Four essays on sustainability-oriented crowdfunding:

Mechanisms and motivational influences in crowd investors' decision making

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Table of contents

List of figures

List of tables

List of abbreviations

α	Level of significance
ABS	Association of Business Schools
ANOVA	Analysis of variance
AOM	Academy of Management
b	Unstandardized regression coefficient
β	Standardized regression coefficient
BIC	Bayesian Information Criterion
CAIC	Consistent Akaike Information Criterion
CI	Confidence interval
CO_2	Carbon dioxide
Dr.	Doctor
ECSP	European Crowdfunding Service Providers
e.g.	Exempli gratia (for example)
ESG	Environmental, social and governance
Et al.	Et alii (and others)
ETF	Exchange Traded Fund
EURAM	European Academy of Management
F	F-test
HSD	Honestly significant difference
i.e.	Id est (that is)
JOBS	Jumpstart Our Business Startups
M	Mean
MANOVA	Multivariate analysis of variance
Mdiff	Mean difference
M.Sc.	Master of Science

n	Sample size
n.a.	Not applicable
OLS	Ordinary least squares regression
p	Probability level
P.R.C.	People's Republic of China
PRISMA	Preferred Reporting Items for Systematic Reviews
R^2	Coefficient of determination
RENT	Research in Entrepreneurship and Small Business
ROI	Return on investment
RQ	Research question
SD	Standard deviation
SE	Standard error
SEC	Securities and Exchange Commission
SNVs	Sustainable new ventures
SPVs	Special purpose vehicles
SSRN	Social Science Research Network
t1	Measurement time 1
t2	Measurement time 2
U.K.	United Kingdom
UN	United Nations
U.S.	United States
USD	U.S. dollar
VIF	Variance inflation factor
vs.	Versus
WEIRD	Western, educated, industrial, rich, and democratic

1 Mechanisms and motivations in sustainability-oriented crowdfunding

1.1 Introduction

Addressing the major societal challenges of our time concerning the protection of the environment and the promotion of social equality calls for a sustainable development of the economy with businesses that generate environmental and social impact alongside economic value (e.g., George et al., 2016; Muñoz & Dimov, 2015; Voegtlin et al., 2022). The United Nations (UN) report by Brundtland (1987) describes the concept of sustainable development as meeting present needs "without compromising the ability of future generations to meet their own needs" (p. 41). To foster the sustainable development of the economy, scholars and practitioners recognize the important role of sustainable entrepreneurship, emphasizing its potential to achieve societal goals, economic growth, and environmental conservation (e.g., Cohen & Winn, 2007; Dean & McMullen, 2007). This dissertation defines sustainable entrepreneurship as the pursuit of entrepreneurial ventures that create social and/or ecological value, while yielding economic and noneconomic benefits for individuals, the society, and the economy (Shepherd & Patzelt, 2011). With reference to this concept, the aim of sustainable ventures is to achieve ecological and/or social impact while also generating economic value. Entrepreneurs who engage in sustainable ventures can thus be seen as catalysts for change (Muñoz & Dimov, 2023), generating impact and developing new products and services that will shape the future world (e.g., Johnson & Schaltegger, 2020; York et al., 2018).

For the creation and growth of sustainable ventures, sustainable entrepreneurship requires adequate funding (Mansouri & Momtaz, 2022). However, acquiring funds proves to be a hurdle for sustainable ventures aiming to achieve a balance between social and/or environmental impact and financial returns (e.g., Calic & Mosakowski, 2016; Nielsen & Binder, 2021). Financially-driven funding sources, such as banks or venture capital firms, largely prioritize financial return over social or environmental impact. Hence, sustainable

ventures frequently encounter difficulties in meeting their requirements as they are not solely focused on financial returns. Instead, they may place a higher emphasis on achieving desirable social and/or environment impacts rather than on maximizing profit (Messeni Petruzzelli et al., 2019). Conversely, charitable funding institutions focus entirely on societal contributions without financial profit, making them incompatible with sustainable ventures balancing social and/or environmental impact with financial returns (Schlütter et al., 2024). As a result, a funding gap emerges for sustainable ventures that strive to achieve all three goals, as this integrated approach is often viewed as contradictory, ambiguous, and involving trade-offs (Belz & Binder, 2017; Cohen et al., 2008). Thus, the "either or" paradigm of traditional financing sources underlines the need for alternative funding models that bridge the gap between profit-driven investing and charitable giving to finance sustainable ventures.

Crowdfunding represents a way to overcome this financing gap (Cumming et al., 2024; Vismara, 2019) by pooling capital from large groups of private individuals through the internet and allowing them to participate in venture funding with relatively small contributions (Mollick, 2014). In contrast to banks and venture capital firms, which focus on financial gains, and charitable organizations, which focus on societal contributions, crowdfunding attracts a broad mass of participants with a diverse array of motivations (Mollick, 2014; Short et al., 2017). Previous research not only highlighted the potential of crowdfunding to address the existing financing gap for sustainable ventures (e.g., Bruton et al., 2015; Hörisch, 2019), but also its broader impacts, including the democratization of entrepreneurial finance (Cumming et al., 2021; Saiedi et al., 2020) and the collective participation of individuals in the development of sustainable ventures (e.g., Siebeneicher & Bock, 2022). Emerging recently as a growing field in both practice and research (e.g., Böckel et al., 2021), sustainability-oriented crowdfunding—particularly focused on advancing sustainable ventures—can serve as a valuable tool to promote societal engagement in support of sustainable development.

To fully realize the potential of sustainability-oriented crowdfunding, it is crucial to gain a deeper understanding of its underlying process dynamics and mechanisms (Testa et al., 2019). Given that crowdfunding encompasses different forms (Short et al., 2017) and involves complex interactions between multiple actors (Lehner & Harrer, 2019), these mechanisms can be observed from multiple perspectives. Crowdfunding can be categorized into four different forms: reward-based, donation-based, lending-based, and equity-based (Mollick, 2014). Each form offers distinct rewards and returns—whether financial or nonfinancial—to individuals in the crowd, catering to a wide range of motivations and drivers for decision making (Meyskens & Bird, 2015; Mollick, 2014). Specifically, reward-based crowdfunding offers the early acquisition of a future product and nonfinancial rewards (Dai & Zhang, 2019). Donation-based crowdfunding collects contributions based on charitable purposes (Bagheri et al., 2019; Li et al., 2020). Lending-based crowdfunding involves providing small loans, which may or may not include interest *(*Allison et al., 2013; Short et al., 2017*)*, with the latter being referred to as the prosocial form of lending-based crowdfunding (Allison et al., 2015). Lastly, equity-based crowdfunding transforms individuals into shareholders with small equity stakes in the venture (Hörisch & Tenner, 2020; Vismara, 2019). When crowdfunding platforms offer financial returns, the backers of crowdfunding campaigns are often referred to as "investors," as they typically seek to accumulate financial wealth while fostering social and environmental impact (e.g., Bento, Gianfrate, & Groppo, 2019).

A large stream of research on sustainability-oriented crowdfunding has focused on crowdfunding forms with no financial return, that is, donation-based (e.g., Li et al., 2022; Logue & Grimes, 2022), reward-based (e.g., Calic & Mosakowski, 2016; Nielsen & Binder, 2021), and prosocial lending-based crowdfunding (e.g., Anglin et al., 2023; Moss et al., 2018). Crowdfunding forms with financial returns, that is, equity-based crowdfunding and lending-based crowdfunding, however, are under-researched in the sustainability context (Böckel et al.,

2021; Hörisch & Tenner, 2020). Furthermore, there is ambiguity in the debate regarding the alignment of financial returns with social and/or ecological goals for the decisions of crowd investors, and previous findings may appear partly contradictory (e.g., Caputo et al., 2022; Hörisch & Tenner, 2020; Vismara, 2019). Vismara (2019) suggests a potential disparity in investors' pursuit of financial and sustainable objectives: Specifically, profit-oriented investors often emphasize short-term outcomes related to high venture growth, which may be incongruent with the objectives of sustainable ventures that prioritize long-term societal and environmental benefits over immediate profit and growth. Thus, within a return-oriented crowdfunding context, crowd investors may allocate less funding to sustainable ventures compared to commercial ventures, believing the latter are more likely to deliver the desired short-term financial returns. However, the findings of Hörisch and Tenner (2020) indicate that a venture's focus on sustainability can enhance the funding success on return-oriented crowdfunding platforms. Hence, even within return-oriented crowdfunding, motivations beyond financial gain seem to significantly influence investor decision making and thus funding success (e.g., Hörisch & Tenner, 2020; Vásquez-Ordóñez et al., 2023). To shed light on the existing ambiguities and advance the emerging research field, developing a better understanding of investors' decision-making mechanisms and motivations in the context of sustainability is crucial.

Against this background, the central aim of this dissertation's research is to explore ***how individual-level mechanisms and motivational factors influence crowd investors' decision making in sustainability-oriented crowdfunding, particularly when financial returns are offered***. In pursuit of this objective, this work begins by providing a comprehensive overview and examination of existing literature on sustainability-oriented crowdfunding. It thereby situates the exploration of individual investor mechanisms and motivations within a broader framework that spans different process dimensions (i.e., [pre-]funding and post-funding phase) and key theoretical research levels (i.e., individual, transactional, and institutional

perspectives). Subsequently, by applying a set of experimental and qualitative research approaches, this dissertation delves into various motivational factors and decision-making mechanisms from the perspective of individual investors in the specific context of lending-based crowdfunding with financial returns—referred to herein as return-oriented crowdlending. The findings of this dissertation highlight three key aspects: (1) *the heterogeneity of investor motivations*, (2) *the hybrid nature of investor decision making*, and (3) *the dynamics of value alignment throughout the crowdlending process*.

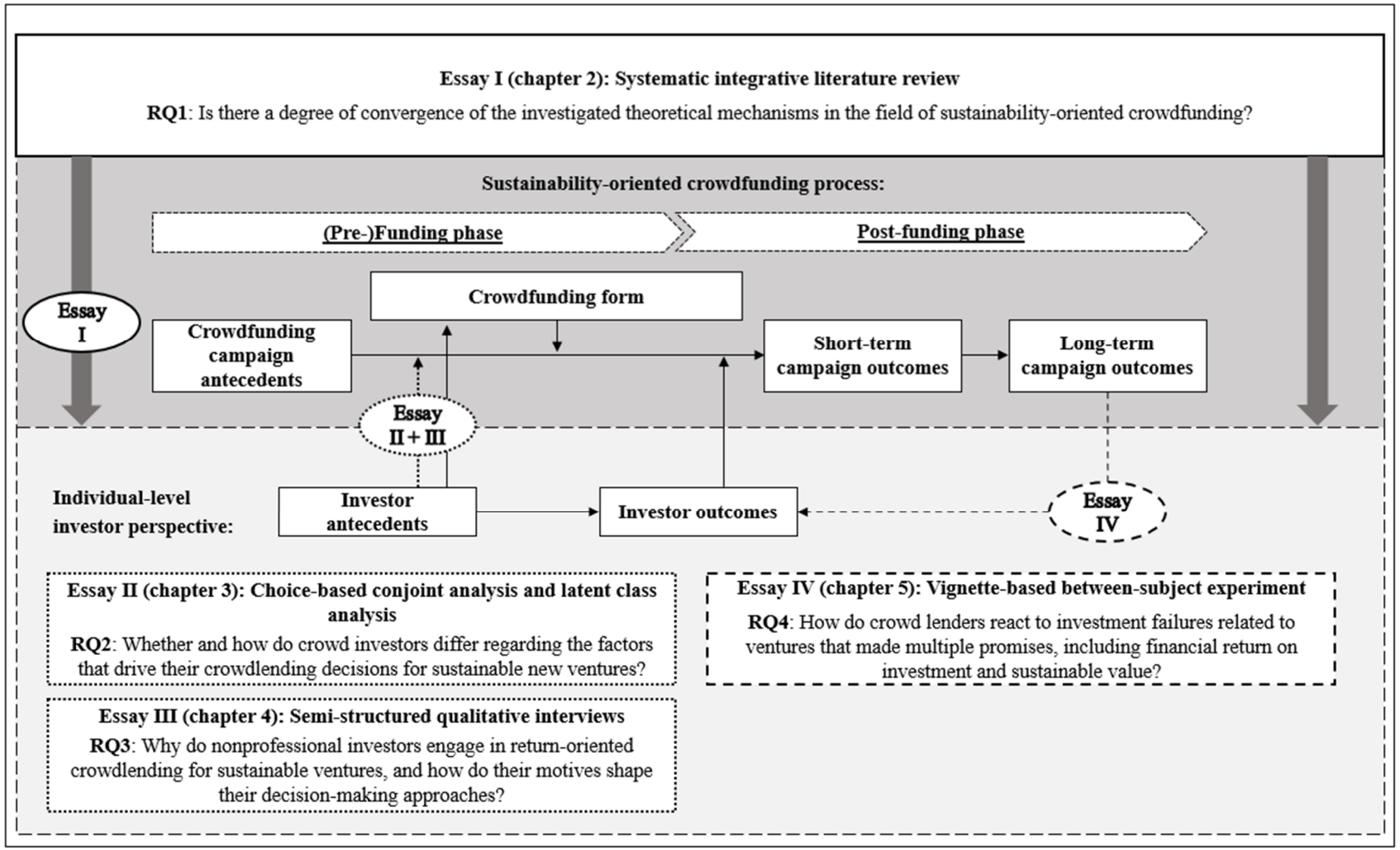
The resulting insights from examining the interplay between investor motivations, decision making, and value alignment within return-oriented crowdlending offer significant contributions to the expanding literature on sustainability-oriented crowdfunding. Specifically, this dissertation reveals how (1) investors exhibit different preferences and are driven by various motivations, (2) they navigate and balance financial, social, and environmental goals in their decision making, and (3) their values shape their choices throughout different phases of the crowdlending process. Further, through its exploration of process dimensions and theoretical perspectives on sustainability-oriented crowdfunding, this dissertation establishes a foundation for guiding future research, contributes to the emerging field at the intersection of crowdfunding and sustainability (e.g., Böckel et al., 2021), and advances the broader academic discourse on sustainable venture finance (e.g., Bocken, 2015; Dhayal et al., 2023; Testa et al., 2019). Moreover, the insights underscore the practical importance of tailored targeting strategies for engaging and retaining investors in sustainable ventures, thereby informing platform operators, policymakers, and entrepreneurs seeking to foster a developing ecosystem for sustainability-oriented crowdfunding.

1.2 Overview of the dissertation: Research questions and methodologies

To address the central research aim, this dissertation encompasses four essays, each representing one chapter. Understanding sustainability-oriented crowdfunding demands

nuanced perspectives and diverse methods to illuminate the underlying motivations and decision-making processes throughout the sustainability-oriented crowdfunding process. Figure 1-1 provides a visual illustration of the four essays and their respective research questions with reference to the framework of the sustainability-oriented crowdfunding process. The individual-level insights presented in *Essay I* serve as the foundation for *Essays II-IV*. Additionally, *Essay I* explores findings on the transactional and institutional level, enhancing the comprehensive overview of research in sustainability-oriented crowdfunding.

Figure 1-1. Overview of four essays within the sustainability-oriented crowdfunding process



Adapted from "Sustainability-oriented crowdfunding: An integrative literature review," by J. M. Dinh, A. J. Isaak, & M. C. Wehner, 2024. *Journal of Cleaner Production*, *448*, p. 10. (https://doi.org/10.1016/j.jclepro.2024.141579). Copyright 2024 by The Authors. Published by Elsevier Ltd.

Essay I (chapter 2) presents a systematic integrative literature review, synthesizing diverse theoretical perspectives to provide an overview and analysis of existing research on sustainability-oriented crowdfunding with the aim of identifying future research opportunities in this field. Despite the important contributions of previous literature, there is an ongoing discourse regarding the underlying theoretical mechanisms to explain the relationship between the studied antecedents and outcomes in sustainability-oriented crowdfunding, such as the social and/or ecological orientation of ventures and funding success (e.g., Calic & Mosakowski, 2016; Hörisch, 2015; Hörisch & Tenner, 2020; Lagazio & Querci, 2018). Whereas existing literature reviews in this rapidly evolving field predominantly focused on bibliometric analyses (e.g., Böckel et al., 2021) or specific crowdfunding forms (e.g., Salido-Andres et al., 2021), there remains a lack of holistic understanding regarding the integration of theories related to processes and interrelations across various crowdfunding forms. Without this theoretical integration, the research field runs the risk of becoming highly fragmented, which threatens further theoretical advancements (Böckel et al., 2021; Messeni Petruzzelli et al., 2019). Therefore, the first essay addresses the research question:

Research question 1: *Is there a degree of convergence of the investigated theoretical mechanisms in the field of sustainability-oriented crowdfunding?*

Drawing on a two-step literature review approach (e.g., Karhunen et al., 2018; Radu-Lefebvre et al., 2021), a systematically generated body of literature is qualitatively analyzed to develop an integrative framework. Based on a structured article search of English-language published articles on crowdfunding and sustainability between 2010 and 2023 (Tranfield et al., 2003), a total of 1,466 articles from two databases were screened (Page et al., 2021), resulting in a final dataset of 157 articles. The qualitative analysis of the articles involved an ongoing iterative comparison of articles to reveal patterns and aggregate similar theoretical themes in higher categories (Gioia et al., 2013). The resulting framework categorizes six theoretical

research themes across the individual, transactional, and institutional level. It illustrates how antecedents (e.g., the social and/or ecological orientation of the venture) impact short- versus long-term outcomes (e.g., crowdfunding campaign success). Additionally, it identifies two corresponding process phases (i.e., [pre-]funding and post-funding phase) with respect to the entire crowdfunding process.

Thus, *Essay I* provides a multilevel perspective on theoretical themes across the individual, transactional, and institutional level in sustainability-oriented crowdfunding. By illuminating the missing conceptual linkages between these levels and the related process dimensions, this essay contributes to the growing research field of sustainable venture finance (Bocken, 2015; Salzmann, 2013; Testa et al., 2019). Grasping the interconnections between these three levels is crucial for advancing our understanding in this field, as it unveils the complex dynamics driving crowdfunding in the context of sustainability and encourages more targeted research endeavors. In light of the fragmented nature of the emerging research field, the findings presented in *Essay I* additionally emphasize the importance of interdisciplinary collaboration to foster academic advancements.

Building on the identified research gaps in *Essay I*, *Essay II* (chapter 3) uncovers four distinct investor segments and shows how human values (i.e., self-enhancement and self-transcendence) impact investor behavior. Previous literature on crowdlending in the context of sustainability mostly focused on studying the prosocial crowdlending approach, whereby investors are not offered any financial returns in the form of interest payments (e.g., Allison et al., 2015; Figueroa-Armijos & Berns, 2022; Luo et al., 2022). However, the current academic understanding of the crowd investors' motivations related to the blend of financial goals and sustainability goals remains limited (Tenner & Hörisch, 2021; Vasileiadou et al., 2016). While studies on other socially responsible investment options have stressed the relevance of individual values for decision making (e.g., Hong & Kostovetsky, 2012; Palacios-González &

Chamorro-Mera, 2018), knowledge about the role of human values in return-oriented crowdlending is still scarce. Therefore, the second essay sheds light on the research question:

Research question 2: *Whether and how do crowd investors differ regarding the factors that drive their crowdlending decisions for sustainable new ventures?*

Drawing on the theory of basic human values (Schwartz, 1992, 2003; Schwartz & Bilsky, 1987), this essay employs a combination of choice-based conjoint analysis and latent class analysis to explore (1) the heterogeneity of crowd investor segments and (2) the role of human values to differentiate between these segments. In particular, our study presents participants with multiple hypothetical investment projects to examine their preferences in response to various project attributes associated with loan characteristics and sustainability impact goals. The experimental conjoint method is suitable to capture the investors' nuanced choices resulting in choice-based preference structures, while also allowing for the survey of individual attributes such as human values (Block, Hirschmann, et al., 2021; de Rassenfosse & Fischer, 2016). The study is based on a sample of 353 nonprofessional investors over the age of 18 with prior investing experience, recruited online in cooperation with an ISO 20252:2019 certified German online panel provider. To reveal heterogeneous investor segments, a latent class analysis was conducted (Apostolakis et al., 2018), followed by a multinomial regression analysis to test the hypotheses.

This essay contributes to the emerging research stream of sustainability-oriented crowdfunding by identifying four distinct investor segments. In particular, the findings reveal that three segments—"loan-first," "fin-social," and "fin-ecological"—prioritize financial returns over sustainability goals, while the "impact-first" segment strongly favors sustainability goals. By showing that the value dimensions of self-transcendence, concerning the welfare and interest for others, and self-enhancement, concerning one's own interests and success (Schwartz, 2012), are useful to identify different crowd investor segments, the study highlights

the important role of human values for crowdlending decisions and extends previous research from other crowdfunding contexts (Nielsen & Binder, 2021; Tenner & Hörisch, 2021).

Inspired by the research avenues outlined in the literature review of *Essay I*, *Essay III* (chapter 4) further narrows its focus to explore the diverse motives and decision-making approaches of investors in return-oriented crowdlending. This exploration involves a detailed examination of the composition of investors' initial motives for participating in crowdlending for sustainable ventures, shedding light on their significant role in the investor decision-making process. While existing literature examined the influence of financial and sustainability-related campaign attributes by taking a contrasting perspective, these studies so far lack in-depth insights into the variety of underlying individual motives (Yoo et al., 2023). Moreover, existing literature presents contradictory inferences regarding the influence of extrinsic and intrinsic drivers in sustainability-oriented crowdfunding (Allison et al., 2015; Cholakova & Clarysse, 2015; Gafni et al., 2021), implying gaps in our knowledge regarding the role of different motives within the crowdlending decision-making process. Hence, to provide differentiated insights into the factors motivating investor participation in crowdlending platforms for sustainable ventures, the third essay clarifies the research question:

Research question 3: *Why do nonprofessional investors engage in return-oriented crowdlending for sustainable ventures, and how do their motives shape their decision-making approaches?*

To answer this research question, *Essay III* is based on qualitative semi-structured interviews to delve into the motives driving investor engagement in return-oriented crowdlending for sustainable ventures and to analyze how these motives influence their decision-making strategies. Previous research has called for qualitative methods to grasp the composition of crowd investor motives and considerations (Cox et al., 2022), aiming at better understanding the motivational elements of engaging investors to contribute to crowdfunding.

Applying an iterative qualitative approach, 18 open-ended interviews (totaling approximately 12 hours of audio) with nonprofessional investors on the German crowdlending platform *bettervest.com* are analyzed. Bettervest finances ecologically and socially sustainable projects and offers investors an average financial return rate of approximately 7.37%[1] (bettervest, 2023). Qualitative research is suitable to reveal the complexities of investors' motivations and takes into account contextual factors such as their personal circumstances (e.g., Brem et al., 2019; Gerber & Hui, 2013). In a first step, interview data was inductively analyzed according to the principles of grounded theory (Glaser & Strauss, 1967) and segmented into codes to identify variations through constant comparison (Glaser & Strauss, 1967; Strauss & Corbin, 1998). In a second step, the analysis was enriched by abductively trianguating the findings with existing theory on the motive drivers and focus, to better understand how different motive types impact investors' decision-making processes.

By examining the spectrum of investor motives in return-oriented crowdlending for sustainable ventures, the third essay extends the prevailing binary view of financial versus nonfinancial motives (e.g., Allison et al., 2015; Moss et al., 2018; Yoo et al., 2023). In particular, crowd investors' initial participation motivation is presented as a multilayered concept consisting of financial, personal, communal, and prosocial motives in relation to their drivers (i.e., intrinsic and extrinsic) and focus (i.e., self-directed and other-directed). *Essay III* provides novel insights into how the weighting of different motives may influence crowd investors' considerations and decision-making approaches, whether strategy-based, emotions-based, or a blend of both. These findings deepen the understanding of the complex, hybrid nature of crowdlending decisions for sustainable ventures (Galak et al., 2011; Yoo et al., 2023), thus advancing the emerging literature stream on return-oriented crowdlending for sustainable ventures (e.g., Bento, Gianfrate, & Groppo, 2019; Otte & Maehle, 2022; Penz et al., 2022). In

[1] The bettervest project statistics of August 2021 based on 102 projects indicate an average return rate of 7.37% (https://www.bettervest.com/de/projekt-statistik, accessed on December 13, 2023)

addition, the insights bridge gaps with existing qualitative research in other crowdfunding contexts, such as reward-based or donation-based crowdfunding (Bagheri et al., 2019; Gerber & Hui, 2013; Mc Laren & Baldegger, 2021)

Moving beyond the pre-funding perspective, *Essay IV* (chapter 5) delves into the effects of long-term campaign outcomes on individual behavior within the post-funding phase, another aspect underscored in the research avenues proposed in *Essay I*. Accordingly, the fourth essay investigates how crowd investors respond to failures in crowdlending campaigns for sustainable ventures that promised both financial returns and sustainable value. Recent research has begun to study failures in the realm of crowdfunding (e.g., Piening et al., 2021; Rossi et al., 2023), investigating factors like unsuccessful inclusion in crowdfunding platforms or how ventures navigate unsuccessful campaigns. Nevertheless, a notable gap in knowledge persists regarding failures that occur following successfully funded campaigns, as well as the responses of crowd investors to these failures (Hörisch, 2019). As crowd investors frequently make multiple investment decisions over time (Andersen et al., 2019), understanding the effects of investment failures on their subsequent behavior is crucial for comprehending the impact of failure on the acquisition of further funding for sustainable ventures (e.g., Dorfleitner et al., 2023; Piening et al., 2021). This becomes particularly important for sustainable ventures, which encounter additional challenges in their pursuit of multiple goals and have a higher risk of failure (Hoogendoorn et al., 2019). Hence, the fourth essay aims to answer the research question:

Research question 4: *How do crowd lenders react to investment failures related to ventures that made multiple promises, including financial return on investment and sustainable value?*

Drawing on the findings from *Essay II*, this essay involves the theoretical lens of value alignment (Nielsen & Binder, 2021; Tenner & Hörisch, 2021) and builds on the theory of basic human values (Schwartz, 1992) to explore to which extent reinvestment decisions are rooted in

different human values of investors. A vignette-based between-subject experiment with 221 nonprofessional investors was used to investigate their reinvestment behavior and observe how they respond to failure. Such an experimental approach is suited for analyzing causal relationships at the individual decision-making level (Aguinis & Bradley, 2014; Hsu et al., 2017). To address the research question, the promised values (i.e., social, environmental, or commercial) of the presented crowdlending campaigns are manipulated in the different experimental vignettes. These vignettes form the basis for participants' initial investment decisions and subsequent reinvestment choices. Participants received additional information throughout the experiment, revealing the failure of their investment, and were asked to make a subsequent decision regarding reinvestment. Self-enhancement and self-transcendence values were assessed and used as moderating variables in the hypotheses, which were tested using analysis of variance (ANOVA) and (moderated) ordinary least squares regression (OLS).

By uncovering that investors' responses to socially and commercially framed campaigns are influenced by human values, *Essay IV* advances our understanding of investor behavior concerning post-funding decisions after previous experience of campaign failure. The findings of this essay underscore the distinctive impact of value alignment on reactions to failure between differently framed campaigns. Moreover, *Essay IV* expands the exploration of the post-funding phase in crowdfunding, contributing to the recent research on crowdfunding failures (Jiang et al., 2021; Kleinert et al., 2022; Piening et al., 2021) and enhancing the extensive body of literature on (pre-)funding success factors (e.g., Anglin et al., 2023; Bento, Gianfrate, & Groppo, 2019; Cappa et al., 2021).

In summary, each of the four essays contributes to the understanding of motivational factors and decision-making mechanisms of crowd investors through a distinct lens. Table 1-1 provides an overview of the essays' research objectives, methodological approaches, and key contributions.

