and variance. The unconditional probability is:

$$Q_{nit}(\theta) = L_{nit}(\beta_n)f(\beta|\theta)d\beta$$

The mean parameters are interpreted similarly to the MNL model and similar signs and results as with the MNL model would suggest that the findings are robust. The standard deviation parameters estimated in the model provide information about the heterogeneity in preferences among respondents. A large standard deviation parameter relative to the mean parameter reveals that there is much heterogeneity in an attribute. Furthermore, the standard deviations can be used to calculate the share of respondents that value a certain attribute. The formula for such a calculation is:

$$P = 100 * \phi\left(\frac{\beta}{\sigma}\right)$$

where ϕ is the cumulative standard normal distribution, σ is the standard distribution and β is the estimated parameters.

4.7.5 Paired sample t-test

A paired sample t-test was conducted to control if there are statistically significant differences between the participants valuation of the importance of the different attributes. A paired sample t-test was deemed appropriate as the sample was dependent i.e. participants tested where the same in both samples. Furthermore, a paired sample t-test investigates if the means are statistically different from each other. The formula is given by:

$$t = \frac{\underline{X}_D - \mu_0}{\frac{s_D}{\sqrt{n}}}$$

where $\underline{X}_D$ is the average of the differences between the criteria and s_D is the standard deviation of those differences. The constant μ_0 is set to zero as the aim of the test is to determine if the criteria are significantly different from one another. Finally, *n* represents the number of pairs.

4.7.6 Independent sample t-test

In order to test if there were any statistically significant differences between men and women regarding the screening criteria an independent sample t-test was conducted, since the data of women and men is not dependent. An independent sample t-test is appropriate since it is a statistical hypothesis test, which determines whether the means of two sets of independent samples are significantly different from one another. If the test shows significance women and men, on average, rate the screening criteria differently. Furthermore, a t-test was deemed appropriate since it follows the methodology of Apostolakis et al. (2016), who used a similar approach when investigating the importance of screening criteria and the study sought to replicate their method to as large degree as possible. The formula for the independent sample t-test is:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{s_p^2}{n_1} + \frac{s_p^2}{n_2}}}$$

where s_p^2 is the estimated variance, $\bar{x}$ is the sample mean and *n* is the sample size.

$$s_p^2 = \frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2}$$

5 Empirical data

In this section the results from the statistical analysis are presented. The first two sections cover the results from the discrete choice experiment. The last section contains the results from the analysis of screening criteria.

5.1 Discrete choice experiment

The results from the DCE and the multinomial logistic regression are displayed in Table 6. The parameters show the relationship between the different levels and attributes. A higher parameter value indicates a stronger average preference for that level. The opposite is also true, a lower value indicates that this level is, on average, less preferred. The attributes management fee, risk, expected performance and investment objective where assumed to have a linear relationship and thus only have one coefficient. The remaining attributes where divided into levels and thus show the preferences for each level. The 'no sustainability' attribute is the combination of having no sustainability strategy or sustainability aspect.

Table 6. Results from the DCE: Multinominal logistic regression

LR chi2(10):	621,72	Number of respondents:	559
Pseudo R2	0,0844	**Number of obs:**	3354
Log likelihood:	-3373,89		

Attributes and levels	Parameter	Std. Err.	P-value
Management fee	-0,361***	0,038	0,000
Risk	-0,240***	0,022	0,000
Expected performance	0,074***	0,004	0,000
Investment objective			
Sweden	0		
Global	0,051	0,036	0,156
Sustainability strategy			
Negative screening	0		
Positive screening	-0,138**	0,069	0,046
Engagement and voting	-0,031	0,065	0,636
Sustainability themed	-0,191***	0,066	0,004
Sustainability aspect			
Governance	0		
Environmental	0,272***	0,054	0,000
Social	0,061	0,058	0,299
No sustainability			
No sustainability strategy or aspect	-0,520***	0,070	0,000

* p < 0,1
** p < 0,05
*** p < 0,01

The *risk* parameter and the *management fee* parameter are statistically significant and negative, which implies that the participants prefer funds with lower risk and lower fees. The *expected performance* parameter is statistically significant and it carries the expected sign; all else equal, which means that the participants are more likely to choose a funds with a higher return. The *investment objective* parameter is insignificant. Hence, on average, participants do not consider this an important attribute when choosing funds. The results from the analysis of the *sustainability strategy* parameter reveal that, on average, respondents prefer funds that have a sustainability strategy over funds with no sustainability strategy at all. In fact, the preference for a sustainability strategy, which is the negative of the "*no sustainability*" has the largest

parameter relative to the other attributes included in the study. For example, it is larger than the *management fee* parameter, indicating that respondents are willing to accept a higher fee in return for a sustainability strategy. Furthermore, among the sustainability strategies, *negative screening* is the most preferred strategy, although it is not significantly different from *engagement and voting*. However, *positive screening* is the second most preferred strategy and the *sustainability themed* is the least preferred strategy included in the study. Lastly, the *sustainability aspect* parameters reveal that respondents prefer the *environmental* aspect to *governance*, while they do not differentiate between *governance* and *social* aspects.

