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Exclusion strategy in socially responsible investment: One size does not fit all

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ABSTRACT

A better overlap between the exclusion set used by socially responsible investments (SRI) managers and individual preferences could lead to higher adoption of SRI, which is in turn expected to promote a more sustainable development. In the first study, we find an essential mismatch: both the US ($n = 472$) and the UK ($n = 560$) respondents did not adhere to the classification of some of the most commonly excluded sin industries as being sinful. In the second study on US investors ($n = 1020$), we show that two-thirds of respondents are willing to pay 2.1% of their initial investment to choose which industries should be excluded. In comparison, the rest of the sample is willing to pay 2.5% to have a panel of experts decide for them. These results suggest the need to refine the exclusion strategies used by funds and update the list of industries typically excluded to promote SRI.

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1. Introduction

Institutional investors have historically pushed socially responsible investments (SRI, see Pilaj, 2017; Gajewski et al., 2021). It has grown from a niche market to a 35.3 trillion dollar one, which is 35.9% of all assets under management (GSIA, 2020). However, even though a majority of individuals (from 50 to 80%) in Europe declare that they would like to invest at least a small part of their portfolio in SRI, very few do so (from 5 to 8%, depending on the country, BNP survey 2018). In short, individual investors are talking the talk, but not walking the walk.

The lack of investment by individuals is a serious issue. SRI promises that money flows toward companies with the best corporate social responsibility. In turn, corporate social responsibility is expected to benefit the economy and society by fostering more sustainable development (see, for instance Sparkes and Cowton, 2004; Pilaj, 2017). Some explanations have been advanced for this vexing issue, including models that display hurdles at various stages of the investment process (Pilaj, 2017).

Surprisingly, a potential explanation for the lack of investment in SRI that has not been previously addressed is investors' disagreement regarding the strategy that SRI funds use to screen assets. As Fan et al. (2022) indicate, SRI funds theme might not align properly with investor preferences, as practitioners tend to display only "limited interest" in the motivation of SRI appetent

investors. In Europe, the main strategy of SRI funds is to exclude controversial industries, sometimes referred to as "sins stocks" (Eurosif, 2018). Similarly, in the US, exclusion is the second most common strategy (Ussif, 2020) after ESG integration. It makes the exclusion strategy the second most common SRI strategy globally (GSIA, 2020). The Eurosif report (2018) highlights that the top 10 most commonly excluded industries in Europe include pornography (34.4% of exclusions), nuclear energy (33.9%), alcohol (30.6%), and Genetically Modified Organism (GMOs, 24.5%). However, do individual investors actually support these exclusion strategies?

Some numbers regarding consumption and attitude indicate a possible mismatch. The majority of men and one-third of the female population are active pornography users (Zattoni et al., 2020). In Europe, only a minority of individuals want to reduce the share of nuclear energy in their countries (Wang and Kim, 2018). The average alcohol consumption per adult in Europe is 10 liters of pure alcohol per year (OECD data, 2020), equivalent to almost 100 bottles of wine.

These figures indicate that the exclusion of these industries might not receive the expected support. Regarding alcohol and pornography, when a given behavior does not match an attitude, cognitive dissonance is created. To reduce this cognitive dissonance, it is often the attitude that changes, not the behavior (Festinger, 1957; Brehm and Cohen, 1962).

Studies that examine the adequation of the exclusion set commonly used by investment funds to individual investors' wishes are lacking. Currently, we are only aware of one seminal paper by Borgers and Pownall (2014), who underline that the exclusion of alcohol, tobacco, and gambling did not receive the support of

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a large sample of the Dutch population. Given that individuals largely consume from typically excluded industries, we argue that a better understanding of the discrepancy between individual investors' expectations and SRI designers' choice of exclusion can explain why individual investors sometimes fail to invest in SRI. The understanding gained through such a study can lead SRI fund managers and SRI label designers to adapt their communication to better explain their exclusion strategy and possibly refine and update their exclusion sets.

The research gap will be addressed by answering the three following sub-questions: (i) Is there a discrepancy between SRI fund managers' and label designers' lists of exclusions and the expectations of individual investors? (ii) Is the addition of a socially responsible component to a typical sin stock sufficient to shift its perception upward? (iii) Are individual investors willing to pay a premium to have a voice in the selection process?

To provide a preview of our results, we find that respondents do not consider several typically excluded industries sinful. We find that the majority of respondents do not consider alcohol, pornography (in the male sample), nuclear, and genetic engineering to be sinful industries (first study, in the UK, $n = 600$, and the US, $n = 492$). Even illegal industries such as cannabis and internet piracy are not considered sinful. Thematic funds invested only in "sinful socially responsible" industries (organic cannabis, local breweries) are considered socially responsible, at par or more, than funds targeting governance objectives. This result provides a plausible explanation for the lack of investment by individual investors in SRI. It also provides an incentive for SRI fund designers and labeling agencies to reconsider their exclusion processes and its communication. Moreover, two-thirds of the respondents in the follow-up study (US investors, $n = 1050$) were willing to pay 2.1% of their initial investment to select which industry to exclude. The remaining third of the sample prefers to delegate selection to a panel of experts. These individuals were willing to pay slightly more, that is, 2.5% of their initial investment for this service.

The added value of our research is at least four-fold. We (i) elucidate whether individual investors share SRI designers' approach regarding the exclusion outcome, (ii) show that the addition of a small socially responsible aspect to a typical sin stock is enough to make respondents consider it socially responsible overall, and (iii) estimate how much individual investors are willing to pay to have a voice in the SRI design process (iv) From a theoretical perspective, we build on Pilaj (2017) theoretical model to show how the design of SRI funds and cognitive dissonance (Festinger, 1957) can influence SRI adoption.

The remainder of this paper is organized as follows. In the following section, we present several hypotheses based on the literature review. We then state the results of our first study before discussing them and depicting the hypotheses of the second study. After presenting the results of this second study, we conclude by discussing practical implications and paths for future research.

2. Literature review and hypotheses development

2.1. Barriers to investment in SRI and proposed solutions

Various models have been developed to explain the low investment of individuals in SRI. One such model is Pilaj's (2017) five hurdles, which underlines the following: (1) The complexity of the saving decision might lead individuals to choose default allocation, generally a conventional fund. (2) Owing to limited attention, individuals might unwillingly disregard the ethical side of investing. (3) Even if the ethical side is recognized and an informed attitude is developed, individuals might intentionally

disregard SR investment (for instance, because of cost-benefit concerns, see Meunier and Ohadi, 2022 or Gutsche et al., 2021 – even though evidence points to the fact that SRI is not damageable to performance on average, see for instance Starks, 2021). (4) Procrastination may lead potential investors to postpone their investment decisions indefinitely. (5) The fifth step of the model deals with adjustments to the portfolio. Our paper is thus rather concerned with the third barrier – the case of individuals intentionally disregarding SRI, because of a mismatch between the exclusions decided by the fund and their personal values. This is particularly important, as previous research, including Williams (2007) and Glac (2009, 2012) have shown the importance of attitude and decision frame in the decision to invest in SRI.

Pilaj (2017) proposed nudges to overcome these hurdles. In particular, he argued that SR investment should be the default vehicle. Gajewski et al. (2021) tested such a nudge and demonstrated that it would drastically increase investment in SRI. However, it appears that this increase in SR investment is driven by the inherent merit of the nudge and not by an appetite for SRI. Setting a conventional investment as the default allocation also leads to a dramatic increase in allocation to the conventional investment.

Thus, while nudging individuals toward SRI through the use of a default allocation appears as an efficient solution, it is still somewhat "mindless" (Ly et al., 2013). Additionally, if such a nudge seems to result in a better choice for the greater good, it is unclear whether it results in an improvement for individuals "as judged by themselves", an essential quality of a good nudge as defined by Thaler and Sunstein (2008). Finally, it does not fully resolve why investors do not invest in SRI on their own.

In this study, we argue that one of the barriers that have not been investigated so far is the design of SRI funds, namely the typical list of exclusion. This intuition was revealed in a preliminary study performed on a sample of UK individuals in Prolific Academics. As part of a larger study, we presented participants with a hypothetical SRI fund that excluded fossil fuels, tobacco, nuclear power, conflict zones or oppressive regimes, weapons/military, alcohol, gambling, and pornography. The question asked the participants whether they would follow this strategy. Amongst various pre-entered answers was the possibility to click on "other" and leave a comment. While it was not the goal of the study, the participants expressed concerns regarding the exclusion strategy. We use their verbatim in the following to illustrate our points.

Many of these comments simply expressed disagreement with the excluded industries. For instance: "I'm not sure we have the same definition of "sin", or "I agree on the approach, but my sin list is a little bit different". Some were more specific on the industries they did not consider as sinful "I wouldn't follow this strategy, fossil fuels, military, and pornography are legitimate businesses". As one wrote, this exclusion list might be considered "Puritan nonsense. No thanks".¹

While investing in sin industries is generally deemed unethical, it seems that numerous respondents disagreed with this classification, at least for some classic sin industries. As summarized more mildly by one of the respondents: "Not all of the categories of 'sin' company are necessarily considered sinful by everybody e.g. nuclear power, alcohol. It might have been interesting to ask which of these categories the participant considered 'sinful'."

Overall, these comments illustrate an important research gap in the possible mismatch between the exclusion set used by SRI designers and the preferences of individuals. Given the possible consequences of this mismatch, it is crucial to fill this gap.

¹ Please note that the – sometimes strong – opinions respondents expressed in their comments obviously remain their own. We do not necessarily endorse them.

2.2. The current state of exclusion for institutional players

“Who gets to decide which is harmful?”

Respondent #5² Comment, preliminary study

The first articulated idea of ethical investing is often credited to John Wesley,³ a Methodist preacher, who encouraged investment that would not hurt one’s neighbor in the 18th century. In his sermon on “The Use of Money”, he clearly forbade pawn-broking, spirituous liquor, and any businesses ministering to unchastity.

The first ethical funds were developed in the US in the 1920s, based on similar exclusion principles. They are strongly linked to religious beliefs and typically exclude the alcohol, gambling, pornography, tobacco, and weapons sectors (Crifo and Mottis, 2016).

One hundred years later, these are still among the top ten most commonly excluded industries (Eurosif, 2018): 30.6% of SRI funds exclude alcohol, 34.4% pornography, 34.9% gambling, 49.1% tobacco, 45.7% all weapons, and 63.6% controversial ones only. Other typically excluded industries in Europe were nuclear energy (33.9% of funds), GMOs (24.5%), and animal testing (19.3%). As put by Eurosif (2018), these exclusions are typically decided at the individual fund level (thus, by the fund manager or the fund management team), although we see an evolution in which the exclusions are decided by the investment firm for its entire range of funds. Sustainability indices also typically have exclusionary policy in place (see Vilas et al., 2022).

Other strategies exist but exclusion remains a favorite. This popularity is probably linked to the simplicity of its implementation and the historical roots we briefly exposed (see Nath, 2021 or Crifo and Mottis, 2016, for more historical details). In addition, the exclusion strategy can serve as a first skimming step in the SR investment process and can be complemented by a second, more sophisticated strategy (for instance, best in class – investing in the most ESG-compliant players of each remaining sector).

The last 10 years have witnessed the development of labels aimed at the SR industry, mainly in Europe. To the best of our knowledge, such labels do not exist in the US or Canada. We found one such label in Australia.⁴ Interestingly, given these labels, “do not change the economic incentives” and should result in better choice by individuals “as judged by themselves”, they preserve individual freedom and thus fall within the nudge umbrella (Thaler and Sunstein, 2008).

Table A.1 in the Appendix provides an exhaustive review of SRI labels and their exclusionary policy. It exposes these labels and the exclusions they require (or suggest), alongside the most commonly excluded industries cited in the Eurosif (2018) report. These labels are in agreement with the fund industry regarding weapons, tobacco, and nuclear energy. They never require the exclusion of alcohol, pornography, gambling,⁵ or animal testing, and only two require the exclusion of GMOs. They also tend to emphasize the exclusion of environmentally detrimental assets. We can see the first level of disagreement between fund exclusion and exclusion required by the labels, which are generally government-backed.

