



# A field experiment on attracting crowdfunders<sup>☆,☆☆</sup>

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## ABSTRACT

In a field experiment, we tracked whether crowdfunders clicked on a newsletter link to a new project and whether they invested. In terms of clicks, we find that crowdfunders overall respond most to an environmental framing, while older crowdfunders respond more to a financial framing than younger ones, and men respond less to a financial framing than women. There were no significant differences in terms of investments.

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## 1. Introduction

Sustainable investing creates a positive impact because it shifts capital to green companies and makes these companies even greener (Pástor et al., 2021). However, when building a portfolio, investors must balance environmental, social and corporate governance (ESG) with risk and return considerations, meaning that ESG preferences can be financially costly for investors (Pedersen et al., 2021). In addition to this trade-off, investors often suffer from incomplete information on equilibrium expected returns and ESG characteristics of an asset, not least because the classification of ESG ratings can vary greatly (Berg et al., 2022).

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<sup>☆☆</sup> This experiment received ethical approval from the University of Essex, application no. ETH1920-0051. The statistical analysis was pre-registered: <https://www.socialscisearch.org/trials/4624>.

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The present study tests whether investors on a crowdfunding platform show more interest and invest more in projects if they obtain additional information about the ESG benefits of an investment, if the financial and economic benefits are made salient, or, as Pedersen et al. (2021) suggest, if a combination of both is presented to them.

We study investor preferences in the context of crowdfunding because crowdfunders choose specific investment projects with individual characteristics rather than a large firm or fund with a multitude of assets, allowing us to better isolate investor motivations. Crowdfunders are also regularly targeted with information by capital-seeking companies. In our field experiment, we track the rate at which investors click a link to a new investment project, which is an expression of interest, and the rate at which they invest. We sent differently framed newsletter announcements about new investment projects to potential investors, who were not made aware of the fact that they were part of an experimental study. For the same investment project, around a third of the investors received a newsletter describing the financial, environmental, and social benefits of the project (control treatment). Another third of the investors received a newsletter solely focusing on the environmental and social benefits of the project (ecological treatment). The remaining third of the investors received a newsletter focusing on the financial and economic benefits of the project (return treatment).

## Example: Ecological Treatment

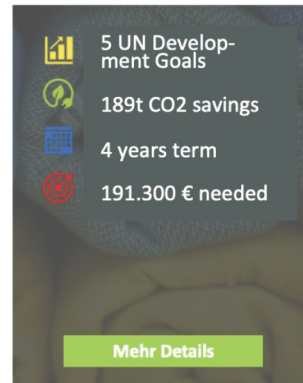
### Resource protection through a sustainable textile concept for the hospitality industry

Dear investors:

Rarely have people thought so much about the impact of everyday actions. Since the outbreak of the corona virus, the topic of hygiene has taken on a whole new meaning in our society. For example, in 2020 the city government of Dubai ordered that hotels introduce **antimicrobially treated towels and sheets** and **must also wash them**. That this new regulation does not burden the environment and even more scarce resources, such as water, requires a sustainable solution.

The Dubai-based company **Rent-A-Towel** has already developed a **resource-saving concept: BioSmart laundry**. 100% cotton towels and bed linen are treated with an **environmentally friendly** antimicrobial chemical during manufacture, reducing the washing time. This results in **savings of up to 15% water and around 18% electricity**. Rent-A-Towel rents this BioSmart laundry to its customers and also offers a resource-efficient cleaning service.

(...)



## Example: Return Treatment

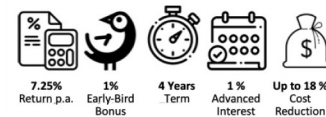
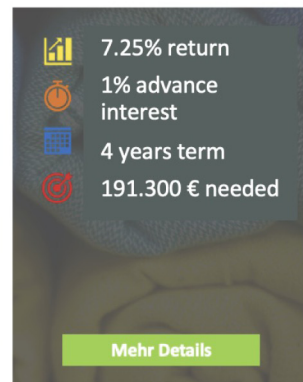
### Efficient and resource-saving concept for the hospitality industry

Dear investors:

Rarely have people thought so much about the impact of everyday actions. Since the outbreak of the corona virus, the topic of hygiene has taken on a whole new meaning in our society. For example, in 2020 the city government of Dubai ordered that hotels introduce **antimicrobially treated towels and sheets** and **wash them more frequently**. However, to ensure that this new regulation does not become too expensive, a **clever and efficient solution is required**.