Table 1-1. Overview of research objectives and methodological approaches

Essay	Research Objective	Research Approach	Sample	Key Contributions
Essay I (chapter 2) Sustainability-oriented crowdfunding: An integrative literature review	Exploring the investigated theoretical mechanisms in the field of sustainability-oriented crowdfunding and systematically identifying research avenues to advance the field	Systematic integrative literature review and qualitative analysis	*K* = 157 articles	1. Providing a multilevel perspective on theoretical mechanisms in sustainability-oriented crowdfunding 2. Illustrating conceptual linkages between individual, transactional, and institutional levels 3. Systematically developing future research avenues
Essay II (chapter 3) Crowdlending decisions for sustainable new ventures: The role of underlying human values in explaining the heterogeneity of crowd investor preferences	Exploring diverse crowd investor segments within return-oriented crowdlending based on investors' decisions and investigating the role of human values in differentiating between these segments	Choice-based conjoint analysis and latent class analysis	*N* = 353 investors	1. Emphasizing the heterogeneity of investor preferences by identifying four crowd investor segments with diverse preference structures 2. Highlighting the relevance of self-enhancement and self-transcendence values in nonprofessional investor decision making 3. Extending research on return-oriented crowdlending for sustainable ventures
Essay III (chapter 4) Investing for good – Uncovering crowd investors' motivations to participate in sustainability-oriented crowdlending	Exploring the underlying motives of nonprofessional investors participating in crowdlending for sustainable ventures and their influence on considerations when making decisions	Semi-structured qualitative interviews	*N* = 18 interviews with investors	1. Disentangling crowd investor motivation as a multilayered concept consisting of financial, personal, prosocial, and communal motives 2. Revealing distinct decision-making approaches (strategy-based approach vs. blended approach vs. emotions-based approach) related to the balancing of motives
Essay IV (chapter 5) Investing again after failure? Understanding crowd lenders' future investments in sustainable ventures	Exploring the role of human values in the reactions of crowd investors to investment failures occurring after the successful funding of crowdlending campaigns	Vignette-based between-subject experiment	*N* = 221 investors	1. Underlining the importance of aligning campaign framing with investor values to mitigate failure effects and promote forgiveness in reinvestment decisions 2. Shedding light on the lasting influence of socially framed campaigns on crowd investors' behavior after investment failure in the post-funding phase

1.3 Additional Remarks

The core of this cumulative dissertation comprises four essays spanning chapters 2 to 5, followed by chapter 6 which presents a discussion of findings along with their theoretical and practical implications. As the essays are based on several projects with contributions from different co-authors, Table 1-2 summarizes each essay's publication status and contributors.

Table 1-2. Status and contributors of each essay

	Status & Reference	**Contributors**
I	Published online by the *Journal of Cleaner Production* on April 5, 2024 Dinh, J. M., Isaak, A. J., & Wehner, M. C. (2024). Sustainability-oriented crowdfunding: An integrative literature review. *Journal of Cleaner Production*, *448*, 141579. https://doi.org/10.1016/j.jclepro.2024.141579 Previous versions were accepted for presentation at several international conferences, including: • 2022 European Academy of Management Conference (EURAM) • 2021 Research in Entrepreneurship and Small Business Conference (RENT)	Jeannette Mai Dinh Andrew Jay Isaak Marius Claus Wehner
II	Published in the *Journal of Cleaner Production* on December 16, 2022 Dinh, J. M., & Wehner, M. C. (2022). Crowdlending decisions for sustainable new ventures: The role of underlying human values in explaining the heterogeneity of crowd investor preferences. *Journal of Cleaner Production*, *379*, 134602. https://doi.org/10.1016/j.jclepro.2022.134602 Previous versions were accepted for presentation at several international conferences, including: • 2021 European Academy of Management Conference (EURAM) *Nomination Best Paper Award Entrepreneurship Track	Jeannette Mai Dinh Marius Claus Wehner
III	Published online by *Technological Forecasting and Social Change* on July 23, 2024 Dinh, J. M., Isaak, A. J., & Yahyaoui, Y. (2024). Investing for good – uncovering crowd investors' motivations to participate in sustainability-oriented crowdlending. *Technological Forecasting and Social Change*, *207*, 123584. https://doi.org/10.1016/j.techfore.2024.123584	Jeannette Mai Dinh Andrew Jay Isaak Yasmine Yahyaoui
IV	First round of revision in *Small Business Economics: An Entrepreneurship Journal* Lindlar, C., Jakob, E. A., Dinh, J. M., & Wehner, M. C. (2024). *Investing again after failure? Understanding crowd lenders' future investments in sustainable ventures*. [Manuscript submitted for publication]. Manchot Graduate School "Competitiveness of Young Enterprises", Heinrich Heine University. Further versions were accepted for presentation at several international conferences, including: • 2023 G-Forum Jahreskonferenz Entrepreneurship, Innovation und Mittelstand • 2024 Social Entrepreneurship Conference • 2024 European Academy of Management Conference (EURAM) • 2024 Academy of Management Annual Meeting (AOM)	Caroline Lindlar Eva Alexandra Jakob Jeannette Mai Dinh Marius Claus Wehner

2 Essay I: Sustainability-oriented crowdfunding: An integrative literature review[2]

Abstract

Crowdfunding has emerged as an attractive financing option for sustainable entrepreneurship, where entrepreneurs must overcome considerable investor uncertainty in light of mixed social, ecological, and economic goals. The rapid emergence of studies on sustainability-oriented crowdfunding yielded a wide variety of theoretical perspectives and an abundance of empirical evidence due to a high dispersion across different research fields. Drawing on a systematic review and qualitative analysis of 157 articles, we map the existing research and develop a new and integrative framework to (1) organize key theoretical research levels (i.e., individual, transactional, and institutional), (2) identify multilevel antecedents, crowdfunding process dimensions, and short- vs. long-term outcomes, and (3) offer new and promising future research avenues. Our findings indicate a high degree of theoretical convergence at the individual and transactional level related to short-term crowdfunding outcomes, while research is limited concerning the institutional level, long-term outcomes, and the context of different crowdfunding forms. By highlighting the existing and missing linkages between the three levels related to sustainability-oriented crowdfunding processes, we contribute to the literature and guide future research to explore fruitful avenues in the field. Practical implications are gleaned from our findings for crowdfunding platforms, their supporting institutions, and the sustainability-oriented entrepreneurs seeking financing.

Keywords: Crowdfunding; Sustainability; Literature review; Venture finance; Triple bottom line

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2.1 Introduction

Recent research has highlighted the potential of crowdfunding as a relevant alternative source of capital for sustainability-oriented ventures, which often face significant financial constraints and difficulties attracting classical venture capital (Calic & Mosakowski, 2016). Global crowdfunding market volume reached approximately USD 18 billion in 2022 and is expected to more than double by 2030[3], demonstrating growing popularity. Crowdfunding involves efforts by entrepreneurs to finance ventures based on small contributions from many individuals over the internet (Mollick, 2014). As backer motivations in crowdfunding differ from those of traditional investors, it represents a fruitful alternative for financing sustainable ventures. Sustainable ventures pursue social and ecological goals through their entrepreneurial activities (York et al., 2016) and thereby actively support a paradigm shift that prioritizes both environmentally sustainable economic development and social change toward fairness and inclusion (Johnson & Schaltegger, 2020). Their simultaneous goal pursuit, however, complicates the acquisition of capital from traditional investors, who typically focus primarily on economic returns and business plans (Lehner, 2013; Messeni Petruzzelli et al., 2019).

These particular hurdles of financing sustainable ventures have resulted in the development of a distinctive and rapidly growing research stream on sustainability-oriented crowdfunding (Testa et al., 2019). Considering the differences to commercial funding contexts (e.g., Parhankangas & Renko, 2017; Vismara, 2019), it would be a fallacy to simply transfer our understanding of the underlying mechanisms in the case of commercial crowdfunding to that of sustainability-oriented crowdfunding. For example, sustainability-oriented ventures attract more investors with a community orientation (Vismara, 2019) and benefit from different linguistic styles in their communication to the crowd (Parhankangas & Renko, 2017). Further, the interplay between extrinsic and intrinsic cues (e.g., Allison et al., 2015) and the relevant

[3]https://www.polarismarketresearch.com/industry-analysis/crowdfunding-market (accessed on June 6, 2023).

role of non-economic outcomes for sustainability-oriented ventures (e.g., Hörisch & Tenner, 2020) seem to significantly shape the study of sustainability-oriented crowdfunding.

Despite these important empirical insights, several research gaps remain to fully understand and grasp the theoretical mechanisms within sustainability-oriented crowdfunding processes. There is an ongoing debate focusing on whether the underlying mechanisms explain the relationships between specific antecedents such as the social and/or ecological orientation of the venture or the different outcomes of the crowdfunding process (e.g., Hörisch & Tenner, 2020; Lagazio & Querci, 2018). While existing literature reviews in this fast-growing field predominantly focus on quantitative analyses of published literature (e.g., Böckel et al., 2021) or the context of single crowdfunding forms (e.g., Salido-Andres et al., 2021), our holistic understanding of the integration of theories in research on sustainability-oriented crowdfunding remains limited. Without theoretical integration across different crowdfunding forms and research disciplines, however, the sustainability-oriented crowdfunding field runs the risk of becoming highly fragmented, which threatens further theoretical advancements (e.g., Böckel et al., 2021). As a counteractive measure, literature reviews from the field of traditional crowdfunding underline the importance of analyzing antecedents and outcomes in the context of different crowdfunding forms and research fields (e.g., Deng et al., 2022; He et al., 2024).

Building on the extant literature, we seek to deepen our current understanding by providing an enhanced review of the theoretical mechanisms that have been studied across different crowdfunding forms in the rapidly growing research stream of sustainability-oriented crowdfunding. We specifically aim to (a) determine if and to what extent a degree of theoretical convergence exists in the field of sustainability-oriented crowdfunding and (b) uncover the research avenues presently available to guide the academic community in its investigation of current, urgent questions to propel this line of research. To address these questions, we conducted (1) a systematic article review (Tranfield et al., 2003) that applies recommendations

from the Preferred Reporting Items for Systematic Reviews (PRISMA) (Page et al., 2021), followed by (2) a qualitative analysis characterized by an exploration of themes and perspectives of the systematically generated body of literature (Elsbach & van Knippenberg, 2020; Karhunen et al., 2018; Radu-Lefebvre et al., 2021). Thus, the aim of this integrative literature review is to uncover the interdisciplinary developments and theoretical themes within this emerging research stream to systematically highlight invaluable research avenues based on the conceptual linkages—missing to date—with regard to the sustainability-oriented crowdfunding process.

Drawing on 157 articles from 79 different journals across 16 research disciplines published between January 2010 and March 2023, we find that previous studies have largely focused on motivational and behavioral mechanisms at the individual level, alongside signaling and interaction mechanisms at the transactional level. In contrast, research exploring the interplay of institutional and cultural factors at the institutional level has remained comparatively underexplored to date. Particularly, research has scarcely analyzed contextual antecedents (such as the institutional environment, culture and market aspects), as well as long-term outcomes related to campaigns (such as project implementation and impact), or to the ecosystem (such as policy impact and sectoral collaboration). Although assessing the contribution of crowdfunding to sustainable development from a long-term meta-level perspective is considered important (Böckel et al., 2021), the institutional level has so far been largely neglected in research on sustainability-oriented crowdfunding. Furthermore, our findings indicate that the understanding of the impact of crowdfunding forms in terms of theoretical mechanisms remains limited.

Based on our analysis, we develop a comprehensive framework that integrates the identified theoretical themes at the (1) individual, (2) transactional, and (3) institutional levels and helps reveal the conceptual linkages between these levels and the corresponding

crowdfunding process dimensions. While most of the reviewed studies focus on one of these levels, insights on the interface between them are critical to advancing our knowledge of this burgeoning field and will allow researchers to efficiently focus on promising target areas. By providing a multilevel perspective on the theoretical mechanisms through which crowdfunding addresses societal support for sustainable entrepreneurship, our integrative framework contributes to the academic discourse on theoretical perspectives in the emerging sustainability-oriented crowdfunding research stream as well as the broader research field of sustainable venture finance (e.g., Bocken, 2015; Dhayal et al., 2023). A holistic understanding of the theoretical mechanisms at the individual, transactional, and institutional levels and their interrelationship is key for future contributions across different academic disciplines. With reference to the multidisciplinary nature of the research field, spanning areas such as information management, entrepreneurship and small business management, sector studies, and innovation, we further suggest that cross-disciplinary research efforts may be crucial for advancing this field.

With additional research on the institutional level, long-term outcomes, and the context of different crowdfunding forms, especially policy-makers and crowdfunding platforms can better focus their practices to influence the development of a conducive ecosystem for sustainability-oriented crowdfunding. By activating broad societal participation in the crowdfunding process, these stakeholders may help unlock the substantial potential of sustainability-oriented crowdfunding to contribute to progress on global sustainability goals (e.g., Anglin et al., 2023).

2.2 Literature review context

Crowdfunding has evolved into different forms, each of which are characterized by complex interactions between stakeholders and the steps involved in the crowdfunding process (e.g., Lehner & Harrer, 2019). Existing literature differentiates between four main

crowdfunding forms, namely reward-based, donation-based, lending-based, and equity-based (Mollick, 2014). Reward-based crowdfunding typically involves the pre-sale of a future product along with non-financial rewards (Dai & Zhang, 2019). Donation-based crowdfunding collects financial contributions based on philanthropy, whereby backers do not receive a product or financial return in exchange for their financial contribution (Li et al., 2020). Lending-based crowdfunding offers small loans to individual backers, who, depending on the platform type, either expect only the repayment of their initially invested capital or an additional financial gain in the form of interest payments (Allison et al., 2013; Short et al., 2017). In equity-based crowdfunding, backers obtain small equity stakes in the venture and become fractional shareholders (Vismara, 2019).

Research on sustainability-oriented crowdfunding centers around crowdfunding practices that aim to provide capital for sustainable ventures, and thus refers to the intersection between crowdfunding and sustainable entrepreneurship (e.g., Böckel et al., 2021; Calic & Mosakowski, 2016). Given its specific focus, sustainability-oriented crowdfunding is related to the concept of the *triple bottom line* from sustainable entrepreneurship (e.g., Vedula et al., 2022), which describes the simultaneous pursuit of social, ecological, and economic goals when following entrepreneurial opportunities (Belz & Binder, 2017). In this study, sustainable entrepreneurship is defined as the exploitation of entrepreneurial opportunities that focus on social and ecological aspects and result in both economic and non-economic gains for individuals, the society, and the economy (Shepherd & Patzelt, 2011). Research suggests that mechanisms in the crowdfunding of sustainable ventures are different from those in that of purely commercial ventures, leading to different success criteria in investor communication (e.g., Parhankangas & Renko, 2017). While commercial and sustainable ventures are present on reward-based crowdfunding platforms (e.g., Kickstarter, Indiegogo), specialized forms of crowdfunding (e.g., donation-based, prosocial lending-based) and platforms (e.g., Betterplace,

Kiva) have emerged that tailor to a sustainability-oriented audience. As crowdfunding backers display more diverse funding motivations than traditional investors, sustainable entrepreneurs are assumed to particularly benefit from crowdfunding due to potential goal alignment (Messeni Petruzzelli et al., 2019).

2.3 Methodology

To ensure an extensive literature examination, we followed a two-fold literature review approach by first generating a broad base of literature and then descriptively and qualitatively analyzing the articles in a second step, while aiming at advancing our conceptual and theoretical knowledge (e.g., Radu-Lefebvre et al., 2021). As recommended by the literature, we applied a systematic article search and selection process (Tranfield et al., 2003) consisting of identifying potential articles, selecting relevant publications, and assessing the studies meeting our criteria.

2.3.1 Article search and selection

To uncover and capture relevant articles for the review, we first developed a broad search string encompassing a combination of relevant keywords related to crowdfunding and sustainability that were linked by suitable search operators (see Table 2-1). In selecting our search terms, the first half of the search string is directly composed of the terms for the types of crowdfunding (e.g., crowdlending) and their synonyms (e.g., peer-to-peer lending). The second half of the string is composed of terms that mirror the development of specialized crowdfunding markets in the environmental sector, such as the renewable energy market (e.g., Bourcet & Bovari, 2020; Cumming et al., 2017), and synonyms for ecological entrepreneurship based on the literature (see Gast et al., 2017). Our search was conducted utilizing the databases *Web of Science/SSCI* and *EBSCO/Business Source Premier*, which are among the most frequently used and widely accepted literature databases in entrepreneurship (see Kraus et al., 2020). We limited our search scope to peer-reviewed journal articles written in English that were published between January 1, 2010 and March 15, 2023. The starting year of 2010 was

chosen because the widely popular U.S.-based platform Kickstarter was founded in late 2009, along with Indiegogo in 2010, after which crowdfunding research and practice escalated (Böckel et al., 2021). Table 1 provides an overview of the search string, the databases, as well as the inclusion and exclusion criteria. These defined search strings resulted in 1,853 hits from the two databases.[4]

Table 2-1. Search string, databases, and inclusion and exclusion criteria

Search string	
crowdfund* OR "crowd fund*" OR crowd-fund* OR crowdlend* OR "crowd lend*" OR crowd-lend* OR crowdinvest* OR "crowd invest*" OR "peer-to-peer lend*" OR "peer to peer lend*" OR "peer-to-peer-lend*" OR "p2p lend*" OR "p2p-lend*" OR "p-2-p lend*" OR "p-2-p-lend*" OR microlend* OR "micro lend*" OR micro-lend*	
AND	
social* OR prosocial* OR eco* OR environment* OR green* OR carbon* OR emission* OR cleantech* OR "clean tech*" OR clean-tech* OR "clean energy" OR energy OR sustain* OR "triple bottom*" OR triple-bottom* OR hybrid*	
Database	*Number of articles (cumulated)*[1]
Web of Science/SSCI	**1,000**
EBSCO/Business Source Premier	**853**
Inclusion criteria	
• Available articles in English language from 2010 to 2023 (until March 15, 2023)	
• Peer-reviewed, academic journal articles	
• Articles examining sustainability-oriented crowdfunding	
Exclusion criteria	
• Articles lacking focus on crowdfunding or sustainability; purely conceptual articles	
• Duplicates within or between databases, or between the two search periods (due to early access to papers)	
• Articles below the defined quality threshold (based on the Academic Journal Guide/ABS[5])	

Note. In the search string, the asterisk (*) is used as a wildcard for any group of characters at the end of words, while the quotation marks ("") are used as parentheses for an exact match of the expression.

Next, after removing all duplicates, two of the authors systematically screened 1,466 articles by scanning the titles and abstracts and excluded articles that either lacked a focus on

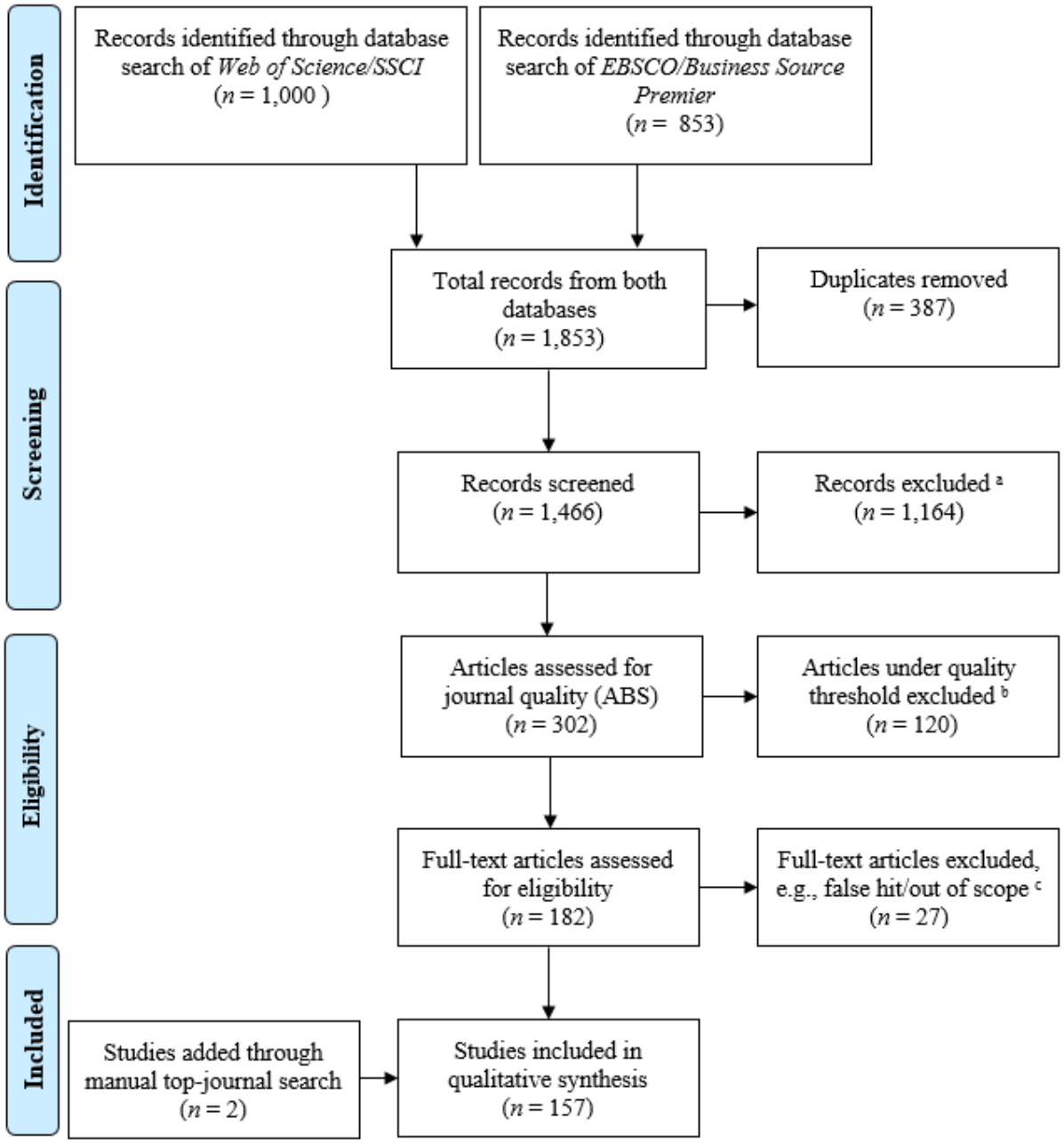
[4] We conducted an initial search on February 17, 2021, and March 17, 2021, to obtain an initial overview of the field for the qualitative analysis. This was updated in a second search two years later, on March 15, 2023, to reflect the current state of research in the dynamically developing field of sustainability-oriented crowdfunding. At the time of each search, our search string resulted in 595 and 405 hits using *Web of Science/SSCI*, and 535 and 318 hits using *EBSCO/Business Source Premier* in the initial and the follow-up search, respectively. The second set of articles includes those published after our initial search, thus spanning a time frame of approximately two years and the first quarter of 2023 up to March 15. Thus, our literature review is based on the total number of (included and excluded) articles resulting from the two separate search periods (in 2021 and 2023).

[5] https://charteredabs.org/academic-journal-guide-2021 (accessed on March 15, 2023).

crowdfunding platforms (e.g., those that focused on other forms of financing, such as traditional venture capital, bank lending, or microcredits in general) or on the topic of sustainable ventures (e.g., articles that focused on purely commercial ventures or on artistic and cultural ventures without a clear reference to social or ecological aims). This process resulted in a high degree of agreement between the authors (approximately 90%). With unclear cases, the full author team engaged in discussions to reach consensus on whether to include these articles. The flow diagram in Figure 2-1 summarizes our screening process following the PRISMA recommendations (Page et al., 2021) that resulted in the final list of publication for this literature review.

In line with our theoretical focus, a quality threshold based on journal rankings was introduced to improve comparability and set a common standard (Kraus et al., 2020). Following the Academic Journal Guide/ABS (U.K.), we included only those articles from journals that reached a rating of 2 or higher (on a scale ranging from 1 to 4*). After reading the full-text articles, we excluded articles that were not specifically focused on our research context. As a robustness check of our search string, we additionally conducted an issue-by-issue search of the three highest ranked entrepreneurship journals from the ABS list, namely *Entrepreneurship Theory and Practice*, *Journal of Business Venturing*, and *Strategic Entrepreneurship Journal*. By applying our predefined criteria (published 2010-2023, focus on sustainability-oriented crowdfunding) to titles and abstracts, we found two additional articles, which we added to our results, yielding our final dataset of 157 articles. This small number of uncovered additional studies implies that our comprehensive search string was indeed representative for our search target. Appendix A reports the full set of 157 articles included in this literature review.

Figure 2-1. Flow chart illustrating the screening process



[a] Topic out of scope, mostly no crowdfunding and/or sustainability

[b] Journals below rating of 2 or not listed in Academic Journal Guide/ABS (U.K.) 2018 and 2021

[c] No crowdfunding and/or sustainability context or work not focused on analyzing the crowdfunding process, e.g., conceptual work

Note. The records reported here are cumulated from both search periods (in 2021 and 2023) to provide a complete overview of the total numbers of included and excluded articles in this literature review.

2.3.2 Analysis

The subsequent analysis process entailed three main steps: (1) the descriptive analysis of the articles based on initial categories and citation mapping using the AI-based software tool *Litmaps*[6], (2) the iterative identification of theoretical themes based on common patterns and discrepancies in the reviewed articles, and (3) the expansion and revision of themes for aggregation. To obtain an overview of the selected articles from our dataset and to determine their positioning within the literature, we conducted an initial descriptive categorization including common categories (see Appendix A), such as the research field, the type of research conducted (empirical-quantitative, empirical-qualitative, or mixed), the chosen methods (secondary data analysis, survey, experiments, interviews, case studies), the main topic focus, and the key findings. In addition, we identified the authors' choice of theoretical lens wherever possible. Lastly, we categorized the geographical location of the examined crowdfunding platform or sample, as well as the underlying platform type. Thereby, we chose to further refine the conventional categorization of crowdfunding forms (Mollick, 2014) and additionally differentiated between two subcategories of lending-based crowdfunding: *prosocial lending* without financial returns and *return-oriented lending* with financial returns. These two subtypes require differentiation due to different underlying funding mechanisms that may be related to different dominant motivations of actors (i.e., altruistic giving vs. profit maximization). To understand the relationship between the articles and to visualize their influence on each other over time, we additionally mapped our articles by applying the algorithm-based literature-mapping software *Litmaps*. This software visualizes the (forward and backward) citation patterns across a given pool of articles, which results in an insightful depiction of published and cited articles over time.

[6] https://www.litmaps.com (accessed on October 13, 2023).

As a next step, we delved deeper into each reviewed article and qualitatively analyzed the theoretical themes that are associated with the examined mechanisms in the sustainability-oriented crowdfunding process. This process entailed the author team's ongoing discussion of the evolving categorization, iteratively referring back to the selected articles and previously identified categories (Gioia et al., 2013). We then critically assessed the literature with the aim of revealing systematic patterns among the articles with regard to the theoretical themes until a holistic picture and structure emerged (see Radu-Lefebvre et al., 2021).