However, it is clear from both the labels and funds that exclusion is a favorite. In essence, this strategy is morally absolutist.

² We provide a respondent number simply to indicate that the quotes come from different respondents.

³ The idea of ethical investing can be found in other major religious traditions such as Catholicism, Islam, and Judaism (see Renneboog et al., 2008).

⁴ We restricted our search to European Union, North America, Japan and Australia/New Zealand.

⁵ Albeit it is suggested for two Luxemburgish labels.

Under moral absolutism, some actions are, without exception, morally prohibited (see for instance Hawley, 2008). Here, some industries are considered morally wrong, without possible exception for individual members of these industries linked to a particular context, and thus need to be discarded from the investable universe. This stance is not particularly surprising as SRI history is strongly related to religion. Additionally, exclusions are simple to implement, particularly in the absence of more detailed data on firms’ sustainability policies, as it used to be the case. However, this situation has evolved since the birth of SRI.

2.3. The evolution of moral values and SRI

As depicted previously, the list of industries excluded by SRI funds has not changed significantly since the 1920s. However, society has since moved on. For instance, in most developed Western countries, religion has seen a sharp decline (see for instance Pew Research Center, 2019).

Most religions subscribe to absolute morality theory, which sets standards of right or wrong that should be applied to all people at all times (as opposed to relativism). Consequently, it carries a set of beliefs and taboos that impact investments. Many religions tend to vehicle a set of prosocial conservative values that impact the view of individuals regarding which industry to exclude (Malka et al., 2011). For instance, given the position of most religions on sexual issues, it is likely that pornography would be frowned upon more by religious people than by atheists. In contrast, relativism has been shown to decrease perceived moral intensity (Singhapakdi et al., 1999). It can suggest that the perception of ethical problems of the “sin” industries would be lower among non-religious individuals.

Following this line of reasoning, individuals’ moral personal philosophy (Forsyth, 1992) and their degree of spirituality (Giacalone and Jurkiewicz, 2003) have been shown to influence their perception of a business as ethical or unethical. As the share of the population identifying itself as religiously unaffiliated has grown drastically, one could expect a decline in support for numerous exclusions, some of which were decided more than 100 years ago.

Similarly, consumption habits have also evolved significantly. For instance, the 1920s, when the first ethical funds were created, was the decade of the Prohibition in the US. Views on alcohol have evolved since then. As stated, by one of the respondents in the preliminary study:

“Some of these things I have no problem with at all - I don’t want to invest like a prohibitionist”. **Respondent #6, preliminary study**

Similarly, while watching pornography is not new in itself, it has become increasingly common with the advent of the Internet. While the estimates vary, 46%–74% of males and 16%–41% of females watch pornography (Zattoni et al., 2020). Opinions on cannabis share a similar trend. The support for the legalization of marijuana has grown steadily from 20% in 1986 to 60% in 2016 in the US (Denham, 2019), thus leading to its legalization in various states. A similar pattern is observed in the UK, although legal changes do not seem to follow a similar trend (Moore, 2019).

I have zero issues with a large pornography industry. **Respondent #7, preliminary study**

Similar arguments can be made regarding nuclear (Bisconti, 2018; Baron and Herzog, 2020) and genetic engineering industries (Ruth et al., 2019). For instance, regarding nuclear power, public opinion in favor of nuclear energy has seen a modest but positive trend over the years, from 42% in 1986 to 52% in 2016. This shift is coherent with the rise in concern for CO2 emissions and global warming, and the credible alternative offered by nuclear power.

I may follow this strategy to exclude sin companies but disagree with you on Nuclear Power as it is environmentally friendly.

Respondent #8, preliminary study

While the outlook of the population on these societal questions has evolved, they are still largely frowned upon by SRI funds that use exclusion. These evolutions led us to hypothesize that:

Hypothesis 1. Alcohol, cannabis, genetic engineering, nuclear power, and pornography are not, on average, considered sinful industries by surveyed individuals.

The seminal work of [Borgers and Pownall \(2014\)](#) tended to underline that alcohol, tobacco, gambling, and the nuclear industry were considered less harmful than other controversial industries, such as the weapon one. We extend their study by considering other controversial industries. In addition, their study was performed 10 years ago, and mentality may have further changed in the meantime. For instance, tobacco is increasingly denounced for its adverse health effect, and various laws and tax increases have been voted in the past 10 years in various countries with respect to tobacco.

2.4. Individual differences – religion, politics, behavior, and demographics

The “sin” industries currently excluded by investment funds might not be considered unethical by respondents. In particular, we hypothesized that three categories of variables should be linked to the ethical acceptability of the controversial industry presented to individuals: beliefs (religion and political affiliation), behavior, and demographics. Generally speaking, research has largely shown a link between religion and investment behavior (see among others, [Ahmad et al., 2023](#); [Ghosh, 2022](#); [Ramazanova et al., 2022](#); [Shahid et al., 2022](#)). For instance, the initial call of Methodist preacher John Wesley in the 18th century still appears current, as it was recently echoed by the Vatican, arguing in favor of a more sustainable and ethical economy:

“Someone spoke of the proposal to “vote with your wallet”. This is in reference to voting daily in the markets in favor of whatever helps the concrete well-being of all of us, and rejecting whatever harms it. They must also have the same considerations toward the management of their savings, for instance, directing them toward those enterprises that operate with clear criteria inspired by an ethics respectful of the entire human person, and of every particular person, within the horizon of social responsibility”.

‘Oeconomicae et pecuniariae quaestiones,’ Congregation for the Doctrine of the Faith and the Dicastery for Promoting Integral Human Development, 17.05.2018

Similarly, political affiliation is likely linked to views on the exclusion of our respondents. For instance, the left wing is often considered to be more favorable to peace and to take a more liberal approach toward drugs, such as cannabis ([Van Green, 2021](#)). Concern about the environment is also likely to affect the view of industry exclusion of our respondents (for instance, regarding fossil fuels, nuclear energy, or GMOs).

Hypothesis 2. Concern for the environment, political affiliation and religiosity are linked to attitudes toward controversial industries.

As previously highlighted, many individuals drink, smoke, gamble, and watch pornography. Following the theory of cognitive dissonance ([Festinger, 1957](#); [Brehm and Cohen, 1962](#)), they are likely to engage in internal dialog to justify their own behavior (see for instance [Bourcier-Bequaert et al., 2020](#)). Thus, their attitudes toward related industries should be adjusted significantly upward. This was already shown to be the case for alcohol and tobacco in [Borgers and Pownall \(2014\)](#). We thus extend their work by also considering the gambling and pornography watching habits of our respondents.

Hypothesis 3. Consuming products from an industry leads to a more positive attitude toward it.

Finally, research has shown that males tend to be more favorable toward numerous controversial industries than females ([Borgers and Pownall, 2014](#); [Niszczota and Białek, 2021a,b](#)). It is in line with the literature on altruism, which holds that females tend to be more altruistic than males ([Brañas-Garza et al., 2018](#)). For instance, studies have highlighted that females are more concerned about environmental issues and animal welfare ([Graça et al., 2018](#)). Similarly, males have more positive opinions toward the nuclear industry and GMOs, possibly in relation to lower perceived risk (see [Chen, 2011](#) for GMOs and [Harris et al., 2018](#) for the nuclear industry).

Hypothesis 4. Males are less likely to consider controversial industries to be “sinful”.

Finally, we also argue that some industries, typically considered sinful by investment funds and immediately excluded, can be considered socially responsible by individuals, provided a small additional socially responsible component is added.

2.5. Accepting sinful responsible investment

We posit that several typical exclusionary SRI fund policies do not match the social responsibility definitions of individual investors. Such a mismatch could distort investors’ attitudes toward SRI. Individuals are typically willing to pay for social responsibility ([Gregory and Whittaker, 2013](#)). However, if the investments are considered misguided by individuals, there is very little chance that they would be willing to invest. That is actually what the comments made in our preliminary study seem to indicate.

[Festinger’s \(1957\)](#) theory of cognitive dissonance states that when a person has two incompatible beliefs, attitudes, or knowledge about oneself or the environment, uncomfortable dissonance is produced. Dissonance is reduced by decreasing or eliminating the inconsistency. To reduce dissonance, a person modifies one of the cognitions that is less resistant to change. Cognitions that represent reality are resistant to change, while cognitions about highly ambiguous events have a lower resistance to change ([Wicklund and Brehm, 2013](#)).

Therefore, introducing ambiguity into a situation can be a way to change cognition and consequently reduce cognitive dissonance. When the sinfulness of an industry is ambiguous, for example, a local brewery or organic cannabis, it is easier for individuals to disregard its unethical side.

Hypothesis 5. Adding a level of ambiguity to industries typically considered to be sinful can make them socially responsible to individuals.

Table 1
Demographic characteristics of the sample.

	UK	US
Male	27.68%	43.43%
Age	24.47	25.95
Atheist	65.18%	48.73%
Left	60.36%	53.39%
Gambling	46.07%	46.61%
Active porn watcher	57.50%	71%
Alcohol (glass per week)	1 to 4	0 to 1
Current smoker	8.21%	23.09%
Concern for the environment (/5)	4.05	4.01
Working (full or part time)	53.75%	63.35%
University degree (Bachelor's or higher)	86.79%	80.93%
Income (Household)	30 to 39 K€	50 to 59 K\$
Risk-taking (/10)	N/A	4.88
Financial literacy (/3)	N/A	2.09
Number of respondents	560	472

3. Study 1: Exclusion does not fit all!

3.1. Methods

Study 1 tests the hypothesis that people do not consider certain industries to be sinful and how introducing ambiguity can reduce cognitive dissonance. We measured the perception of various controversial industries in two surveys, on the UK ($n = 600$) and the US population ($n = 492$). We excluded 20 respondents from the US and 40 from the UK, who failed to answer the attention question properly, thus resulting in a sample of 472 for the US and 560 for the UK. Participants from Prolific Academic were paid 0.63 £ (roughly 0.85\$) to participate in our study.

The main variable of interest was the answer on a 5 points disagree/agree Likert scale to the following question for various controversial industries:

“Some companies that are harmful to society and the environment are labeled as sin companies. Some SRI funds exclude these “sin companies” from their potential investments.

*If a firm is active in one of the following businesses, you would consider it a “sin company”.*⁶

In both studies, we gathered from Prolific Academic the gambling, pornography, smoking, and alcohol consumption habits of the participants, and various demographic variables through both Prolific Academic and survey questions (income, education, religion, and political affiliation). Questions regarding the consumption habits of respondents for gambling, pornography, smoking, and alcohol were answered when respondents registered on Prolific Academic prior to our survey. Thus, it is likely that these questions and our survey were separated by several weeks or even months and there was little risk of the respondents trying to be consistent in their answers to these questions and our survey.

In the US sample, we also measured risk-taking propensity on a 10-point Likert scale following Dohmen et al. (2011), and financial literacy through the 3 questions scale of Lusardi and Mitchell (2011) as control variables. Table 1 presents basic descriptive statistics regarding the demographic characteristics of the sample. In the US sample, we investigated the perception of social responsibility on a 5-points Likert scale for various fictitious thematic funds. We provide more details on these funds in the Results section.

⁶ The sentence “Some SRI funds exclude these “sin companies” from their potential investments”. was added in the US study, to make sure the participants understood the meaning of the term “sin” in that context.

3.2. Results

3.2.1. Are the excluded industries really considered “sinful”?

Overall, we observe general agreement with the classification of various industries in the sin category. However, a few exceptions stand out in line with H1.

In the UK, respondents disagree on average with the classification of cannabis, alcohol, and genetic engineering as sinful industries ($p < 1\%$, t-test, see Fig. 1). This finding is of particular importance as genetic engineering and alcohol are in the top ten most commonly excluded industries (Eurosif, 2018). Recreational use of cannabis is forbidden in the UK. For the other industries, participants agree with their classification as sin stocks on average ($p < 1\%$ in all cases).

