

The power of information nudges for individual sustainable investment: Empirical evidence from a framed field experiment

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Overview

The transition process to a low-carbon economy requires substantial investments into low-carbon infrastructure, by both the public as well as private sector. This includes mobilizing individual, i.e. retail investors. Individual sustainable investment is driven by both pecuniary and non-pecuniary motives such as social preferences (Hartzmark and Sussman, 2019; Riedl and Smeets, 2017). Moreover, information plays an important role in enabling sustainable investments (Glac, 2009). Knowledge about sustainable financial products leads to a higher level of engagement in such products (Filippini et al., 2021). Too high information costs and little knowledge of sustainable investments are thus important barriers preventing retail investors from taking up such types of investments (Gutsche and Zwergel, 2020). Yet, little is known about which type of information might decrease these barriers, update beliefs, and thus mobilize retail investors to invest in a sustainable manner. Accordingly, this study aims to empirically analyze a) the extent to which different information (frames) affect sustainable investment at the individual level and b) which investor types (in terms of wealth, financial literacy, environmental awareness, altruism, and trust in scientist) respond the most to which type of information.

We thus connect to previous studies showing that different information (frames) affects individual sustainable investment behavior. Døskeland and Pedersen (2016) find that customers of a Norwegian bank more strongly increase their engagement in responsible investments when they receive information on potential financial rather than environmental benefits associated with such investments. Glac (2009) shows, using a student sample, that financial and expressive framing significantly influences the probability of investing sustainably, and in case of the financial framing also the willingness to sacrifice return. Given the very specific target groups in these previous studies, it is an empirical question whether similar effects can be found for a broader group of retail investors. In addition, our study refers to studies showing that information about the investment behavior of other investors ("social descriptive norms") can influence own investment behavior (Bertrand and Morse, 2011; Beshears et al., 2015).

In addition, previous studies only marginally consider the extent to which the response to certain information depends on the personal characteristics of investors. Døskeland and Pedersen (2021) deliver first results by using their natural field experiment to examine how different investors in terms of wealth respond to different arguments. They find that investors of high wealth are more responsive to financial information rather than moral information, whereas this is not the case for less wealthy investors. Thus, our objective is to answer the question if individual investors' reactions varies across different individual characteristics: We first aim to replicate the results by Døskeland and Pedersen (2021) regarding wealth for our three information frames. Moreover, given the importance of information costs as barrier for sustainable investments, we also examine the reaction of financially (il-)literate persons to different information frames. Adding on to this, we analyze whether investors with high levels of environmental awareness and strong social preferences, respectively, are more strongly mobilized by information on the (environmental) impact of sustainable investments. Finally, as distrust in providers of sustainable investment products can be a further barrier for these kinds of investments (Gutsche and Zwergel, 2020), we also analyze the responsiveness of individuals with different levels of trust in scientists to different information frames.

Methods

This study is based on a representative online survey including an incentivized investment experiment among about 1600 households' financial decision makers in Germany conducted between May and July 2021. In the investment experiment, respondents were randomly assigned to one of four different groups that received different group specific information prior to their investment decisions, namely the a) control group, b) financial information group who learned that the financial performance of sustainable investments has been similar to or better than conventional investments in the past, c) impact information group who learned about the potential real-world effects of sustainable investments, and d) social norm group who learned that other investors often consider sustainability criteria when investing. Afterwards, all respondents were endowed with €500 and chose six times among four real bond funds which are traded on the market and which differ with respect to their fees, past returns, share of bonds from the European

Union, and especially the strength of sustainability. Respondents were further informed that ten of them will be randomly drawn after every respondent completed the survey and that for these ten respondents one of their six decisions will be realized. The payoff for each respondent is determined by the selling price of their investment after a one-year holding period net of fees. This incentive mechanism was implemented to ensure that the participants were aware of the consequentiality of their choices (Bauer et al., 2021) and thus make their decisions generalizable to real-life behavior.

Results

We find that respondents in all four groups are willing to pay higher fees for bond funds with higher sustainability performance on average. Individuals in both the financial information and impact information group even have a significantly higher mean willingness to pay (WTP) for sustainability compared to the control group. We find no significant differences between the WTP for sustainability when comparing the control group with the group that received information on the behavior of other investors (i.e. the social norm group). This implies that presenting investors with financial or impact information prior to their investments can increase their investments in sustainable investment products.

To what extent does the response to different information depend on individual investor characteristics? We find that financial literacy, altruism, as well as trust in scientists affects the responsiveness to certain frames. In contrast to Døskeland and Pedersen (2021), we do not find evidence that individual wealth moderates the impact of information frames on individuals' estimated mean WTP for sustainable bond funds. For respondents with moderate to low financial literacy, seeing impact or social norm information leads to an additional WTP for sustainability. Respondents that have low trust in scientists and have seen either one of the three information have an additional WTP for sustainability. Environmental awareness of respondents does not seem to determine additional WTP for sustainability depending on presented information. Respondents with a high level of altruism have an additional WTP for sustainability after seeing impact information. Targeting these specific groups of investors with the aforementioned information that generate additional WTP for sustainability, can increase these investors' investments in sustainable bond funds, as they will be enabled to elicit their preferences for sustainability more precisely. Overall our results show that barriers towards sustainable investments can be diminished by presenting respondents with suitable information prior to their investment decisions.

Conclusions

The results of this study can be used to advise policy makers and practitioners on the kind of information they should use to inform individual investors to encourage low-carbon and sustainable investments. Our results allow us to disentangle the relevance of pecuniary and non-pecuniary motives for (sustainable) investment decisions of individuals. We find that providing individual investors with appropriate information might reduce barriers towards low-carbon and sustainable investments. We also find that financial literacy, altruism, as well as trust in scientists affect the responsiveness to the provided information. Thus, our study is the first to give a broader overview over which type of investor is most responsive to certain information. As these results show that social norm information can encourage sustainable investment, caution is advised. As displayed in Banerjee (1992) and Bikhchandani et al. (1992), considering information about the decision of others for one's own decision can lead to herd behavior where investors blindly follow others. This behavior can have unintended consequences, for example, with respect to reaching one's individual investment objectives.

Since the information in our study is based on scientific research, future studies should consider different information frames, i.e., information from different sources that convey this kind of information. The information of social norms for example might be more influential when communicated in a less official context. Moreover, as conceptualized in Filippini et al. (2021), experiments like ours could greatly benefit from implementing a measure of sustainable finance literacy instead of solely relying on the general measure of financial literacy. Furthermore, it would be interesting to see if putting emphasis on certain parts of sustainability, i.e., framing the information exclusively with regard to a social or environmental or governance perspective, have different effects on the probability to invest sustainably. In addition, it might be interesting to see if investors respond equally to similar information if different investment products like shares or ETFs are the base of the investment experiment instead of bond funds which investors might be less familiar with. This approach would allow us to generalize the effectiveness of information frames on financial products.