2.4 Results

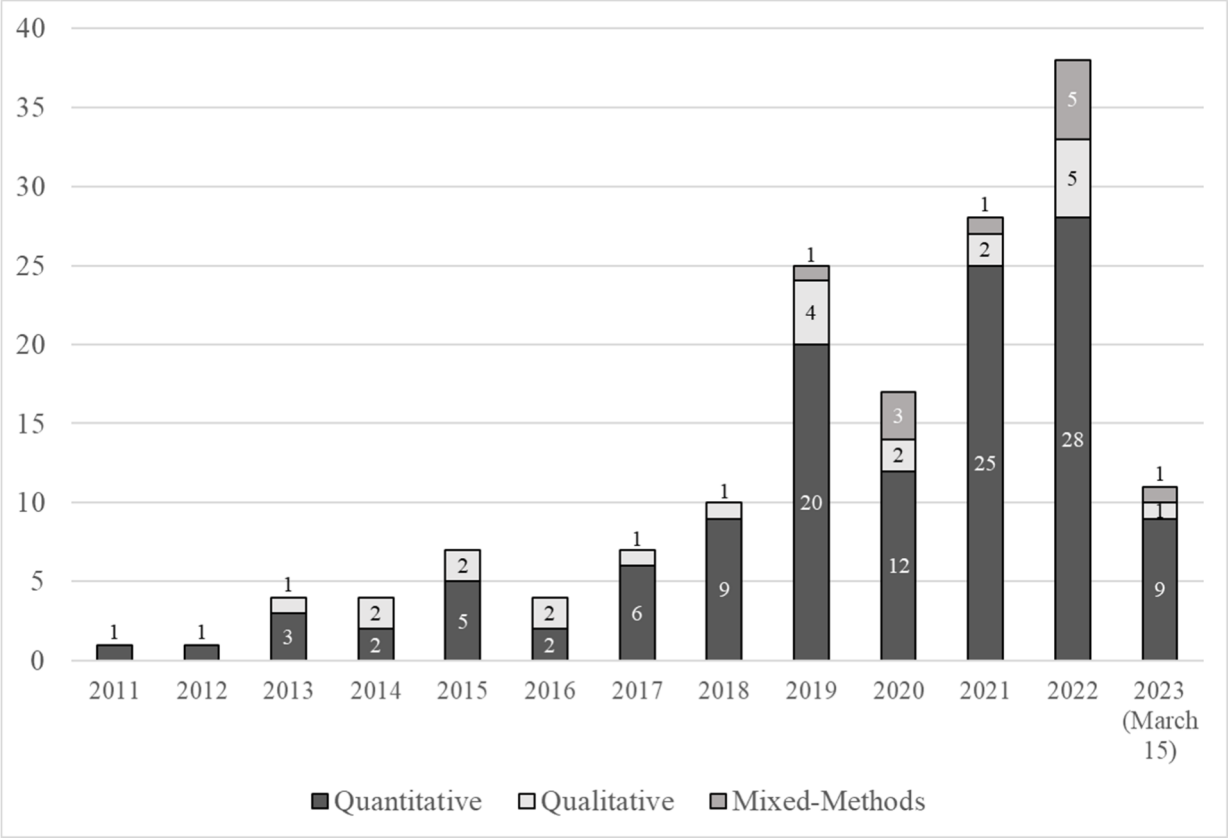
2.4.1 Mapping a fragmented research field

Our initial descriptive analysis disclosed the following trends in sustainability-oriented crowdfunding: (1) an increasing research interest, (2) an imbalanced research focus with regard to quantitative, qualitative, and mixed methods, crowdfunding forms, and geographical regions, and (3) high fragmentation of research fields and journals, as well as the applied theories. Furthermore, the literature map reveals a small number of highly influential articles over time that are cited by the majority of the reviewed articles on sustainability-oriented crowdfunding.

Figure 2-2 depicts the increasing number of articles on sustainability-oriented crowdfunding, showing steep growth in the years 2019 (n = 25), 2021 (n = 28), and 2022 (n = 38). The upward growth trend found in 2021 and 2022 appears to continue in 2023, indicated by the 11 articles included in our literature review as of March 15. Quantitative methods were used in 123 articles, qualitative methods in 23 articles, and a mixed method approach (utilizing both quantitative and qualitative methods) in 11 articles. Further, research on sustainability-oriented crowdfunding explored predominantly reward-based (28%), donation-based (24%), and prosocial lending-based crowdfunding (21%). In the context of sustainability, fewer articles

have dealt with return-oriented lending-based (13%) and equity-based crowdfunding (11%)[7], the two crowdfunding forms that offer potential financial gains to backers. The geographical regions represented in this sample include the United States with 78 publications examining a crowdfunding platform or a respective sample of backers, the European Union with 35 articles, the People's Republic of China (hereafter the P.R.C.)[8] with 15 articles, and the United Kingdom with 13 articles. The early launch of crowdfunding platforms in the U.S. (e.g., Kickstarter in 2009) is one reason for the disproportionate number of studies deriving from this region compared to the other geographical regions.

Figure 2-2. Number of published papers on sustainability-oriented crowdfunding by method

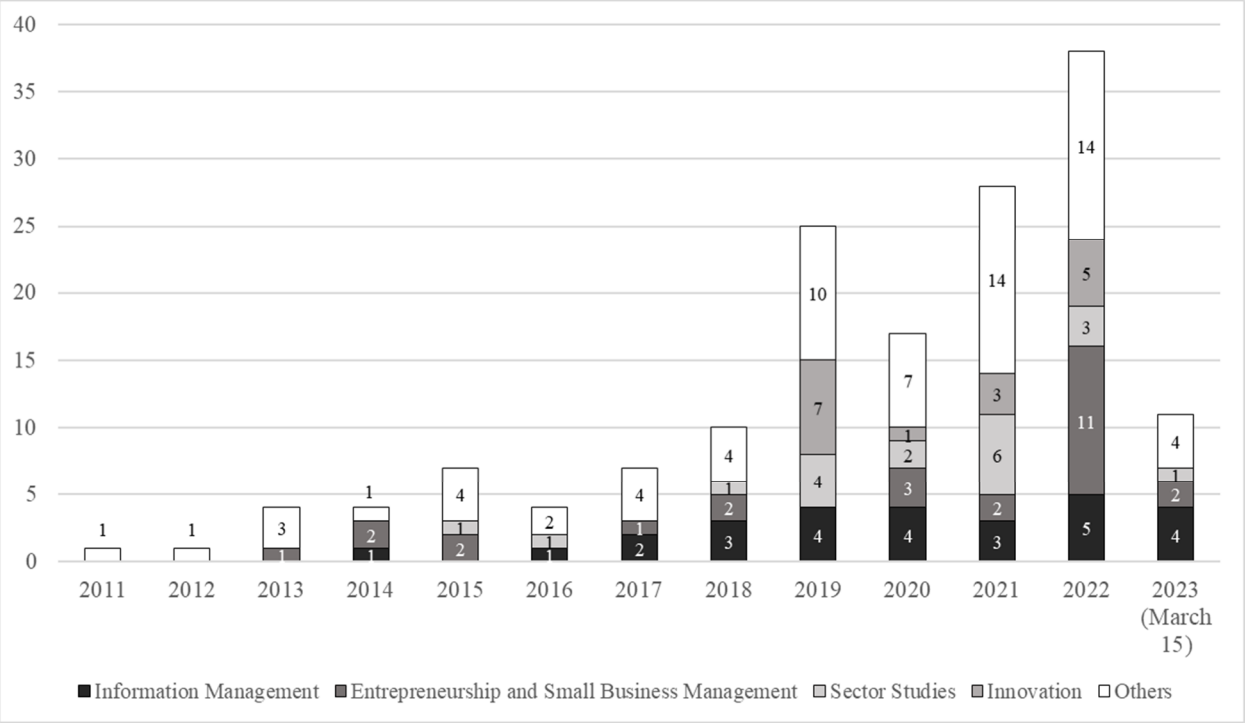


Note. The search resulted in 11 articles in 2023 for the time period from January 1, 2023 until March 15, 2023.

[7] Given that some articles consider multiple crowdfunding forms, the percentages indicated refer to a total number of 193 individual crowdfunding forms examined within the 157 reviewed articles. Three percent of the articles did not specify the considered crowdfunding form, e.g., reported focusing on "crowdfunding" in general.
[8] Note that lending-based crowdfunding activities have been essentially banned in China as of 2020 due to fraud cases. Consequently, research on this type of crowdfunding in China has declined and researchers are now forced to use older data in their analyses.

In addition, we observed a high fragmentation in terms of the research fields and journals as well as the applied theories. Our findings show that researchers published their articles in 79 different journals from 16 research disciplines. Figure 2-3 illustrates the growth (in terms of numbers) of articles on sustainability-oriented crowdfunding according to the dominant research fields.

Figure 2-3. Number of published papers on sustainability-oriented crowdfunding by research field



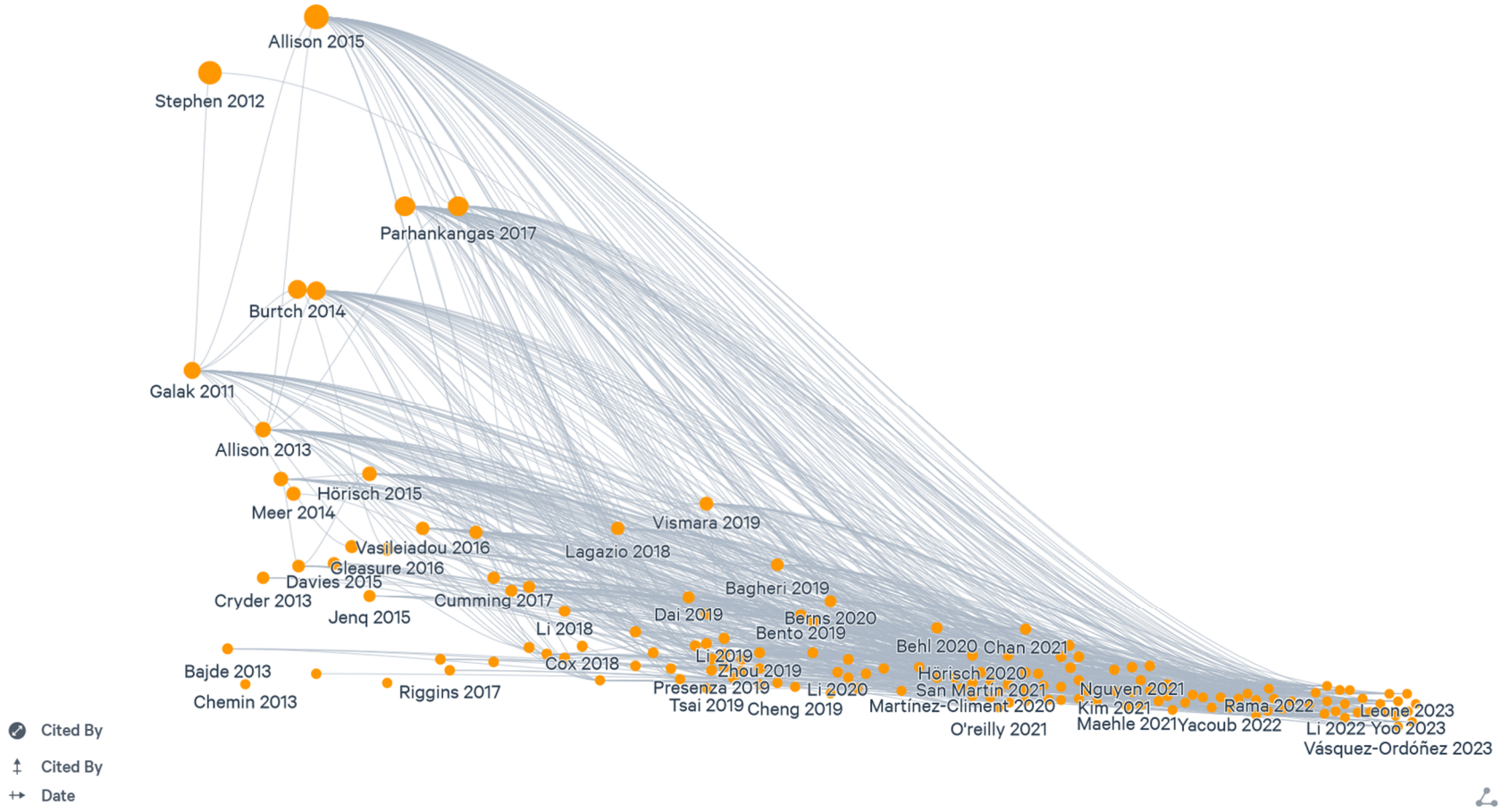
Note. In 2023, the search resulted in 11 articles for the time period from January 1, 2023 until March 15, 2023.

The majority of the reviewed articles derive from the field of information management (27 articles) with *Management Information Systems Quarterly* as the leading journal with 4 publications, which implies a high dispersion across different journals in this field. The information management discipline is closely followed by research from the field of entrepreneurship and small business management (26 articles) with the highest article count (6 articles each) found in *Entrepreneurship Theory and Practice* and *International Journal of Entrepreneurial Behavior & Research*. The research discipline sector studies (19 articles) focuses on sectors such as energy or nonprofits, and the highest number of publications is found

for the *Journal of Cleaner Production* (14 articles). This is followed by publications of research covering the area of innovation (16 articles), with all but two appearing in *Technological Forecasting and Social Change* (14 articles). The distinct spike observed in the number of published articles in 2019 may be attributed to the publication of a special issue focusing on "the role of crowdfunding in moving towards a sustainable society" of *Technological Forecasting and Social Change* in the field of innovation. Other fields contributing research on this topic include ethics, corporate social responsibility, and management (13 articles), economics (12 articles), marketing (11 articles), and the social sciences (9 articles).

Figure 2-4 provides a visual citation map of the 157 papers on sustainability-oriented crowdfunding in our review and shows how the field has evolved over time. The number of citations for each study is depicted on the y-axis, while the year of publication is depicted on the x-axis. The studies located above an imaginary diagonal line from the top left to bottom right corner of Figure 2-4 are particularly influential. Exerting their influence even today, our systematic review uncovered only one article each for the years 2011 and 2012 (on prosocial lending-based crowdfunding), and both were published in the *Journal of Marketing Research* (Galak et al., 2011; Stephen & Galak, 2012). The platform focus of these earliest articles is not surprising, because prosocial lending-based crowdfunding was historically one of the first crowdfunding forms on the internet. The most influential work was published by Allison and colleagues (2015) in *Entrepreneurship Theory and Practice.*

Figure 2-4. Visual citation map of published papers on sustainability-oriented crowdfunding using *Litmaps*



Note. Input of n = 157 identified and included articles in this literature review were used to visualize the citation map. The x-axis (i.e., date) is depicted in a compact format, which compresses the early years (2011-2018) and pushes apart later years (2019-2023), to better visualize the high number of publications on sustainability-oriented crowdfunding in recent years.

Similarly, the work of Calic and Mosakowski (2016) on sustainability orientation and crowdfunding success in the *Journal of Management Studies* and the contribution of Parhankangas and Renko (2017) on linguistic styles in crowdfunding pitches of sustainable versus commercial ventures in the *Journal of Business Venturing*—both based on reward-based crowdfunding—have been cited more than 380 times within a few short years. Focusing on the recent 2019-2023 period, the field increasingly evolved to include different disciplines and journals, providing additional, recent outstanding studies by Vismara (2019), Bagheri et al. (2019), Behl and Dutta (2020), and Chan et al. (2021) to name a few. Especially, Vismara's (2019) recent work on equity-based crowdfunding (the newest form of this phenomenon so far) has attracted the attention of scholars in the field. In summary, the visual citation map provides confirmatory evidence for an increasingly evolving multidisciplinary research field.

Although most articles provide theoretical backgrounds for their research and even mention several theories in this context, only a few explicitly build their research around one or more core theories. The applied theories span multiple perspectives with a predominant focus on information asymmetry and/or signaling theory: 28 articles build on or refer to these theories. Further frequently mentioned theories included self-determination theory and/or cognitive evaluation theory (13 articles), as well as social capital and/or social network theory (10 articles). Additional articles referred to warm-glow theory (8 articles), altruism (7 articles), or framing theory (7 articles). Figure 2-5 illustrates the most frequently applied theoretical lenses across the different crowdfunding forms, revealing that information asymmetry and signaling was mostly utilized in prosocial lending-based and reward-based crowdfunding, whereas self-determination theory was predominantly applied in donation-based crowdfunding.

Figure 2-5. Theoretical lenses applied in the various crowdfunding forms

Crowdfunding form / Theoretical lens (number of articles)	Reward-based	Donation-based	Prosocial lending-based	Return-oriented lending-based	Equity-based	Total count*
Information asymmetry / signaling (28)	7	5	11	3	2	28
Self-determination / cognitive evaluation (13)	2	7	3	1	-	13
Social capital / networks (10)	4	3	1	3	2	13
Warm-glow (8)	2	1	2	3	1	9
Altruism (7)	3	2	2	-	-	7
Framing (7)	4	1	2	2	1	10

* Total count shows the total number of crowdfunding forms examined by the articles under each theoretical lens; Therefore, total count may be larger than number of articles, as articles may examine more than one crowdfunding form.

2.4.2 A framework for organizing research on sustainability-oriented crowdfunding

Derived from our qualitative analysis, we identified major theoretical themes in sustainability-oriented crowdfunding. Table 2-2 offers an overview of the clustering of the identified descriptive theoretical themes into higher-order and aggregate themes with corresponding examples, which provides the basis for our framework.

Table 2-2. Overview of clustering into major theoretical levels

Aggregate themes	Higher-order themes	Descriptive themes (exemplary manifestations)	Examples
INDIVIDUAL LEVEL	Mixed motives of sustainability-oriented entrepreneurs and backers	• Influence of intrinsic and extrinsic motivation • Relevance of warm-glow effect • Altruistic vs. egoistic motives	Allison et al. (2013); Bagheri et al. (2019); Kollenda (2022); Nakagawa and Kosaka (2022); Penz et al. (2022); Song et al. (2022); Zhang et al. (2022)
	Sustainability-related biases, framing effects, and behavioral factors	• Behavior of sustainability-oriented crowdfunding backers compared to rational economic stakeholders • Impact of framing with regard to different sustainability dimensions	Bento, Gianfrate and Groppo (2019); Defazio et al. (2021); Figueroa-Armijos and Berns (2022); Hornuf and Siemroth (2023); Kuo et al. (2022); Nielsen and Binder (2021)
TRANSACTIONAL LEVEL	Campaign signals in sustainability-oriented crowdfunding	• Sustainability-related campaign attributes as quality signals • Relative influence of campaign characteristics in sustainability-oriented crowdfunding	Anglin et al. (2020); Gama et al. (2023); Hörisch (2019); Mejia et al. (2019); Moss et al. (2015); Saluzzo and Alegre (2021); Siebeneicher and Bock (2022); Pabst et al. (2021); Pan and Dong (2023); O'Reilly et al. (2021)
	Role of social interaction in sustainability-oriented crowdfunding	• Transaction dynamics within social networks • Role of social connections and group membership • Impact of funding progress and goal proximity	Butticè and Useche (2022); Chung et al. (2021); Cheng et al. (2019); Cox et al. (2022); Dai and Zhang (2019); Davies and Giovannetti (2022); Li et al. (2020)
INSTITUTIONAL LEVEL	Link between institutional factors and sustainability-oriented crowdfunding	• Role of institutional logic with regard to sustainability orientation • Linkage to external ecological, social, or economic conditions	Butticè et al. (2019); Langley et al. (2020); Logue and Grimes (2022); Manning et al. (2022); Presenza et al. (2019); Vismara (2019)
	Link between cultural factors and sustainability-oriented crowdfunding	• Impact of cultural differences opposed to cultural alignment • Differences of individualistic or collectivistic cultures • Linkage to cultural and communal factors	Burtch et al. (2014); Bento, Gianfrate and Groppo (2019); Jancenelle et al. (2019); Quigley and Patel (2022); Rama et al. (2022)

To provide additional context for these theoretical mechanisms and to present a comprehensive picture of the crowdfunding process, we further analyzed the explored antecedents and outcomes in sustainability-oriented crowdfunding. Tables 2-3 and 2-4 provide an overview of the clustering of the antecedent and outcome themes into higher-order and aggregate themes with corresponding examples.

Table 2-3. Overview of clustering into major antecedent themes

Aggregate themes	Higher-order themes	Descriptive themes (exemplary manifestations)	Examples
ACTOR	Characteristics	Age, gender, personality, personal values	Allison et al. (2022); Chen et al. (2017); Nielsen and Binder (2021); Tenner and Hörisch (2021)
	Attitudes and beliefs	Social consciousness, opinion on sector, impact	Bourcet and Bovari (2020); Kim and Hall (2021b); San Martín et al. (2021)
	Perceptions	Perceptions of risk, transparency, effectiveness	Bourcet and Bovari (2020); Kim and Hall (2021a); Liang et al. (2023); San Martín et al. (2021); Wang et al. (2019)
	Social ties	Social media links, social network	Cheng et al. (2019); Li et al. (2020); Wang et al. (2019)
CAMPAIGN	Sustainability orientation	Social orientation, environmental orientation, sustainability orientation	Calic and Mosakowski (2016); Hörisch and Tenner (2020); Liang et al. (2023); Moss et al. (2018); Shevchenko et al. (2020); Vismara (2019)
	Linguistic and narrative features	Altruistic narrative, affect-related language, self-centered attributes, storytelling	Allison et al. (2015); Moss et al. (2015); Lee et al. (2019); Parhankangas and Renko (2017); Robiady et al. (2021); Testa et al. (2020)
	Funding characteristics	Target funding amount, funding threshold Loan/reward characteristics	Anglin et al. (2020); Bento, Gianfrate and Thoni (2019); Cox et al. (2022); Dai and Zhang (2019); Slimane and Rousseau (2020); Xiang et al. (2019)
	Project presentation	Visuals, videos	Gleasure and Feller (2016); Lagazio and Querci (2018)
	Communication	Project updates, comments	Hong and Ryu (2019); Mejia et al. (2019)
	Social shares	Social media links, shares	De Crescenzo et al. (2020); Slimane and Rousseau (2020); Zhou and Ye (2019)
	Third-party information	Third-party endorsements, indicator of external support, performance microfinance institutions	Anglin et al. (2020); De Crescenzo et al. (2022); Dorfleitner et al. (2020); Gama et al. (2023); Hong and Ryu (2019); Saluzzo and Alegre (2021)
	Team/venture features	Number of founders, employees, team gender	Bento, Gianfrate and Thoni (2019); Gafni et al. (2021); Slimane and Rousseau (2020)
CONTEXT	Geographical and cultural aspects	Geographic location, context, individualistic vs. collectivist society	Burtch et al. (2014); Brent and Lorah (2019); Chen et al. (2017); Langley et al. (2020); Quigley and Patel (2022)
	Institutional environment	Policy, governance, legal conditions, institutional structure	Tsai and Wang (2019); Logue and Grimes (2022); Presenza et al. (2019)
	Market aspects	Rising oil prices, country's sustainability orientation	Butticè et al. (2019); Cumming et al. (2017)

Table 2-4. Overview of clustering into major outcomes themes

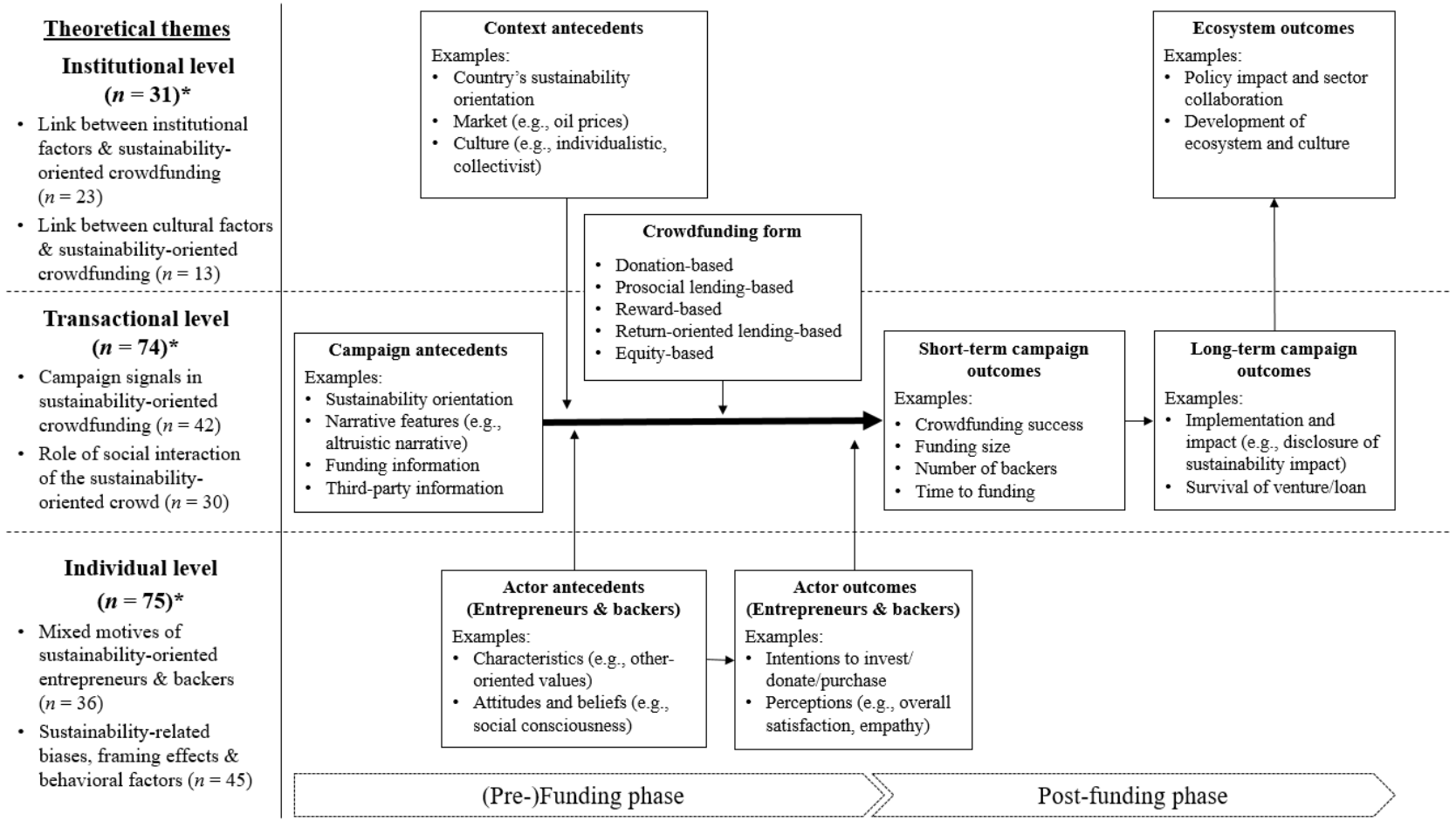
Aggregate themes	Higher-order themes	Descriptive themes (exemplary manifestations)	Examples
ACTOR	Intentions to back campaign	Intention to invest/donate, purchase intention	Ba et al. (2020); Behl and Dutta (2020); Li et al. (2020); Kuo et al. (2022); Wehnert et al. (2019)
	Perceptions	Overall satisfaction, empathy of the crowd	Bergmann et al. (2021), Carè et al. (2018); Zheng et al. (2017)
SHORT-TERM CAMPAIGN	Crowdfunding success	Rate of financing, attainment of funding target, fully funded (yes/no)	Allison et al. (2013); Anglin et al. (2022); Berns et al. (2020); Hörisch (2015); Moss et al. (2015); Nielsen and Binder (2021); Testa et al. (2020)
	Time to funding	Time until loan is funded	Allison et al. (2015); Dai and Zhang (2019); Dorfleitner et al. (2021), Jenq et al. (2015); Gafni et al. (2021)
	Funding size	Funding amount, incremental pledge amount, average contribution	Anglin et al. (2022); Brent and Lorah (2019); Mejia et al. (2019); Shevchenko et al. (2020); Slimane and Rousseau (2020); Zhou & Ye (2019)
	Number/type of backers	Number of backers, incremental number of backers, type of backers	Anglin et al. (2022); Li et al. (2020); Ryu and Kim (2018); Slimane and Rousseau (2020); Vismara (2019); Xiang et al. (2019)
LONG-TERM CAMPAIGN	Financial success	Financial return rate on project, external equity	Bento, Gianfrate, and Groppo (2019); O'Reilly et al. (2021)
	Implementation and impact	Project implementation and awareness	Gooch et al. (2020); Hörisch (2019), Zheng at al. (2017)
		Disclosure of sustainability impact	Hörisch (2019)
	Survival	Survival of venture, loan survival	Bento, Gianfrate, and Thoni (2019); Dorfleitner et al. (2019); Riggins and Weber (2017)
ECOSYSTEM	Impact on policies and collaboration	Policy, agenda-setting impact, collaboration, support	Carè et al. (2018); Tsai and Wang (2019); Logue and Grimes (2022)
	Development of ecosystem and culture	Common culture, social entrepreneurship ecosystem	Carè et al. (2018); Langley et al. (2020); Presenza et al. (2019)

Specifically, to offer a comprehensive picture of how effects in sustainability-oriented crowdfunding occur (Andersen et al., 2019), and in line with other multilevel studies on crowdfunding (e.g., Cai et al., 2020; Harrer et al., 2023), we developed our three-level theoretical framework based on the antecedents and outcomes of the underlying crowdfunding process. The framework involves the (1) individual, (2) transactional, and (3) institutional level.