Note that as we perform tests over 11 industries, one could get concerned over multiple hypotheses testing. The highest p -value for these results is for alcohol ($p = 0.44\%$). Even if we were to apply a Bonferroni correction ($\alpha/11$, that is a threshold of $\alpha = 0.91\%$ for marginal significance and $\alpha = 0.45\%$ for significance), all our results would remain significant. In addition, as the results obtained on the UK sample are replicated over the US one, this further alleviates concerns regarding such results being obtained by chance. If these results were type 1 errors, they would be highly unlikely to replicate in a different, unrelated sample.

In the US, respondents, on average, disagree with the classification of cannabis ($p < 1\%$), genetic engineering ($p < 1\%$), and nuclear ($p = 6.5\%$, marginal significance), as sinful industries (see Fig. 2). GMO and nuclear energy are in the top 10 industries most often excluded by SR funds (Eurosif, 2018). Nuclear energy is one of the most typical exclusions required by SRI labels. On average, the respondents did not agree or disagree with the classification of alcohol as sinful, with a score indistinguishable from the meat industry for instance (the meat industry was present only in the US sample).

In the US sample, we also added some industries that are generally excluded only by religious investment funds, such as contraceptives and abortions. On average, respondents strongly disagreed with their classification as sinful and their exclusion. Interestingly, in both cases, while males do not consider these industries to be sinful, they still frown more upon them than females.

Another addition, fur, is strongly frowned upon. This is an interesting finding, as fur, while sometimes excluded from SRI funds, is not an excessively common exclusion. This industry is not a required or suggested exclusion for most SRI labels (see Table A.1). Thus, it seems that the low frequency of exclusion

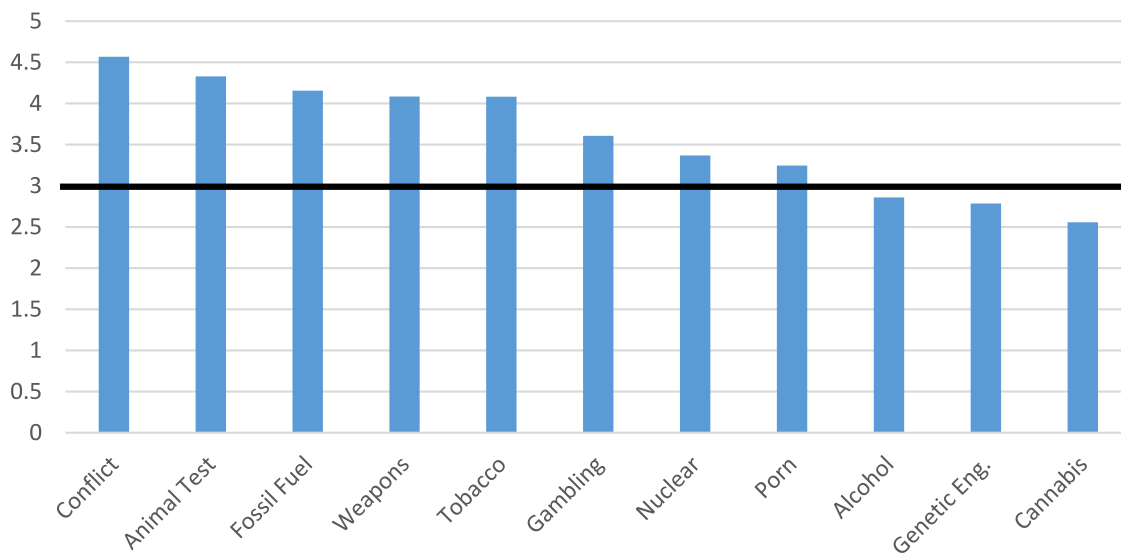


Fig. 1. Average sin rating on a 5-point Likert scale of controversial industries – UK.

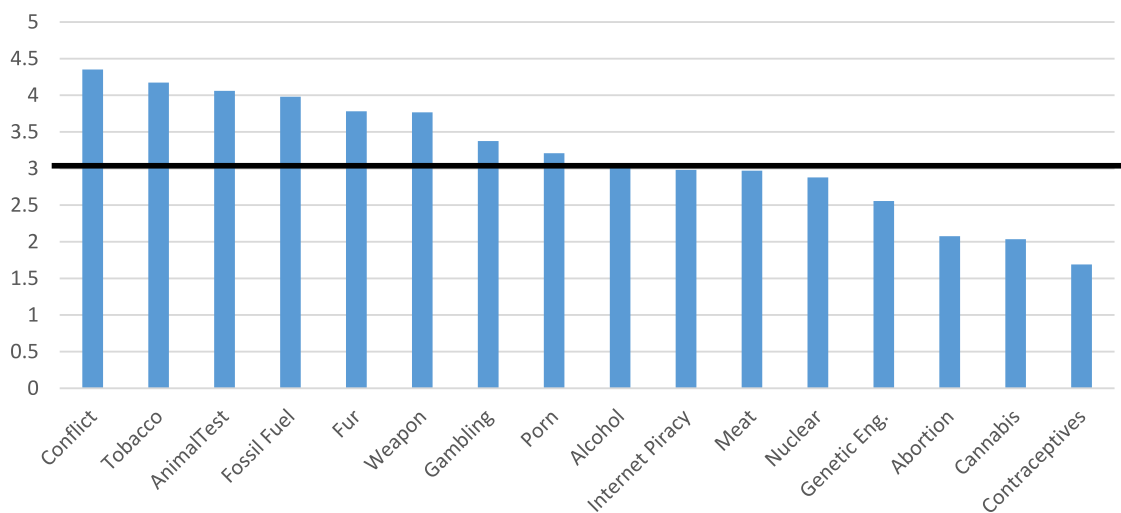


Fig. 2. Average sin rating of controversial industries – US.

does not match the strong sin rating given to this industry by investors. We also added to the US an illegal industry: “Internet piracy. Quite strikingly, the respondents did not agree or disagree with its exclusion from socially responsible funds.

Once again, one could get concerned over multiple hypothesis testing in this study. The results we obtain on the US sample are very similar to the ones obtained on the UK one, pointing toward some robustness of the effect we are observing here. We can still perform a Bonferroni correction ($\alpha/16$, that is a threshold of $\alpha = 0.63\%$ for marginal significance and $\alpha = 0.31\%$ for significance). In that case, all results would remain unchanged, with the exception of the one regarding nuclear energy, which would switch from being marginally significant to non-significant (i.e., respondents do not disagree nor agree with the classification of nuclear energy as sinful).

In line with H4, we also observe a large gap in the rating of these industries between males and females in both the UK and the US (see respectively Fig. 3 and Fig. 4), a finding already reported by Niszczota and Białek (2021a,b). Males are less likely to consider the numerous industries proposed to them as sinful.

UK males disagree with the classification of nuclear as sinful ($p < 1\%$), a result that is not present when we consider the entire

population. Strikingly, US males disagree with the classification of internet piracy as a sinful industry to be excluded ($p < 1\%$). Finally, male respondents in the UK and the US did not agree or disagree with the classification of the pornography industry as sinful.

Overall, these results suggest that a mismatch exists between what is excluded by SR funds and what should be excluded, according to respondents. In particular, individuals in our surveys did not support the exclusion of the genetic engineering, nuclear, and alcohol industries, and pornography (in the case of males). This result has managerial relevance, as these four industries are in the top ten most commonly excluded industries by investment funds. The exclusions required by the SRI labels appeared to be more consistent with the respondents’ answers. We only noted a few differences regarding the nuclear energy sector, shunned by labels but not individuals, and animal testing and fur, spurned by individuals but not labels. Interestingly, fur does not appear to be a common exclusion of investment funds. These results may indicate a need to educate individuals regarding the reasons underlying the exclusion set used by SR funds or labels and/or a need to refine and update the exclusion set if a better match is desired.

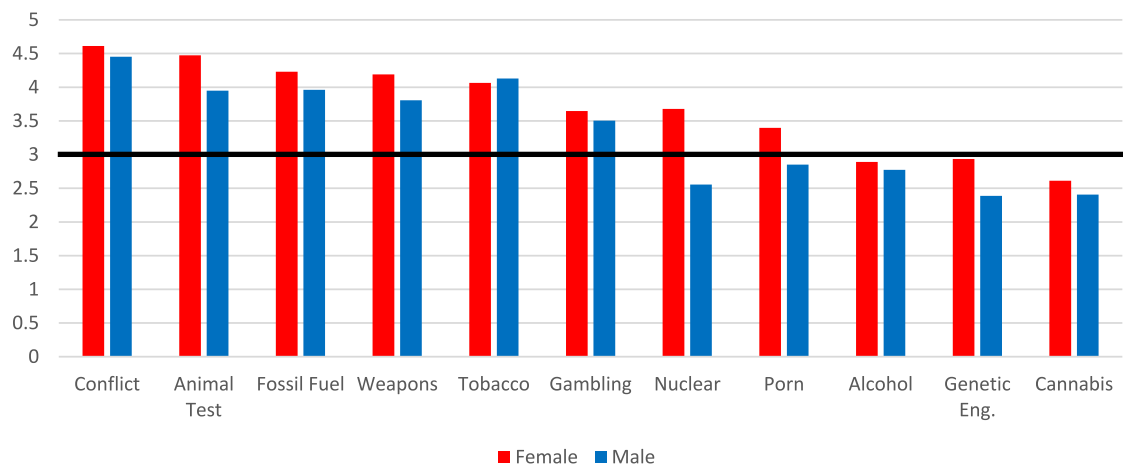


Fig. 3. Average sin rating of controversial industries by sex – UK.

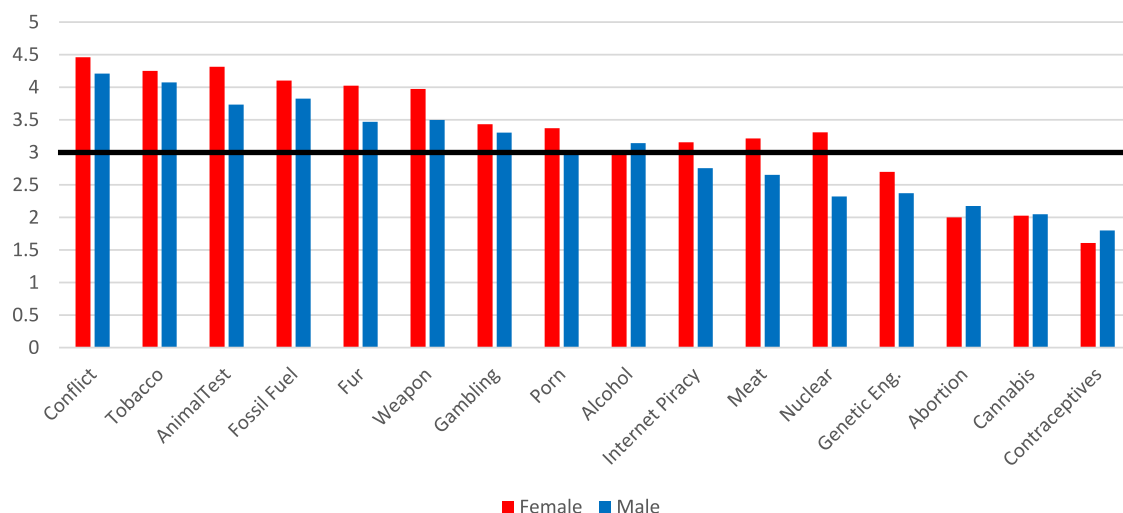


Fig. 4. Average sin rating of controversial industries by sex – US.

Result 1. Alcohol, cannabis, genetic engineering, and nuclear power exclusions by SRI funds are not supported by individuals.

3.2.2. Different strokes for different folks

We also observe significant individual variations in the judgments formed on these industries. We delved into the most significant determinants when they are observed in both samples.