The Dubai-based company **Rent-A-Towel** has already developed an **economical concept: BioSmart laundry**. 100% cotton towels and bed linen are treated with a **gentle**, antimicrobial chemical during manufacture, reducing their washing time. This results in **cost savings of up to 18% on laundry**. Rent-A-Towel rents this BioSmart laundry to its customers and also offers a resource-efficient cleaning service.

(...)



**Fig. 1.** Example of the difference between ecological and return treatment (newsletter excerpts). Note: The text was translated by the authors from the original version. Text highlighting is added here to illustrate treatment differences, but was not part of the original newsletters sent to investors.

We find that the ecological framing of the newsletter increases the click rate from about 3.1% in the control treatment to about 3.5%, that is, by 13% or 0.4 percentage points. The return treatment did not generate a significantly different click rate from that of the control treatment. We also find that older investors respond more to the return framing than younger investors, and that men tend to respond less to the return framing than women. We find no significant differences among treatments in terms of investments.

Previous research has used field experiments to examine characteristics that attract the interest of investors by varying the framing of the project. Bernstein et al. (2017) investigate the early-stage financing market and find that information about the founding team generates higher click rates by investors, but

information about firm traction or existing lead investors does not. Døskeland and Pedersen (2015) consider a wealth or moral framing for investments, and find that the wealth framing generates more investments. Their findings are contrary to ours, suggesting that the effects of such framing experiments depend on the target audience, which in their case was relatively conservative bank customers. More recently, lab-in-the-field experiments have examined the motivations of early-stage (Siemroth and Hornuf, 2021) and professional (Heeb et al., 2022) investors by presenting them with properly designed experimental choices. This literature largely finds that investors care about the environmental and social aspects of their investment. Our field experiment differs from its predecessors in that it is not an artificial lab task. Our study contributes to the literature not only by

**Table 1**  
Summary statistics for outcome and demographic variables, by treatment.

	Mean	SD	N
<b>Treatment Control</b>			
ClickPercent	3.19	17.57	18,374
InvestmentPercent	1.16	10.73	18,374
InvestmentAmount	9.61	203.10	18,374
Age	46.17	12.57	10,280
HighAge	0.50	0.50	10,280
Male	0.78	0.41	12,713
HighPopDensity	0.56	0.50	8405
<b>Treatment Ecological</b>			
ClickPercent	3.46	18.27	18,648
InvestmentPercent	1.15	10.68	18,648
InvestmentAmount	9.22	164.87	18,648
Age	45.90	12.44	10,442
HighAge	0.50	0.50	10,442
Male	0.78	0.41	12,850
HighPopDensity	0.56	0.50	8438
<b>Treatment Return</b>			
ClickPercent	3.25	17.72	18,335
InvestmentPercent	0.99	9.91	18,335
InvestmentAmount	6.99	135.66	18,335
Age	46.23	12.66	10,429
HighAge	0.50	0.50	10,429
Male	0.78	0.41	12,839
HighPopDensity	0.56	0.50	8506

examining click-through rates, as did the study by Bernstein et al. (2017), but also by documenting the resulting actual investments.

## 2. Experimental design

For this field experiment, we cooperated with the German debt crowdfunding platform bettervest, which specializes in social and environmental projects. Bettervest had already been in operation for almost a decade when we started the experiment, and had previously funded more than 100 companies or projects (for details on the platform see Online Appendix A). It already had thousands of users subscribed to its email newsletter, many of whom had previously invested.

The company's e-mail newsletter announces new investment opportunities and describes the company or project seeking financing. Previously, bettervest had framed these announcements with information on the social and environmental benefits of the project, but also with financial information and the economic benefits of the project. For example, an investment project to install photovoltaic panels described the environmental benefits in terms of CO<sub>2</sub> emissions reduction and the possible reduction of air pollution as compared to existing energy production using coal. With regard to financial information, it described the terms of the investment, such as the time to repayment, the promised interest rate, the funding limit, and that the firm had won government tenders before, which is a signal of quality. For other projects, the newsletter described economic benefits such as the firm being the sole provider of a new service, or that it was already backed by institutional investors.

Our field experiment was carried out using 10 newsletters about 10 new investment projects. For every newsletter, all existing newsletter subscribers – who are registered on bettervest and are potential investors – were randomized into one of three treatments: control, ecological, and return. The same investor would receive different treatment in different newsletters; hence, this is a within-subjects design.