The *individual level* aggregates the theoretical themes of mixed motives of sustainability-oriented entrepreneurs and backers and sustainability-related biases, framing effects, and behavioral factor*s*. The *transactional level* aggregates the themes of campaign signals in sustainability-oriented crowdfunding and the role of social interaction in sustainability-oriented crowdfunding. The *institutional level* aggregates the themes related to the link between institutional and cultural factors and sustainability-oriented crowdfunding.

Figure 2-6 illustrates the theoretical mechanisms that are linked to the theoretical levels and indicates the number of articles associated with each of the aggregate themes. Based on the results of our analysis, we further included the different crowdfunding forms in the framework and incorporated two process phases to distinguish between short- and long-term outcomes in sustainability-oriented crowdfunding. This distinction is useful to better capture potential future research avenues with respect to the entire process (Saebi et al., 2018).

Figure 2-6. Multilevel framework of the sustainability-oriented crowdfunding process



*Denotes the total number of articles per category

Note. The frequency of categories and themes are presented in parentheses.

Individual level

Individual-level mechanisms refer to the motivations and decisions of sustainable entrepreneurs or backers as individual actors. Research at the individual level (n = 75) deals predominantly with *mixed motives of sustainability-oriented entrepreneurs and backers* (n = 36) as well as *sustainability-related biases, framing effects, and behavioral factors* (n = 45) of the individuals. As sustainability-oriented crowdfunding is associated with both economic and non-economic outcomes (Shepherd & Patzelt, 2011), investigating psychological and behavioral theories linked to decision-making processes represents a relevant research topic in this particular context. The personal sustainability orientation of entrepreneurs and backers can impose constraints to the economic growth of ventures. Thus, it is ambiguous how this influences the crowdfunding process (Mansouri & Momtaz, 2022).

Mixed motives of sustainability-oriented backers and entrepreneurs. The subtheme of mixed motives focuses on the interplay of different motivations, for example, extrinsic and intrinsic motives, self-orientation and other-orientation, or altruism and egoism. Scholars often applied theories from social psychology to derive conclusions about the drivers of individual crowdfunding decisions (e.g., Allison et al., 2013; Behl et al., 2023; Jang & Chu, 2022).

Self-determination theory (Deci & Ryan, 1985) is such a frequently used theory to explain backer behavior linked to intrinsic and extrinsic incentives of sustainability-oriented campaigns (e.g., Bento, Gianfrate, & Thoni, 2019). The theory distinguishes between extrinsic motives related to external rewards and intrinsic motives related to the satisfaction from performing an activity (Deci & Ryan, 2012). Scholars find that a combination of intrinsic and extrinsic factors drives backer behavior, even in the absence of potential financial or product returns (Chen et al., 2021; Zhang et al., 2022). The influential work of Allison et al. (2015) highlights the relevance of the backers' intrinsic motivation in prosocial lending-based crowdfunding by showing that they respond positively to narratives emphasizing the basic needs of others compared to narratives emphasizing the potential for business growth. While

some studies describe similar findings (e.g., Gafni et al., 2021), others report that the existence of financial returns can crowd out backers' intrinsic motivation related to social impact (e.g., Kollenda, 2022).

In addition, warm-glow theory (Andreoni, 1990) represents another commonly studied theoretical mechanism (e.g., Chemin & de Laat, 2013; Dorfleitner et al., 2020; Penz et al., 2022), stating that individuals support others to feel good about themselves. In this regard, the findings reported in the reviewed studies show some inconsistencies. While Allison et al. (2013) conclude that faster funding can be explained through the warm-glow effect of narratives linked to blame and current concern in prosocial lending-based crowdfunding, Lagazio and Querci (2018) find no support for this effect in their study of reward-based crowdfunding. Further studies observe a warm-glow effect for ecological campaigns in equity-based and return-oriented lending-based crowdfunding (Hörisch & Tenner, 2020; Penz et al., 2022). The partly contrasting results may be explained by the focus on different crowdfunding forms that are related to different degrees of economic, social, or ecological orientations and values of the participating entrepreneurs and backers (Meyskens & Bird, 2015; Mollick, 2014).

Furthermore, discussions around altruistic motivations of individual backers in sustainability-oriented crowdfunding have evolved (e.g., Cox et al., 2018; Nakagawa & Kosaka, 2022; Testa et al., 2020). In comparison to the warm-glow theory, altruism refers to the desire to help others, even if this comes at a personal cost such as time or money (Gleasure & Feller, 2016). By examining backers' altruistic motivation in the crowdfunding process and contrasting it to egoistic motivation, Song et al. (2022) find that contributions of backers in donation-based crowdfunding are predominantly driven by egoism, whereas, over the course of a campaign, altruistic factors become important to reach the funding goal. Comparing altruistic and strategic motives in prosocial lending-based crowdfunding, Berns et al. (2020) find that backers follow mostly strategic motives related to quality and risk. Hence, the interplay

of different contrasting types of motives influences individuals in sustainability-oriented crowdfunding.

Sustainability-related biases, framing effects, and behavioral factors. Further, scholars find that in the context of sustainability, biases, framing effects, and other related behavioral factors can influence the decision making of individual crowdfunding stakeholders (Jenq et al., 2015; Kuo et al., 2022; Maehle et al., 2021). For example, Bento, Gianfrate and Groppo (2019) argue that the individuals' bounded rationality (Simon, 1955), referring to the limited availability of information and time of backers, constrains them from fully evaluating risk–return relations in sustainability-oriented crowdfunding. Hence, they deviate from rational decision-making behavior and therefore accept lower financial returns in the context of sustainable ventures (Bento, Gianfrate, & Groppo, 2019). In addition, backers consider the presented social and ecological benefits of sustainable campaigns as references and cognitive frames for their decision making and may respond differently to variable framing of objectively similar campaign contents (Kuo et al., 2022).

Building on framing theory, Nielsen and Binder (2021) find that reward-based campaigns with altruistic frames have a higher likelihood of funding than campaigns with ecological or egoistic frames and that frames need to be aligned with backers' values. Defazio et al. (2021) corroborate these findings, suggesting a positive relationship between social framing and successful crowdfunding, if the framing is not too strongly emphasized. Moreover, other scholars find that female or rural framing increases the likelihood of funding success in the context of prosocial lending-based crowdfunding (Figueroa-Armijos & Berns, 2022). In addition, the responses to framing can be influenced by the backers' characteristics: Hornuf and Siemroth (2023) reveal that older backers are more attracted by a framing that highlights financial returns. Results further indicate that a lender's decision to crowdfund is linked to the identification with sustainable entrepreneurs (e.g., Riggins & Weber, 2017).

Transactional level

Transactional-level mechanisms encompass the interactions and exchange processes between entrepreneurs and the crowd of backers via the platform. Another large part of the research in the reviewed literature deals with the transactional level (n = 74), focusing on *campaign signals in sustainability-oriented crowdfunding* (n = 42) using information asymmetry and signaling theory along with *the role of social interaction* (n = 30) based on social network theories. Research indicates that attributes that signal quality and trust in the interaction between backers and entrepreneurs are highly relevant in sustainability-oriented crowdfunding (e.g., Pabst et al., 2021; Saluzzo & Alegre, 2021). In addition, crowdfunding cultivates a community of backers and enables social engagement between backers and entrepreneurs, providing a sense of group belonging that can be intensified through common sustainability goals (Vismara, 2019).

Campaign signals in sustainability-oriented crowdfunding. Theories related to information asymmetries and signaling (Spence, 1973) are those most frequently applied by the reviewed studies and drawn upon in all forms of crowdfunding, especially reward-based and prosocial lending-based crowdfunding (e.g., Cumming et al., 2017; Hoos, 2022; Jancenelle et al., 2018). Crowdfunding represents a situation where one party (i.e., the sustainable entrepreneur) has more information than the other (i.e., the backer). In the sustainability context, information asymmetries not only refer to the viability of the business but also to the implementation of sustainable measures. Campaign-related attributes serve as (low-cost) signals that indicate whether a sustainable venture is potentially successful, which can be critical to receiving capital from the crowd (Moss et al., 2015). Scholars highlight sustainability-related signals to assess the quality and legitimacy of crowdfunding campaigns (e.g., Anglin et al., 2020; Hörisch, 2019).

Literature frequently emphasizes the role of third-party endorsements (de Crescenzo et al., 2022; Gama et al., 2023; Pabst et al., 2021). Particularly in prosocial lending-based crowdfunding, third-party endorsements of external microfinance institutions or nonprofit institutions are found to have a significant impact on crowdfunding outcomes: Anglin et al. (2020) show that the financial and social performance of microfinance institutions positively influence crowdfunding outcomes, whereby social performance shows a dominant effect. Similarly, Saluzzo and Alegre (2021) stress that pro-bono endorsements achieve more success compared to financial endorsements. Further, studies show that government endorsements in form of seals (Pabst et al., 2021) or other indications of government involvement (Hong & Ryu, 2019) are related to crowdfunding success, alluding to a key role of institutional legitimation and the role of governments in shaping the playing field of sustainability-oriented crowdfunding.

In addition, the reviewed studies confirm the signaling relevance of project attributes from research on traditional commercial crowdfunding, for example, regarding the visual presentation of campaigns (e.g., videos, Dorfleitner et al., 2021; Lagazio & Querci, 2018), campaign communication (e.g., project updates, Mejia et al., 2019), or the relevance of campaign funding characteristics (e.g., target funding amount, Bento, Gianfrate, & Groppo, 2019). Considering return-oriented lending-based and equity-based crowdfunding, O'Reilly et al. (2021) show that different financial measures (e.g., total assets, liquidity) are important signals during and after the funding period. Regarding long-term outcomes, Hörisch (2019) underlines the relevance of sustainability-related signals, such as the ability and willingness to implement actions with ecological impact, for maintaining backer trust.

Role of social interaction in sustainability-oriented crowdfunding. Online crowdfunding transactions reduce the distance between entrepreneurs and backers as well as their social networks (Butticè & Useche, 2022). Hence, the social interaction within networks

plays an important role for research on funding dynamics in sustainability-oriented crowdfunding (e.g., Cheng et al., 2019; Li et al., 2020). Researchers use social capital theory (Bourdieu, 1986; Putnam, 1995) to explain these interactions related to crowdfunding transactions in the sustainability context (e.g., Banerjee, 2022; Davies & Giovannetti, 2022; Guillochon, 2022). For example, studies highlight the positive influence of social network size and network links for the match between backers and entrepreneurs in donation-based crowdfunding (Cheng et al., 2019; Li et al., 2020). In this context, Butticè and Useche (2022) find that entrepreneurs who immigrated to another country collect less funding from backers in their host county, but more from those in other countries, with social capital increasing this effect.

Other studies applied the goal gradient or goal setting theory (Hull, 1934) to examine the effect of the funding progress on the collective behavior of backers in the context of sustainability-oriented crowdfunding (e.g., Li & Wang, 2019). According to goal gradient or goal setting theory, backers react to the target amount of crowdfunding campaigns and increase their efforts if the threshold or the collective funding goal of the campaign is approached (Cryder et al., 2013). Dai and Zhang (2019) show that the prosocial nature of a crowdfunding project amplifies this effect. Comparing different crowdfunding platforms, Cox et al. (2022) reveal more pronounced variation in terms of the positive relationship of funding and goal proximity for donation-based compared to equity-based crowdfunding. In addition, Lagazio and Querci (2018) highlight the importance of social group membership for interactions in sustainability-oriented crowdfunding and refer to social identity theory (Tajfel et al., 1979) to show that backers tend to behave according to their social identity with groups in the crowd.

Institutional level

Third, institutional-level mechanisms refer to institutional and cultural theories on a higher level. Compared to the individual and transactional level, fewer articles (n = 31) in our

review focus on or involved the institutional level, examining the *link between institutional factors and sustainability-oriented crowdfunding* (*n* = 23) associated with markets and regulatory frameworks, as well as the *link between cultural factors and sustainability-oriented crowdfunding* (*n* = 13) associated with values and beliefs in a given community.

Link between institutional factors and sustainability-oriented crowdfunding. Building on institutional logic, Vismara (2019) argues that, in equity-based crowdfunding, non-professional backers who are embedded in the community logic are more attracted by sustainability-oriented crowdfunding campaigns compared to professional investors who follow the market logic. The author explains this observation with the commitment to communal values and beliefs in trustworthiness and reciprocity (Vismara, 2019). Furthermore, Butticè et al. (2019) apply an institutional lens to show how the country's ecological sustainability orientation influences the creation of respective crowdfunding campaigns in reward-based crowdfunding. Cumming et al. (2017), also focusing on the reward-based context, find that cleantech crowdfunding is more common when oil prices are rising, denoting an important role for external conditions (e.g., market aspects). Hence, the context and the environment linked to countries or markets may influence crowdfunding actors and dynamics throughout the sustainability-oriented crowdfunding process.

In addition, Manning et al. (2022) point out narrative strategies for sustainable entrepreneurs in reward-based crowdfunding to leverage institutional relationships and underline the interrelatedness of local entrepreneurial contexts and local ecosystems. These local entrepreneurial ecosystems consist of stakeholders such as incubators, accelerators, universities, the media, and a network of enterprises and professionals including backers, who form part of a support community (Manning et al., 2022). Similarly, Logue and Grimes (2022) emphasize the relevance of an institutional infrastructure that enables collaboration across different sectors and increases the number of users without compromising on societal goals for

donation-based crowdfunding. With regard to long-term outcomes beyond the crowdfunding success, scholars highlight that sustainability-oriented crowdfunding activity influences the development of respective communities and thus the growth of sustainable entrepreneurship ecosystems that can exert an influence on policies and regulations (Langley et al., 2020; Presenza et al., 2019).

Link between cultural factors and sustainability-oriented crowdfunding. Although research on sustainability-oriented crowdfunding is growing in different countries, surprisingly little research has been conducted to date on cultural mechanisms. The findings of Burtch et al. (2014) suggest that cultural differences between the backers' and the entrepreneurs' countries negatively influence funding activity, while Jancenelle et al. (2019) conclude that the entrepreneurs' cultural alignment with their own country affects funding speed. Furthermore, Quigley and Patel (2022) find a gender effect in prosocial lending-based crowdfunding that is moderated by gender egalitarianism in the home culture. Cultural factors also play a role in donation-based crowdfunding success, as highlighted by Rama et al. (2022), with individualistic and long-term oriented cultural characteristics increasing the positive impact of expressing a religious and social orientation on the likelihood of success. In return-oriented lending-based crowdfunding, Bento, Gianfrate and Groppo (2019) demonstrate that the long-term orientation and individualism of project host countries can have a positive influence on financial returns of campaigns for cleantech ventures, while revealing that collective goals such as environmental preservation seem to be less prioritized in individualistic cultures compared to returns.

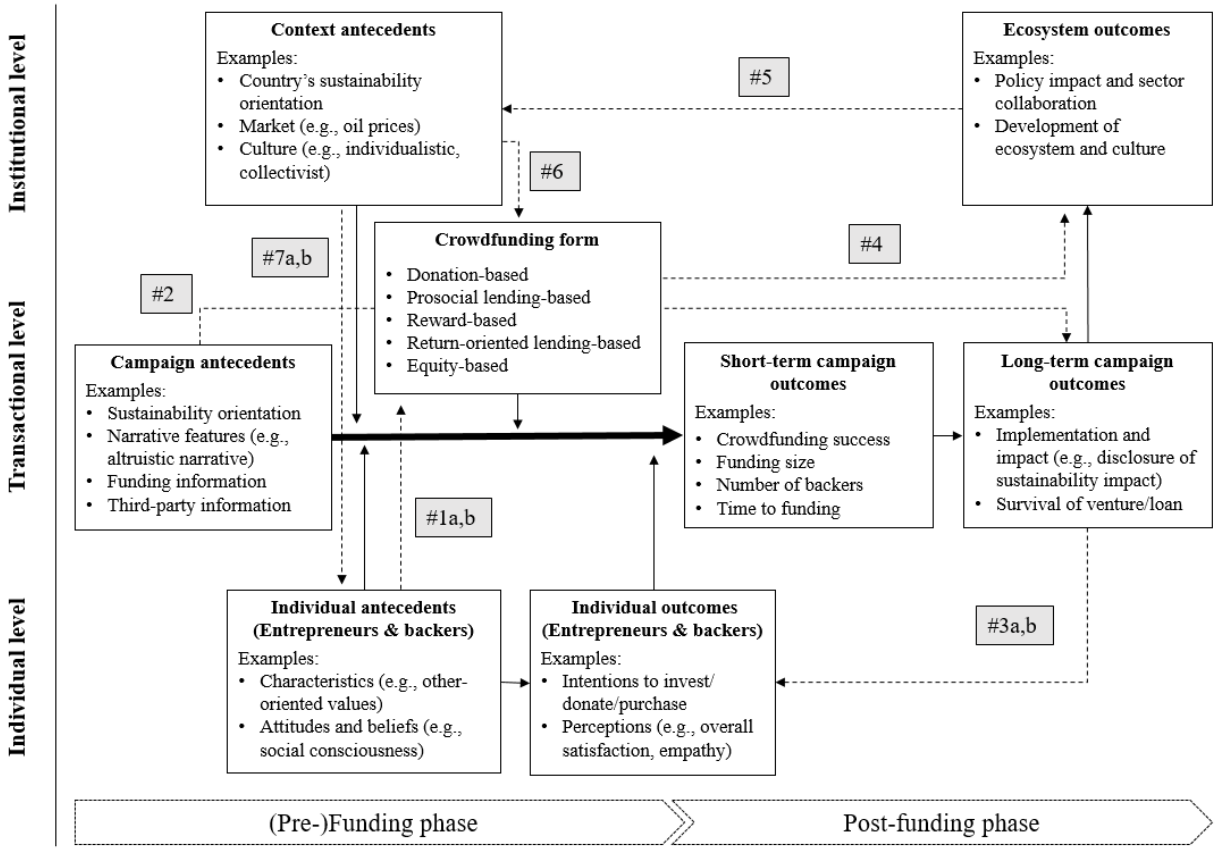
2.5 Systemization of research gaps and future research avenues

While our review sheds light on the extensive and fragmented literature on the topic of sustainability-oriented crowdfunding and highlights major emerging theoretical themes for a better understanding, it also shows that research findings are mostly limited to short-term

outcomes related to the funding success. Further, our analysis reveals that differences in the results regarding the effects of theoretical mechanisms and the relative importance of crowdfunding antecedents across the diverse crowdfunding forms may benefit from further clarification. The developed framework thus helps integrate different research levels from the literature to fully understand the mechanisms at work within the bigger picture of the phenomenon (Saebi et al., 2018). In this vein, it provides the foundational structure to discuss diverse theoretical themes as well as related future research avenues with regard to the context of different crowdfunding forms, the institutional level as well as the long-term perspective in general. Therefore, in Figure 2-7 below, we extended our initial framework (from Figure 2-6) by adding the illustration of under-researched linkages between the identified levels and related elements in the crowdfunding process. With this approach, we offer paths for additional exploration that emerge from the systematically identified research gaps in this review (see Volberda et al., 2010).

Based on these research gaps, we derive future research avenues regarding the following topics: (1) the effects of individual antecedents on the participation in different crowdfunding forms; (2) the impact of campaign antecedents on long-term campaign outcomes; (3) the effects of long-term campaign outcomes on individual outcomes with respect to the post-funding phase; (4) the interrelation of crowdfunding forms and the sustainable entrepreneurship ecosystem; (5) the impact of the ecosystem on shaping institutional environments and contexts; (6) the effects of contextual and environmental factors on the development and prevalence of different crowdfunding forms; and (7) the impact of institutional and cultural factors on individual actors. In the following we discuss each identified linkage and its corresponding challenges to outline several fruitful paths for future research.

Figure 2-7. Research gaps related to the sustainability-oriented crowdfunding process



Linkages between individual antecedents and crowdfunding forms. Research avenue 1 focuses on exploring the effects of individual antecedents on the actors' participation in different crowdfunding forms from the perspective of (a) entrepreneurs and (b) backers in sustainability-oriented crowdfunding.

Extant research provided relevant findings regarding the motivational and behavioral mechanisms of individuals, especially backers, by examining campaign-related antecedents and outcomes on crowdfunding platforms (e.g., Dorfleitner et al., 2020; Gleasure & Feller, 2016). However, our review still reveals ambiguities and ongoing debates about the relevance of, for example, extrinsic and intrinsic motivations (e.g., Allison et al., 2015; Kollenda, 2022) or altruistic and warm-glow motivations (e.g., Allison et al., 2013; Berns et al., 2020), as well as the extent of rational behavior by crowdfunding actors (e.g., Bento, Gianfrate, & Groppo, 2019; Yoo et al., 2023). In this regard, Cox et al. (2022) point toward the role of different motivations

and goals in relation to distinct crowdfunding forms. Hence, analyzing the linkage between individual antecedents and the participation in particular crowdfunding forms could substantially contribute to our understanding of motivational and behavioral effects in sustainability-oriented crowdfunding. Figure 2-5, for example, shows that self-determination and cognitive evaluation theory are still under-researched in return-oriented lending-based and equity-based crowdfunding. Contrasting several crowdfunding forms (e.g., prosocial lending-based vs. return-oriented lending-based vs. equity-based) while factoring in the company's sustainability orientation (i.e., social or environmental) may expand our knowledge of the influence of self-selection on crowdfunding platforms (e.g., Cox et al., 2022). Literature on sustainable entrepreneurship suggests that social entrepreneurship research largely emphasizes tradeoffs between economic and social motives, whereas ecological entrepreneurship research emphasizes synergies (Vedula et al., 2022). Examining this perspective more closely could round out our current knowledge, which also implies a larger shift toward the application of complementary experimental and qualitative studies to enrich findings of secondary data analyses. Such methods could provide a more fine-grained level of detail and help us to better understand the motives and behavior of entrepreneurs and backers in the context of sustainability. In particular, the entrepreneurs' perspective is rarely studied, probably due to limited access to entrepreneurs and their data beyond publicly available campaign information.

Consideration of long-term campaign outcomes. Research avenue 2 suggests to extend the study of the relationship between campaign antecedents and outcomes to a long-term perspective.

Our literature analysis reveals a large focus on the study of signaling and social interaction mechanisms in relation to short-term campaign outcomes. Although investigating relevant outcomes such as funding success or funding amount explains a vital part of the transactional crowdfunding process, it neglects the view beyond the funding phase. After the

campaign is successfully funded, it remains unclear whether the funded project will be successfully implemented to achieve the promised non-financial benefits (e.g., CO_2 reduction) or, if applicable, the underlying financial goals (e.g., a successful exit). However, to date only a handful of studies analyze the relationship between particular campaign signals and long-term outcomes in the context of sustainability (e.g., Bento, Gianfrate, & Groppo, 2019; O'Reilly et al., 2021). If the perceived quality and legitimacy signals of the crowdfunding campaigns are not reflected in the impact of the venture, this may provoke moral hazard in the long term (e.g., Hörisch, 2019). Particularly for sustainability-oriented ventures, which promise to impact society or the environment positively, it is crucial to extend this limited perspective to capture the long-term contribution of the venture (e.g., Gooch et al., 2020). Therefore, future research should include additional long-term measures, such as reporting activity, follow-up financing rounds, or the survival of the venture, to better explore the relationship between campaign antecedents and outcomes as well as their potential long-term impacts in the post-funding phase.

Linkage between long-term campaign outcomes and individual outcomes. Research avenue 3 concentrates on exploring the effects of long-term campaign outcomes on the individual motivation and behavior from the perspective of (a) sustainability-oriented entrepreneurs and (b) sustainability-oriented backers in the post-funding phase.

In relation to capturing long-term outcomes, another important path for future research lies in exploring the individual motivation and behavior in response to these outcomes. For example, the delivery of financial or non-financial returns or the communication of success and failure of the venture implementation may have a substantial impact on the subsequent crowdfunding behavior of individuals. Especially in reward-based, lending-based, or equity-based crowdfunding, backers expect the promised product rewards or financial repayments (Signori & Vismara, 2018; Vanacker et al., 2019). Examining the post-funding phase could provide insights into how signaling and information asymmetry effects related to project

outcomes influence backers' motivational and behavioral responses. Further, researchers have recognized serial crowdfunding as a common behavioral pattern of entrepreneurs (e.g., Piening et al., 2021). The success or failure of crowdfunding campaigns may impact whether sustainable entrepreneurs consider the repeated launch of crowdfunding campaigns on a given platform. Enlightening the role of communal behavior, social networks, social capital, and social identity may further advance our understanding of mechanisms in the post-funding phase. In this regard, the influence of the chosen crowdfunding form also deserves particular research attention to examine the interrelatedness of campaigns and individuals.

Influence of crowdfunding forms on the sustainable entrepreneurship ecosystem and institutional structures. Research avenue 4 refers to exploring the interrelation between crowdfunding forms and the sustainable entrepreneurship ecosystem involving the development of collaborative networks, institutional support initiatives, and policy-making.

As Calic and Mosakowski (2016) point out, crowdfunding forms are continuously evolving and innovating their funding processes, whereas traditional sources of funding remain relatively stable in their processes. Crowdfunding is not only influenced by external factors, such as institutional settings, but also by the large crowd of backers and entrepreneurs that can democratically move the targets of the crowdfunding industry (Cumming et al., 2021). The practice of sustainability-oriented crowdfunding can significantly shape the sustainable entrepreneurship ecosystem and thereby influence policy-making (e.g., Carè et al., 2018; Logue & Grimes, 2022). Hence, providing insights into the interrelation of different forms of sustainability-oriented crowdfunding and support practices or collaboration networks represents another promising research avenue. With advancing technology around financial transactions on crowdfunding platforms and the development of associations and initiatives around financing sustainable ventures, more data will become available at the aggregate level. Thus, researchers could increasingly explore the influence of different crowdfunding forms on

the sustainable entrepreneurship ecosystem. Here, recent work by Logue and Grimes (2022) can provide helpful guidance regarding the governance of crowdfunding platforms. Future research could assess the impact on community building or the introduction of policies that incentivize funding for sustainability-related projects on particular platforms.

Shaping mechanisms on an institutional level. Research avenue 5 focuses on exploring the impact of the sustainable entrepreneurship ecosystem on shaping institutional environments and contexts.

Manning et al. (2022) highlight the importance of the local entrepreneurial ecosystems involving communities of incubators, accelerators, universities, the media, and networks of professionals who support and promote the practice of sustainability-oriented crowdfunding. In this context, insights into how emerging or evolving policies and sector collaboration contribute to the development of these different types of supporting communities and institutions can lead to a better understanding of the novel institutional environment (Calic & Mosakowski, 2016). Of interest here is the question of how are institutions, governments, markets, as well as cultures and societies shaped through sustainability-oriented crowdfunding and vice versa. Further, the societal legitimation and adaptation of support structures for sustainable entrepreneurs and sustainability-oriented backers represents a relevant research avenue. As the institutional environment of alternative investments co-exists alongside the traditional financial institutional environment, scholars could compare both and explore relevant interrelations.

The interrelatedness between institutions, culture, and crowdfunding forms. Research avenue 6 focuses on exploring the effects of contextual and environmental factors on the development and prevalence of different crowdfunding forms in sustainability-oriented crowdfunding.