In line with H2, three variables coding for beliefs stand out in both countries in these regressions: political affiliation, religion, and concern for the environment. Being on the left of the political spectrum (UK) or being a democrat (US) leads to a higher propensity to consider the fossil fuel, nuclear, and weapons industries as sinful. In both cases, this political orientation is linked to a lower likelihood to consider cannabis sinful. In the case of fossil fuels and weapon industry the effect size is medium in both countries (Cohen's $d > 0.5$), the other effect sizes being small (Cohen's $d \approx 0.3$, see Cohen, 1988). This result aligns with the general political agenda of the left/democrat, which generally displays greater environmental concern and opposes more weapon ownership. Concerns about the environment also displays a similar pattern of significance. Respondents who are more concerned about the environment display harsher judgment regarding fossil fuel, conflict zone involvement, animal testing, and weapons industries in both countries.

Result 2. Being more concerned about the environment or being on the left of the political spectrum leads to more severe judgment regarding numerous controversial industries, with the notable exception of cannabis.

Atheists in both countries are more likely to consider weapons and fossil fuel industries as sinful. However, they are less likely to consider porn and cannabis industries sinful.⁷ This result is consistent with the findings of Malka et al. (2011), underlining that religion carries both conservative and prosocial values.

Consuming from a given industry makes respondents less likely to consider it sinful, in line with H3. Both UK and US respondents who consume alcohol are less likely to consider the alcohol industry as sinful ($p < 1\%$ and small effect size $d \approx 0.3$ in both cases). US respondents who consume alcohol significantly disagreed with the classification of the alcohol industry as sinful ($p < 5\%$). Given that US respondents consume less alcohol on average, this result can explain the difference between the two samples in terms of the average rating of the industry. This finding might also be linked to stricter laws in the US regarding alcohol consumption.

Similarly, respondents who smoke ($p < 1\%$ in the US, $p < 10\%$ in the UK, small effect size $d < 0.3$) or watch pornography

⁷ In the US, where we asked the question, religious individuals are also more likely to consider contraception and abortion to be sinful.

($p < 1\%$ in both the US and the UK, medium effect size, $d > 0.5$) are less likely to consider the corresponding industry sinful (see respectively Tables 6 and 7).⁸ This finding is in line with the prediction from cognitive dissonance theory, which states that when behavior and attitude are at odds, it is often the attitude that is adjusted (Brehm and Cohen, 1962).⁹ As depicted in Bénabou and Tirole (2011), people might derive their personal values from past choices.¹⁰

The findings regarding the gambling industry are mixed: while gamblers in the UK consider the industry significantly more sinful than non-gamblers, the reverse hold true in the US. We thus refrain from drawing any definitive conclusions on the matter.

Result 3. Individuals consuming products from a given industry (alcohol, tobacco, or pornography) have a more positive attitude toward it.

Males tend to consider numerous industries as less sinful than females, as remarked by Borgers and Pownall (2014) or Niszczota and Białek (2021a,b). Overall, the effect sizes are small ($d \approx 0.3$), with the exceptions of the nuclear and animal testing industries. In our sample, males are significantly less likely to regard nuclear and genetic engineering industries as part of the sin group in both the UK (Table 6) and the US (Table 7).¹¹ The effect size is large for nuclear power in both the UK and the US ($d > 0.7$). Previous studies established that males had more positive opinions toward the nuclear industry and GMOs, possibly in relation to lower perceived risk (see Chen, 2011 for GMOs and Harris et al., 2018 for nuclear). In both the US and the UK, males also have a more positive outlook on the weapons industry. This finding relates to the higher proportion of males relative to females owning a firearm (45% versus 19% in the US in 2020). In both the UK and the US, males are less likely to frown upon animal testing (medium effect size, $d > 0.5$ in both countries). In the US, males are less likely to classify the meat and fur industry as sinful. Overall, this result echoes Graça et al. (2018), who emphasized that females are more concerned about animal welfare.

Result 4. Males are less likely to consider numerous controversial industries as sin stocks. In particular, pornography is not, on average, considered sinful by male respondents.

In conclusion, significant heterogeneity exists regarding attitudes toward investment in controversial industries. The final

⁸ It also seems that respondents engaged in one of these behaviors are less likely to be in favor of excluding other controversial sectors, albeit this exploratory finding appeared only in the UK sample. We calculated a score from 0 to 3 denoting the number of industries individuals consume from (alcohol, pornography and tobacco). Regressions show that the higher this score, the more lenient individuals' attitudes toward the other, unrelated industries ($p < 1\%$, regressions available on demand). While extremely interesting, this exploratory finding could not be reproduced in the US sample. It might be worth further research on this specific subject, particularly since Borgers and Pownall (2014) also find some suggestive evidence in that direction.

⁹ However, note that in our case causality can flow both ways: it might be that individuals who engage in these behaviors are already the ones having more favorable attitudes toward them.

¹⁰ Note that these findings are strongly significant, and performing Bonferroni correction (i.e., $\alpha/4$ as 4 industries are under investigation for consumption habits) would not change the conclusions.

¹¹ Once again, one could get concerned over multiple hypothesis testing. Performing a Bonferroni correction ($\alpha/11$ for the UK and $\alpha/16$ for the US) would result in some of these results becoming non-significant. In the UK, the statistical significance of the variable male for porn, weapon and tobacco industries would disappear if we performed such a correction. The variable male would remain significant for the nuclear, animal testing and genetic engineering industries. In the US, the correction would lead to the variable male losing its significance for conflict zones, alcohol, genetic engineering, contraception, abortion, fur and meat industry. It would remain significant for nuclear, animal testing, and internet piracy.

attitude appears to be correlated to basic demographic characteristics (sex), beliefs (concern about the environment, political affiliation, and religiosity), and past behaviors (consuming from a given controversial industry).

3.2.3. Sinful socially responsible investment

An additional comment regarding the exclusion strategy deals with the inherent limitation of excluding entire sectors of the economy. Some respondents in the preliminary survey pointed out that there are various shades of gray when assessing the ethical character of investments. As stated by one of our respondents regarding the exclusion strategy:

"I would not automatically follow this strategy. I don't believe everything is black and white and that all of the above are harmful to society" **Respondent #9, preliminary study**

In the last part of this survey, we wanted to assess whether a thematic fund fully invested in a sin industry could be considered a sustainable investment by respondents. Following the comments of one of our respondents, we added a realistic sustainable dimension to investments that are otherwise considered sinful by funds, to result in a form of "Sinful Socially Responsible Investment".

We designed two thematic funds that were fully invested in the typically excluded industries to which we provided an ethical twist. One fund was fully invested in "Local breweries", and the other, in "Organic cannabis". We asked the participants to rank the social responsibility of these funds on a scale from 1 to 5 ("If a fund is invested only in these types of companies or industries, I would consider it socially responsible"), alongside other more typical SRI thematic funds.

Both funds invested in local breweries and organic cannabis are, on average, considered socially responsible by respondents ($p < 1\%$, see Fig. 5). Unsurprisingly, typical SRI thematic funds fully invested in solar panels or water distribution in developing countries obtain a much higher rating than sinful socially responsible investments.

However, funds investing in companies whose CEO are from a minority, funds where the board of directors includes a significant number of female members, or funds from minorities are ranked at par with funds invested in local breweries when considering the whole sample. Funds invested in organic cannabis are ranked higher in terms of sustainability than those invested in companies whose CEO belongs to a minority ($p < 1\%$).

When considering the male-only sample (see Fig. 6), funds invested in organic cannabis are rated much higher in terms of sustainability than funds investing in companies whose CEO are from a minority or even companies whose boards of directors include a significant number of women (t-test, $p < 1\%$ in both cases). Overall, while board and CEO representativeness issues are important governance criteria considered by institutional investors, it seems that such considerations are far from the individual investor's preoccupations. This is rather coherent with Lagerkvist et al. (2020), who showed that SRI funds focused on governance issues tended to be shunned by investors relative to funds focused on environmental issues.

Result 5. Sinful socially responsible investments can be considered socially responsible by respondents, at par or even more so than typical socially responsible investments.

Table 8 presents the regressions we performed on the determinants of perceiving these thematic funds as socially responsible. Respondents who declared that they were more concerned about the environment find all funds to be more socially responsible. Only the funds invested in companies whose boards of directors

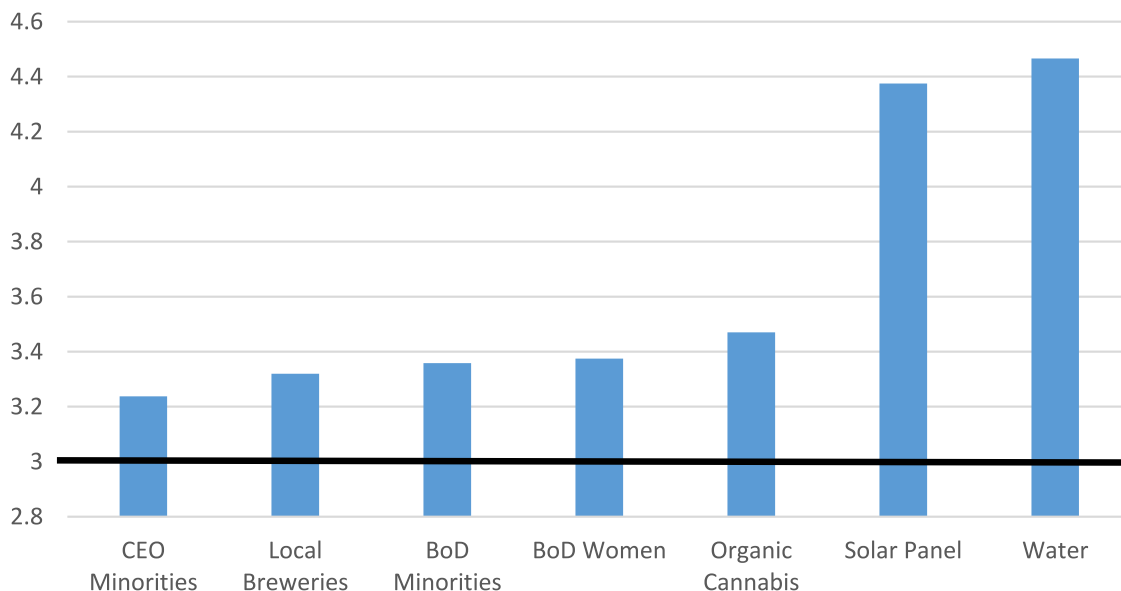


Fig. 5. Sustainable rating over 5 of various thematic funds – US.

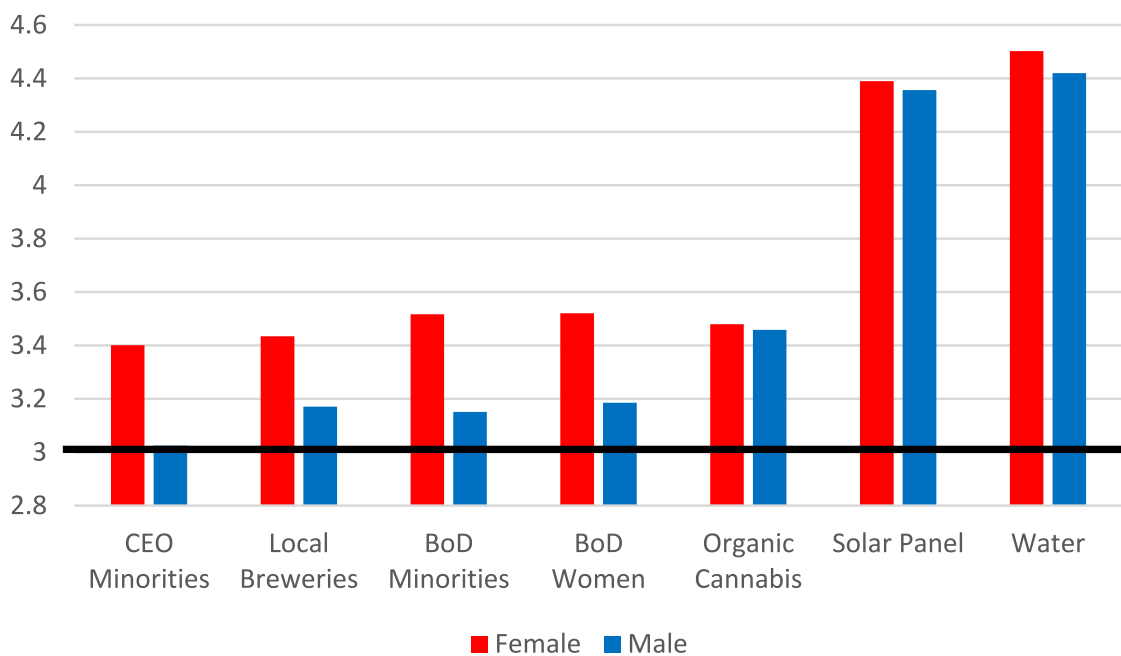


Fig. 6. Sustainable rating on a 5-point Likert scale of various thematic funds by sex – US.

include a significant proportion of members from minorities, and companies whose CEO is from a minority, fail to reach significance. Similarly, Democrats are significantly more prone to consider all funds to be socially responsible (except for water distribution and local breweries, which fail to reach statistical significance). Higher income and financial literacy are linked to a lower propensity to consider funds invested in companies whose board of directors includes women, minorities, or whose CEO is from a minority to be socially responsible. People displaying higher financial literacy and atheists are more likely to consider water distribution and solar panels socially responsible. Older respondents tended to regard water distribution and local breweries as less socially responsible. Smokers and risk-takers are more likely to see funds invested in organic cannabis as socially responsible. Interestingly, the male variable is not significant in

these regressions. Thus, the effect we observe in Fig. 6 is fully explained by other variables that differ by gender, such as political affiliation (61% of females in our sample are democrats against 44% of males, $p < 1\%$ using a proportion test) or concern for the environment (females are marginally more concerned about the environment, $p < 10\%$).