To create the ecological and return newsletter versions, we proceeded as follows. Bettervest sent us the newsletter they would have sent had there been no experiment. We used this version as the control treatment newsletter. For the ecological

treatment, we removed as much financial and economic information and framing as possible, and replaced it with social and environmental information. For the return treatment, we removed as much social and environmental information as possible, and replaced it with financial and economic information.<sup>1</sup> We aimed to replace information sentence-by-sentence, so that the structure of paragraphs was mostly uniform across treatments. Fig. 1 provides an example of these newsletter treatment differences. Online Appendix B shows two example newsletters with all three treatments.

Once these three different newsletter versions were created for each investment project, bettervest sent them out simultaneously to all newsletter subscribers and potential investors, each of whom had a one-third chance of assignment to any given treatment.<sup>2</sup> Exogenously shifting the information and framing of the newsletter while using the same investment project allowed us to identify which information or aspects of an investment project attracted investors more. The experimental design, outcome variables, and statistical analyses were pre-registered.<sup>3</sup>

## 3. Data

Table 1 presents the summary statistics for the outcome and crowdfunder demographic variables. The unit of observation is investors per newsletter; hence a single investor may be present up to 10 times in the dataset if they were subscribed to the mailing list for all 10 newsletters of the experiment. We observe 55,357 click and investment decisions across all newsletters.

We have three outcome variables. *ClickPercent* is 100 if the investor clicked the link to the new investment project in the newsletter, and 0 otherwise. Because the link is unique for every investor, bettervest's newsletter program is able to identify who clicked the link. Rather than using a dummy, we scale the outcome by 100, because the click rates are low and the scaling makes differences more visible. *InvestmentPercent* is 100 if the crowdfunder invested any positive amount, and 0 otherwise. *InvestmentAmount* is the Euro amount invested, with 0 for those who did not invest.

The demographic variables have missing values for some investors, because either not all investors provided them or they had left bettervest by the time we exported these variables. *Age* is the age in years at the time the newsletter was sent out. *HighAge* is a dummy variable, which equals 1 for investors with an above-median age. *Male* is a dummy for male investors, based on their self-categorization upon registration. *HighPopDensity* is calculated based on the investor's postal code, which we match to the public list of municipalities in Germany,<sup>4</sup> which are categorized into low, mid and high population density. *HighPopDensity* is 1 if this categorization is high, which is typically the case for large cities.

<sup>1</sup> "As much as possible" means that, for example, we cannot hide that the investment is about photovoltaic panels even in the return treatment, because the platform cannot announce an investment project without specifying what it is about. But the return framing did not provide a number for tons of CO<sub>2</sub> emissions saved, and it did not spell out the environmental benefits of that project, thus shifting the framing relative to the control and ecological treatment.

<sup>2</sup> Once investors go to the bettervest website, all of them see the same information, because it is legally not possible to give different investors different information about an investment on the platform. We were only able to change information in the email newsletter, which is why the click rate is the most informative outcome. Therefore, our results represent a lower bound of the effect, which should be higher if the information on the website could also be changed.

<sup>3</sup> See <https://www.socialscisceregistry.org/trials/4624>.

<sup>4</sup> Source: [https://www.destatis.de/DE/Themen/Laender-Regionen/Regionales/Gemeindeverzeichnis/Administrativ/Archiv/GVAuszug/31122020\\_Auszug\\_GV.html](https://www.destatis.de/DE/Themen/Laender-Regionen/Regionales/Gemeindeverzeichnis/Administrativ/Archiv/GVAuszug/31122020_Auszug_GV.html).

**Table 2**  
Average effect of framing treatments relative to control.

Dependent variable	(1) ClickPercent	(2) InvestmentPercent	(3) InvestmentAmount
Treatment Return	0.176 (0.181)	−0.138 (0.104)	−2.243 (1.533)
Treatment Ecological	0.409** (0.181)	0.051 (0.099)	1.799 (1.800)
Constant	3.103*** (0.105)	1.132*** (0.060)	8.746*** (1.005)
Investor FE	Yes	Yes	Yes
Observations	55,357	55,357	55,357
Clusters	7864	7864	7864

Note: ClickPercent is 100 if the investor clicked on the link to the project in the newsletter and 0 otherwise. InvestmentPercent is 100 if the investor invested in the project and 0 otherwise. InvestmentAmount is the Euro amount invested, 0 for no investments. The unit of observation is investors per newsletter. Standard errors are shown in brackets below the point estimates, and are clustered on investor level. \*\*\*Significant at the 1% level; \*\*significant at the 5% level; \*significant at the 10% level.