The early emergence of prosocial lending (e.g., Kiva) was an outgrowth of institutional voids in developing countries (where financial systems and local entrepreneurial ecosystems

are comparatively underdeveloped) and was eventually adopted globally. Thus, context, environment, and society with regard to national settings play a crucial role in the development of crowdfunding as a source of entrepreneurial financing for sustainable ventures (e.g., Bento, Gianfrate, & Groppo, 2019; Butticè et al., 2019; Vismara, 2019). Institutional and cultural mechanisms exert a significant influence on the development particular forms of sustainability-oriented crowdfunding in different countries. Our descriptive analysis, for example, revealed that the majority of studies from the P.R.C. examined donation-based crowdfunding (10 of the 15 articles). This is due not only to the later launch of crowdfunding platforms in the P.R.C. but also to the dominance of the state, which complicates efforts of other platforms to obtain legal permission to operate. In the U.S., on the other hand, the JOBS (Jumpstart Our Business Startups) Act enabled the establishment of equity crowdfunding in 2012 (SEC, 2012). Historically, only accredited investors could buy stakes in startups, requiring significant capital outside the reach of the general public. Also, the U.S. is a consumer-driven culture where going into debt is socially accepted, facilitating the early adoption of lending-based crowdfunding. Hence, the regulatory framework and culture of countries can influence the extent to which particular crowdfunding models dominate as financing vehicles for sustainable enterprises (e.g., Quigley & Patel, 2022). However, research rarely explores the mechanisms underlying the popularity and growth of different forms of sustainability-related crowdfunding across countries.

Institutional and cultural impact on individual antecedents. Research avenue 7 refers to exploring the impact of the institutional and cultural factors on (a) entrepreneurs and (b) backers in sustainability-oriented crowdfunding.

Although researchers emphasize that the sociocultural environment, national institutional settings, as well as the economic market situation play important roles in shaping individuals' goals, beliefs, and drivers related to sustainability-oriented crowdfunding (e.g.,

Butticè et al., 2019), both mechanisms have so far received relatively little research attention. Hence, more studies on how different national and cultural contexts influence the individual crowdfunding behavior of sustainable entrepreneurs and backers would be highly valuable to provide a complete picture of their motives to collect capital through crowdfunding. For example, recent crowdfunding research indicates that the relevance of sustainability aspects is related to the countries' power distance levels, and that the platforms' selection criteria with regard to environmental, social and governance (ESG) aspects have a positive impact on their survival (Cumming et al., 2024). Hence, future examinations could especially focus on the impact of country-level differences for campaigns with social or ecological sustainability orientations. Individuals in developing nations, for instance, could tend to emphasize solutions to social problems that are present in their environment, such as poverty elimination, over problems that are not in plain sight (e.g., climate change). Similarly, collectivist (group-oriented) societies may have advantages when pursuing societal sustainability goals. In addition, the political and economic situation (e.g., gas shortage, migration) on a national level may effect individuals' priorities in creating or funding sustainability-oriented crowdfunding campaigns. Another fruitful research avenue could explore the influence of a cultural value shift on the behavior of individuals with regard to different crowdfunding forms.

Table 2-5 provides some possible research questions derived from each research avenue. In addition, the table includes the related theoretical lenses to provide additional guidance for future research efforts in sustainability-oriented crowdfunding.

Table 2-5. Potential research questions derived from each research avenue

	Possible research questions	Theoretical lenses
#1a	• How and why do sustainable entrepreneurs choose a particular crowdfunding form? • What is the influence of the venture's sustainability orientation on the engagement in a particular crowdfunding form? • To what extent are entrepreneurs in return-oriented lending- and equity-based crowdfunding intrinsically motivated?	*Self-determination theory / Cognitive evaluation theory* *Warm-glow theory* *Altruism* *Framing theory* *Behavioral biases*
#1b	• To what extent are backers in these two crowdfunding forms intrinsically motivated? • How and why do backers choose a particular crowdfunding form to support sustainability-oriented ventures?	
#2	• To what extent does campaign sustainability orientation influence the venture survival? • What is the relative impact of campaign signals on short- vs. long-term crowdfunding outcomes? • What campaign attributes are indicative of progress on reporting practices?	*Information asymmetry / Signaling theory* *Social capital / Network theory* *Goal gradient theory* *Social identity theory*
#3a	• What is the impact of a campaign's success or failure on sustainable entrepreneurs' (future) crowdfunding participation? • How does serial sustainability-oriented crowdfunding behavior differ between various crowdfunding forms?	
#3b	• How does the delivery of (non-)financial returns impact subsequent backing behavior? • To what extent does the communication of success or failure regarding the venture implementation serve as a signal? • What is the role of community and networks in relation to success and failure?	
#4	• How do different crowdfunding forms shape the sustainable entrepreneurship ecosystem? • What is the impact of sustainability-oriented crowdfunding on community building and public–private relationships? • How do different crowdfunding forms influence the development of institutional support structures?	*Institutional theory* *Cultural theory*
#5	• How does the sustainable entrepreneurship ecosystem contribute to the emergence of different types of institutions? • How are institutions, markets, cultures, and societies shaped through sustainability-oriented crowdfunding? • To what extent do arising institutions co-exist alongside the traditional financial institutional environment?	
#6	• How do contextual attributes (e.g., climate change) contribute to the development of sustainability-oriented crowdfunding? • How do national contexts influence the dominance of crowdfunding forms as financing vehicles for sustainable ventures?	
#7a	• How do sociocultural factors shape entrepreneurs' motives, beliefs, and goals in sustainability-oriented crowdfunding? • How do country-level differences influence campaign creation with social or ecological sustainability orientations?	*Self-determination theory / Cognitive evaluation theory* *Warm-glow theory* *Altruism* *Framing theory* *Behavioral biases*
#7b	• Are backers more likely to support sustainability-oriented ventures that deal with concerns held in their culture? • What is the effect of value shifts in the culture on backers participating in sustainability-oriented crowdfunding?	

2.6 Conclusion

Sustainability-oriented crowdfunding has become an important research field, given the current societal needs to address both the growing environmental and social challenges posed by climate change and migration as well as the difficulties of sustainable ventures in obtaining financing to achieve their goals (Anglin et al., 2022). The field combines concepts from research on sustainable entrepreneurship with the complex interplay of different dimensions in the crowdfunding process and extends across various research disciplines. Therefore, a better understanding of the mechanisms involved in the crowdfunding process can contribute to the development of the young research stream. Our integrative literature review extends previous reviews (e.g., Böckel et al., 2021; Salido-Andres et al., 2021) by proposing a holistic framework that integrates (1) fundamental theoretical research levels (i.e., individual, transactional, and institutional), (2) multilevel antecedents, crowdfunding process dimensions, and short- and long-term outcomes, and (3) differentiates between the different crowdfunding forms relevant for sustainability-oriented crowdfunding. In alignment with the aims of this review, we outline the research developments across multiple disciplines and uncover theoretical themes related to the different levels of sustainability-oriented crowdfunding. By systemizing the missing linkages between these different levels, our framework can be used to overcome disciplinary boundaries and guide future research (see Table 2-5). As our descriptive findings indicate, specifically four research areas—information management, entrepreneurship and small business management, sector studies, and innovation—have gained importance for sustainability-oriented crowdfunding. Therefore, we suggest that future research can combine research efforts and theoretical lenses from these neighboring domains. This would allow scholars to exploit the multidisciplinary nature of the field and increase the explanatory power of their studies. Taking such a multidisciplinary view may inspire novel conceptualizations and practical recommendations for sustainability-oriented crowdfunding (Cicchiello et al., 2023).

From the practitioners' point of view, our work has implications for sustainable entrepreneurs, platforms, and regulators. First, our framework can help entrepreneurs better understand how to approach and motivate the specific crowds that back sustainable projects, because capital acquisition is essential for the development and growth of sustainable ventures. In other words, they can utilize the theoretical insights linked to mixed motives, sustainability-related biases, framing effects, or behavioral factors to optimize and align their communication to backers in the crowd with regard to the variety of crowdfunding forms and related signaling and interaction effects. Second, both established crowdfunding platforms as well as new specialized platforms targeted at sustainable ventures can gain a holistic view of the sustainable crowdfunding field across levels and crowdfunding forms, which can help them to improve platform design to better attract backers and sustainable entrepreneurs and engage in cross-platform or institutional cooperation in an informed manner. Third, in the spirit of promoting both economic and societal welfare, our analysis supports the efforts of policy-makers to provide tailored institutional-level support, crowdfunding regulations, and cross-sector collaboration that foster and incentivize the development of this market category with the aim of contributing to sustainable development within our society (Allison et al., 2022). Yet our findings indicate that sustainability-oriented crowdfunding is highly contingent upon national and international contexts. Hence, the development and refinement of sensible policies and regulations is essential to support sustainability-oriented crowdfunding. For instance, the JOBS[9] Act in the U.S., which established the legal framework for equity crowdfunding in 2012 and was expanded in 2016 will undoubtedly face further refinements. Similarly, in Europe, the Regulation on European Crowdfunding Service Providers (ECSP)[10] is still in early stages and will likely examine institutional-level findings from research in this domain before deciding on

[9] https://www.sec.gov/spotlight/jobs-act (accessed on October 13, 2023).
[10] https://finance.ec.europa.eu/capital-markets-union-and-financial-markets/financial-markets/crowdfunding_en (accessed on October 13, 2023).

final policy implementation. Our results suggest that policy-making processes should differentiate between the mechanisms related to diverse crowdfunding forms to incorporate specific amendments that can aid the ecosystem around sustainability-oriented ventures and create standards around the communication of long-term campaign results (e.g., impact reporting).

Finally, this review is not without limitations. First, while we used two popular and established databases (i.e., Web of Science and EBSCO) for the identification of the peer-reviewed papers in this study, our findings are contingent on the results of these two databases. However, this approach increases the replicability of our findings; in addition, the *Litmaps* algorithmic search did not reveal additional or previously unidentified studies that match our inclusion criteria. Yet our approach neglects unpublished works, such as papers uploaded to the Social Science Research Network (SSRN), conference papers, or dissertations, which could limit the scope of our findings, although we consider this potential effect to be limited. Including research that has not undergone journal peer-review would pose the risk of reporting unsubstantiated findings.

Second, we focused on studies written in English, and published non-English works were not included. Although this approach is commonly accepted, the different views and findings reported in other languages than English were not considered and might cause a language bias (Morrison et al., 2012). For instance, research deriving from Spanish- or French-speaking countries may be underrepresented to the degree that researchers potentially rely on smaller outlets in their local language. However, we believe that the threat of a language bias is relatively small here because researchers seek to present their findings in influential, internationally established and ranked journals, which are in English.

Third, a potential limitation of this review lies in the geographic focus of most current crowdfunding research on Western Europe and the U.S. (i.e., on so-called WEIRD subjects:

Western, Educated, Industrial, Rich, and Democratic), whereas much of the world population lives outside of this region and the context of emerging countries is likely to impact relevant mechanisms in the crowdfunding process for sustainability-oriented ventures (see also Henrich et al., 2010). While part of this issue stems from local bans and voids of legalization as is the case in China, our article clearly demonstrates that considerable bias remains toward Western data and literature in the scientific community.

3 Essay II: Crowdlending decisions for sustainable new ventures: The role of underlying human values in explaining the heterogeneity of crowd investor preferences[11]

Abstract

Crowdlending for sustainable new ventures is situated between traditional investing and charitable giving, thereby attracting nonprofessional investors with different motivations. However, the current understanding of these different motivations related to crowdlending decisions is limited. Drawing on the theory of basic human values, the present article addresses the question of whether and how crowd investors differ regarding the factors that drive their crowdlending decisions for sustainable new ventures. Using a choice-based conjoint analysis followed by a latent class analysis, this study explores the preferences of 353 nonprofessional investors in response to project attributes associated with loan characteristics and sustainability impact goals. The results reveal four crowd investor segments with heterogeneous preference structures and highlight the role of human values to identify such segments. While the majority of crowd investors form their decisions around financial return rates, the segment of crowd investors characterized by high self-transcendence and low self-enhancement values focuses primarily on ecological impact goals. Surprisingly, crowd investors who prefer social over ecological impact goals are characterized by high self-enhancement values and thus appear to be motivated by self-interest. These insights are significant for sustainable entrepreneurs and platforms, helping them to better address the diverse audience in crowdlending.

Keywords: crowdfunding, sustainable entrepreneurship, decision making, conjoint analysis, human values, sustainable finance

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3.1 Introduction

Researchers and practitioners have likewise emphasized the relevance of *sustainable new ventures* (SNVs) to foster a sustainable development of the economy (Dean & McMullen, 2007; Johnson & Schaltegger, 2020). The concept of sustainable development refers to meeting present and future needs of society by promoting social equity and economic growth while preserving the natural environment (Brundtland, 1987). Against this background, SNVs aim to create ecological and/or social impact alongside economic value (Shepherd & Patzelt, 2011) and therefore are often not able to meet the requirements of traditional sources of funding such as banks or professional investors, who still prioritize financial returns above all else (Calic & Mosakowski, 2016; Messeni Petruzzelli et al., 2019). This stimulates debates on how to overcome funding constraints that limit the foundation and growth of these ventures (e.g., Austin et al., 2006; de Crescenzo et al., 2020; Zahra & Wright, 2016). In light of this, crowdfunding emerged as an alternative source of entrepreneurial finance because it enables the pooling of capital from a large group of individuals whose investment decisions may not solely be motivated by expected financial gains (Mollick, 2014; Short et al., 2017). Prior research highlighted the potential of crowdfunding to close the existing funding gap for SNVs (Bento, Gianfrate, & Thoni, 2019; Slimane & Rousseau, 2020).

Crowdfunding has attracted a growing number of nonprofessional investors who seek to support SNVs through their investments (Vasileiadou et al., 2016; Vismara, 2019). However, to date, research on crowdfunding for SNVs that aim to achieve social, ecological, and economic impact is still in its infancy, limiting further advancement of knowledge in this field (Böckel et al., 2021; Messeni Petruzzelli et al., 2019). Considering the amount of capital raised via crowdfunding within the European Union[12], *crowdlending* (also referred to as *lending-based*

[12] In 2015, 3.2 billion euro was raised from the crowd through loans in the European Union (see European Commission, 2016). https://ec.europa.eu/info/sites/default/files/crowdfunding-report-03052016_en.pdf, accessed on January 12, 2022.

crowdfunding) represents a prevailing form of crowdfunding with high practical relevance (Block et al., 2018). Within crowdlending, new ventures are funded through loans and investors typically expect a financial gain from their investments based on fixed interest rates (Block et al., 2018; Mollick, 2014). Previous studies in the field primarily focused on other forms of crowdfunding in which crowd investors receive no monetary repayment of their investment, such as reward-based crowdfunding (e.g., Calic & Mosakowski, 2016; Cumming et al., 2017; Hörisch, 2015; Piroschka Otte & Maehle, 2022) or donation-based crowdfunding (e.g., Bagheri et al., 2019; Gleasure & Feller, 2016; Logue & Grimes, 2022). Yet the factors and motivations that drive crowdfunding decisions may differ fundamentally depending on whether or not monetary returns are offered (Cecere et al., 2017). Therefore, there is a lack of understanding of crowd investor decision making in the specific context of crowdlending for SNVs.

In addition, the majority of quantitative crowdfunding studies is based on aggregated secondary data analyses with findings generalized to the crowd without distinguishing between investor segments (e.g., Bento, Gianfrate, & Thoni, 2019; Hörisch & Tenner, 2020; Slimane & Rousseau, 2020). While literature suggests that crowd investors differ in the values and motivations that shape their investment decision for SNVs, the current understanding of this heterogeneity in relation to investor values is comparatively sparse (Tenner & Hörisch, 2021; Vasileiadou et al., 2016). This gap is surprising considering that scholars have already emphasized the role of the investor perspective with respect to socially responsible investment options (e.g., Berry & Junkus, 2013; Palacios-González & Chamorro-Mera, 2018). Thus, previous research particularly called for the implementation of novel research methods that take such a perspective and provide nuanced insights into crowd investor decisions (e.g., Calic & Mosakowski, 2016; Nielsen & Binder, 2021).

Given the identified research need to examine crowdlending as a distinctive form of crowdfunding and to offer new insights by taking the investors' perspective, the purpose of this

work is to answer the question of whether and how crowd investors differ regarding the factors that drive their crowdlending decisions related to SNVs. An experimental conjoint analysis followed by a latent class analysis is used to examine their choice preferences in response to varying crowdlending project attributes. As crowdlending for SNVs combines elements from traditional investing and charitable giving, it requires decision makers to balance the pursuit of creating welfare for themselves and welfare for others (Allison et al., 2015; Galak et al., 2011). Hence, to account for possible differences in crowd investor preferences, this study draws on the theory of basic human values (Schwartz, 1992, 2003; Schwartz & Bilsky, 1987), in particular on the value dimensions of self-transcendence (i.e., concerns the welfare and interest for others) and self-enhancement (i.e., concerns one's own interests and success; Schwartz, 2012). The exploration of the underlying human values offers new insights to identify crowd investor segments that differ in their nuanced preference structures.

Thereby, the study contributes to the emerging research stream at the intersection of crowdfunding and sustainable entrepreneurship in two ways. First, it provides novel findings on crowdfunding for SNVs by highlighting the heterogeneity of crowd investor preferences within crowdlending that offers a financial return from the investment in SNVs. The analysis of crowd investor choices reveals four segments that attach different importance to project attributes related to the expected financial returns of the loans and the social and ecological impact goals of the SNVs. While the majority of crowd investors primarily base their decisions on personal financial returns for themselves, one segment demonstrates a clear focus on ecological and social impact goals. In addition, the results indicate that the majority of crowd investors in return-oriented crowdlending prefer SNVs primarily focusing on ecological goals over SNVs primarily focusing on social goals. Thereby, this article sheds light on the recent theoretical discussion about the effects of emphasizing a social or ecological orientation in the

description of crowdlending projects (e.g., Berns et al., 2020; Gafni et al., 2021; Hörisch & Tenner, 2020; Moss et al., 2018).

Second, by showing that self-transcendence and self-enhancement values are useful to identify different segments of nonprofessional investors, this work complements initial studies that point toward the relevance of human values for crowd investor decision making with respect to other crowdfunding contexts (Nielsen & Binder, 2021; Tenner & Hörisch, 2021). Building on the results of Tenner and Hörisch (2021), the findings of the analysis suggest that different motivational mechanisms may influence crowd investor decisions for SNVs in return-oriented crowdlending. Hence, this study sheds light on the ongoing academic debate regarding the importance of self-oriented and other-oriented goals and motivations of crowd investors (e.g., Allison et al., 2015; Allison et al., 2013; Bagheri et al., 2019; Hörisch & Tenner, 2020; Nielsen & Binder, 2021; Testa et al., 2020). In doing so, it further contributes to the broader research field of sustainable venture capital and social finance, where individual actors or teams face investment decisions regarding SNVs that may be also partly motivated by their underlying human values (Bocken, 2015).

The article is structured as follows: Section 3.2 consists of four subsections, presenting the conceptual background as well as the research interest derived from the current theoretical debates in the field, before introducing the theoretical foundation, and developing the hypotheses underlying this study. Section 3.3 encompasses five subsections with descriptions of the sample, the measures, the methods and the implementation of this study. Section 3.4 reports the results of the conducted analyses in three subsections with reference to (1) the segments derived from the latent class analysis of the choice-based conjoint data, (2) the descriptive segment characteristics, and (3) the results from the multinomial regression analysis with regard to the underlying human values. The findings are discussed in section 3.5, followed

by the practical and theoretical implications in section 3.6. Finally, section 3.7 offers a conclusion of the study's results.

3.2 Literature review and hypotheses

3.2.1 Conceptual background

Coined by the report of Brundtland (1987, p. 41), sustainable development is defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." With reference to the concept of sustainable development, scholars emphasized the relevance of sustainable entrepreneurship to contribute to a society that promotes social equity and economic growth while preserving the natural environment (e.g., Cohen & Winn, 2007; Dean & McMullen, 2007; Johnson & Schaltegger, 2020; Shepherd & Patzelt, 2011). This article defines sustainable entrepreneurship as the pursuit of entrepreneurial opportunities that sustain the social and ecological environment and result in economic and noneconomic gains for individuals, the society, and the economy (Shepherd & Patzelt, 2011). Depending on the problem sustainable entrepreneurs aim to solve, they may primarily focus on ecological aspects, such as maintaining ecosystems, mitigating climate change or environmental damage, or social aspects, such as fostering education or self-sufficiency of individuals in developing economies (Cohen & Winn, 2007; Shepherd & Patzelt, 2011). While sustainable entrepreneurs typically follow the triple bottom line of social, ecological, and economic goals when exploiting respective entrepreneurial opportunities (Belz & Binder, 2017; Cohen & Winn, 2007; Testa et al., 2019), their positioning and thus their communication of focus to external audiences may differ, especially in the early stages of new venture development (Belz & Binder, 2017; Moss et al., 2018). Hence, research at the intersection of crowdfunding and sustainable entrepreneurship has begun to investigate whether a particular communication focus of SNVs influences crowdfunding outcomes (e.g., Calic & Mosakowski, 2016; Hörisch & Tenner, 2020; Moss et al., 2018).

Crowdfunding represents an alternative source of entrepreneurial funding for SNVs (Messeni Petruzzelli et al., 2019). Crowdfunding literature distinguishes between four crowdfunding forms that differ in their funding mechanism (Mollick, 2014; Short et al., 2017): Donation-based, reward-based, equity-based, and lending-based crowdfunding, also known as crowdlending (Böckel et al., 2021). Prior research on crowdfunding for SNVs has predominantly focused on investments without financial returns (Böckel et al., 2021; Hörisch, 2019), such as reward-based (e.g., Bento, Gianfrate, & Thoni, 2019; Hörisch, 2015; Lagazio & Querci, 2018; Parhankangas & Renko, 2017) and donation-based crowdfunding (Ba et al., 2020; Bagheri et al., 2019; Lee et al., 2019; Mejia et al., 2019). Within reward-based crowdfunding, crowd investors receive products or services in return for their investments, while within donation-based crowdfunding they engage in charitable giving and do not obtain any financial returns or material rewards (Block et al., 2018). In contrast, within equity-based and lending-based crowdfunding, crowd investors expect financial returns from their investments in form of profit shares and loan repayments, respectively (Hörisch & Tenner, 2020). The latter crowdfunding forms typically attract growth-oriented ventures and thus represent great potential for SNVs that aim to achieve economic growth while creating social and ecological value (Hörisch, 2019; Vismara, 2019). At the same time, crowd investors receive the opportunity to participate in the economic growth of new ventures and thereby create wealth for themselves (Bento, Gianfrate, & Groppo, 2019; Vismara, 2019). Following the argument that the different crowdfunding forms are related to different purposes and motivations (Meyskens & Bird, 2015; Mollick, 2014), findings from previous literature on crowdfunding for SNVs may not be readily transferable to crowdfunding forms with financial returns, such as crowdlending.

3.2.2 Research interest in crowdlending for sustainable new ventures

As investors in crowdlending seek repayment of their investment, they usually consider the characteristics of the loan when making their funding decision (Slimane & Rousseau, 2020). Accordingly, the decision-making process of crowd investors within crowdlending differs from other crowdfunding settings and, therefore, research examining this specific context is needed. Yet academic knowledge on crowdlending related to SNVs remains limited because existing studies in this field mostly focused on the crowdlending platform *Kiva.org* (e.g., Allison et al., 2015; Anglin et al., 2020; Berns et al., 2020; Figueroa-Armijos & Berns, 2022; Gafni et al., 2021; Luo et al., 2022; Moss et al., 2018; Shevchenko et al., 2020; Stephen & Galak, 2012). *Kiva.org* follows a prosocial crowdlending approach by not offering any interest rates on loans and hence no incentive for financial gains (Berns et al., 2020). Crowd investors on *Kiva.org* are therefore intrinsically motivated to invest in crowdlending projects (Allison et al., 2015). In contrast, crowd investors on platforms that provide an incentive of financial return by offering fixed interest rates, such as German-based bettervest.com, seem to be additionally influenced by the expected returns of their investment (Bento, Gianfrate, & Thoni, 2019; Penz et al., 2022; Vasileiadou et al., 2016). As this type of crowdlending complements or even substitutes conventional investment options such as stocks and shares (Jiang et al., 2020), it prospectively addresses a large number of nonprofessional investors, who increasingly care for investments that support a sustainable development of the economy (Palacios-González & Chamorro-Mera, 2018). Considering the imbalance of existing literature in this field and the future growth potential with regard to the target audience of nonprofessional investors, further research on return-oriented crowdlending[13] is needed.

The previous quantitative studies on prosocial crowdlending provided initial and important insights for the field, for example, demonstrating that funding success is positively

[13] This article explicitly refers to *return-oriented crowdlending* to clearly demarcate this term from *prosocial crowdlending*.

influenced by narratives using language related to blame and present concern (Allison et al., 2013) and by emphasizing social over economic goals (Moss et al., 2018). However, scholars propose that financial incentives may crowd out intrinsic motivations and therefore change the logics behind crowd investor decision making (Cecere et al., 2017). This assumption is reflected in the contradictory results of previous quantitative studies on the influence of social, ecological, and financial factors in project descriptions on crowdlending outcomes (e.g., Berns et al., 2020; Gafni et al., 2021; Hörisch & Tenner, 2020; Moss et al., 2018; Slimane & Rousseau, 2020). While scholars examining prosocial crowdlending found a positive relationship between the projects' social orientation and crowdlending success (Allison et al., 2015; Gafni et al., 2021), Hörisch and Tenner (2020), for example, found no such significant effect of social orientation, but a significant effect of ecological orientation on crowdfunding success for lending- and equity-based crowdfunding. To shed light on the ongoing scholarly debate regarding the factors that drive crowdlending decisions, this study takes an investor perspective and examines individual preferences in response to the presentation of varying project attributes of SNVs.

By relating the underlying human values of crowd investors to differences in their crowdlending preferences, this work goes beyond previous crowdfunding studies. Thus far, assumptions about crowd investor decisions and potential motivators were often derived from measuring crowdfunding success based on secondary data analyses from crowdfunding platforms (Bento, Gianfrate, & Groppo, 2019; Calic & Mosakowski, 2016; Hörisch & Tenner, 2020; Vismara, 2019). These analyses typically have no access to data about the individual investors and, thus, no information on their human values (Tenner & Hörisch, 2021). Therefore, our knowledge about the influence of crowd investor values on their decision making remains unclear. While researchers highlighted the relevance of individual orientations and values for investments in socially responsible financial products (e.g., Berry & Junkus, 2013; Hong &

Kostovetsky, 2012; Palacios-González & Chamorro-Mera, 2018), their role in crowdlending for SNVs is still under-researched. To close the outlined research gap, this study applies a human value perspective to account for differences in crowd investor preferences related to SNVs.

3.2.3 Theoretical foundation

Schwartz's theory of basic human values (Schwartz, 2003, 2012; Schwartz & Bilsky, 1987) lends itself to capture investor values with the aim of gaining further knowledge of their decision making (Nielsen & Binder, 2021; Tenner & Hörisch, 2021). According to Schwartz (2012), human values represent beliefs linked to desirable goals that go beyond particular situations and serve as guiding principles for individuals' decisions and actions. As such, they are ranked by the relative importance and priorities of the individual (Schwartz, 2012). The theory of basic human values primarily builds on literature from the field of psychology (e.g., Allport, 1961; Feather, 1975; Maslow, 1959; Rokeach, 1973). Based on the foundational work of Rokeach (1973) who emphasized values as central criteria to explain human behavior, Schwartz (1992) introduced the theory of basic human values as a framework that presents ten basic values in a circular structure (Hueso et al., 2021).

The basic human values form four aggregated value dimensions: self-enhancement, openness to change, self-transcendence, and conservation (Schwartz, 1992). With reference to the circular structure, openness-to-change and conservation values as well as self-enhancement and self-transcendence values are considered to be contrasting value dimensions (Schwartz, 2003, 2012). The pursuit of contrasting value dimensions may result in psychological or social conflicts (Schwartz, 2003). In addition, the dominance of a certain value dimension over another has an impact on the evaluation of different alternatives and the decision making of individuals (Holland & Shepherd, 2013; Hueso et al., 2021). Thus, the theory of basic human values has been used across different research fields to shed light on the decision making of

individuals, for example, in entrepreneurship (e.g., Fayolle et al., 2014; Hauswald et al., 2016; Holland & Shepherd, 2013). In the context of crowdfunding, recent studies have begun to use the theory of basic human values to examine investor decision making (e.g., Nielsen & Binder, 2021; Tenner & Hörisch, 2021). For example, Tenner and Hörisch (2021) introduced human values as individual motivators to support SNVs with reference to reward-based and lending-based crowdfunding. They found that individuals with high self-enhancement values are less likely to fund crowdlending projects of SNVs (Tenner & Hörisch, 2021).