3.3. Discussion of study 1

In this first study, we underlined the fact that respondents from both the US and the UK do not subscribe to the exclusion of four out of ten of the most commonly shunned controversial industries (alcohol, nuclear, and genetic engineering, as well as pornography in the case of males). It could generate a serious hurdle for SR investment by individual investors, given that the exclusion strategy remains the most common SRI strategy in

Europe and the second most common in the world (Eurosif, 2018; GSIA, 2020). Previous work took the stance that SR investment would necessarily result in a better investment for individuals as judged by themselves, hence proposing nudges as a solution (see Pilaj, 2017; Gajewski et al., 2021).

These results call for a more informed approach. There is a mismatch between what is typically proposed by investment funds in terms of SRI and what individuals actually consider socially responsible (Borgers and Pownall, 2014). This discrepancy is also highlighted in the second part of the US survey, which shows that typical governance metrics such as the percentage of minorities or women on the board of directors of a company do not receive much support from individuals. We posit that this response is because such metrics are somewhat distant concepts for most individual investors. Respondents consider more tangible investments, such as solar panels or water distribution, to be more socially responsible. The importance of water distribution is clear, while the mechanism underlying director board composition might seem obscure for non-specialists. Investments targeting these governance metrics are considered to be at par with thematic funds only invested in what we termed “sinful socially responsible investments”, or investments displaying both a sinful and socially responsible character, such as local breweries or organic cannabis. These results regarding sinful socially responsible investments strongly echo the finding of Davis and Burton (2019), who showed that natural label claims reduced the effectiveness of graphic pictorial health warnings on cigarette packs.

We also uncovered significant inter-individual variation in attitudes toward these industries. In particular, three variables appear to display good explanatory power: sex, beliefs, and consumption habits. Males are less likely to consider controversial industries as sinful (as already highlighted in Borgers and Pownall, 2014 or Niszczota and Białek, 2021a,b). We show that respondents on the left of the political spectrum and those more concerned about the environment typically have harsher judgments of those industries. Finally, respondents consuming from a given industry (i.e., internet pornography, tobacco, alcohol or gambling) tend to have a more positive outlook toward it, as also remarked by Borgers and Pownall (2014) regarding alcohol and tobacco. Two explanations can be given for this result. First, those consuming from these industries might have the most positive outlook toward them in the first place. Alternatively, (or additionally), cognitive dissonance (Festinger, 1957; Brehm and Cohen, 1962) might be at play here. When attitudes and behaviors are at odds, attitudes tend to adjust. It might explain why consumers from a given industry express a more positive outlook on the industry themselves.

However, this first study calls for additional research. In the first part, we tested whether some industries are considered sinful by respondents, which does not prove that their exclusion or inclusion in an SRI fund would affect their willingness to invest, a possible objection we would like to address. In the second study, we created three groups, one composed of the three most controversial industries, another with the three least controversial ones, and the last one regrouping all six industries. We hypothesized that:

Hypothesis 6. By decreasing order of preference, individual investors are more willing to invest in a fund (1) excluding only the most controversial industries (2) all six industries (3) the three least controversial ones.

Given the high variability in terms of attitude toward the industries proposed and the number of comments indicating that individuals would like to select which industry to include, we would also like to explore a procedural utility explanation

(Frey et al., 2004; Frey and Stutzer, 2005). Instead of proposing a standard fund excluding some industries, individuals might obtain higher utility by having a voice in the process. Individuals might be more satisfied if they feel they have a choice, even if their choice results in the same investment as what would have constituted the standard SRI fund. The idea is to propose to the individual to choose which industry should be excluded, among six: three controversial ones and three non-controversial ones. Then, a fund excluding only the three controversial ones is proposed to them. This process would constitute an intermediate and less costly way to give an impression of freedom compared to letting respondents choose which industries they wish to exclude. By slightly modifying the choice environment to favor the SRI fund, without forbidding any option or changing economic incentives, this method would fall under the umbrella of “Nudges”.

Hypothesis 7. Individual investors are more likely to invest in SRI in the procedural utility treatment compared to presenting them directly the fund excluding the most controversial industries

Finally, we test whether and to what extent individuals would be willing to pay to choose which industry should be excluded. The idea was already explored in Borgers and Pownall (2014), who reported a rather high willingness to pay from their respondents to choose which industry should be excluded.

Hypothesis 8. On average, individual investors are willing to pay a non-negligible amount to choose which industries should be excluded

4. Study 2: Willingness to pay for a fitted exclusion strategy

4.1. Method

We used a between-subjects design with participants randomly assigned to one of the treatments. Respondents from Prolific Academic were split into four treatment groups, each of which was confronted with specific investment funds. Three of these four groups were confronted with an investment fund, excluding either the least controversial industries (nuclear energy, alcohol, genetic engineering), the most controversial ones (weapons, tobacco, animal testing), or all six industries.

The last group is based on the idea of procedural utility. Respondents first had to state which industries should be excluded, among six potential ones (weapons, tobacco, animal testing, contraceptives, organic therapeutic cannabis, and local organic breweries). The first three industries were the most controversial, while the last three were much less contentious, based on the previous study, and were essentially used as decoys. After selecting the industries they would have liked to exclude, all respondents in this group, regardless of their choice, were presented with a fund excluding weapons, tobacco, and animal testing. They were told that this fund most closely fitted their exclusion preferences.

All four groups were asked to rate on a Likert scale from 1 to 7 how likely they were to invest in the funds presented to them, which constituted the dependent variable for this part of the experiment.

All the respondents were then asked whether they preferred to select which industry to exclude or to have a panel of experts choose. Following this question, they were asked how much they would be willing to pay for the service (either selecting themselves or having a panel of experts select for them). The willingness to pay question was a transposition of the question used by Vrecko and Langer (2013) to SRI. Table 3 summarizes the design of the second study and the actual language used in the survey.

Table 2
Demographic characteristics of the sample from study 2.

Variable	Mean	Std.
Male	49.7%	0.50
Age	33.79	12.34
Working	72.3%	0.45
Charity affiliation	21.9%	0.41
Concern environment/5	3.95	1.03
Single	15.8%	0.36
Bachelor or higher	62.7%	0.48
Income [Bracket]	7.18 [60–69 K\$]	3.53
Conservative	11.1%	0.31
Atheist	45.6%	0.50
CRT score/3	1.54	1.19
Risk-taking/ 10	5.29	2.11
Evaluate companies before investing	83.3%	0.37

Table 3
Design summary of study 2.

Treatment groups			
Least controversial	Most controversial	All	Procedural utility
A socially responsible investment fund operates by <u>excluding</u> investments in companies operating in:			In your opinion, which industries/operations should be excluded from investment by socially responsible funds?
Nuclear energy	Weapons	Weapons	Weapons
Alcohol	Tobacco	Tobacco	Tobacco
Genetic engineering	Animal testing	Nuclear energy	Animal testing
		Alcohol	Contraceptives
		Genetic engineering	Organic therapeutic cannabis
		Animal testing	Local organic breweries
			[Next page]
			The fund in existence that most closely fits your exclusion preferences from the previous question is a fund that excludes investments in companies operating in:
			- Weapons
			- Tobacco
			- Animal testing
I am likely to invest in that fund (Likert 1 to 7)			
Comment (optional)			
[Next page]			
To create a socially responsible portfolio, you would prefer to:			
<ul style="list-style-type: none"> Select yourself the industries you want to exclude. Have a panel of experts select which industries are excluded. 			
[Next page]			
Imagine that you are going to invest 10,000\$. What maximum fee (in % of the investment) are you willing to pay to [Piped Text – choice from the previous question]?			
(This percentage is between 0 to 10%. For instance, if you select 2%, given an investment of 10,000\$, it means that the maximum you would be willing to pay is 200\$)			

Our sample is composed of 1050 US investors, of which 1020 successfully passed the attention check. They were paid £1.00 to participate in the experiment, which took approximately 10 min to complete. We gathered several demographic variables from the Prolific Academic database regarding our sample. The descriptive statistics for these variables are presented in Table 2. Additionally,

the respondents were required to answer the three questions of the Cognitive Reflection Test (Frederick, 2005, see Table 2), an integrity scale (Peterson and Seligman, 2004), a reactance scale (Hong and Faedda, 1996), an altruism scale (Costa and McCrae, 1992), and a risk-taking measure (Dohmen et al., 2011, see Table 2).

Table 4
Willingness to invest in various exclusionary funds – 7-point Likert.

Treatment groups	Obs.	Mean	Confidence interval	Std. Dev.	P ≠ NGA	Cohen's d
1. Exclusion of least controversial industries (Nuclear, Genetic eng., and Alcohol (NGA))	265	3.89	[3.69; 4.08]	1.61		
2. Exclusion of all six industries	248	4.57	[4.37; 4.78]	1.63	0.001	0.423
3. Exclusion of most controversial industries (Weapon, tobacco, and animal testing)	246	4.78	[4.58; 4.98]	1.56	0.001	0.563
4. Procedural utility	261	4.21	[4.00; 4.42]	1.70	0.026	0.195

4.2. Results

4.2.1. Willingness to invest depends on the industry excluded

The respondents displayed a significantly lower willingness to invest in funds excluding nuclear, genetic engineering, and alcohol than in the funds excluding weapons, tobacco, and animal testing, or all six industries ($p < 0.001$ in both cases, t-test, Table 4), in line with H5. Similarly, the fund excluding all six industries is rated slightly lower in terms of willingness to invest than the fund excluding only the three industries considered most sinful, a difference that attains marginal significance ($p < 10\%$) when performing a regression (see Table 9). Regarding effect size, the difference in willingness to invest between the fund excluding the least controversial industry and that excluding the most controversial ones would be considered “medium” using Cohen's d ($d = 0.56$, see Cohen, 1992). Thus, this result has practical implications in addition to its statistical significance.

Result 6. Individuals' willingness to invest in SRI exclusionary funds decreases when funds exclude less-controversial industries.

The respondents were also offered the opportunity to offer comments, which we used for qualitative confirmation of the data obtained. In the group excluding weapons, tobacco, and animal testing, only five chose to do so, mainly to make general statements (for instance, saying that returns, the environment, or governance were the most important factors). Comparatively, nine chose to leave comments for the group excluding all six funds, and 20 in the group excluding only the less controversial industries (alcohol, nuclear energy, and genetic engineering). The comments in these groups were more specific and displayed a stronger emotional load. For instance:

Nuclear Energy and Genetic Engineering are critical components of improving lives and reducing carbon. I would not trust the people running a fund who were using those criteria. Respondent #11, 2nd study, group non-controversial industries

These industries are typically excluded by investment funds, and several EU SRI labels require such exclusions.