5.1.1 Likelihood ratio test

By conducting a LR-test (see method chapter 4.9.3) the fit of the MNL model could be evaluated. First, the sustainability strategies were restricted to be equal and tested. The results show that the likelihood ratio test statistics are: 10,86, Chi Square distributed, and the number of restricted parameters (3) provides the degrees of freedom. This means that there is a statistically significant difference between the models and that the unrestricted model fits significantly better than the restricted i.e. the *sustainability strategy* parameters are not equal. Secondly, the same procedure was conducted on the *sustainability aspect*s. The likelihood ratio test statistics: 27,56 with 2 degrees of freedom reveal that the unrestricted model fits significantly better than the restricted model. Thus, the *sustainability aspect* parameters are not equal. Therefore, the study proceeds with the unrestricted model, presented in Table 6 as the unrestricted model has proven to have the best fit.

5.2 Mixed logit model results

To explore if there is unobserved heterogeneity in preferences, a mixed logit model was estimated, where all parameters are specified with normal distributions. This specification, presented as Model 2 in Table 7, improves model fit significantly compared to the main effects MNL model in Table 6. The mean parameters are interpreted similarly to the MNL model, while the standard deviation parameters provide information about the heterogeneity in preferences among respondents. A large standard deviation parameter relative to the mean parameter reveals that there is much heterogeneity in this attribute.

In Table 7, the mean parameters for *management fee*, *risk* and *expected return* have the same sign and relative importance as in the MNL model in Table 6. This means that, on average, participants prefer lower management fees and lower risk. Respondents have, on average, positive preferences for a higher return, as *expected performance* is positive and statistically significant. The fact that the parameters show the same sign in both models indicates that the findings are robust. Furthermore, *Investment objective* is, on average, not important to respondents. Among the different sustainability strategies, the statistically significant mean parameters for *engagement and voting* and *sustainability themed* suggest that respondents differentiate between these strategies and *negative screening*. Furthermore, the sustainability strategies that are most preferred differ from the MNL model. The most preferred strategy in this model is *sustainability themed*, which is followed by *negative screening*. *Engagement and voting* is the least preferred strategy. It is important to note that the fit of the mixed logit model is better than the MNL model and therefore these parameters might be more accurate.

Table 7. Results from the DCE: Mixed logit model

LR chi2(10):	606,75	**Number of respondents:**	559
Draws:	1000	**Number of obs:**	3354
Log likelihood	-3070,51		

Attributes and levels	Parameter	Std. Err.	P-value
Management fee	-0,575***	0,098	0,000
Risk	-0,396***	0,051	0,000
Expected performance	0,128***	0,013	0,000
Investment objective			
Sweden	0		
Global	0,075	0,085	0,378
Sustainability strategy			
Negative screening	0		
Positive screening	0,071	0,131	0,589
Engagement and voting	-0,309**	0,125	0,014
Sustainability themed	0,270*	0,143	0,060
Sustainability aspect			
Governance	0		
Environmental	0,521***	0,109	0,000
Social	0,159	0,097	0,102
No sustainability			
No sustainability strategy or aspect	-0,603***	0,152	0,000
Standard derivation			
Management fee	1,620***	0,137	0,000
Risk	0,771***	0,072	0,000
Expected performance	0,223***	0,017	0,000
Investment objective	1,173***	0,125	0,000
No sustainability strategy or aspect	1,354***	0,130	0,000
Positive screening	-0,233	0,394	0,554
Sustainability themed	0,640***	0,215	0,003
Engagement and voting	0,568**	0,249	0,023
Environmental aspect	1,020***	0,147	0,000
Social aspect	0,434**	0,204	0,033

*   p < 0,1
**   p < 0,05
*** p < 0,01

5.3 Heterogeneity

The model also reveals heterogeneity among respondents in the importance they place on these attributes, since all the standard deviations (except for positive screening) for the parameters are statistically significant, as illustrated in Table 7. *Management fee* is the attribute that shows the largest amount of heterogeneity. Whereas, e*xpected performance* is the attribute that have the smallest heterogeneity. Indicating that this is the attribute that participants had the most similar preferences for and that most participants prefer higher return. *Investment objective* also have a large standard deviation, which indicates that this attribute is polarising and that a part of the sample prefers a global investments objective whilst other prefer a Swedish investment objective. The standard deviation for the *risk* attribute reveals a relatively large amount of heterogeneity.

As mentioned earlier an interesting finding is that, on average, respondents prefer funds with a *sustainability strategy* and *sustainability aspect*. However, the large standard deviation for the attribute reveals that there are many respondents that do not value sustainability strategies or aspects in funds. By calculating (see method section 4.9.4) the share of respondents that do value sustainability funds could be shown. The calculations reveal that 67% of the respondents prefer sustainability funds to funds with no sustainability at all.

The relative size of the standard deviations for the different sustainability strategies reveal that there is much heterogeneity among respondents in which sustainability strategy that is the most preferred. The insignificant mean and standard deviation parameter for *positive screening* suggests that respondents do not differentiate between *positive screening* and *negative screening*. Moreover, the *environmental* aspect is the most preferred sustainability aspect, although the statistically significant standard deviations for *environmental* and *social* aspect reveal heterogeneity in preferences among respondents.

5.4 Screening criteria

Table 8 presents the average importance of the positive and negative screening criteria. The most popular positive screening criteria on average were 'commitment to sustainability' followed by 'commitment to recycling and waste production'. The least important criteria on average were 'medical innovations' and 'efficient water management'. When it comes to negative screening criteria the most valued options on average are 'violations of international norms and standards' and 'oil production and extraction of raw materials'. The least important negative screening criteria are 'relation to arms, alcohol, tobacco and pornography' followed by 'involvement in human rights violations'.