Investment decisions in the crowdfunding context are characterized by high levels of uncertainty, as crowd investors lack the necessary information to completely evaluate the development of a business or the creditworthiness of a loan (Hoegen et al., 2018). In addition, the individual investors' processing capacity and time are typically limited in decision-making situations (Bento, Gianfrate, & Thoni, 2019). Therefore, crowd investors tend to form their decisions around the presentation and positioning of projects on crowdfunding platforms, often relying on their perceptions and intuitions (Bento, Gianfrate, & Thoni, 2019; Moritz et al., 2015). Accordingly, crowd investors' decisions may depend on their cognitive references, for example, whether the crowdfunding project aligns with their individual values and motivations (Hoegen et al., 2018; Nielsen & Binder, 2021). In the context of crowdlending for SNVs, such cognitive references particularly relate to the personal as well as social and ecological benefits of the presented project (Nielsen & Binder, 2021). Thus, the investment decisions in crowdlending may be driven by mixed motivations regarding financial and emotional gains for the individual (Hoegen et al., 2018; Moysidou & Spaeth, 2016). In this regard, the contrasting value dimensions according to the theory of basic human values are useful for grasping the nuanced motivations of crowd investors (Tenner & Hörisch, 2021). Being associated with the individual's priorities (Schwartz, 2012), human values are particularly suitable for a fine-grained examination of crowd investor preferences in response to project attributes of SNVs.

3.2.4 Development of hypotheses

Individual crowd investors may differ in how they respond to the presentation and positioning of SNVs on crowdlending platforms (Moss et al., 2018). On the one hand, the emphasis on social and/or ecological impact goals seems to positively affect crowdlending decisions (Gafni et al., 2021; Hörisch & Tenner, 2020; Moss et al., 2018). On the other hand, the emphasis on factors related to characteristics of the loan appears to be important in the crowdlending context (Bento, Gianfrate, & Groppo, 2019; Slimane & Rousseau, 2020). As crowd investors find themselves in a situation between traditional investing and charitable giving, they need to balance the pursuit of creating welfare for themselves and welfare for others (Allison et al., 2015; Galak et al., 2011). Thus, some crowd investors might be more motivated by potential financial gains from the loan for themselves, whereas others might be primarily motivated by the prospective benefits for the society or the ecological environment (Vasileiadou et al., 2016). The motivations of crowd investors in return-oriented crowdlending are reflected in their individual preference structures. This leads to the assumption that crowd investors differ their prioritization of presented project attributes in terms of loan characteristics and sustainability impact goals in crowdlending decisions. Thus, we hypothesize:

Hypothesis 1*. Within return-oriented crowdlending, crowd investors can be classified into different segments based on their nuanced preferences for project attributes related to sustainability impact goals and loan characteristics.*

With regard to the different preferences of individual crowd investors, the human value dimensions of self-transcendence and self-enhancement values are assumed to play a crucial role (Nielsen & Binder, 2021; Tenner & Hörisch, 2021). Self-enhancement values are centered around self-orientation and personal benefit, meaning that individuals prioritize outcomes that maximize their own utility. The value dimension of self-enhancement includes values from the sub-dimensions “power” and “achievement” (Schwartz, 2003). Power values refer to the pursuit

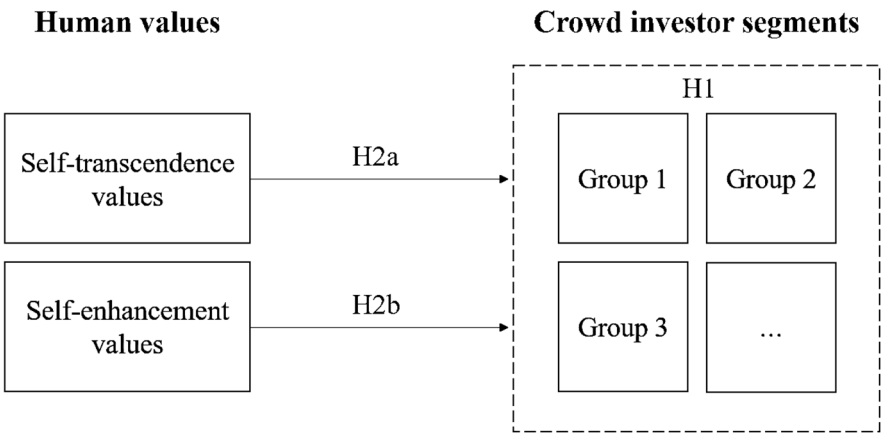
of aims related to status and dominance, while achievement values refer to the pursuit of aims related to success and competence (Schwartz, 2003, 2012). In contrast, self-transcendence values are associated with welfare for others and concern for nature (Schwartz, 2012). The value dimension of self-transcendence includes values from the sub-dimensions "universalism" and "benevolence" (Schwartz, 2003). Universalism values refer to the pursuit of aims related to protecting the society and the environment. Benevolence values refer to the pursuit of aims related to preserving the welfare of close personal contacts (Schwartz, 2003, 2012). Hence, higher self-transcendence values reflect other-oriented motivations associated with charitable giving, while higher self-enhancement values reflect self-oriented motivations associated with traditional investing (Nielsen & Binder, 2021). This leads to the following two hypotheses:

Hypothesis 2a. *High levels of self-transcendence values increase the probability that crowd investors belong to the segments that form decisions predominantly around social and ecological impact goals.*

Hypothesis 2b. *High levels of self-enhancement values increase the probability that crowd investors belong to the segments that form decisions predominantly around financial returns of the loan.*

The conceptual model of the study is summarized in Figure 3-1.

Figure 3-1. Conceptual model



3.3 Methodology

3.3.1 Sample

As this study aimed at addressing nonprofessional private investors, the choice-based conjoint survey explicitly targeted people over the age of 18 with prior investing experience. The selection of the sample was based on insights from an internal customer survey of the German crowdlending platform bettervest.com. The customer survey results indicated that the majority of bettervest's investors had experience with financial products such as shares.[14] Founded in 2012 to finance ecologically and socially sustainable projects, bettervest provides private investors with the financial opportunity to profit from the positive development in the energy efficiency market in Germany and worldwide. Since its launch, the platform has shifted its focus toward the African market, focusing increasingly on projects that achieve a social and ecological impact (bettervest, 2023).

Participants were recruited online in cooperation with an ISO 20252:2019 certified German online panel provider. To determine the participants' investing experience, the online survey started with ask ing whether they had already invested in stocks, funds, bonds, or other securities. In total, 526 people were invited to take part in the survey, of which 54 did not meet the predefined requirements. Another 118 participants did not complete the survey, and one respondent was further excluded due to implausible answers regarding the years of investing experience (i.e., more than 100 years), yielding a final sample of 353 respondents for the present study. On average, respondents from the final sample were approximately 51 years of age and had 15.12 years of investing experience. Furthermore, 61.76% of the respondents were male.

[14] According to the 2019 bettervest customer survey, 185 of 209 (88.25%) survey respondents have also invested in shares, and 24 of 24 (100%) survey respondents within the large investor segment have a German "Depot" for private investments.

3.3.2 Measures of values, characteristics, and hypothetical investment

To gather data on the investors' value orientation, the survey included questions from the Portrait Value Questionnaire based on Schwartz's human value theory (Schmidt et al., 2007; Schwartz, 2003). In line with the study's objective, the self-enhancement values “power” and “achievement” as well as the self-transcendence values “universalism” and “benevolence” were queried. The Portrait Value Questionnaire includes short descriptions of verbal portraits of fictitious persons to implicitly capture the participants' values. Accordingly, participants were asked to rate how much the described person resembles themselves on a 7-point Likert scale ranging from 1 (not like me at all) to 7 (very much like me). Based on the included items for each scale, the mean scores for the two value dimensions resulted in Cronbach's alphas of .83 (M = 3.87, SD = 1.32) for self-enhancement values and .82 (M = 5.40, SD = 1.02) for self-transcendence values. The questionnaire furthermore assessed additional demographic and background information of the respondents including years of investment experience, household income, and the potential amount of money they would invest in crowdlending projects. In addition, it included a question assessing whether participants were investing in stocks, funds, bonds, or other securities to evaluate the status of their investment activity at the time of their participation in this study.

3.3.3 Choice-based conjoint analysis and latent class analysis

To empirically examine the preference structures of crowd investors based on different project attributes, a conjoint analysis was chosen. Since their origin in marketing research, conjoint analyses have been successfully applied to decision-making contexts across different research disciplines, including entrepreneurial finance (e.g., Block, Hirschmann, et al., 2021; de Rassenfosse & Fischer, 2016). In general, this method is used to examine decision situations in which decision makers face trade-offs when dealing with multiple options that simultaneously differ across various attributes (Green et al., 2001).

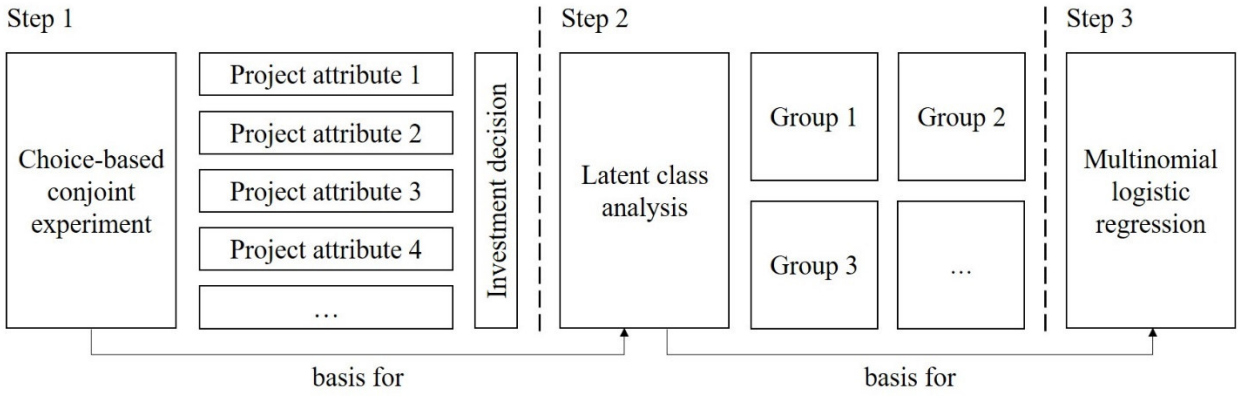
With regard to crowdfunding decisions, this method provides certain advantages compared to secondary data analysis or retrospective self-reports through surveys or interviews. The latter methods often require individuals to reflect on decisions from the past, which might involve a recall bias (Lohrke et al., 2010). In addition, investors may be unable to properly report their own decisions because they lack a complete understanding of their decision-making process (Shepherd & Zacharakis, 1999; Warnick et al., 2018; Zacharakis & Meyer, 1998). Conjoint analyses can overcome these possible limitations, as they enable a real-time observation of participants' decision making while the linkage between responses and results appears less evident to the participant (de Rassenfosse & Fischer, 2016; Franke et al., 2006). At the same time, a survey-based conjoint analysis allows the collection of additional information on the characteristics of participants. As such, the values of crowd investors can be captured to provide further insights that may account for potential differences in their decision making. While the frequently used secondary data analyses of crowdfunding platforms have advanced the field, they mostly lack this nuanced investor level perspective (Tenner & Hörisch, 2021). Hence, conjoint analyses are useful experimental designs to measure investor decisions in response to multiple varying attributes (Block, Hirschmann, et al., 2021).

To realistically imitate the decision situation on crowdlending platforms, where crowd investors can choose among different alternative investment opportunities according to the presented project profiles, this study applies a choice-based conjoint analysis. Whereas traditional conjoint analyses require participants to rank or rate a set of profile configurations on a scale, choice-based conjoint analyses require participants to make discrete choices between a number of presented profiles (Green & Srinivasan, 1990). In contrast to rankings or ratings, choices are more present in people's everyday situations and thus a less obvious measure of preferences (Eggers et al., 2016). The single choice profiles are described by multiple attributes, which vary in their levels (Shepherd & Zacharakis, 1999). On the basis of all respondent

choices, the part-worth utilities for each attribute level are computed. The results quantify the amount of utility that respondents attach to a specific attribute level (Berger et al., 2015). Considered in total, the part-worth utilities describe the overall preference structure of the corresponding person (Berger et al., 2015; Green & Srinivasan, 1978).

As this study aims at revealing heterogeneous investor segments, the conjoint experiment was followed by a latent class analysis of the resulting choice-based data. Latent class analysis can uncover heterogeneous investor segments based on the respondents' preference structures that are otherwise not directly observable. The resulting estimates reveal the probable group membership of the respondents for different numbers of groups (Sawtooth, 2017). Thus, the respondent segments are heterogeneous among each other with relatively homogeneous respondent preferences within each single segment (Yu et al., 2008). As a statistical method, latent class analysis can be tested and is therefore considered advantageous over conventional clustering methods, because the determination of the number of segments is less arbitrary (Notelaers et al., 2006). In addition, fit indices enable the comparison of solutions with different numbers of groups (Baum et al., 2015). Given these benefits, latent class analysis is a suitable approach to identify different respondent segments from choice-based conjoint data. Based on the resulting segments and segment characteristics, a multinomial regression can be conducted to investigate whether particular characteristics, such as basic human values, are associated with the differences in the preferences between the groups (e.g., Apostolakis et al., 2018). Figure 3-2 outlines the single steps involved in the research methodology for this study.

Figure 3-2. Steps of research methodology



3.3.4 Choice-based conjoint implementation

Based on previous literature and the developed hypotheses, a set of crowdlending project attributes was identified to guide the study. To ensure the practical relevance of the attributes, the online appearances of German crowdlending platforms were reviewed. In addition, the founders of bettervest were interviewed regarding the topic of presentation of crowdlending projects. Professional expertise is generally considered a common source to develop conjoint attributes and levels (Green et al., 2001). The final conjoint design consisted of the five project attributes social impact goal, ecological impact goal, commercial impact goal, project return, and project duration. Project return and project duration represent typical loan characteristics of crowdlending projects that may vary in their levels across different projects (Slimane & Rousseau, 2020). Social, ecological, and commercial impact goals reflect the triple bottom line goals that SNVs need to balance (Belz & Binder, 2017; Kuckertz & Wagner, 2010). The crowdlending projects may vary in their level of focus on these goals, as entrepreneurs often emphasize particular goals in their crowdlending presentation to keep their projects understandable. Table 3-1 shows the attribute descriptions and levels.

Table 3-1. Choice-based conjoint design: Attributes and levels

Attribute	Level	Description
Social impact goal (3 levels)	Low Moderate High	The crowdlending project's focus on social and societal goals (e.g., the reduction of poverty, hunger, discrimination, persecution of minorities) and respective performance reporting.
Ecological impact goal (3 levels)	Low Moderate High	The crowdlending project's focus on ecological and environmental goals (e.g., the reduction of emissions, protection of ecosystems, recycling) and respective performance reporting.
Commercial impact goal (3 levels)	Low Moderate High	The crowdlending project's focus on commercial goals (e.g., revenue growth, increase in sales volume) and respective performance reporting.
Project return (3 levels)	2% 5% 8%	The annual financial return that can be expected if the crowdlending project is successful.
Project duration (3 levels)	3 years 5 years 7 years	The duration of the crowdlending project that also marks the period of the financial payback.

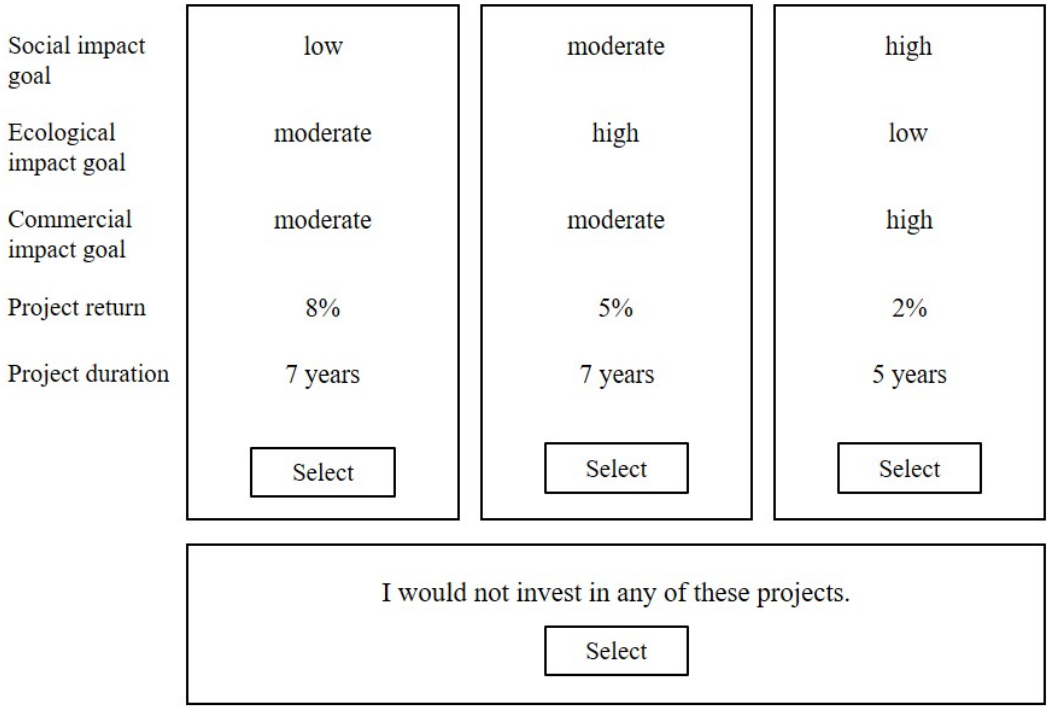
As the choice tasks needed to be manageable for respondents, the information regarding the project profiles was limited to five attributes with three levels each (de Rassenfosse & Fischer, 2016; Warnick et al., 2018). When creating a conjoint analysis, it is important to design choice tasks that imitate the actual decision situation while avoiding respondent fatigue, as this may have negative effects on the results of conjoint analyses (Reibstein et al., 1988). In light of this methodical limitation, the chosen five attributes represent relevant aspects that vary across the project descriptions of SNVs on crowdlending platforms. With reference to the developed hypotheses, crowd investors associate project return primarily with personal financial benefits

for themselves. Social and ecological impact goals are primarily associated with collective benefits for the ecological environment or the society.

At the start of the online survey the respondents were presented a crowdlending scenario, and they were asked to imagine themselves investing in SNVs via a crowdlending platform. To ensure a common understanding among all participants, the principle of crowdlending was clearly explained within the scenario. Furthermore, the introductory text emphasized that the presented SNVs differ only regarding the five attributes and are otherwise equal (e.g., same business idea, same financial funding goal, operating in the same region, etc.). For every choice task, participants were asked to select the crowdlending project in which they would preferably invest. They were also allowed to choose the "none" option if none of the displayed alternatives appealed to them. Scholars have argued that the use of a none alternative increases the realism of the conjoint experiment (Vermeulen et al., 2008).

The choice-based conjoint analysis was implemented using the software Sawtooth Lighthouse Studio and contained 12 choice tasks. Moreover, two fixed choice tasks with identical design were added manually to the 12 conjoint tasks to measure reliability and validity (Berger et al., 2015; Warnick et al., 2018). The warm-up tasks as well as the fixed tasks were excluded from the part-worth estimation (Orme, 2009). Pretest participants confirmed that the number of choice tasks was workable and that they did not feel cognitively overstrained. Figure 3-3 shows the translated version of an exemplary choice task from the online choice-based conjoint analysis.

Figure 3-3. Example of a choice task in the choice-based conjoint analysis



3.4 Results

3.4.1 Latent class segments and preference structures

Researchers evaluate statistical information criteria, such as the Consistent Akaike Information Criterion (CAIC) or the Bayesian Information Criterion (BIC), as well as the interpretability and consistency of the latent class solutions in relation to theory to decide upon the optimal number of latent classes (Nylund et al., 2007). To model the crowd investor data from the choice-based conjoint analysis, both criteria CAIC and BIC were taken into consideration to identify a suitable latent class solution. These two measures represent common indicators to choose the optimal number of classes, with lower total values indicating a better fit (Apostolakis et al., 2018; Vermunt & Magidson, 2002). In particular, the incremental improvements of fit according to the relative delta values of both indicators guided the decision on the optimal number of classes in this study. The analysis showed that the CAIC and the BIC decreased substantially until reaching four groups and then flattened for larger group numbers. In addition to statistical criteria, it is important to take the interpretability of the segments into

account to attain meaningful results from the latent class analysis (Sawtooth, 2021). A latent class solution with larger group numbers would have involved very small classes, each containing 5%–7% of the total sample. With regard to their interpretability and with reference to the cut-off criteria for class proportions in other studies (e.g., 5% cutoff; see Nasserinejad et al., 2017), a segmentation into more than four groups did not seem feasible (see Appendix B for further details). To additionally evaluate the interpretability in relation to theory, the alignment between the estimated utilities and average importance weights of the groups (see Table 3-2) with the introduced theoretical background was assessed. In summary, considering the observed inflection point, the segment sizes in relation to the overall sample and the interpretability with respect to the overall theoretical background of this study, four classes appeared as the optimal number of segments.

Table 3-2 shows the relative average importance weights, derived from the differences between the most preferred and the least preferred part-worth values, as well as the respective rankings of project attributes for the identified four groups. The relative importance weights measure the impact of an attribute on the overall utility of the project profile and are expressed in percentage values that add up to 100% (Braun et al., 2016). To facilitate the interpretation of the results, the four groups were labeled based on the average importance weights, reflecting the preference structures of the crowd investors in each segment.

Table 3-2. Latent class estimation: Average importance weights (percentage) and ranking

Attribute	Group 1 "Loan-first"		Group 2 "Fin-social"		Group 3 "Fin-ecological"		Group 4 "Impact-first"	
	Average importance		**Average importance**		**Average importance**		**Average importance**	
Project return	**43.04**	**1**	**44.75**	**1**	**53.09**	**1**	13.79	4
Project duration	**37.65**	**2**	**21.68**	**2**	**18.71**	**2**	2.88	5
Ecological impact goal	**9.69**	3	10.70	4	**13.13**	**3**	**38.52**	**1**
Social impact goal	6.16	4	**14.25**	**3**	6.57	5	**30.19**	**2**
Commercial impact goal	3.46	5	8.63	5	8.49	4	**14.62**	**3**

Note. The average maximum membership probability for four groups is .94. The values shown in bold were used to determine the group labels. The labels "fin-social" (Group 2) and "fin-ecological" (Group 3) are short forms for "financial-social" and "financial-ecological."

Crowd investors in Group 1 showed the strongest focus on loan characteristics of crowdlending projects, deriving approximately 80% of their overall utility from these project attributes. Therefore, their label is "loan-first investors." In comparison to the segment of loan-first investors, Group 2 and Group 3 attributed higher importance to sustainability goals than Group 1; however, they differed in their sustainability focus. Group 2 preferred social impact goals (14.25%), whereas Group 3 preferred ecological impact goals (13.13%). As Group 2 and Group 3 both showed high preferences for financial returns, the groups are labeled "fin-social investors" (short for "financial-social investors") and "fin-ecological investors" (short for "financial-ecological investors"), respectively.

Across all four groups, fin-ecological investors attributed the highest importance weight to the project return attribute (53.09%). Moreover, as the largest of the four investor segments, the group of fin-ecological investors reflected the most common preference structure within the given sample. Group 4 represented the second-largest segment, which was labeled "impact-first investors" because the crowd investors' overall utility was mainly formed around sustainability impact goals. The most important decision criterion of impact-first investors was the ecological impact goal, ranking first with a relative importance of 38.52%, followed by the social impact goal, ranking second with a relative importance of 30.19%. The commercial impact goal is ranked third for impact-first investors, whereas its ranking for the other investor groups is fourth or fifth.

In summary, the resulting four groups vary in their part-worth utilities and their relative importance weights of the presented project attributes related to the differing goals. Therefore, hypothesis 1 can be supported, suggesting the existence of heterogeneous crowd investor segments based on nuanced preferences for different project attributes referring to characteristics of the loan and sustainability impact goals of the SNVs. Table 3-3 depicts the corresponding part-worth utilities of each of the four groups. As the part-worth utilities are interval values, the absolute size of these values cannot be interpreted, whereas an interpretation of the rank order and the differences between utility values of attributes is possible (Berger et al., 2015). The part-worth utilities were scaled to center around zero; thus, the sum of attribute level values within each attribute is equal to zero. Zero-centered differences achieve a better comparability among respondents by ensuring that each respondent has the same impact on the calculation of averages for the sample (Apostolakis et al., 2018).

The part-worth values reveal that fin-social investors differed from all the other groups because they preferred (1) a moderate financial return of 5% over a high/low financial return and (2) a moderate level of ecological impact over a high/low ecological impact.

Table 3-3. Latent class estimation: Average part-worth utilities (zero-centered differences)

	Group 1 "Loan-first" *n* = 61	**Group 2 "Fin-social" *n* = 51**	**Group 3 "Fin-ecological" *n* = 137**	**Group 4 "Impact-first" *n* = 104**
Attributes and levels	**Average part-worth utilities**	**Average part-worth utilities**	**Average part-worth utilities**	**Average part-worth utilities**
Project return				
2%	-131.76	-120.97	-149.20	-42.91
5%	48.35	102.77	32.93	16.89
8%	83.42	18.20	116.27	26.02
Project duration				
3 years	80.57	39.99	41.01	8.02
5 years	27.12	28.39	11.54	-1.65
7 years	-107.69	-68.38	-52.55	-6.38
Ecological impact goal				
Low	-24.96	-32.11	-35.53	-108.33
Moderate	1.47	21.39	5.40	24.08
High	23.49	10.72	30.13	84.25
Social impact goal				
Low	-18.19	-46.67	-21.29	-84.58
Moderate	5.57	22.07	9.72	18.18
High	12.62	24.60	11.57	66.39
Commercial impact				
Low	-9.80	-0.28	-22.37	-43.16
Moderate	7.49	21.70	2.28	13.21
High	2.31	-21.42	20.08	29.95
None option	146.95	-365.12	-41.48	-4.29

3.4.2 Descriptive segment characteristics

Furthermore, Table 3-4 shows the results of the descriptive analysis of the demographic characteristics, human values, and hypothetical investment contribution of each group. With reference to the human values, impact-first investors were characterized by the highest average self-transcendence values (M = 5.79; SD = 0.84) and the lowest average self-enhancement values (M = 3.58; SD = 1.42). Moreover, the segment of fin-social investors showed the highest orientation toward self-enhancement values (M = 4.52; SD = 1.30).

Table 3-4. Group characteristics of identified segments

	"Loan-first" ***n* = 61**	**"Fin-social"** ***n* = 51**	**"Fin-ecological"** ***n* = 137**	**"Impact-first"** ***n* = 104**
Characteristic	***M*** **(*SD*)**	***M*** **(*SD*)**	***M*** **(*SD*)**	***M*** **(*SD*)**
Gender [a]	0.51 (0.50)	0.69 (0.47)	0.64 (0.48)	0.63 (0.49)
Age	53.84 (13.62)	46.86 (15.05)	51.90 (13.14)	50.44 (14.63)
Education [b]	3.77 (1.45)	4.08 (1.61)	4.20 (1.45)	4.09 (1.57)
Household income [c]	3.28 (1.53)	3.53 (1.39)	3.64 (1.41)	3.43 (1.54)
Investment experience [d]	16.52 (11.45)	13.25 (10.48)	16.04 (10.77)	13.98 (9.58)
Currently investing [e]	0.87 (0.34)	0.90 (0.30)	0.89 (0.31)	0.92 (0.27)
Self-enhancement values [f]	3.83 (1.34)	4.52 (1.30)	3.86 (1.17)	3.58 (1.42)
Self-transcendence values [g]	5.08 (1.10)	5.13 (1.32)	5.35 (0.89)	5.79 (0.84)
Hypothetical investment [h]	2,857 (3,909)	4,102 (7,341)	5,267 (9,133)	2,852 (3,340)

Note. Means (*M*) and standard deviations (*SD*) were calculated by averaging the observed indicators for each segment according to the obtained segment membership.
[a] 0 = other, 1 = male.
[b] Ranges vary between 1 (no education) and 7 (doctoral degree).
[c] Ranges vary between 1 (< €1,000) and 5 (> €4,000); 0 = no answer.
[d] Investment experience was indicated in years.
[e] 0 = no, 1 = yes.
[f g] Ranges vary between 1 (not like me at all) and 7 (very much like me).
[h] Hypothetical investment amount was indicated in Euro.