Excluding nuclear energy and genetic testing is regressive. Respondent #12, 2nd study, group all (controversial and non-controversial) industries

Nuclear Energy and Genetic Engineering are helpful to the environment! Respondent #13, 2nd study, group all (controversial and non-controversial) industries

Nuclear energy is socially responsible as well as alcohol and genetic engineering Respondent #14, 2nd study, group non-controversial industries

Overall, in practical terms, it seems that a well-designed fund excluding only the industries considered most controversial by the population (e.g., weapons, tobacco, and animal testing) leads to the highest willingness to invest. Adding to this fund industries that might not be seen as controversial in the first place reduce the willingness to invest, albeit only in a marginally significant way (e.g., adding alcohol, nuclear energy, and genetic engineering to weapons, tobacco, and animal testing).

The “procedural utility” strategy consisting in pushing people to think about the investment decision before proposing them the fund excluding the most sinful industry backfired. Overall, this leads to a lower willingness to invest ($p < 5\%$, both with a Wald test of equality of parameters from the regression in Table 9 and a simple t-test of the mean of both groups). Respondents who picked the three industries composing the fund in the first step did not display a significantly higher willingness to invest than the group of respondents who directly saw this fund (4.71 compared to 4.78). However, those who picked another fund composition appeared to be disappointed and thus displayed a lower willingness to invest (3.86 as compared to 4.78, $p < 1\%$). It might be related to a comment made by a respondent from a previous study:

I do not like being told what a “sin company” is. Whilst I broadly agree with the list above [...] Respondent #13, preliminary study

Result 7. Asking individuals which industries they would like to avoid before proposing a fund excluding standard controversial industries backfired and resulted in lower investment than presenting them directly with the fund, excluding these standard controversial industries.

4.2.2. Respondents are willing to pay to get a say

Approximately two-thirds (67.24%) of individuals prefer to choose which industries to exclude. They are willing to pay a one-off fee of 2.14%, with an initial investment of \$10,000 to do so. The remaining third prefers to have a panel of experts decide for them and are willing to pay for that service 2.48% (WTP significantly higher than the WTP for the group preferring to choose for themselves, $p < 5\%$). It seems that some individuals prefer to rely on the judgment of experts because they can dispose of more information or knowledge. As pointed out by a respondent in the group seeing the fund excluding alcohol, nuclear, and genetic engineering:

“There must be a reason why the fund isn't investing in those things, and they have more info than I do”. Respondent #14, 2nd study, group non-controversial industries

Respondents scoring higher on the CRT test and scoring higher in integrity are more likely to prefer choosing which industry to exclude (marginal significance, $p < 10\%$, second regression, Table 9). However, the main predictor is reactance. As reactance measures negative reactions to threats toward one's freedom and independence, it is not surprising to observe that individuals scoring higher in reactance prefer to select which industries to exclude ($p < 1\%$).

A regression on the willingness to pay reiterates that respondents preferring experts to select which industry to exclude have a higher willingness to pay than those who choose by themselves ($p < 5\%$, third regression, Table 9). This regression also highlights a large number of significant determinants of this willingness to pay. Respondents displaying a higher willingness to take risks and those affiliated with charity are willing to pay more for such a service. Regarding charity affiliation, this result is coherent with the findings of Williams (2007) who show that responsible consumers are more likely to invest in SRI. However, males, older individuals, individuals holding a bachelor's or higher degree, conservatives, atheists, individuals performing their own analysis of companies before investing, and individuals with higher CRT and reactance display a lower willingness to pay.¹²

Taken together, these variables have a large economic impact. For instance, the model predicts that a 20-years old female with a low CRT score (0 out of 3) and a high willingness to take risks (10 out of 10) is willing to pay 3.70% to choose which industries to include in her portfolio all other variables held at the mean. This result represents \$370 for the \$10,000 investments in this scenario. On the contrary, the model predicts that a 60-years old male, scoring high on CRT (3 out of 3) and unwilling to take risks (0 out of 10), would be willing to pay only 0.59% for the same service. It is a mere \$59 for the \$10,000 investment, which is more than six times less than the 20 years-old female taken as an example.

Overall, it appears that offering the choice to customers to either select which industry to exclude or have a panel of experts choose for them could constitute a profitable venue, both in terms of financial returns for wealth advisers and in terms of SRI promotion. The willingness to pay that we elicited in both cases was quite large. It is similar – and if anything, slightly higher – to the willingness to pay elicited by Vrecko and Langer (2013) on their sample of investors regarding the customization of returns. In their study, respondents were willing to pay 1.3 to 2% to customize their distribution of returns. It highlights the importance of the exclusion set in the eyes of the respondents in our study.

Result 8. Two-thirds of the respondents are willing to pay a one-off fee of 2.1% to choose which industries should be excluded. The remaining third was willing to pay 2.5% to have a panel of experts chooses for them.

5. General discussion

Our first study indicates that individuals from the US and the UK do not agree with some of the top ten industries typically shunned by socially responsible funds using an exclusion strategy. In particular, our survey does not provide support for the general exclusion of alcohol, cannabis, genetic engineering, nuclear power, and pornography industries. Given that these industries tend to display attractive financial features, such as superior performance (see Fabozzi et al., 2008 for sin stocks) or low

correlation with the market (see Weisskopf, 2020 for cannabis), automatically excluding these industries may degrade financial performance without necessarily delivering, in exchange, an individual moral return (on the basis of respondents' statements).

In this survey, we went beyond controversial industries and considered illegal ones. Respondents do not consider internet piracy to be part of the sin industries in the US, where we asked the question. Similarly, the cannabis industry is not regarded as a part of the sin group in both the US (where it is legal in some states) and the UK (where its recreational use is illegal).

These results enable the creation of a 2-by-2 matrix, thus summarizing the similarities and discrepancies between which industries generate concerns for individual investors, and which industries are typically excluded by SRI funds (see Table 5).

Individual characteristics matter when classifying stocks. Males are less likely to classify most industries as being sinful. Personal beliefs, captured in particular through religiosity, political orientations, and concerns about the environment, also have an influence. In particular, being on the left of the political spectrum and being more concerned about the environment leads to a more severe judgment of numerous industries. In line with the theory of cognitive dissonance (Festinger, 1957), being a consumer of the products of one of the controversial industries is associated with a more positive outlook toward it.

It appears that thematic funds invested in "Sinful Social Responsibility" – controversial industries to which a socially responsible component is added – can be considered socially responsible by respondents. In particular, funds fully invested in local breweries or organic cannabis production are classified as socially responsible, at par with typical funds that target governance goals. This result may call for the development of best-in-class or specialized thematic funds. These thematic funds could be a way to reconcile the performance of sin funds with "social responsibility", as perceived by individuals. We think that further research on the theme of sinful social responsibility, or put otherwise how adding socially responsible elements can neutralize negative judgments of stocks would provide a fruitful avenue for future research. It is possible that in some cases, adding socially responsible components to sin stocks can be perceived as greenwashing and backfire.

In the second study, we proposed to US investors typical investment funds, excluding controversial industries, in a between-subjects design. We observe that, in accordance with our first study, individuals display a much higher willingness to invest in the fund excluding the most controversial industries (tobacco, animal testing, and weapons) than in the one excluding the least controversial ones (nuclear, genetic engineering, and alcohol). The willingness to invest in a fund excluding all six industries is slightly lower than the willingness to invest in a fund excluding only the most controversial ones. We also tested a nudge based on procedural utility, first asking respondents which industries they would like to exclude before presenting them with a standard fund excluding tobacco, animal testing, and weapons. This nudge backfired. It did not improve the willingness to invest of respondents who selected these three industries but deteriorated the willingness to invest in respondents who selected additional or different industries. Other nudges have been shown to backfire (see Sunstein, 2017; Hummel and Maedche, 2019 for reviews). In our specific case, one potential explanation might be that our nudge forced respondents to think more about the morality of the decision under consideration and to question ethics. Asking them first which industry should be excluded made them wary of ethical issues surrounding investment and more likely to refuse investing in the fund proposed if it did not match perfectly their preferences.

¹² The pattern of significance was similar for individuals preferring to select themselves which industries to exclude and those preferring to have a panel of expert do the selection. We thus display only one regression for the willingness to pay.

Table 5
Summary of industries classification.

	Rarely excluded by SRI institutional players	Typically excluded by SRI institutional players
High level of individual concern	- Fur	- Tobacco - Weapons - Gambling - Animal testing - Fossil fuels
Low level of individual concern	- Contraceptive - Abortion - Meat	- Pornography - Nuclear - Genetic engineering - Alcohol - Cannabis - Internet piracy

Table 6
Ordered Logistic Regressions – Determinants of attitudes toward controversial industries in the UK.

	Fossil		Tobacco		Nuclear		Conflict		Animal test		Weapons	
	Coef.	P > z	Coef.	P > z	Coef.	P > z	Coef.	P > z	Coef.	P > z	Coef.	P > z
Male	-0.272	0.185	0.510**	0.011	-1.547***	0.001	-0.309	0.171	-1.012***	0.001	-0.487**	0.014
Age	-0.006	0.610	0.043***	0.001	0.003	0.766	0.019	0.134	0.017	0.140	0.013	0.216
Atheist	0.608***	0.001	0.032	0.853	-0.182	0.269	0.312	0.110	0.285	0.108	0.336*	0.051
Left	1.039***	0.001	0.393**	0.022	0.382**	0.020	0.634***	0.001	0.031	0.862	0.969***	0.001
Gambling	0.246	0.159	-0.056	0.737	-0.078	0.627	0.136	0.483	-0.195	0.262	0.194	0.248
Porn	0.004	0.984	-0.356**	0.043	-0.086	0.612	0.075	0.715	-0.181	0.326	-0.236	0.184
Alcohol	0.015	0.847	-0.142*	0.062	-0.002	0.972	0.030	0.735	0.011	0.886	-0.050	0.512
Smoker	0.251	0.430	-0.569*	0.052	0.271	0.371	-0.563*	0.081	0.354	0.267	0.425	0.181
Conc. Env	0.771***	0.001	0.347***	0.001	0.032	0.725	0.573***	0.001	0.231**	0.020	0.322***	0.001
Working	-0.317*	0.073	0.090	0.599	0.070	0.667	-0.037	0.851	0.035	0.843	0.104	0.539
Univ	-0.088	0.728	0.152	0.525	-0.414*	0.080	-0.183	0.508	-0.074	0.772	0.556**	0.020
Income	-0.003	0.911	-0.009	0.751	-0.030	0.268	-0.014	0.661	-0.042	0.150	-0.055	0.053
Cut-off 1	-0.303		-1.714		-2.863		-2.354		-3.646		-1.927	
Cut-off 2	1.106		0.049		-1.544		-0.857		-2.049		0.118	
Cut-off 3	1.770		0.988		-0.747		0.415		-0.992		1.110	
Cut-off 4	4.189		3.112		0.609		2.361		0.738		2.875	
R	0.109		0.040		0.052		0.062		0.037		0.067	

	Alcohol		Gambling		Porn		Genetic engineering		Cannabis	
	Coef.	P > z	Coef.	P > z	Coef.	P > z	Coef.	P > z	Coef.	P > z
Male	0.040	0.832	-0.006	0.975	-0.409**	0.030	-0.780***	0.001	0.030	0.876
Age	0.027***	0.008	0.028***	0.008	0.033***	0.002	0.018*	0.078	0.025**	0.016
Atheist	-0.354**	0.032	-0.061	0.713	-0.572***	0.001	-0.269	0.102	-0.558***	0.001
Left	0.107	0.516	0.118	0.480	0.057	0.724	0.246	0.128	-0.270*	0.099
Gambling	0.064	0.686	0.443***	0.006	-0.018	0.912	0.005	0.977	0.059	0.712
Porn	-0.383**	0.023	-0.213	0.207	-0.868***	0.001	-0.279*	0.099	-0.865***	0.001
Alcohol	-0.264***	0.001	-0.166**	0.024	-0.140*	0.054	-0.121*	0.095	-0.245***	0.001
Smoker	-0.349	0.234	-0.105	0.714	-0.694**	0.015	-0.006	0.984	-0.902***	0.002
Conc. Env	0.206**	0.026	0.136	0.139	0.054	0.555	-0.157*	0.083	0.089	0.325
Working	-0.057	0.727	-0.090	0.582	-0.167	0.300	-0.103	0.522	0.029	0.860
Univ	-0.309	0.182	0.005	0.985	-0.171	0.462	-0.235	0.316	0.080	0.741
Income	-0.061**	0.028	0.014	0.615	0.022	0.405	0.009	0.749	0.038	0.169
Cut-off 1	-2.031		-2.105		-2.578		-2.886			
Cut-off 2	0.059		-0.287		-1.110		-1.121			
Cut-off 3	1.021		0.592		-0.196		-0.021			
Cut-off 4	2.812		2.557		1.159		1.475			
R	0.033		0.018		0.052		0.027		0.055	

We also required participants to state whether they would prefer to select which industries to exclude or have a panel of experts choose for them. More than two-thirds of our respondents indicated that they prefer to select themselves and are willing to pay a fee of 2.1% of their initial investment to do so. The remaining third a panel of experts to select and are willing to pay slightly more (2.5%) for this service. This willingness to pay is quite high. We adapted the task of [Vrecko and Langer \(2013\)](#), who found a willingness to pay of 1.3 to 2% for investors to customize their distribution of returns. Thus, the selection of excluded industries appears to be an important topic for individual investors. This is coherent with the findings of [Borgers and Pownall \(2014\)](#) who also found high willingness to pay from investors to be able to customize their investments, or of [Apostolakis et al. \(2018\)](#) who underline that investors might be willing to forego some measure of financial performance to invest in SRI.