**Table 3**  
Effect of framing treatments by demographics relative to control.

Dependent variable	(1) ClickPercent	(2) ClickPercent	(3) ClickPercent	(4) ClickPercent
Treatment Return	−0.359 (0.374)	0.763* (0.441)	0.427 (0.448)	0.836 (0.798)
Treatment Ecological	0.490 (0.379)	0.082 (0.419)	0.901* (0.491)	0.364 (0.793)
HighAge × Treatment Return	1.177** (0.533)			0.990* (0.598)
HighAge × Treatment Ecological	0.174 (0.536)			0.252 (0.582)
Male × Treatment Return		−0.746 (0.517)		−1.224* (0.699)
Male × Treatment Ecological		0.480 (0.501)		0.461 (0.674)
HighPopDensity × Treatment Return			−0.477 (0.613)	−0.397 (0.623)
HighPopDensity × Treatment Ecological			−0.587 (0.621)	−0.512 (0.623)
Constant	4.179*** (0.163)	3.642*** (0.136)	4.087*** (0.179)	4.092*** (0.179)
Investor FE	Yes	Yes	Yes	Yes
Observations	31,151	38,402	25,349	25,329
Clusters	4108	4891	2676	2674

Note: ClickPercent is 100 if the investor clicked on the link to the project in the newsletter and 0 otherwise. HighAge is a dummy for an investor above the median age in the sample, at the time when the newsletter was sent out. Male is a dummy for a male investor. HighPopDensity is a dummy for an investor living in a high density area (such as a city). The unit of observation is investors per newsletter. Standard errors are shown in brackets below the point estimates, and are clustered on investor level. \*\*\*Significant at the 1% level; \*\*significant at the 5% level; \*significant at the 10% level.

## 4. Results

A strength of our experimental design is that we observe the same investor in different treatments, since investors were re-randomized into treatments for each newsletter. This allows us to use investor fixed effects to estimate treatment effects. The average treatment effects on all three outcome variables are estimated in Table 2.

Compared to the control treatment with a 3.1% click rate, the ecological treatment increases clicks by about 0.4 percentage points or  $0.409/3.1 \approx 13\%$ . Given the small base rate, this is quite a large increase. The point estimate for the return treatment effect is positive but not significantly different from zero. Hence, we have evidence that an environmentally focused framing creates more interest in an investment project than a balanced framing.

The other two outcome variables are both a function of the investment amount, and neither shows significant treatment differences. Based on the summary statistics in Table 1, only about 1% of newsletter subscribers invest a positive amount. Hence, it is an open question whether a significant ecological treatment

effect might be detected with an even larger sample size, or whether the positive treatment effect of the ecological framing is only present for clicks but not investments.

Table 3 investigates whether different kinds of investors react differently to the treatments based on click rates. We interact the treatment dummies with each of the three demographic variables on their own, and then include all interactions jointly in column 4. Columns 1 and 4 show a significantly positive effect of the return treatment and HighAge interaction term. Compared to younger investors, above-median-age investors have a 1.2 percentage points higher click rate in the return treatment. This difference is approximately  $1.177/3.1 \approx 37\%$  of the control treatment group mean from Table 2, a very sizeable difference, which suggests that older investors pay considerably more attention to financial aspects.

There is also evidence that male investors react more negatively to the return treatment than female investors. This is based on the significantly negative return-treatment and male-dummy interaction term in column 4, although this same interaction term is not significantly different from zero in column 2. Consequently,

this effect is only visible once treatment effects are estimated by age and gender jointly (column 4), that is, once the confounding variable of age is controlled for. Compared to male investors of the same age and in the same population density area, female investors have a 1.2 percentage point higher click rate in the return treatment. This difference is approximately  $1.224/3.1 \approx 39\%$  of the control treatment group mean from Table 2, representing a large gender difference.

## 5. Conclusion

In a field experiment where real crowdfunders were treated with differently framed newsletters and information, we found that a more environmentally oriented framing attracts more attention from investors, but a financially oriented framing does not. Older investors and women responded more to the financial framing. On the methodological side, we show that higher click rates do not necessarily lead to more investment, which tempers the results of Bernstein et al. (2017) and others, which only consider click rates but no actual investments. This raises the question of how investors can actually be persuaded to shift capital to green companies once they have generated increased interest.

## Data availability

Data will be made available on request.

## Appendices. Description of the bettervest platform and example newsletters

Supplementary material related to this article can be found online at <https://doi.org/10.1016/j.econlet.2022.110928>.

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