Concerning the hypothetical investment, fin-ecological investors pledged the highest amount of €5267 (*SD* = €9133) on average, whereas impact-first investors pledged the lowest amount of €2852 (*SD* = €3340) on average. Considering the segment size, n = 137 of fin-ecological investors would raise a total sum of €721,579 (137 * €5267), which presents by far the highest overall hypothetical investment amount. The segment of fin-ecological investors is then followed by the segment of impact-first investors with €296,608 (104 * €2852) before fin-

social investors with €209,202 (51 *€4102) and loan-first investors with €174,277 (61 * €2857). The total amounts of the hypothetical investments provide insights on the relevance of the heterogeneous crowd investor segments for the overall acquisition of funding by SNVs. These results will be thoroughly discussed in section 3.5.

3.4.3 Multinomial regression results

To explore whether the self-transcendence and self-enhancement values are associated with the differences in investor preferences between the groups, a multinomial regression with loan-first investors as reference group was conducted. The results of the multinomial regression analysis are displayed in Table 3-5.

Table 3-5. Results of multinomial logistic regression

	"Fin-social" ***n* = 51**	**"Fin-ecological"** ***n* = 137**	**"Impact-first"** ***n* = 104**
Variables	**B (*SE*)**	**B (*SE*)**	**B (*SE*)**
Gender	1.02* (0.44)	0.64 (0.34)	0.82* (0.37)
Age	-0.03 (0.02)	-0.02 (0.01)	-0.02 (0.01)
Education	0.14 (0.14)	0.20 (0.11)	0.18 (0.12)
Household income	0.03 (0.14)	0.13 (0.11)	0.04 (0.12)
Investment experience	-0.02 (0.02)	-0.01 (0.02)	-0.03 (0.02)
Currently investing	-0.15 (0.65)	-0.07 (0.51)	0.55 (0.59)
Self-enhancement values	0.37* (0.17)	-0.08 (0.13)	-0.28* (0.14)
Self-transcendence values	0.04 (0.18)	0.28 (0.15)	0.83** (0.18)

Note. n = 353; Reference group 1 "Loan-first investors"; Nagelkerke R^2 = .20.
B = unstandardized effect; *SE* = standard error.
*p < .05; **p < .01.

The findings indicate that self- enhancement values and self-transcendence values have a significant impact on the probability of belonging to the segments of impact-first and fin-social investors when compared to loan-first investors. As higher levels of self-transcendence values significantly increase their probability of belonging to the segment of impact-first investors who form their decisions mainly around ecological and social impact goals, hypothesis 2a is supported. While higher levels of self-enhancement values significantly decrease the probability that an investor is a member of the segment of impact-first investors, they increase the probability that an investor belongs to the group of fin-social investors. Whereas the segment of fin-social investors is mainly driven by project return and project duration, the fin-ecological segment attributes substantially higher importance to financial return but is characterized by comparatively lower self-enhancement values.

However, according to the results in Table 3-5, self-enhancement values were not associated with belonging to the segment of fin-ecological investors. Hence, hypothesis 2b is not supported. Yet the finding that fin-social investors seem to be more concerned about their own interests than the reference group of loan-first investors seems surprising and will be further elaborated on in the subsequent discussion of the results. Regarding the other variables that serve as control, all other characteristics, except the participant's gender, show no significant association with the segment membership of crowd investors in comparison with the reference group.

3.5 Discussion

Moving toward a sustainable development of the economy requires a holistic approach that includes ecological, social, and economic goals. Crowdlending projects of SNVs pursue a combination of these goals, whereby the extent to which they focus on the different goals in their project presentation may vary. From the investors' perspective, individuals tend to base their crowdlending decisions on their underlying motivations. Against this background, this

work aimed at shedding light on whether and how crowd investors differ regarding the factors that drive crowdlending decisions in relation to human values as motivators. In line with this objective, the following discussion will (1) focus on the heterogeneity of crowd investor segments and (2) elaborate on the role of human values to differentiate between these segments.

3.5.1 Heterogeneous investor segments in crowdlending

The results of the conjoint analysis and latent class estimation emphasize the importance to acknowledge the heterogeneity of crowd investors to understand their crowdlending decisions in the sustainability context. Within the context of crowdlending that offers a financial return from the investment in SNVs, crowd investor preferences for project attributes diverge. In particular, the group of impact-first investors, who form their decisions mainly around ecological and social impact goals, is clearly differentiated from the other three segments of crowd investors whose decisions are formed primarily around financial returns from the loan. By revealing granular differences in the contribution of loan characteristics as well as social, ecological, and commercial impact goals to the overall utility of crowd investors, this study extends the findings of Slimane and Rousseau (2020) and Penz et al. (2022) who highlighted the importance of loan characteristics in return-oriented crowdlending.

Furthermore, it supports recent studies that have raised awareness for the need to compare the social and ecological orientation of SNVs when examining crowdfunding decisions (Calic & Mosakowski, 2016; Hörisch & Tenner, 2020; Nielsen & Binder, 2021). In this regard, the results of this study reveal higher crowdlending preferences for ecological impact goals than for social impact goals within three of the four segments. Noticeably, crowd investors who attribute the highest relevance to financial returns prefer ecological impact goals over commercial impact goals. This demonstrates that crowd investors who are mainly focused on personal financial gains believe in the economic viability of SNVs that emphasize ecological impact goals. Adding to the discussion on the commercialization of SNVs (Gafni et al., 2021;

Vasileiadou et al., 2016), these findings can be explained with the growth of economic markets in the ecological sector related to topics such as renewable energy (e.g., Wang et al., 2022), circular economy (e.g., Kurniawan et al., 2022), and reverse supply chain logistics (Sharma et al., 2021). The growing political support of these ecological sectors in European countries increases the awareness of the respective topics within society while creating novel investment opportunities for nonprofessional investors (Butticè et al., 2019; Slimane & Rousseau, 2020; Vasileiadou et al., 2016). For SNVs, the emphasis of ecological impact goals therefore leads to a high commercial appeal and, hence, to a better alignment of expected financial returns and ecological impact goals.

A comparison of the total sums of the hypothetical investments further illustrates the contrast between the fin-ecological and the fin-social investor segment. Although the mean investments of both segments did not show high variation, the segment sizes and thus the total sum of the amassed hypothetical investment differs tremendously. Consequently, within the given crowdlending context, crowd investors prefer SNVs that are able to convey a strong ecological orientation rather than a strong social orientation. While these results contrast the studies that reported a positive effect of the social orientation on funding success with reference to prosocial crowdlending (e.g., Allison et al., 2015; Gafni et al., 2021; Moss et al., 2018), they are in line with Hörisch and Tenner's (2020) finding of a positive impact of ecological orientation on funding success. Thus, this study strongly supports the assumption that investors who engage in return-oriented crowdlending are motivated by different factors than investors who engage in prosocial crowdlending. These findings open up further academic research paths regarding the comparison of the decision making of crowd investors between crowdlending with and without financial returns.

3.5.2 Human values within crowd investor segments

The results of this work further show that it can be particularly insightful to look at crowd investor preferences from a human value perspective, as these characteristics significantly affect the probability of crowd investors belonging to the segment of fin-social or impact-first investors. As assumed, crowd investors whose values support benevolence and universalism form their decisions around ecological and social impact goals. Remarkably, impact-first investors would pledge the lowest average investment amount of all four segments (see Table 3-4). This finding suggests that although ecological and social impact goals attract individuals who are highly concerned about others and passionate about the venture's impact on the environment and the society, it ultimately may not necessarily lead to a higher individual funding amount for the venture. Nonetheless, the insights of the present study still indicate the importance of this segment with regard to the overall segment size, as the total hypothetical investment sum of €296,608 even exceeds the hypothetical investment amounts by fin-social investors and loan-first investors.

Further, the revealed insights challenge the reasoning of previous contributions arguing that crowd investors who support social goals may lack self-centered motives (Hörisch & Tenner, 2020). Fin-social investors had the highest self-enhancement values, implying that investors in this group are focused on their own personal benefit. What seems counterintuitive at first glance can be explained by the warm-glow effect (Andreoni, 1990), which has been also recognized as a motivator for behavior in prosocial crowdlending (Allison et al., 2013). Accordingly, to feel positive about themselves, crowd investors with high self-enhancement values choose projects with high social impact goals over projects with high ecological impact goals. Hence, opposed to Hörisch and Tenner (2020) who conclude a weaker warm-glow effect with social goals than with ecological goals, the findings for the group of fin-social investors

support the existence of a stronger warm-glow effect related to projects with high social impact goals.

The additional observation that fin-social investors prefer a combination of moderate financial returns with high social impact goals (Table 3-3) implies that crowd investors with high power and achievement values perceive a misalignment between high financial returns and high social impact goals. As crowd investors may associate social impacts with the nonprofit sector, they potentially attribute lower financial gains with high social impact goals (Hörisch & Tenner, 2020). In addition, ethical concerns of crowd investors may lead to conflicting considerations (Gafni et al., 2021), resulting in lower investment sums amassed by fin-social investors. Hence, the findings of this study suggest that crowd investors emphasizing self-oriented values face an inner conflict or tension when evaluating commercial activities with a social impact orientation. This is also reflected by the scholarly discussions on conflicting goals and tensions within the related research stream of social entrepreneurship (Battilana & Dorado, 2010; Smith et al., 2013; Wry & York, 2017). By revealing differences in the motivational mechanisms of crowd investors in relation to their preferences for social and ecological impact goals, this study contributes to the ongoing academic debates regarding the influence of sustainability orientation in the field of crowdlending (e.g., Berns et al., 2020; Gafni et al., 2021; Hörisch & Tenner, 2020; Moss et al., 2018). In addition, the insights of the study extend the findings of Tenner and Hörisch (2021) and suggest that both self-enhancement and self-transcendence values are useful to identify segments of nonprofessional investors with heterogeneous preferences in this regard.

3.6 Implications and limitations

3.6.1 Practical implications

By providing the investors' perspective on crowdlending for SNVs, this study offers useful implications for sustainable entrepreneurs and crowdlending platforms, as well as further

actors from the field, such as crowdfunding associations or institutional players. The results show that (1) crowd investors differ in their crowdlending preferences related to SNVs and (2) their underlying human values can be associated with these differences.

Sustainable entrepreneurs and crowdlending platforms should bear in mind the heterogeneous motivations of their target audience when interacting with the crowd. To appeal to a large number of potential investors, this study suggests to clearly emphasize the financial return rate of the crowdlending project. Even though the majority of individuals are primarily seeking financial returns from the investment, the simultaneous communication focus on commercial goals and targets, such as revenue growth or the increase in sales volume, appears to be less relevant. Nonprofessional crowd investors prefer ventures that additionally highlight ecological impact goals, such as the reduction of emissions or the protection of ecosystems. The group of fin-ecological investors was the largest in segment size and pledged the highest amount on average.

Surprisingly, crowd investors striving for prestige and status are willing to accept lower financial returns if they also place a high importance on social impact goals, such as the reduction of poverty, hunger, discrimination, and persecution of minorities. Thus, their decision making seems to be based not only on traditional financing mechanisms, but also on the "warm glow" they feel from supporting social causes and thereby helping others. This finding implies that sustainable entrepreneurs who primarily focus on achieving high social impact goals with their crowdlending projects may tailor their project presentation and communication around the warm-glow feeling they convey to crowd investors. For example, they could emphasize the present concern and external visibility of the social problem. In this way, they may attract the group of investors with high self-enhancement values who are particularly concerned of their status and image within the society. Alternatively, sustainable entrepreneurs might consider prosocial crowdlending that centers mainly around social impact goals as a more suitable way

to raise funds at this point of time. The warm-glow effect was recognized as an important motivational mechanism in this context as well (e.g., Allison et al., 2013).

With regard to the future, sustainable finance and crowdfunding associations as well as other institutional players in the field could take steps to raise awareness of the economic potential of SNVs focused on social impact goals. They may create awareness campaigns to motivate nonprofessional investors to engage in crowdlending by highlighting both the financial opportunity and the warm-glow feeling that results from the investment in such ventures. In addition, policy makers may think of ways to provide further incentives to increase the engagement of nonprofessional investors in crowdlending for SNVs. For example, similar to charitable giving, tax deductions for crowdlending losses could help realize the full potential of this alternative source of funding for SNVs.

3.6.2 Limitations and future research

This study is subject to certain limitations that offer opportunities for future research. First, despite the many advantages of the choice-based conjoint method, it does not come without constraints. The analysis is based on a carefully selected set of five project attributes, assuming that participants keep all other attributes equal. However, participants might not have been cognitively able to do so (de Rassenfosse & Fischer, 2016). Furthermore, crowdlending decisions are more complex and based on an interplay of many different project attributes and their presentation on the platform by means of pictures, narratives, and other visual and linguistic cues (Parhankangas & Renko, 2017; Slimane & Rousseau, 2020). In addition, sustainability impact goals tend to be more specific and often relate to the UN Sustainable Development Goals (Aly et al., 2022). According to the study's research focus and the design limitations inherent to conjoint studies, this work deliberately disregarded other project characteristics and additional levels of detail. The addition of further attributes and details would have potentially increased respondent fatigue, leading to a lower accuracy of results

(Reibstein et al., 1988). Hence, this study may be subject to preselection bias (Shepherd & Zacharakis, 1999) as it excludes other project attributes that could be relevant for crowd investor decision making. Therefore, provided that relevant project attributes (i.e., project return and project duration) are kept constant within the scenario upfront, the inclusion of additional attributes, such as the geographical region or the founding team of the venture, or further goal descriptions could represent an insightful extension of the present study. Moreover, the external validity of the study might be limited because participants were presented with hypothetical SNVs. To increase the realism of the choice tasks, future conjoint analyses could involve a visual presentation of actual project profiles.

Second, the sample of experienced nonprofessional investors was obtained from the German market, which can be considered representative for other countries in Europe (Berger et al., 2015; Hörisch & Tenner, 2020). However, as the sample is limited to one European country, any differences in crowd investor behavior due to country specific characteristics cannot be captured. Thus, future examinations on crowd investor decision making could consider additional markets, such as the large crowdfunding market in the U.S. (Hörisch & Tenner, 2020), and compare crowd investor preferences from different countries. Preferences for social and ecological impact goals might vary between different national cultures, such as individualistic and collectivist cultures (Bento, Gianfrate, & Groppo, 2019). Moreover, scholars could limit their sample to investors with actual crowdfunding or even particularly crowdlending experience. In this context, it could be worthwhile to consider portfolio choices or reinvestment decisions in crowdlending, as crowd investors might act similarly to shareholders and diversify their portfolio.

Third, although the investors had to provide answers on multiple-choice tasks, the online survey included a single hypothetical question to obtain an initial assessment of the average investment amount for different investor segments. Therefore, a direct linkage between the

amount of hypothetical investment and the single choices of the investors is lacking. Another avenue for future research could be the systematic investigation of the willingness to invest in SNVs in response to the combinations of varying crowdlending project attributes. In addition, future studies may apply an experimental setting that provides a financial endowment to create an actual investment situation for participants.

3.7 Conclusion

Return-oriented crowdlending bears considerable future potential to raise funds for SNVs (Hörisch, 2019; Slimane & Rousseau, 2020), especially because it attracts a large number of nonprofessional investors, such as private shareholders. With respect to crowdlending decisions for SNVs, the findings of this study show that nonprofessional investors have heterogeneous preferences for project attributes related to financial returns for themselves and social and ecological impact goals. In this context, the crowd investors' self-enhancement and self-transcendence values provide relevant insights regarding the identification of different crowd investor segments. While the majority of crowd investors base their decisions mainly on the potential financial returns of the projects, one investor segment, characterized by high self-transcendence and low self-enhancement values, clearly differs from the other segments by attaching the highest importance to ecological and social impact goals of the venture. In addition, the findings reveal overall investor preferences for ecological impact goals over social and commercial impact goals in the context of return-oriented crowdlending. Crowd investors with high levels of self-enhancement values, however, consider the venture's focus on social impact goals to be more important than its focus on ecological or commercial impact goals. This finding suggests that investors who choose to fund socially-oriented ventures might also do so out of self-interest. The insights of this study encourage scholars and practitioners to take into account the heterogeneous preferences and underlying human values of nonprofessional investors in return-oriented crowdfunding for SNVs.

4 Essay III: Investing for good – uncovering crowd investors' motivations to participate in sustainability-oriented crowdlending[15]

Abstract

Sustainable ventures that pursue social and ecological goals alongside economic profitability can contribute to innovative solutions aimed at conserving natural resources and creating social value. However, as these ventures are not solely focused on profit maximization, they often face particular difficulties in acquiring external funding from traditional capital sources, making crowdlending an attractive alternative. In this study, we explore investor motivations to partake in crowdlending for sustainable ventures by conducting a qualitative study based on 18 open-ended interviews (approximately 12 hours of audio recordings) with investors of a crowdlending platform targeted at sustainable ventures. Our findings suggest that balancing financial, personal, prosocial, and communal motives shapes investors' decision-making approaches. Hereby, our research contributes to an ongoing debate on the role of financial and nonfinancial motivations in investor decisions, particularly in light of the rise of return-oriented crowdlending platforms specialized in sustainable ventures.

Keywords: crowdfunding, sustainability, venture finance

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4.1 Introduction

As societies become increasingly aware of the urgent challenges posed by climate change and global warming (as exemplified by the consensus reached at the December 2023 Global U.N. Climate Change Conference), the demand for innovative sustainable and social solutions to address problems such as natural resource depletion and migration crises is growing rapidly (Mansouri & Momtaz, 2022; Voegtlin et al., 2022). Sustainable ventures that pursue social or ecological goals alongside economic profitability can substantially contribute to sustainable economic development (Apostolidis et al., 2022; Johnson & Schaltegger, 2020). However, these ventures often face difficulties in accessing external funding from traditional sources, such as banks, given their focus on objectives beyond profit maximization (e.g., Anglin et al., 2022; Calic & Mosakowski, 2016). Therefore, crowdfunding is gaining relevance and momentum as an accessible alternative to finance sustainable ventures (Vismara, 2019). Notably, crowdfunding provides the potential for a bandwagon effect and corresponding changes in behaviors toward sustainability aims by amplifying societal awareness of sustainable topics (Messeni Petruzzelli et al., 2019).

Especially *lending-based crowdfunding*, also called *crowdlending*, which addresses nonprofessional investors, holds considerable potential for sustainable ventures (Hörisch & Tenner, 2020; Penz et al., 2022; Slimane & Rousseau, 2020). Hereby, ventures are funded through many small loans from investors in the crowd based on fixed interest rates for a fixed period (Block et al., 2018). In this regard, crowdlending can appeal to retail investors seeking options to complement or substitute their private investments in conventional banks, stocks, or funds because it offers potential financial gains (Jiang et al., 2020; Palacios-González & Chamorro-Mera, 2018; Saiedi et al., 2020). Sustainable ventures can leverage crowdlending as a means to finance the realization and growth of their projects aimed at addressing poverty and environmental issues across the globe. Crowdlending platforms like *bettervest.com* specialize

in facilitating funding for such ventures, which include projects such as providing affordable cooking stoves or solar home systems to underserved populations in regions like Zambia, Rwanda, or Kenya.[16] Through dedicated crowdfunding campaigns, these companies seek to raise a specified funding target from a large pool of investors, who in turn can receive a financial return on their investment if the project is successful.[17]

Despite the increasing popularity of loans for sustainable ventures, return-oriented crowdlending remains under-researched (Böckel et al., 2021; Messeni Petruzzelli et al., 2019; Tenner & Hörisch, 2021). This is surprising, given that crowdlending represents the most widely used form of alternative finance in Europe (Saiedi et al., 2020). Thus, it is especially important to further investigate and deepen our knowledge on return-oriented crowdlending (Vásquez-Ordóñez et al., 2023). Research examining return-oriented crowdlending for traditional ventures suggests that investors' participation is predominantly motivated by profit maximization (Borello et al., 2015; Dorfleitner et al., 2023). As these profit-oriented investors typically attempt to limit their risk of financial loss via portfolio diversification (Dorfleitner et al., 2023), they cognitively process campaign information presented online (e.g., the pitch video, project description, prospectus, and risk disclosures) and strongly consider potential financial outcomes of their crowdlending activities (Herzenstein et al., 2011).

With regard to sustainable ventures, however, literature typically highlights the importance of sustainability-related motivations and outcomes for tailoring crowdfunding offerings (e.g., Nielsen & Binder, 2021). While studies have explored the role of intrinsic and extrinsic motives (e.g., Chen et al., 2021) or egoistic and altruistic motives (e.g., Testa et al., 2020) in donation-based or reward-based crowdfunding, we lack relevant insights into the

[16] For exemplary project descriptions, see the crowdlending campaigns for the projects "Solar home systems for Kenya" (https://www.bettervest.com/de/project/pawame-1), "Sustainable cooking stoves for Zambia" (https://www.bettervest.com/de/project/greenway-cookstoves), or "Solar products for clean electricity in Rwanda" (https://www.bettervest.com/de/project/munyax-eco), accessed on May 5, 2024.
[17] The financial return rate offered on bettervest averages around 7.37 % (Status: August 2021, https://www.bettervest.com/de/projekt-statistik, accessed on December 13, 2023).

nature and heterogeneity of crowd investors' motives in return-oriented crowdlending. These insights are crucial for designing an effective crowdlending ecosystem that meets the crowds' needs in the context of sustainability. Further, while a recent literature review on crowdfunding and sustainability shows a rapidly growing research field, the authors identify specific gaps in our understanding of individual-level investor motives in return-oriented crowdlending (Dinh et al., 2024, p. 14), underscoring the importance of examining the composition of these motives and their linkages to decision making. Hence, this study aims at answering the following research question: *Why do nonprofessional investors participate in return-oriented crowdlending for sustainable ventures, and how do their motives shape their decision-making approaches?*

The research question of this study holds significant theoretical relevance due to the nature of crowdlending, which operates as a two-sided market involving entrepreneurs and investors (e.g., Belleflamme et al., 2014; Tang et al., 2023), with the platform serving as the intermediary. While our knowledge of the influence of campaign attributes presented by entrepreneurs is expanding (e.g., Berns et al., 2020; Moss et al., 2018), there remains a gap in understanding the individual investors' perspective. Understanding the participation motives and decision-making processes of investors is particularly important in the context of sustainability, where funding outcomes may be less tangible and immediate compared to traditional crowdfunding (e.g., Messeni Petruzzelli et al., 2019; Tenner & Hörisch, 2021). Most crowdfunding studies based on platform data lack access to detailed information about individual investors and their motivations, often relying on inferred motives derived from observed behavior at an aggregate level (Cox et al., 2022). For example, previous work has inferred motives by examining the relationship between campaign success and campaign narratives (e.g., Allison et al., 2013; Robiady et al., 2021) or funding information (e.g., Anglin et al., 2020; Slimane & Rousseau, 2020) presented by the entrepreneurs. Thus, scholars

particularly call for more qualitative research in the field of crowdfunding (e.g., Cox et al., 2022) to answer how and why questions regarding the investor perspective. Previous studies from related research fields underline the usefulness of taking the investor perspective to gain deeper insights into motivations (e.g., Berry & Junkus, 2013; Hong & Kostovetsky, 2012; Palacios-González & Chamorro-Mera, 2018).

In light of this, we base our qualitative study on semi-structured interviews with crowd investors from a German sustainability-oriented crowdlending platform to explore the nature and variety of investor motivations and develop a clearer understanding of related drivers and considerations. Using an iterative data collection and analysis technique, our study comprises a total of 18 interviews. In a first step, we conducted an inductive analysis of our qualitative data according to the principles of grounded theory (Glaser & Strauss, 1967) to reveal the investors' underlying motivations. In a second step, we further enriched our analysis with an abductive approach whereby we triangulated our findings with existing theory to derive a conceptual model that sheds light on the drivers and focus of the motives for crowdlending participation in the sustainability context, as well as on the role these motives play for investors' decision-making processes. By increasing our conceptual knowledge of the underlying investor motivations in return-oriented crowdlending for sustainable ventures, we not only add to the existing qualitative studies in other crowdfunding contexts, such as reward-based or donation-based crowdfunding (e.g., Bagheri et al., 2019; Gerber & Hui, 2013; Mc Laren & Baldegger, 2021), but also make several key contributions to the literature on sustainable venture financing.

First, we present crowd investor motivation as a multilayered concept encompassing heterogeneous financial, personal, prosocial, and communal motives, thereby extending previous research that is often based on broader conceptions primarily distinguishing between financial and nonfinancial motivations (Hajiheydari & Delgosha, 2023; Yoo et al., 2023). Illuminating the drivers (i.e., intrinsic or extrinsic) as well as the focus (i.e., self- or other-

directed) of investor motives, our study adds to the theoretical discourse about different motivators for sustainability-oriented crowdfunding (e.g., Allison et al., 2015; Siebeneicher & Bock, 2022).

Second, our findings indicate that crowd investors make different considerations regarding crowdlending outcomes based on weighing their underlying motives, leading to a dominant *strategic*, *emotional* or, lastly, *blended* decision-making approach that intertwines strategic and emotional concerns. Understanding how crowd investors adopt these different approaches provides valuable insights on the mix of strategies and emotions that drive investment decisions in the context of sustainable ventures. Thereby, this study enhances our understanding of the mixed investor motives at the individual level of analysis (e.g., Dinh et al., 2024). By revealing investors' considerations with regard to their decision making, we extend the findings from the emerging literature on return-oriented crowdlending (e.g., Penz et al., 2022; Vásquez-Ordóñez et al., 2023), while also adding to the broader debate on the potentially conflicting nature of investor decisions in the sustainability context (e.g., Agrawal & Hockerts, 2019; Richardson & Cragg, 2010).

Third, the insights of this study advance our understanding of how crowdlending can help overcome the financing constraints of sustainable ventures by reaching and involving a heterogeneously motivated crowd (e.g., Hörisch, 2019; Vasileiadou et al., 2016). We reveal that investors in return-oriented crowdlending seem to adopt charitable considerations when driven more by other- than self-directed motives. This differentiates crowdlending from other return-oriented funding options, such as equity-based crowdfunding, business angels, or sustainable venture capital (Bocken, 2015), which involve a larger proportion of professional investors who ultimately seek financial returns (e.g., Block, Groh, et al., 2021; Bocken, 2015; Vismara, 2019). Finally, our study also provides practical insights. Specialized crowdlending platforms and sustainable entrepreneurs can use our findings to enhance the engagement and retention of

nonprofessional investors, thereby maximizing the potential of this financing option for sustainable ventures (Cumming et al., 2021; Siebeneicher & Bock, 2022). Moreover, a deeper understanding of investor motives can inform policymakers and institutions that support and incentivize sustainability-oriented crowdfunding, thus developing mechanisms and policies to create a more conducive environment for sustainable development at large (Allison et al., 2022; Cumming et al., 2021).