6. Conclusion

A key philosophical issue that might be raised is whether exclusions in SRI should be defined according to individual stated preferences, or rather according to “superior principles”. In our opinion, this aspect remains an unresolved and contentious issue, especially regarding the identification of superior principles that should be used. As we have highlighted, on numerous issues, there is no agreement among the individuals we surveyed. There is also no objective way to settle this discussion. For instance, nuclear power is an economically viable low-carbon energy source. However, it poses a significant radioactive danger (both through accidents and waste management). There is no objective method to weigh the benefits and risks associated with this industry, and even reviews from experts refrain from drawing “definite conclusions” on the matter (p. 91, [\(Prävälje and Bandoc, 2018\)](#)).

Table 7
Ordered Logistic Regressions – Determinants of attitude toward controversial industries in the US.

	Fossil		Tobacco		Nuclear		Conflict		Animal test		Weapons	
	Coef.	<i>P</i> > z	Coef.	<i>P</i> > z	Coef.	<i>P</i> > z	Coef.	<i>P</i> > z	Coef.	<i>P</i> > z	Coef.	<i>P</i> > z
Male	-0.239	0.273	-0.280	0.183	-1.248***	0.001	-0.564**	0.013	-0.831***	0.001	-0.563***	0.005
Age	-0.031**	0.014	0.017	0.201	-0.003	0.782	0.000	0.981	-0.016	0.195	0.009	0.488
Atheist	0.503***	0.007	0.406**	0.028	-0.488***	0.006	0.577***	0.003	0.029	0.875	0.316*	0.077
Democrat	0.645***	0.001	-0.006	0.975	0.389**	0.028	0.070	0.720	0.321*	0.081	0.391**	0.030
Gambling	0.036	0.854	-0.282	0.136	0.103	0.561	-0.409**	0.038	0.230	0.220	-0.077	0.668
Porn	0.422**	0.045	-0.048	0.821	0.134	0.508	0.333	0.134	-0.402*	0.065	0.100	0.629
Alcohol	0.061	0.536	-0.010	0.920	-0.027	0.776	0.019	0.859	-0.011	0.912	-0.046	0.636
Smoker	0.841***	0.001	-0.628***	0.006	0.185	0.398	-0.094	0.701	0.165	0.471	-0.175	0.429
ConcernEnv	0.795***	0.001	0.122	0.183	-0.133	0.124	0.326***	0.001	0.346***	0.001	0.510***	0.001
Working	-0.129	0.517	-0.101	0.608	-0.191	0.306	0.140	0.495	-0.287	0.146	0.110	0.557
Univ	0.407*	0.076	0.110	0.639	-0.054	0.805	0.346	0.149	-0.458*	0.055	0.403*	0.074
Income	-0.008	0.759	-0.028	0.296	-0.052*	0.048	-0.042	0.141	-0.003	0.906	-0.072***	0.007
RiskTaking	-0.093**	0.039	0.008	0.851	0.088**	0.034	-0.010	0.837	-0.014	0.741	-0.042	0.319
FinLit	0.126	0.204	0.190*	0.052	-0.476***	0.001	0.178*	0.092	-0.129	0.198	-0.070	0.464
Cut-off 1	0.161		-2.418		-3.560		-3.123		-3.889		-1.138	
Cut-off 2	1.303		-1.344		-2.270		-1.314		-2.523		0.231	
Cut-off 3	1.923		-0.662		-1.495		-0.032		-1.626		1.257	
Cut-off 4	3.828		1.053		-0.199		1.593		0.037		2.773	
R	0.112		0.026		0.082		0.053		0.057		0.060	
N	472		472		472		472		472		472	

	Alcohol		Gambling		Porn		Genetic engineering		Cannabis	
	Coef.	<i>P</i> > z	Coef.	<i>P</i> > z	Coef.	<i>P</i> > z	Coef.	<i>P</i> > z	Coef.	<i>P</i> > z
Male	0.351*	0.076	-0.018	0.927	-0.274	0.165	-0.345*	0.085	0.006	0.976
Age	-0.002	0.847	-0.005	0.705	0.008	0.511	-0.009	0.432	-0.020	0.133
Atheist	-0.087	0.618	-0.267	0.126	-0.945***	0.001	-0.533***	0.003	-0.773***	0.001
Democrat	-0.048	0.783	0.015	0.930	-0.174	0.321	-0.280	0.116	-0.553***	0.003
Gambling	-0.256	0.148	-0.471***	0.008	-0.252	0.157	0.130	0.464	0.152	0.417
Porn	-0.207	0.300	-0.136	0.498	-0.771***	0.001	-0.124	0.538	-0.506**	0.017
Alcohol	-0.270***	0.004	-0.091	0.321	-0.225**	0.019	0.004	0.963	-0.426***	0.001
Smoker	-0.041	0.852	-0.077	0.725	-0.128	0.559	0.254	0.252	-0.300	0.207
ConcernEnv	0.061	0.488	0.096	0.275	-0.103	0.232	-0.028	0.755	-0.198**	0.032
Working	-0.028	0.878	-0.172	0.351	-0.049	0.789	-0.093	0.614	-0.072	0.708
Univ	-0.009	0.968	0.064	0.766	-0.144	0.514	-0.260	0.235	0.122	0.592
Income	-0.039	0.128	-0.001	0.978	0.020	0.432	-0.001	0.957	-0.005	0.845
RiskTaking_1	0.079*	0.054	0.035	0.410	0.034	0.421	0.011	0.795	0.021	0.636
FinLit	-0.103	0.261	0.026	0.775	-0.002	0.980	-0.354***	0.001	-0.023	0.817
Cut-off 1	-2.325		-2.546		-3.467		-3.229		-2.778	
Cut-off 2	-0.807		-1.020		-2.284		-1.779		-1.543	
Cut-off 3	0.102		-0.288		-1.427		-0.488		-0.555	
Cut-off 4	1.592		1.331		-0.326		1.015		0.792	
R	0.018		0.012		0.0537		0.038		0.062	
N	472		472		472		472		472	

	Contract		Abortion		Piracy		Fur		Meat	
	Coef.	<i>P</i> > z	Coef.	<i>P</i> > z	Coef.	<i>P</i> > z	Coef.	<i>P</i> > z	Coef.	<i>P</i> > z
Male	0.545**	0.021	0.443**	0.040	-0.703***	0.001	-0.390*	0.054	-0.518***	0.010
Age	-0.037**	0.014	0.003	0.827	0.048***	0.001	0.012	0.354	-0.033***	0.011
Atheist	-1.202***	0.001	-1.105***	0.001	-0.719***	0.001	0.269	0.137	0.149	0.391
Democrat	-0.233	0.251	-0.324*	0.080	0.024	0.889	0.587***	0.001	0.136	0.437
Gambling	0.071	0.731	-0.135	0.476	0.023	0.893	-0.384**	0.035	-0.272	0.126
Porn	-0.399*	0.083	-0.487**	0.020	0.004	0.984	-0.172	0.418	0.045	0.829
Alcohol	-0.210*	0.063	-0.043	0.659	0.020	0.829	-0.012	0.904	0.066	0.476
Smoker	0.347	0.165	0.168	0.467	-0.359	0.104	0.467**	0.039	0.218	0.319
ConcernEnv	-0.318***	0.001	-0.311***	0.001	-0.075	0.390	0.593***	0.001	0.512***	0.001
Working	0.372*	0.085	0.083	0.673	-0.004	0.981	-0.041	0.832	0.011	0.951
Univ	-0.284	0.248	0.119	0.614	0.063	0.774	-0.128	0.575	0.140	0.536
Income	-0.041	0.171	0.017	0.541	0.002	0.931	-0.009	0.741	-0.030	0.256
RiskTaking_1	0.134***	0.006	0.083*	0.062	0.012	0.771	-0.101**	0.022	-0.068	0.107
FinLit	-0.317***	0.004	-0.237**	0.019	0.098	0.298	-0.203	0.039	-0.145	0.122
Cut-off 1	-2.774		-2.091		-1.157		-1.645		-1.530	
Cut-off 2	-1.483		-0.966		-0.063		-0.260		-0.131	
Cut-off 3	-0.466		-0.073		1.143		0.823		1.019	
Cut-off 4	0.682		0.869		2.483		2.599		2.708	
R	0.098		0.071		0.033		0.080		0.054	
N	472		472		472		472		472	

A way to solve this dilemma could be to adopt the position defended by Pilaj (2017): “Ultimately, SRI is in the eye of the beholder” (p. 744); that is, each investor should be free to decide

what constitutes SRI. Taking this interpretation into account, we could advise funds and labels to adjust their exclusion set to match the demands of individuals. IT-based tools can facilitate

Table 8
Ordered Log. Regressions – Determinants of attitude toward controversial industries in the US.

	Water		Solar		Cannabis		BoD women		BoD minority		Local breweries		CEO minority	
	Coef.	P > z	Coef.	P > z	Coef.	P > z	Coef.	P > z	Coef.	P > z	Coef.	P > z	Coef.	P > z
Male	-0.071	0.757	-0.136	0.548	-0.015	0.938	-0.253	0.213	-0.294	0.140	-0.289	0.148	-0.232	0.249
Age	-0.030**	0.021	-0.018	0.161	-0.017	0.154	0.001	0.947	-0.007	0.575	-0.025**	0.038	-0.011	0.367
Atheist	0.476**	0.018	0.371*	0.058	-0.099	0.569	-0.162	0.360	-0.143	0.418	-0.255	0.147	-0.020	0.909
Democrat	0.209	0.301	0.395**	0.043	0.483***	0.007	0.788***	0.001	0.731***	0.001	-0.067	0.706	0.721***	0.001
Gambling	-0.088	0.665	-0.260	0.189	0.023	0.897	-0.120	0.503	-0.090	0.610	-0.069	0.700	-0.049	0.783
Porn	0.275	0.220	0.350	0.117	0.308	0.131	-0.094	0.647	-0.233	0.251	-0.128	0.522	-0.482**	0.019
Alcohol	0.072	0.507	0.359***	0.001	0.031	0.747	-0.109	0.239	-0.081	0.388	0.065	0.482	-0.046	0.622
Smoker	0.009	0.971	-0.024	0.921	0.900***	0.001	0.435	0.050	0.215	0.335	0.304	0.172	0.167	0.448
Conc. Env	0.309***	0.001	0.361***	0.001	0.367***	0.001	0.167	0.054	0.054	0.542	0.171**	0.049	0.090	0.303
Working	0.103	0.629	0.067	0.743	-0.082	0.660	-0.048	0.801	-0.058	0.756	0.021	0.911	0.038	0.840
Univ	-0.119	0.633	-0.087	0.721	-0.023	0.919	-0.068	0.755	-0.168	0.444	0.183	0.398	-0.345	0.115
Income	0.007	0.809	-0.046	0.110	-0.031	0.230	-0.047*	0.070	-0.073***	0.005	-0.039	0.136	-0.044*	0.089
FinLit	0.236**	0.024	0.271***	0.009	-0.138	0.144	-0.176*	0.063	-0.175*	0.063	-0.127	0.173	-0.158*	0.095
Risk Tak.	-0.078	0.104	-0.038	0.420	0.088**	0.036	0.011	0.798	0.023	0.578	0.010	0.819	0.000	0.993
Cut-off 1	-3.606		-3.574		-1.409		-2.721		-3.711		-3.548		-3.480	
Cut-off 2	-2.236		-1.518		-0.009		-1.383		-2.333		-1.735		-2.184	
Cut-off 3	-1.317		-0.640		1.464		0.213		-0.714		-0.424		-0.489	
Cut-off 4	0.631		1.618		3.155		2.013		0.986		1.348		1.190	
R2	0.045		0.064		0.047		0.038		0.038		0.018		0.036	
N	472		472		472		472		472		472		472	

Table 9
Regressions regarding study 2.