Table 8. Summary statistics of the importance of criteria for SRI: total sample

Screening criteria	n=559	
	Mean	Std. Dev.
SRI positive criteria inclusions		
Commitment to sustainability	5,32	1,665
Commitment to recycling and waste production	5,09	1,635
Good employee relationships	5,02	1,649
Local community volunteerism	5,01	1,672
Promotion of human rights	4,95	1,651
Tech improving transport and infrastructure	4,83	1,592
Innovations connected to reduction of CO2 emissions	4,40	1,730
Efficient water management	4,29	1,655
Medical innovations	3,85	1,891
SRI negative criteria exclusions		
Violation of international norms and standards	5,23	1,644
Oil production/ extraction of raw materials	5,17	1,604
Relation to nuclear power	5,13	1,638
Involvement in human rights violations	5,07	1,617
Relation to arms, alcohol, tobacco and pornography	4,83	1,960

Note: The answers ranged from 1 = very unimportant to 7 = very important.

Table 9 contains the results from the paired sample t-test on screening criteria. As previously mentioned the most important criteria is 'commitment to sustainability', and the results from the paired sample t-test show that it is significantly more important than *all* other screening criteria. The results for the second most important criteria, 'commitment to recycling and waste production', are less straightforward as it is not significantly different from five other criteria. The results for the least important criteria show that 'medical innovations' are significantly less important than *all* of the criteria. Further, 'efficient water management' is the second least preferred attribute after medical innovations. The importance is significantly different from all other criteria except for the criteria 'innovations connected to reduction of CO2 emissions'.

The results display that within *negative* screening criteria, 'violations of norms and standards' are the second most preferred and are significantly different from all negative screening criteria except for oil production and extraction of raw materials. 'Relation to arms alcohol, tobacco and pornography' are as previously mentioned the least important negative screening criteria, and the result illustrate that it is significantly less important than the other negative screening criteria. Overall, the two attributes that show the least significant differences (on a $p<0,05$ level) are 'involvement in human rights violations' and 'relation to nuclear power', which are not significantly different from six alternatives out of the 13 other criteria.

Table 9. Summary statistics paired sample t-test: total sample

	Local community volunteerism	Good employee relationships	Tech improving transport and infrastructure	Involvement in human rights violations	Promotion of human rights	Commitment to recycling and waste production	Oil production/ extraction of raw materials	Efficient water management	Violation of international norms and standards	Relation to arms, alcohol, tobacco and pornography	Relation to nuclear power	Commitment to sustainability	Innovations connected to reduction of CO2 emissions	Medical innovations
Local community volunteerism		-0,004	0,186***	-0,052	0,063	-0,075	-0,152***	0,725***	-0,211***	0,181**	-0,113*	-0,306***	0,617***	1,168***
Good employee relationships	0,004		0,190***	-0,048	0,066	-0,072	-0,148***	0,728***	-0,208***	0,184**	-0,109*	-0,302***	0,621***	1,172***
Tech improving transport and infrastructure	-0,186***	-0,190***		-0,238***	-0,123**	-0,261***	-0,338***	0,538***	-0,397***	-0,005	-0,299***	-0,492***	0,431***	0,982***
Involvement in human rights violations	0,052	0,048	0,238***		0,114*	-0,023	-0,100	0,776***	-0,159**	0,233***	-0,061	-0,254***	0,669***	1,220***
Promotion of human rights	-0,063	-0,066	0,123**	-0,114*		-0,138***	-0,215***	0,662***	-0,274***	0,118*	-0,175***	-0,369***	0,555***	1,106***
Commitment to recycling and waste production	0,075	0,072	0,261***	0,023	0,138**		-0,077	0,800***	-0,136***	0,256***	-0,038	-0,231***	0,692***	1,243***
Oil production /extraction of raw materials	0,152***	0,148***	0,338***	0,100	0,215***	0,077		0,877***	-0,059	0,333***	0,039	-0,154***	0,769***	1,320***
Efficient water management	-0,725***	-0,728***	-0,538***	-0,776***	-0,662***	-0,800***	-0,877***		-0,936***	-0,544***	-0,837***	-1,030****	-0,107	0,444***
Violation of international norms and standards	0,211***	0,208***	0,397***	0,159**	0,274***	0,136***	0,059	0,936***		0,392***	0,098*	-0,095**	0,828***	1,379***
Relation to arms, alcohol, tobacco and pornography	-0,181**	-0,184**	0,005	-0,233***	-0,118*	-0,256***	-0,333***	0,544***	-0,392***		-0,293***	-0,487***	0,436***	0,987***
Relation to nuclear power	0,113*	0,109*	0,299***	0,061	0,175***	0,038	-0,039	0,837***	-0,098*	0,293***		-0,193***	0,730***	1,281***
Commitment to sustainability	0,306***	0,302***	0,492***	0,254***	0,369***	0,231***	0,154***	1,030***	0,095**	0,487***	0,193***		0,923***	1,474***
Innovations connected to reduction of CO2 emissions	-0,617***	-0,621***	-0,431***	-0,669***	-0,555**	-0,692***	-0,769***	0,107	-0,828***	-0,436***	-0,730***	-0,923***		0,551***
Medical innovations	-1,168***	-1,172***	-0,982***	-1,220***	-1,106***	-1,243***	-1,320***	-0,444***	-1,379***	-0,987***	-1,281***	-1,474***	-0,551***	

Note: The answers ranged from 1 = very unimportant to 7 = very important.
* p < 0,1
** p < 0,05
*** p < 0,01

The findings were analysed further by conducting a comparison of the importance of screening criteria between men and women (see Table 10). Note that two respondents identified themselves as 'other' when questioned on their gender in the survey, which was considered as a too small sample to include them in the comparison. The results show that women tend to value positive screening criteria: 'medical innovations' and 'innovations connected to reduction in CO2 emissions' higher than men. Women also tend to value the negative screening criteria and exclusion of 'arms, alcohol, tobacco and pornography' higher than men, as well as the exclusion of companies that 'violate international norms and standards'. In fact, all investment criteria except for 'technical improvements for transport and infrastructure' are attributed greater importance by women than men on average. However, the differences for the majority of screening criteria are not statistically significant showing that women and men tend to value them almost equally.

Table 10. Summary statistics of the importance of criteria for SRI: gender

Screening criteria	Women (*n*= 279)		Men (*n* = 278)				
	Mean	Std. Dev.	Mean	Std. Dev.	Difference (W-M)	p	T-test statistics
SRI positive criteria inclusions							
Commitment to sustainability	5,42	1,634	5,21	1,692	0,218	0,123	-1,546
Commitment to recycling and waste production	5,18	1,576	4,99	1,688	0,186	0,178	-1,347
Good employee relationships	5,12	1,628	4,9	1,663	0,215	0,123	-1,544
Local community volunteerism	5,06	1,650	4,96	1,696	0,097	0,495	-0,684
Promotion of human rights	5,06	1,612	4,83	1,686	0,230	0,100	-1,646
Tech improving transport and infrastructure	4,78	1,596	4,87	1,593	-0,096	0,476	0,713
Innovations connected to reduction of CO2 emissions	4,60	1,706	4,18	1,728	0,419***	0,004	-2,878
Efficient water management	4,37	1,599	4,21	1,701	0,161	0,252	-1,147
Medical innovations	4,14	1,803	3,54	1,929	0,600***	0,000	-3,794
SRI negative criteria exclusions							
Violation of international norms and standards	5,36	1,585	5,08	1,691	0,279**	0,045	-2,011
Oil production/ extraction of raw materials	5,29	1,561	5,03	1,640	0,258	0,058	-1,902
Relation to nuclear power	5,20	1,660	5,05	1,617	0,159	0,279	-1,083
Relation to arms, alcohol, tobacco and pornography	5,13	1,898	4,53	1,981	0,597***	0,000	-3,629
Involvement in human rights violations	5,07	1,630	5,05	1,607	0,021	0,877	-0,155

Note: The answers ranged from 1 = very unimportant to 7 = very important.
*   p < 0,1
**   p < 0,05
*** p < 0,01

6 Analysis and discussion

In this section the results of the study will be related to findings of previous studies. First, the results from the DCE is analysed and secondly, the importance of screening criteria.

6.1 Preference for fund attributes

The investigation of which preferences Swedish private investors have for the different fund attributes was examined and what type of sustainability strategy and aspect that are preferred. The results show that an equity fund with a low management fee, a lower risk (risk indicator of 5) and a high return, along with a sustainability themed strategy that are focused on the environment is the most preferred fund. The contribution of these findings fills the research gap that fund attributes has not been investigated in this way before. It proves that the choice of SRI funds is not done in isolation but that each attribute is weighted against each other when choosing a fund. The findings further challenge previous literature based on rationality, which suggests that, the only attributes important when choosing a fund is risk and return (Statman, 2005). As there is a number of other attributes that private investors also consider when they decide which fund to choose, such as management fee, sustainability strategy and sustainability aspect. In fact, one of the attributes that showed the largest magnitude in preference was the difference between sustainability and no sustainability. This is in line with the findings of Berry and Yeung (2013) who states that fund investors gain utility from an improvement in sustainability performance of a fund. The findings of Berry and Yeung (2013) further states that the utility that investors gain from improvements in sustainability performance varies between individuals. This is supported by the study's findings as the funds with no sustainability strategy or aspect showed the most heterogeneity, showing that this was the level that polarised the participants the most and that the utility derived from SRI performance differed within the sample. This lends support to Nilsson (2009) segmentation that divides private investors into a spectrum from those primarily concerned about social responsibility to those that are primarily return driven. Since the findings suggests that there are those that find SRI performance the most important level and those that on the contrary do not appreciate it. Anyhow, these findings calls for further investigation as it would be interesting to segment private investors based on more aspects than return and SRI performance, for instance it would be interesting to see if the risk preference mattered.