	Ordered logistic Likert would invest		Logistic Let experts choose		OLS robust Willingness to pay	
	Coef.	P > z	Coef.	P > z	Coef.	P > z
Fund						
All	-0.304*					
Non-controversial	-1.058***	0.001				
Procedural utility	-0.572***	0.001				
Experts choose					0.262**	0.035
Male	-0.025	0.845	0.133	0.389	-0.244*	0.069
Age	-0.015***	0.002	-0.006	0.326	-0.024***	0.001
Working	0.049	0.712	-0.029	0.859	-0.084	0.558
Charity Aff.	-0.076	0.587	0.269	0.105	0.270*	0.066
Concern Environ.	0.331***	0.001	0.037	0.621	-0.042	0.523
Single	-0.110	0.495	-0.063	0.749	0.098	0.613
Bachelor	-0.002	0.990	0.262*	0.089	-0.446***	0.002
Income	0.000	0.995	-0.010	0.634	-0.028	0.135
Conservative	-0.207	0.283	-0.376	0.155	-0.363**	0.096
Atheist	0.022	0.851	0.149	0.301	-0.264**	0.038
Firm analysis	0.174	0.261	0.060	0.745	-0.289*	0.086
CRT	0.010	0.844	-0.097	0.111	-0.323***	0.001
Integrity	-0.011	0.287	-0.024	0.058	-0.015	0.200
Reactance	-0.004	0.508	-0.027***	0.001	-0.012*	0.064
Risk taking	-0.010	0.737	-0.032	0.338	0.093***	0.003
Altruism	0.032***	0.001	-0.003	0.773	0.009	0.375
Constant			0.914	0.129	4.775***	0.001
Cut-Off 1	-2.068					
Cut-Off 2	-1.192					
Cut-Off 3	-0.638					
Cut-Off 4	0.335					
Cut-Off 5	1.496					
Cut-Off 6	3.539					
N	1020		1020		1020	
R2	0.037		0.028		0.135	

The third regression used robust standard errors as there was evidence of heteroscedasticity. We also performed the second and third regressions including the group respondents were affected in (All, non-controversial, procedural utility), as a robustness check. As this variable proved non-significant, it was dropped in the final specification displayed here.

“customized exclusion” and/or investor education regarding pre-defined exclusion. When investors feel that their investment is not against their personal views of morality, they would be more willing to invest and commit to their investment.

Our results can also be interpreted as an argument to encourage SR funds and labels to better explain and maybe educate investors on their exclusion set. Individuals may express an attitude regarding a given industry based on a cursory examination of the limited information at their disposal. Bringing them more

information about why an industry is excluded might lead to an update in their attitudes.

These results also suggest the need to refine the exclusion strategies used by funds and perhaps update the list of industries typically excluded by investment funds, following the results shown in Table 5.

Regarding the idea of “superior principles”, some organizations promote a certain set of principles (such as religious organizations or governments). They can provide information to

Table 10
Summary of results and link with the literature.

Results	Summary of results	Link with previous results in the literature
R1	Alcohol, cannabis, genetic engineering, and nuclear power exclusions by SRI funds are not supported by individuals.	Coherent with the results already obtained by Borgers and Pownall (2014) or Niszczoła and Białek (2021a,b) where these industries are considered less controversial than others.
R2	Being more concerned about the environment or being on the left of the political spectrum leads to more severe judgment regarding numerous controversial industries, with the notable exception of cannabis.	Not test in Borgers and Pownall (2014) or Niszczoła and Białek (2021a,b) , but largely coherent with the literature regarding SRI in general.
R3	Individuals consuming products from a given industry (alcohol, tobacco, or pornography) have a more positive attitude toward it.	Replication of the results of Borgers and Pownall (2014) regarding alcohol and tobacco. First time that this is also tested regarding pornography.
R4	Males are less likely to consider numerous controversial industries as sin stocks. In particular, pornography is not, on average, considered sinful by male respondents.	Replication: Confirm the results already obtained by Borgers and Pownall (2014) or Niszczoła and Białek (2021a,b)
R5	Sinful socially responsible investments can be considered socially responsible by respondents, at par or even more so than typical socially responsible investments.	New result. Not tested in Borgers and Pownall (2014) or Niszczoła and Białek (2021a,b) . Could be the subject of future research.
R6	Individuals' willingness to invest in SRI exclusionary funds decreases when funds exclude less-controversial industries.	Robustness check and ecological validity test of R1 and of the results previously obtained by Borgers and Pownall (2014) or Niszczoła and Białek (2021a,b) . Typically, funds exclude several industries. It is worth verifying that the results obtained previously regarding controversial industries reproduce in more natural settings, where several industries are excluded.
R7	Asking individuals which industries they would like to avoid before proposing a fund excluding standard controversial industries backfired and resulted in lower investment than presenting them directly with the fund, excluding these standard controversial industries.	New result. Not tested in Borgers and Pownall (2014) or Niszczoła and Białek (2021a,b) .

individual investors by endorsing investment funds following specific guidelines. Such an endorsement can typically take the form of a label granted to a fund. The exact exclusionary policy of a given fund is sometimes hard to obtain and hard to understand (see, for instance, a report by the French regulator, AMF, 2015 on the subject, p. 28). Such a label reduces the cognitive load required of individuals to make informed decisions. It has already been the direction taken in the past 10 years by some European countries (see [Table A.1](#)). Our results show a reasonable amount of agreement with the exclusion set forth by these labels. The only exceptions are nuclear power (shun by labels but not by individuals), animal testing, and fur (shunned by individuals but not by labels). Thus, our results could inform the design and update of the exclusionary policy set using by these labels. These labels, given their optional characters for funds and the fact they are likely to result in better decisions by individuals “as judged by themselves” can qualify as nudges in the [Thaler and Sunstein \(2008\)](#) sense.

These findings join and complement the work of previous authors, who considered the lack of investment in SRI to be a market failure needing to be corrected through nudges ([Pilaj, 2017](#); [Gajewski et al., 2021](#)). While we do agree that nudges, including labels or some form of ratings ([Gangi et al., 2022](#); [Popescu et al., 2021](#)), can be used in SRI, we argue that individuals might have rational reasons to shun SR funds. It seems that the SRI offer might not match the preferences of individuals, as four out of ten of the most commonly excluded controversial industries do not obtain support from the population we surveyed. This strongly echoes [Fan et al. \(2022\)](#), who encourage investment funds to pay more attention to individual investors desires.

From a theoretical perspective, we can be seen as expanding on [Pilaj \(2017\)](#) theoretical model to show how the design of SRI funds and cognitive dissonance ([Festinger, 1957](#)) can influence SRI adoption. This connects to the attitudinal barrier mentioned in [Pilaj \(2017\)](#). While [Pilaj \(2017\)](#) essentially emphasizes that cost–benefit concerns might prevent SRI investment, we show

that concerns regarding the exclusion strategy implemented by the funds can also play a role. We also show that cognitive dissonance ([Festinger, 1957](#)) might play a role, essentially promoting more positive attitudes toward some sin stocks (alcohol, tobacco, and pornography) typically on the exclusion list of investment funds. We also summarized in [Table 10](#) our main results and their link with the existing literature, in particular with the closely related papers of [Borgers and Pownall \(2014\)](#) and [Niszczoła and Białek \(2021a,b\)](#).

A few limitations of our research should be noted. First, our samples are not entirely representative of the entire population. In particular, the UK sample in the first study displayed a high share of women, which could explain the overall tendency of the UK sample to consider industries to be more sinful than the US sample. Similarly, our US and UK samples are quite young, particularly in the first study, which limits the representativeness of our results. However, overall, age did not prove to be a strong covariate. At the very least, the results obtained in the first study reflect the moral values of young adults nowadays. The surveys were based on hypothetical choices. Thus, a fruitful avenue for future research could be to perform field experiments to overcome this limitation. In particular, such a field study could explore the impact on SRI investment of giving the choice to individuals' investors, thus displaying such an appetite to select industries that should be excluded.

CRediT authorship contribution statement

L. Meunier: Conceptualization, Methodology, Software, Data curation, Formal analysis, Writing – original draft. **S. Ohadi:** Conceptualization, Methodology, Validation, Writing – original draft, Writing – review & editing.

Appendix

See [Table A.1](#).

Table A.1
Summary of the main exclusions practiced by funds and the main exclusions required by labels.

EuroSif	Country	Creat. year	Controv. weapons	Tobacco	All weapons	Gambling	Porn.	Nuclear energy	Alcohol	GMO	Animal testing	Fossil fuels
		2018	63.60%	49.10%	45.70%	34.90%	34.40%	33.90%	30.60%	24.50%	19.30%	
General Labels												
LuxFlag LSIP	LU	2021	X	X		Sugg.	Sugg.	X	Sugg.			Sugg.
Toward Sustainability	BE	2019	X	X	X			X*				X*
Nordic Ecolabelling	DK, FI, IS, NO, SE	2017	X	X	X			X		X		X
Label ISR	FR	2016										
FNG Siegel	CH, DE, AT	2015	X		X			X				X*
LuxFlag ESG	LU	2014	X	X		Sugg.	Sugg.	X	Sugg.			Sugg.
RIAA	AU, NZ	2005	X	X								
Umweltzeichen	AT	2004	X		X			X		X		
Essentially Thematic Labels												
LuxFlag Climate	LU	2016						X				X*
Label GreenFin	FR	2015						X				X
LuxFlag Environment	LU	2011										
LuxFlag Microfinance	LU	2006										
(The fund must develop an exclusionary policy.)												

Note: X indicates a mandatory exclusion (if a firm derives more than a percent threshold of its revenue from the sector, generally 5%), Sugg. An exclusion that is merely suggested, and X* a mandatory exclusion under condition. For instance, we put "X" for the label "Toward Sustainability" under "Conventional oil and Gas" and "Nuclear," as these industries are excluded apart if the funds can demonstrate corporate engagement or shareholder activism. All thematic labels are environment or climate change related, except LuxFlag Microfinance. LuxFlag microfinance requires an "exclusionary policy" to be set up by the fund and 50% of assets to be invested in microfinance. Label ISR and LuxFlag Environment labels do not require exclusion. Label ISR is essentially about transparency and procedures, while LuxFlag environment requires at least 75% of assets to be invested in environmentally friendly products. We did not include the French private Finansol label. They themselves declare to not be part of SRI and we were not able to obtain sufficient information regarding their labeling procedure. We did not include the French CIES label either, a label supported by work unions aimed at employee savings schemes, which takes an essentially qualitative approach. Note that all these labels, in addition to exclusion, requires additional strategies or procedure to be applied.

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