Expected performance was the attribute that showed the least heterogeneity and thus the attribute that private investors had the most similar preference for. This might lend support to Markowitz (1959) who highlights return as one of three attributes that form the basis for an investment decision. The second attribute suggested by Markowitz (1959) is risk. The findings regarding risk suggest that Swedes on average prefer less risky funds. This is an important finding in regard to the amount of capital that is invested in SRI funds. If a less risky fund is preferred, it is important to consider the attitude that investors have towards the riskiness of SRI funds. Previous research has shown that SRI funds are considered to have the same or being less risky than conventional funds (Nilsson, 2008; Wins and Zwergel, 2016). However, if an SRI fund is considered to be a riskier alternative it will become a less attractive option. Interestingly risk also had a somewhat high standard deviation, which indicates that some private investors actually prefer a higher amount of risk. This corresponds with the epithet, risk lovers, although the majority of the sample seems to be risk averse. When it comes to the heterogeneity of the different attributes the results indicate that management fees have the highest heterogeneity and thus the largest group that instead favour higher management fees. This might be an indication that there is a proportion of respondents that prefer actively managed funds as these are grouped together in this study.

6.1.1 Sustainability strategies

The findings support the proposition made by McLachlan and Gardner (2004) that engagement and voting is a less desirable strategy compared to other sustainability strategies such as negative and positive screening. This study shows in contrast to previous studies (Wins and Zwergel, 2016; Dorfleitner and Nguyen 2016; Berry and Junkus, 2013) that negative screening is preferred over positive screening. However, the results from the mixed logit model also indicate that the participants do not differentiate positive screening and negative screening, which is in line with the findings of McLachlan and Gardner (2004). Regarding the heterogeneity the sustainability strategy that showed the most polarisation among private investors was sustainability themed investments, which indicates that a proportion of the sample dislikes this strategy.

6.1.2 Sustainability aspects

The study aims at expanding the knowledge on the preferences for screening based on environmental, social and governance issues since previous literature on the subject are inconclusive (Wins and Zwergel, 2015). Some state that environmental aspect (Berry and Junkus, 2013) is most important, whilst some state that social issues are more important (Wins and Zwergel, 2016; Pérez-Gladish et al. 2012). The findings suggest that the environmental aspect is preferred above governance, while they do not differentiate between governance and social aspect. Furthermore, there seems to be a large heterogeneity in the valuation of these aspects. The largest heterogeneity could be found for the environmental aspect, showing that this was the aspect that polarised the participants the most, with a large proportion that did not value environmental aspects. The social aspect on the other hand did not show a large proportion of heterogeneity indicating that this aspect was valued in a similar way by Swedish private investors. These results further support the findings by Entine (2003) that screening criteria are highly subjective and different people will place a larger emphasis on different screening criteria.

6.2 Importance of screening criteria

In relation to the calls made by Wins and Zwergel (2015) a cross-country comparison between the importance of screening criteria has been conducted. The results indicate that the importance of positive and negative screening criteria differed between Sweden and the Netherlands. Apostolakis et al. (2016) states that promotion of companies with good employee relationships and human rights practices are the most important positive screening criteria, whilst Swedes tend to value criteria based on companies' commitment to sustainability. Apostolakis et al. (2016) findings further suggest that negative screening criteria that exclude companies related to human rights violations and the arms industry was the most important. These were the two least important negative screening criteria for Swedes. These findings support the argument put forward by Entine (2003) that negative screening criteria are to a large degree dependent on cultural and religious beliefs and thus differ between countries.

Generally, the importance of screening based on medical innovative solutions and efficient water management seems to be the least important to Swedes. This differs from the Netherlands, were non-ethical and nuclear power screening is the least important screening criteria in general terms (Apostolakis et al. 2016). The study shows that companies that have a good local community volunteerism is important to Swedes as it is the fourth most important positive criteria, contrastingly to Netherlands, where it is the least preferred positive criteria. This challenge previous findings by Wins and Zwergel (2016) that child labour, not exploiting people and racisms and sexisms were the most important issues. Regarding positive screening criteria, environmental aspects scores high in both countries. This contradicts previous research

by Pérez-Gladish et al. (2012) which found that investors tend to focus more on social issues than environmental when investing. These findings illustrate some critic of the negative screening method, as the important screening factors may differ based on culture, conservative religious beliefs and liberal notions, highlighted by Entine (2003).

A lot of research within the scope of SRI has confirmed that women have a higher tendency to invest in SRI funds compared to men (Cheah et al. 2011; Nilsson; 2009; Wins and Zwergel, 2016; Junkus and Berry, 2010; Escrig-Olmedo et al. 2013). This inclination to invest in SRI has not translated into a higher preference for sustainability screening criteria in Sweden. The results show that there are four different screening criteria that are statistically different in importance for women and men, suggesting that in Sweden the opinions of men and women regarding screening criteria are relatively equal. Contrastingly, in Netherlands, women value all screening criteria that were investigated higher than men (Apostolakis et al. 2016). These findings are inconclusive and calls for further investigation.

7 Conclusions

In the last section, the conclusions are presented which answers the research questions. This is followed by the limitations of the study and suggestions for further research.

7.1 Findings

This study sought to investigate the preferences of private investors regarding fund attributes, sustainability strategies and aspects and the importance they place on screening criteria. The study contribute to the literature on SRI funds investment behaviour by using a new methodology, a DCE, which included the most important fund attributes, to elicit the trade-offs between the various fund attributes. Furthermore, an investigation of the importance of screening criteria was conducted.

The findings reveal that private investors, on average, prefer funds with lower risk, lower management fees with a higher return and with a sustainability strategy above those that do not have one. However, there seems to be a fair amount of heterogeneity and a large proportion of the sample do not value sustainability strategies. The most preferred strategies are sustainability themed followed by negative screening, whilst engagement and voting is the least preferred strategy. However, private investors do not seem to differentiate between negative and positive screening. Additionally, environment seems to be the preferred sustainability aspect above governance, while they do not differentiate between governance and social aspects. The most popular fund for private investors in Sweden are thereby a fund with a low management fee, a low risk (indicator of 5), a higher return and a focus on environmental aspect that use a sustainability themed strategy. Furthermore, the most important positive screening criteria, on average, are 'commitment to sustainability' followed by 'commitment to recycling and waste production'. When it comes to negative screening criteria the most important options, on average, are 'no violations of international norms and standards' and 'oil production and extraction of raw materials'. Moreover, screening criteria seem to be rated relatively equal by women and men in Sweden.

The study's empirical contribution is a greater understanding for practitioners of private investors preferences for the fund attributes. This could facilitate a better design of funds as the study reveals the attributes that private investors prefer and what trade-offs they make between them in regard to SRI funds. One of the most important implications is that private investors place a large importance on sustainability, in fact it is the attribute that is the most preferred. Which suggests that practitioners could place a larger focus on the implementation and communication of the funds sustainability performance. Furthermore, the result from the investigation of screening criteria indicates that private investors place a relatively large importance on the different issues. Thereby, it could be beneficial to highlight the specific screening criteria of the service, such as 'commitment to sustainability' and 'recycling and waste production', and communicate these issues in a manner that influence private investors' perception of importance for these specific issues.

7.2 Critique and limitations

The study has some limitations. The study aims at investigating the preferences for fund attributes in a Swedish setting and the fund attributes deemed most important by Swedes might not be the same in other countries. Thus, a study conducted in another setting and with attributes adapted to that market might render different results. Therefore, the findings should be generalized with caution. In addition, the study takes several attributes into account, but not all attributes that could affect the fund choice. Furthermore, the study focused on equity funds and the findings might therefore not apply to other funds such as interest funds or mixed funds.

It was difficult to simulate a real-life environment, since there was a limited selection of funds and the attributes were only presented with a description, and thus the participant did not receive the full experience of choosing a fund. Furthermore, as in all stated preference models; the participant did not actually purchase the product, and hence the real preference is not revealed, and a discrepancy between stated and actual behaviour might exist. Since the research subject is on an ethical and sensitive area one must also consider the possibility of the results being affected by the attitude behaviour gap. However, how well designed the survey might be, there is also a risk that the participants lack motivation and engagement for the task, which might result in arbitrary answers not representative of their true attitudes.

7.3 Further research

The findings of this study open for further research on the topic of SRI for private investors, especially when it comes to fund preferences. By investigating if the preferences for SRI funds diverge within the sample a clearer picture can emerge as to why private investors choose to invest sustainably and whom invest sustainably. Further research could utilize the comprehensive collection of background data conducted in this study, which includes additional aspects such as attitudes, psychological distance and product involvement. By conducting a latent class model a segmentation of the participants could be done, which would allow us to get an understanding of which type of people that value certain attributes and how they differ. Such segmentation would be interesting since professional asset managers could take advantage of the findings in order to nudge private investor to a sustainable way of investing. Moreover, research that address framing methods for SRI would be necessary in order to see whether preferences for SRI change depending on how it is expressed. Earlier research has highlighted the importance of environmental communication to nudge behaviour to more sustainable products and services, which would be interesting to see how it affects fund choices as well. Previous research has concluded that inconsistent behaviour can be addressed by a combination of different intervention strategies, such as nudging, framing, or enhancing individuals' self-efficacy by increasing financial education. However, there is still a lack of knowledge when it comes to financial products, especially within the Nordic countries. An investigation of inconsistent behaviour, or the attitude behaviour gap, would fill a gap within the existing academic field of sustainable funds.

Furthermore, as the present study determine the trade-offs between different preferences for fund attributes, it would be interesting to investigate fund choices in the Swedish pension system (or other pension systems globally) instead of general equity funds. This would contribute to the academic research with an even broader perspective since these fund choices have an even longer perspective than ten years which could affect the choice of sustainability strategy and (or) aspect. Furthermore, it would be interesting to investigate if the trade-offs between attributes are different in another cultural setting.. Similar studies within the Nordics or in other parts of the world would facilitate for the understanding of how to facilitate sustainable investment behaviour. Such studies could also include or exclude different

attributes to investigate if this affected the results and the preferences for sustainability aspects and strategies. In that way a more comprehensive picture of the trade-offs that private investors make could emerge.

Finally, further research could investigate the preferences for private investors of third-party assurance of a fund's sustainability work. Recently the Nordic eco-label "Svanen" pioneered an environmentally friendly label that assures that funds invest in a sustainable way. By showing that private investors value such labelling that makes it easier for them to make a sustainable choice the incentives for fund managers and banks to adopt a labelling scheme would increase. Thus, move the industry towards more sustainable consumption. Such trade-off research focusing on labels has already been conducted on multiple types of products but are lacking within the field of financial products. Thus, such research could provide factual contribution to the on-going academic and industry debates on sustainable and responsible investments.

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Acknowledgements

Appendix

Appendix 1.

The Principles for Responsible Investment

Principles	Description
1	We will incorporate ESG issues into investment analysis and decision-making processes.
2	We will be active owners and incorporate ESG issues into our ownership policies and practices.
3	We will seek appropriate disclosure on ESG issues by the entities in which we invest.
4	We will promote acceptance and implementation of the Principles within the investment industry.
5	We will work together to enhance our effectiveness in implementing the Principles.
6	We will each report on our activities and progress towards implementing the Principles.

(UNPRI, 2019).

Appendix 2.

Screening

Q1. Are you?

☐ Man ☐ Woman ☐ Other

Q2. What year are you born?

___

Q3. We are looking for people within certain professions. Do you work with any of the following?

☐ Advertising and PR ☐ Journalism ☐ Marketing or market surveys ☐ Marketing or sales of alcoholic beverages ☐ Other ☐ Do not work

Part 2

Q.3.1 Type of Question: Information (I)

Read the text below carefully before proceeding the survey

Equity funds account for approximately 57 % of the total Swedish fund wealth. Through savings in equity funds, you can place your savings in both Swedish and foreign securities. Fund saving always has a certain risk and when when choosing equity funds you should consider the level of risk that suits you the best. A high risk means that there is a greater risk of losing money. However, high risk means greater opportunities for good returns, but also a greater risk for a lowering in value. Low risk means lower opportunities for high returns, but the risk of loss becomes smaller. Normally, a fund invests in 20-30 different shares, but sometimes even more which spreads the risk. The selection of shares for a fund is handled by professional investors who follow the fund's development and review the invested capital.

You will now see a couple of attributes that different funds can have. Please choose the one most important for you when choosing a fund.

Choose a fund that suits you best

Imagine that you are about to choose a equity fund where you would save 1500 SEK per month. In this context, you will not use the money within 10 years. Which attributes do you think is the most important? *Two attributes were randomly selected and presented to participants and they choose which one that was most important. The attributes was described in the following way:*

Management fee: You pay an annual fee depending on whether the equity fund is managed "actively" or "passively". In active asset management, the manager follows and updates the shares in the fund based on which companies are believed to have the best conditions for return. In passive management, the holdings in the fund are allocated to be designed as a market index. The management fee for an active managed fund is 1.1% and for a passively managed fund the fee is 0.4 %.

Risk: The risk in a fund is a measure of how much the return varied historically, where a higher number indicates a higher risk. Risk category 5, with a historical spread in return of

10-15% per year, is medium risk. Risk categories 6 and 7 involve higher risk. Risk category 6 has a spread between 15 - 25% and risk category 7 has a spread from 25% and more.

Sustainability strategies: Funds can choose different ways to find companies that fit in as sustainable and responsible investment:
(a) *Negative screening:* The fund exclude countries, sectors or companies that are not considered sustainable. Typical businesses that may be excluded from the portfolio are tobacco, alcohol, pornography, controversial weapons and companies that violate international standards.
(b) *Positive screening:* The fund actively selects companies that work proactively with sustainability.
(c) *Active engagement:* The fund's managers exercise their right to vote at general meetings and can engage with management to influence the business behavior in a sustainable direction.
(d) *Sustainable themed investments:* The fund has a given theme and focuses on, for example, renewable energy, sustainable transport or sustainable food production.

Investment objective: You can choose between funds with a Swedish or a global investment objective. Swedish funds invest in companies that are listed on the Stockholm Stock Exchange, while global funds invests in companies listed on various stock exchanges worldwide. The return on a global fund is exposed to changes in exchange rates, while such a fund provides more investment options, which can affect the fund's return and risk.

Sustainability aspects: Sustainability funds can focus on the follow aspects;
    (a) *Environment* represents factors such as climate change, carbon dioxide emissions, natural resources, water stress, pollution and waste, green construction, renewable energy and clean technology.
    (b) Social factors include human rights, fair working conditions, health and safety, the right to privacy and data security, interested opposition, product liability and improvement of social conditions.
    (c) *Governance* include how companies are governed and regulated. These include factors such as corporate governance, diversity, payment of wages, ownership and control, corporate behavior, business ethics, transparency about tax and corruption and instability.

Expected return: Is a measure of the annual return that the fund can give you. There is a direct correlation between risk and return. High risk means greater opportunity for good returns, but also a greater risk of a decrease in value. Low risk means lower opportunities for high returns, but the risk of loosing money also become smaller.

Imagine that you are about to choose a equity fund where you would save 1500 SEK per month. In this context, you will not use the money within 10 years. It may be so that you already save monthly into specific equity funds, but we kindly ask you know (in the different

situations that you will meet), to choose the fund that you want to save in on the basis of the conditions given.

Saving 1 500 SEK per month over a 10 year period could for various reasons be a challenge - it is therefore important to make as accurate choice as possible so that the choices you make really reflect what you think is important in your fund savings.

Choice of equity fund for monthly savings
Assume that the following three equity funds are the only ones to choose from for your monthly savings of 1 500 SEK per month. Which one of these funds would you choose?

Attribute	Fund 1	Fund 2	Fund 3
Management fee	1,1%	1,1%	0,4%
Risk indicator	Risk indicator 5 +/- 15% performance per year	Risk indicator 7 +/- 35% performance per year	Risk indicator 6 +/- 25% performance per year
Investment objective	Sweden	Sweden	Global
Type of fund:	Fund with no focus on sustainability	Fund that focus on sustainability	Fund that focus on sustainability
Sustainability strategy	None	Positive screening The fund actively include companies that are proactive with sustainability	Negative screening The fund exclude countries, sectors or companies that are not considered sustainable
Sustainability aspect	None	Environment E.g. climate change, CO2 emissions, renewable energy and clean tech	Governance E.g. diversity and inclusion, executive pay, ownership and control and tax transparency
Expected return	13%	19%	7%
Which fund do you choose?	☐	☐	☐

[The attributes are presented randomly]

Note that a fund's historical performance is not a guarantee for future returns. The value of your fund units can both increase and decrease as a result of the market's development.

Q4. Which of the following feelings do you have when faced with the question of saving in equity funds with a focus on sustainability and responsible investments? scale from 1 = does not match at all to 5 = is very similar

1. Attentive	6. Determined	11. Hostile	16. Upset
2. Active	7. Inspired	12. Irritable	17. Scared
3. Alert	8. Proud	13. Ashamed	18. Afraid
4. Excited	9. Interested	14. Guilty	19. Jittery
5. Enthusiastic	10. Strong	15. Distressed	20. Nervous

Investments

A number of questions will be asked about your current savings.

Q5. Do you save a fixed monthly amount each month?

☐☐ Yes ☐☐ No

(If yes on Q5) Q5.1. How much do you save monthly?

☐☐ Less than 500 SEK ☐☐ 500 - 1 000 SEK ☐ 1 001 - 2 000 SEK ☐ 2 001 - 5 000 SEK

☐☐ More than 5 000 SEK

(If no on Q5) Q5.2. We understand from the previous question that you do not save every month. Do you save money by making one-time deposits?

☐☐ Yes ☐ No

Q5.3. Which of the following forms of savings do you have? Please indicate below how your savings are distributed:

☐ Savings account ___ % ☐ Direct savings in funds ___ % ☐ Investment savings account

___ % ☐ IPS/Private fund insurance___ % ☐ Endowment insurance ___ % ☐ Shares

Q.5.3.1 What type of funds do you invest in?

☐ Equity funds ☐ Mixed funds ☐ Interest funds ☐ Don't know/other

Q6. Rate from 1 = strongly disagree 7 = strongly agree (adapted from Apostolakis et al. 2016)

1. Choosing my investment fund would be an important decision for me
2. I would choose my investment fund carefully
3. The investment fund I would choose matter a lot to me

Consideration of sustainability when investing

Q7. Do you ever worry about where, how and for what purpose your investment contributions are invested? (adapted from Apostolakis et al. 2016)

☐ Yes, very often ☐ Yes, regularly ☐ Yes, sometimes ☐ No, (almost) never ☐ No, never ☐ I don't know

Q8. Do you ever worry about major sustainability problems? E.g. pollution, human rights, climate change, etc. (adapted from Apostolakis et al. 2016)

☐ Yes, very often ☐ Yes, regularly ☐ Yes, sometimes ☐ No, (almost) never ☐ No, never ☐ I don't know

Q9. On a scale from 1 = unimportant 7 = very important (adapted from Apostolakis et al. 2016)

1. How important do you think that the return on your private savings is?
2. How important do you think your private savings are?

Q10. How important do you consider investing in…? Rate from 1 = very unimportant 7 = very important (adapted from Apostolakis et al. 2016)

1. Firms that seek to be active in the local community by sponsoring charitable donations and employee volunteerism
2. Firms that promote good employee relationships
3. Technologies that aims at improving transportation and infrastructure
4. Firms that are not involved in human rights violations
5. Firms that promote human rights standards

6. Firms that have environmental concerns and are committed to recycling and waste production
7. Firms not related to oil production or extraction of raw materials
8. Firms that work with efficient water management
9. Firms that do not violate international norms and standards
10. Firms not related to arms, alcohol, tobacco and pornography
11. Firms not related to nuclear power
12. Firms committed to sustainability
13. Technical innovations that contributes to a reduction in CO2 emissions in the form of alternative energy sources and efficient handling of natural resources
14. Medical innovations and research for new treatments and medicines

**Q11. If I invest my money in a sustainable and responsible fund, this will have…
(adapted from Apostolakis et al. 2016)**
1. Mainly a positive effect on myself vs Mainly a positive effect on others
2. An immediate positive effect vs A positive effect in the long term
3. A positive effect here vs A positive effect elsewhere

Q12. On a scale from 1 = strongly disagree 7 = strongly agree (adapted from Apostolakis et al. 2016)
1. I am becoming increasingly convinced that I should take greater financial risks to improve my financial position
2. If I think that an investment will be profitable, I am prepared to borrow money to make this investment
3. I am prepared to risk losing money if there also is a chance to earn money

Part 3
Q13. How many people live in you household including yourself?
☐ 1 person ☐ 2 persons ☐ 3 persons ☐ 4 persons ☐ 5 persons or more
Q14. Which of the following is most accurate about where you live?
☐ More than 150 000 inhabitants ☐ 50 000 - 150 000 inhabitants ☐ 10 000 - 50 000
☐ Thinly populated area ☐ Don't know
Q15. Educational level
☐ Elementary school or equivalent ☐ High school or equivalent ☐ University up until three year ☐ University more than three year ☐ Other post high school education ☐ Other
Q16. How much is the household's total monthly income before tax?
☐ Less than 10 000 ☐ 10 001-20 000 ☐ 20 001-30 000 ☐ 30 001-40 000 ☐ 40 001-50 000 ☐
☐ 50 001-60 000 ☐ 60 001-70 000 ☐ more than 70 0