4.2 Literature background

4.2.1 Crowdlending for sustainable ventures

Crowdfunding describes the mechanism of pooling smaller capital amounts from a large group of individuals to fund projects through internet platforms (Block et al., 2018; Short et al., 2017). Sustainable ventures frequently encounter financial hurdles as they strive to simultaneously pursue both financial and social/ecological goals, which can deter traditional profit-oriented investors. In this regard, crowdfunding represents an attractive fundraising alternative to traditional entrepreneurial finance (Calic & Mosakowski, 2016). In the case of lending-based crowdfunding (crowdlending), individual investors grant small loans to entrepreneurs and receive their investments back if the projects are successfully implemented (Block et al., 2018). Literature distinguishes between two types of crowdlending platforms: prosocial and return-oriented (Short et al., 2017). In prosocial crowdlending, only the invested amount is returned to investors without any interest payments (Allison et al., 2013). In return-oriented crowdlending, investors earn interest on their invested capital and therefore expect financial returns in addition to repayment of the principal (Hörisch & Tenner, 2020).

So far, research on crowdfunding for sustainable ventures has predominantly focused on crowdfunding forms without financial returns, that is, donation-based crowdfunding (e.g., Gleasure & Feller, 2016; Logue & Grimes, 2022), reward-based crowdfunding (e.g., Calic & Mosakowski, 2016; Otte & Maehle, 2022) which is often pre-selling or prosocial crowdlending

(e.g., Anglin et al., 2020; Luo et al., 2022). In comparison, return-oriented crowdlending has received less attention in the sustainability context (Hörisch, 2019). Nonetheless, taking into account the large volume of capital raised through crowdlending within the European Union[18] and thus its practical relevance (Block et al., 2018), it is essential to comprehend dynamics and mechanisms of return-oriented crowdlending for unlocking its potential to attract a broader crowd of investors to foster the development of sustainable ventures.

Previous quantitative studies have analyzed how campaign attributes impact crowd investor decisions by predominantly investigating data from platforms. For example, existing crowdfunding studies indicate that ventures' sustainability-oriented narratives or framing can impact investor decisions (e.g., Moss et al., 2018). However, due to the limited public availability of individual-level information about investors on crowdfunding platforms (Pierrakis, 2019), research on investors' participation motivations remains scarce. In this regard, Gerber and Hui (2013) qualitatively reveal that in reward-based crowdfunding backers are not only motivated by rewards, but also by helping the entrepreneurs, interacting in communities or contributing to product design. Further studies based on primary data explore motivations in donation-based crowdfunding, where backers are driven by the desire to help others related to charitable and philanthropic causes (e.g., Bagheri et al., 2019; Chen et al., 2021; Choy & Schlagwein, 2016). Relying on semi-structured interviews with crowdfunding stakeholders, Mc Laren and Baldegger (2021) compare different crowdfunding forms and state that, in contrast to donation- and reward-based crowdfunding, financial factors are relevant in the lending and equity context, while environmental and social factors have little to no relevance. Hence, assuming that crowd investors approach crowdlending participation with a similar mentality as

[18] In 2015, €3.2 billion was raised from the crowd through loans in the European Union (see European Commission, 2016). https://finance.ec.europa.eu/document/download/a1a70784-607a-4ca2-ad00-110eb692b93b_en?filename=crowdfunding-report-03052016_en.pdf (accessed on May 19, 2024).

retail investors, the findings of previous research cannot be directly transferred to return-oriented crowdlending (Mollick, 2014; Vasileiadou et al., 2016).

4.2.2 The motivation of crowd investors

Motivation refers to the extent to which people are induced to engage in behavior through particular drivers (Deci & Ryan, 2012; Deci et al., 1991). According to cognitive evaluation and self-determination theory, motivation is categorized into extrinsic and intrinsic motives (Deci & Ryan, 1985). In line with these theories, intrinsically driven motives stem from the psychological gains of performing an action, whereas extrinsically driven motives are connected to an external outcome, such as receiving a (monetary) reward or some form of external recognition or feedback (Allison et al., 2015; Bagheri et al., 2019; Ryan & Deci, 2000). In this context, Allison et al. (2015), based on an analysis of campaign rhetoric, emphasize the relevance of intrinsic factors, such as human interest, for crowd investor decisions. They conclude that investors in prosocial crowdlending are dominantly driven by altruism (Allison et al., 2015). Other crowdfunding studies, in contrast, suggest that crowd investor decisions are primarily motivated by extrinsic factors, such as product rewards in reward-based crowdfunding, or financial returns in equity-based crowdfunding (Cholakova & Clarysse, 2015; Vismara, 2019). Such a distinction between financial and nonfinancial motives is common in the crowdfunding literature (Berns et al., 2020) because it helps researchers to understand the complex interplay between motivating factors.

Further existing crowdfunding studies focusing on motivation delve into self-directed and other-directed motives (e.g., Hashinaga et al., 2023; Zhang & Chen, 2019). These studies often refer to the concepts of egoistic and/or altruistic motives, which correspond to the orientations either directed toward the self or toward others (Zhang & Chen, 2019). In this regard, self-directed motivation is associated with a benefit for the individuals themselves linked to individual goals and standards, whereas other-directed motivation is associated with

a benefit for others, such as society or the community, linked to social interactions or social norms (e.g., Hashinaga et al., 2023; White & Peloza, 2009). For example, the findings of Zhang and Chen (2019) reveal that self-directed motives exert a more pronounced positive influence than other-directed motives on the crowd investors' funding decision. In the realm of sustainability-oriented crowdfunding, Hashinaga et al. (2023) observe a greater influence of other-directed motives over self-directed motives on individuals' willingness to participate in crowdfunding, while also noting that motivational factors may vary in diverse socioeconomic contexts and cultures within different countries.

Return-oriented crowdfunding forms are assumed to attract growth-oriented investors who seek financial gains (e.g., Bento, Gianfrate, & Groppo, 2019; Nitani et al., 2019; Vasileiadou et al., 2016) and act in a way to maximize their financial returns (Dorfleitner et al., 2021; Nitani et al., 2019). In this respect, previous studies have stressed the relevance of factors such as interest rates, risks, and market conditions for driving crowd investor behavior (e.g., Bento, Gianfrate, & Groppo, 2019; Penz et al., 2022; Pierrakis, 2019). Slimane and Rousseau (2020), for example, compare the behavior of crowd investors to that of traditional banks, which primarily seek a solid return on investment (ROI). In contrast, Hörisch and Tenner (2020) argue that crowdfunding campaigns' environmental sustainability orientation may positively influence funding success, even in a context where financial incentives exist. Hence, literature has presented partly contradictory arguments concerning the motives of crowd investors in the return-oriented crowdlending context (e.g., Caputo et al., 2022; Mendoza et al., 2023). In addition, scholars argue that financial returns may crowd out the intrinsic motivation of investors in the context of return-oriented crowdfunding (e.g., Kollenda, 2022; Mendoza et al., 2023). For example, the quantitative study by Kollenda (2022) suggests that the expectation of financial gains potentially diminishes the effect of social impact in crowdlending decisions.

These observations underscore the relevance of analyzing the granular composition of motives in return-oriented crowdlending and related mental linkages to crowd investors' decision-making deliberations. Given that crowdlending involves the risk of monetary loss for crowd investors (Bento, Gianfrate, & Groppo, 2019), it is important to grasp their considerations with regard to crowdlending outcomes. In addition, a deeper knowledge of motives is useful for informing the platforms' practices with regard to presenting and reporting on project implementation as well as social or environmental improvements, which are considered especially relevant for sustainable ventures (Hörisch, 2019). Therefore, the present study uses a qualitative approach to develop a model of how investor participation motives may shape considerations in the decision-making process, while providing a comprehensive picture of investor motives in return-oriented crowdlending.

4.3 Methodology and research context

4.3.1 Semi-structured interviews

Qualitative analyses can help scholars to gain a deeper understanding of the motivations of crowd investors and provide insights into their decision-making processes, contributing to a more nuanced view of return-oriented crowdlending in the context of sustainability. Thus, this research form is particularly suitable to answer "why" and "how" questions related to phenomena that are shaped by contextual factors (Gioia et al., 2013; Huy et al., 2014), such as prevalent societal problems or personal reasons of individuals (see, e.g., Mittermaier et al., 2023). In particular, qualitative research allows the exploration of the true complexities of motivations (Bagheri et al., 2019; Brem et al., 2019; Gerber & Hui, 2013), taking into account contextual factors such as crowd investors' personal circumstances, for example, their living and professional situations, or perceived societal and environmental issues. While existing research highlights the relevance of early studies on crowd investor motivations, it so far offers limited in-depth insights from the investor perspective to adequately answer the research

question of this study (e.g., Cox et al., 2022; Tenner & Hörisch, 2021; Yoo et al., 2023). We base our qualitative research on semi-structured interviews with actual investors. Specifically, we examine *why* crowd investors participate in crowdlending for sustainability ventures and *how* these motives may shape their outcome considerations. To capture both the initial investor motivations and their considerations regarding the possible outcomes of their participation in crowdlending, we structured the interview content as follows: (1) initial interest and engagement in participating in crowdlending for sustainable ventures (e.g., how the participant became involved in investing in young companies with social and/or environmental goals via crowdlending), and (2) individual approach to funding decisions considering potential crowdlending outcomes (e.g., the relevant decision-making factors and considerations when financing sustainable projects). The interview guideline involved a series of open-ended questions to enable a candid conversation with the interviewees (see Appendix C1). Throughout the data collection process, this interview guideline was slightly adjusted and expanded by building on prior observations (Gioia et al., 2013; Glaser & Strauss, 1967; Strauss & Corbin, 1998). In addition to the opening and ending questions, the guideline initially included seven main questions, which were increased to nine during the data collection process. We uncovered two additional questions in the initial interviews and added them to the guideline to reflect the structured follow-up inquiries on the multifaceted nature of initial participant engagement. As we followed a semi-structured approach, the structured main questions were expanded by follow-up questions based on the narratives of individual interviewees to gain an in-depth perspective (Helfferich, 2011; Rubin & Rubin, 2005). In addition, interviewees were encouraged to provide any emergent narrative description that they felt was relevant in relation to the questions. Interviews were recorded with a voice recorder and transcribed for analysis. Finally, they were scheduled and conducted until the authors believed that theoretical saturation was sufficient to develop the characteristics of the categories (Glaser & Strauss, 1967).

4.3.2 Sample selection and data collection

Our study was conducted in cooperation with the German-based return-oriented crowdlending platform bettervest, which is listed among the top 10 crowdfunding platforms specialized in financing renewable energy projects (e.g., solar, wind, and hydroelectric power) worldwide (Cogan et al., 2023; Slimane & Rousseau, 2020) and quantitatively measures the impact of these in terms of total carbon dioxide (CO_2) reduction. The platform, founded in 2012, offers an average financial return rate of 7.37 % with a project duration of typically between 3 and 8 years (average: 6.3 years) and minimum investment amounts starting at €504 (bettervest, 2023), having achieved a total investment volume of roughly 16 million Euro in over 100 projects in 20 different countries as of August 2021. With over 10 years of market experience since its establishment in 2012, bettervest offers a robust foundation for our study. Additionally, due to its central location within Europe, the German market can be viewed as indicative of other neighboring European countries (Berger et al., 2015; Hörisch & Tenner, 2020).

Primarily addressing private investors, bettervest offers the opportunity to financially benefit from investments in ecologically and socially sustainable projects with an increasing focus on the African market. For example, one project distributes solar home systems to Kenyan families, offering them sustainable and cost-effective electricity alternatives while eliminating harmful kerosene lamps and candles. This project not only contributes to climate protection by reducing carbon emissions, but also empowers economically disadvantaged families by acting as a credit agency. The funding goal of the project amounted to €323,500 and was nearly reached with €316,850 collected from 393 investors.[19] The annual return rate was stated as 8 % with a project duration of 5 years. The project description includes two presentation videos showcasing the company, along with comprehensive details on the project's background, repayment structure, social and environmental impacts, as well as financial information

[19] https://www.bettervest.com/de/project/pawame-1 (accessed on May 5, 2024).

regarding the business model (see Appendix C2 for a visual excerpt of the project description on the crowdlending platform). Other typical projects on bettervest include deploying photovoltaic systems, solar water heaters, solar water pumps, or clean cooking stoves in regions like Rwanda or Zambia. To facilitate partial repayment in the case of insolvencies, project investments are typically structured as special purpose vehicles (SPVs). In exchange for their intermediary services, the platform charges a periodic handling fee and a success-dependent commission.[20]

By strategically approaching our sample from the platform bettervest, we aim to describe the particular subgroup of crowdlending investors with regard to the specific topic of how participation motivation shapes investor decision making (Neergaard, 2007, p. 264). Based on the method of purposeful sampling (Lincoln & Guba, 1985; Patton, 1990), we defined and followed specific characteristics to reach out to potential participants. As we were interested in the investors who fully recall their crowdlending activity, we only approached active investors with two or more investments that had invested in a bettervest project within the last six months before the interviews. Following this procedure helped us to avoid or significantly reduce potential recall bias (i.e., incomplete or inaccurate recollections) because the closer in time the object of cognition, the less severe the recall bias is likely to be (Cassar, 2007).

We approached a total of 130 investors in successive groups based on the recency of their investments, with a final response rate of approximately 14 %. The semi-random approach has advantages over simple snowball sampling often used in other studies, because we did not know the interviewees prior to approaching them, thus increasing the objectivity of the findings. To signal trust, investors were contacted via e-mail together with bettervest and asked whether

[20] https://www.bettervest.com/en/2022/12/06/ausfallgarantie, https://www.bettervest.com/de/intrasparenz-beim-crowdfunding (accessed on December 13, 2023).

they were interested in participating in the study.[21] As an incentive, bettervest offered participants a voucher for their next investment (€20 toward the minimum investment amount of €100). Such participation incentives have been shown to improve engagement in consumer research studies (Keller et al., 2020). The semi-structured interviews were conducted by the first author between October 2021 and January 2022 and took place predominantly via telephone (14 of 18 interviews) or the digital conferencing tool Webex by Cisco Systems (4 of 18 interviews).

The final dataset includes 18 interviews with a duration of 38 min on average, ranging from 24 to 60 min. In our study, we employed purposeful sampling to ensure the characteristics of participants closely mirrored those typically found in crowd investors (Neergaard, 2007). Thus, this method allowed us to select individuals whose sociodemographic characteristics and experiences are representative of the examined population. Table 4-1 provides an overview of the characteristics of each investor, demonstrating the investors' age, gender, and general investment experience, as well as crowdfunding experience. In our sample, 14 interviewees were male and the same number of interviewees were under the age of 50. Further, 15 interviewees had investment experience with stocks, funds, bonds, or other financial products before participating in crowdlending for sustainable ventures via bettervest or other platforms. The remaining three reported that they began their general investment activities around the same time as they began participating in crowdlending. According to their own recall and estimations, investors had approximately 17 years of investment experience on average before starting with crowdlending. In addition, seven respondents reported that they had additional experience with investing in crowdfunding before their crowdlending activities on bettervest.

[21] The authors received no financial compensation or other incentives from bettervest to conduct this study and cooperation on this study was limited to providing access to the platforms' investor pool for the purpose of conducting the interviews.

At the time of contact, the investors from our final sample had made between 2 and 61 crowdlending investments via bettervest.

Table 4-1. Overview of interviews and characteristics of interviewees

ID	Profession	Education (degree)	Prior invest-ments	Investment experience (years)	Prior crowd-funding	Age category (years)	Gender	Length (minutes)	Date of interview
1	IT Manager	Master's	Yes	5-10	Yes	30-39	M	24	21/10/2021
2	Property Manager	Apprentice-ship	Yes	21-30	Yes	40-49	M	45	27/10/2021
3	Quality Manager	Master's	Yes	5-10	No	20-29	M	29	29/10/2021
4	Public Administrator	Master's	Yes	21-30	No	40-49	M	40	03/11/2021
5	Credit Analyst	Apprentice-ship	Yes	11-20	No	50-59	M	30	10/11/2021
6	Psychotherapist	Master's	Yes	41-50	No	60-69	F	38	15/11/2021
7	Official	Master's	Yes	21-30	Yes	50-59	M	51	16/11/2021
8	IT Administrator	Master's	Yes	21-30	No	40-49	M	39	25/11/2021
9	Engineer	Master's	Yes	11-20	No	40-49	M	30	01/12/2021
10	Sustainability Consultant	Master's	No	0-4	Yes	30-39	F	42	07/12/2021
11	Consultant	Master's	Yes	5-10	Yes	30-39	F	41	09/12/2021
12	Research Assistant	PhD	No	0-4	No	30-39	F	29	14/12/2021
13	Business IT Specialist	Master's	Yes	21-30	Yes	50-59	M	60	13/01/2022
14	Marketing Manager	Master's	Yes	11-20	No	40-49	M	28	18/01/2022
15	Research Assistant	PhD	Yes	11-20	No	30-39	M	34	18/01/2022
16	Research Assistant	PhD	Yes	11-20	Yes	30-39	M	43	24/01/2022
17	Software Engineer	Master's	No	0-4	No	40-49	M	49	26/01/2022
18	Electrical Engineer	Master's	Yes	11-20	No	40-49	M	29	28/01/2022

Note. M = Male, F = Female; 1 = True, 0 = False. Prior crowdfunding indicates additional experience on any type of crowdfunding platform, Master's degree refers to university degrees as well as to Diploma holders before the Bologna Process. Dates are presented in the DD/MM/YYYY format.

These sample characteristics represent typical sociodemographic characteristics of crowd investors as revealed in previous quantitative crowdfunding studies (e.g., Penz et al., 2022; Tenner & Hörisch, 2021). In addition, research has highlighted the relevant role of previous investment experience in the crowdfunding market (e.g., Kim & Viswanathan, 2019). Ultimately, the characteristics of the interviewees in our study were comparable to those in previous work and, thus, suitable for our analysis.

4.3.3 Data analysis

Our initial analysis and coding process of the gathered interview data follows an inductive procedure, which is enriched with an abductive approach in a subsequent step to better comprehend how investors' motives in return-oriented crowdlending may shape their decision making (for a similar analytical approach, see Farny et al., 2019). Such an analytical approach involves a dynamic iteration between data analysis and the emergence of theoretical constructs by further drawing inspiration from existing theory (e.g., Huy et al., 2014; Williams & Shepherd, 2016).

In a first step, we implemented grounded theory in our analysis, because it is known to have several advantages for studying complex and dynamic phenomena like return-oriented crowdlending. For instance, it can identify the situated nature of knowledge and adapt to diverse phenomena or changes (Milliken, 2010). We used the software MAXQDA for our data analysis and followed an iterative technique based on constant comparison according to the principles of grounded theory (Glaser & Strauss, 1967). By employing the technique of constant comparison (Glaser & Strauss, 1967; Strauss & Corbin, 1998), the methodology of grounded theory generates insights from underlying data while increasing the rigor of qualitative studies. Thus, we first segmented the data into initial codes and then aimed to identify variations between the interviews. The identification of initial codes involved an open coding procedure of the underlying data that resulted in a list of first-order concepts related to the research

question (Strauss & Corbin, 1998). Subsequently, we iteratively compared and contrasted the emerging themes in an ongoing process to aggregate similar concepts into a meaningful data structure of second-order themes and aggregated categories (Gioia et al., 2013; Strauss & Corbin, 1998).

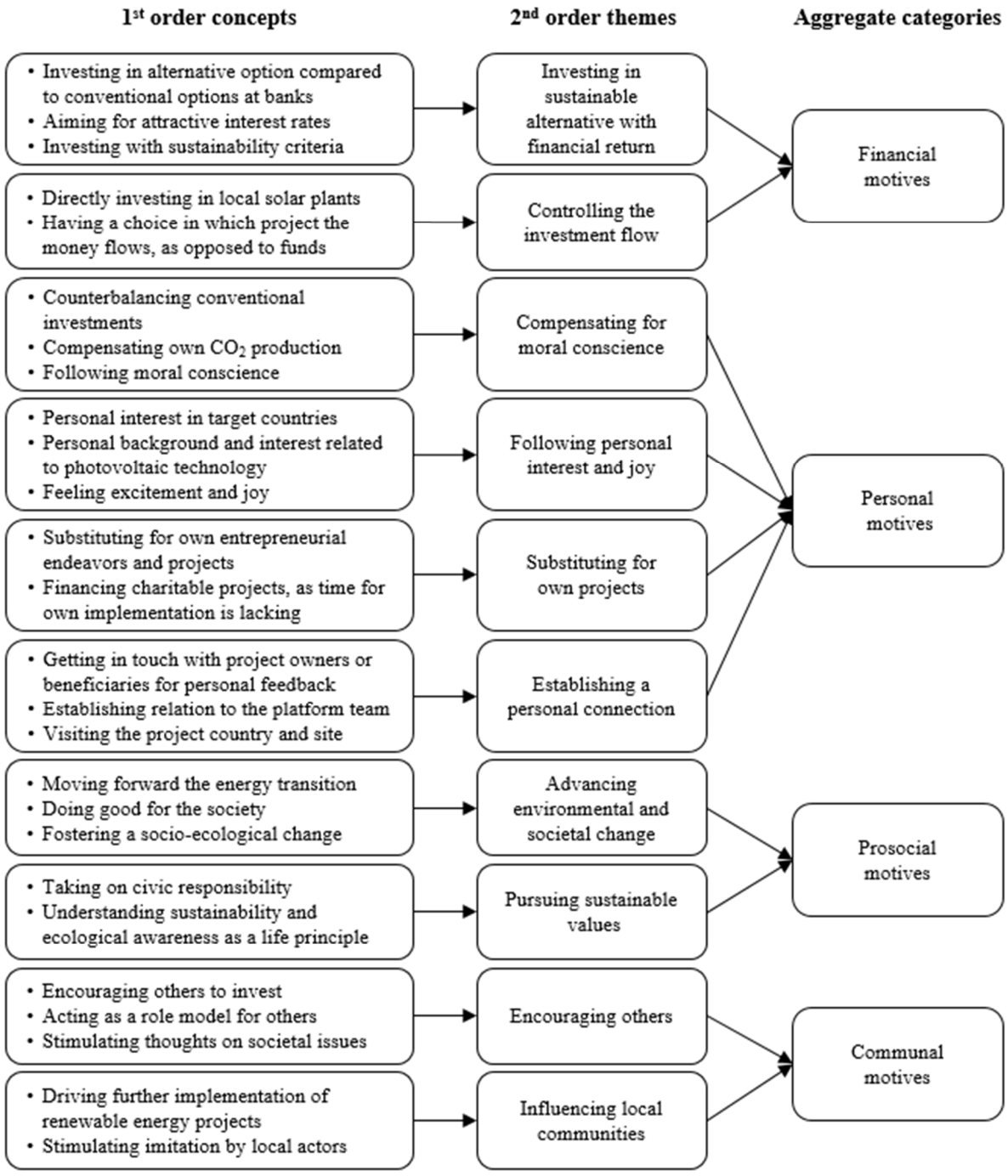
In a second step, we incorporated procedures from an abductive approach to achieve a valuable contribution to theory development (Sætre & Van de Ven, 2021; Vila-Henninger et al., 2024). More specifically, we further reviewed relevant literature on motivation to provide support for the reasoning of the derived themes and dimensions and to evaluate if any further concepts could be developed after the preliminary stages of analysis (e.g., Sætre & Van de Ven, 2021). In this process, the reviewed literature and existing theory on motivation in sustainability-oriented crowdfunding served as a lens for the classification of the emerged themes and categories (e.g., "compensate for their moral conscience" or "establish a personal connection"). Hence, the consideration of theoretical work concerning focus and drivers of motives arose from analyzing data and gaining emergent insights through an initially inductive coding procedure (see, e.g., Choy & Schlagwein, 2016), while the insights from previous studies on intrinsic and extrinsic drivers of motives (e.g., Alam & Campbell, 2012; Bagheri et al., 2019; Choy & Schlagwein, 2016) and self-directed and other-directed motives (e.g., Hashinaga et al., 2023; Zhang & Chen, 2019) inspired the further analysis of findings. Based on this, we developed a model to add further depth to the analysis of how motives can shape crowd investors' decision making, advancing the discussion of the theoretical implications and contributions to existing literature in the field.

4.4 Results

Our findings across the interviews revealed that the investors' motivation to engage in crowdlending for sustainable ventures is multilayered and appears to be a combination of

financial, personal, prosocial, and communal motives. Figure 4-1 depicts the first-order concepts, second-order themes, and aggregated dimensions resulting from the analysis.

Figure 4-1. Data structure of motives in return-oriented crowdlending



Exemplary interviewee statements for the evolving themes and our inductive coding procedure are presented in the tables in Appendix C3 to Appendix C6. The identified themes and subthemes of our findings are interrelated rather than mutually exclusive, as is often the

case in qualitative studies (Meng et al., 2022). The results of our analysis indicate that investor considerations about crowdlending outcomes are based on their weighting of the distinct motives. In the following, we first describe the results of our qualitative study in more detail, after which we provide insights into the role these motives play in the decision-making approach of crowd investors.

4.4.1 Motives to engage in return-oriented crowdlending for sustainable ventures

Financial motives

The investors we interviewed indicated that their engagement in crowdlending for sustainable ventures was tied to the basic idea of preserving or increasing their financial wealth (see Appendix C3). Financial motives thus represent one of the main participation criteria that was consistent across all interviews. The majority of interviewees emphasized the desire to supplement or substitute traditional financial products and described looking for sustainability-focused options to *invest in an alternative with potential financial returns*. For most crowd investors, the initial impetus to participate in crowdlending for sustainable projects was to critically question traditional investment opportunities. For example, Investor 7 explained:

"The first is to invest one's money, one's savings, in such a way that it has a chance of retaining its value in the long term or even growing. But above all, to ensure, so to speak, on the international financial markets that one does not contribute to financing the bad in the best case."

And Investor 16 stated:

"Before that, I was also looking for forms of investment that moved away from the traditional bank account and, in some cases, invested in specific projects. The aim is to achieve a return, but also to create added value for society or, in my case, above all for the environment."

Comparing crowdlending with the economic appeal of financial products offered by traditional banks, the interviewees underlined the attractiveness of return rates in crowdlending. With respect to the increased risk, they stressed the practice of distributing small investment amounts across different sustainable crowdlending projects to diversify as broadly as possible. Most investors further indicated that they had experience with traditional investments as retail

investors prior to participating in crowdlending for sustainable ventures and thus had an existing investment portfolio. In view of this, the interviewees considered crowdlending as a part of their overall investment strategy which, in most cases, also included traditional investment options such as stocks and shares. For example, Investor 13 stated that the share of alternative investments amounts to around 5 to 10 percent of the overall portfolio. While for the majority of investors crowdlending accounts for a smaller share of the overall investment portfolio, some investors show tendencies to increasingly shift larger shares toward crowdlending. Hence, their focus on crowdlending in relation to their investment portfolio ranges from small to large. Further, Investor 11 explained: "Since I am employed and also earn a little money, I invest money. I have a relatively good knowledge and for me, crowdlending is more of a small […] addition to my profile." In contrast, Investor 2 declared: "I've been trying to turn that around for two years. And I'm getting more and more money out of the things that are simply based on security and my financial advantage […]." All investors, however, stressed that at the given time they do not rely on the money they invest in crowdlending, so they have some leeway to make this type of investment with high returns and high risk.

Actively comparing crowdlending with traditional investment options that claim to meet sustainability and financial criteria, investors perceived the ability to *control the investment flow* by directly selecting sustainable projects as another benefit of crowdlending. In contrast, when investing in large stock funds, for example, they would have to rely on the decisions of fund managers as the intermediaries. In this regard, one interviewee noted that crowdlending represents one of the few investment opportunities in the retail segment to "invest directly" (Investor 9) into projects of new ventures that create social and ecological value. Other investors highlighted the possibility of making a direct monetary contribution to physical "asset value" (Investor 7). Referring to the link between the investments and the projects, Investor 9 explained:

"I have the possibility to influence that actually physically somewhere a solar plant is built, which ensures every year that hundreds of kilos of CO_2 do not end up in the atmosphere. […] The money that goes into it ensures that these solar plants and so on are built there. This direct link to the individual project is what I invest in."

Personal motives

Second, we identified a range of personal motives related to individual perceptions, needs, and desires of the interviewed crowd investors (see Appendix C4). Our study revealed that some investors were driven by their perceived need to *compensate for their moral conscience*, that is, their desire to compensate or counterbalance their bad conscience regarding their personal carbon footprint or their previous or current traditional investment activities. Referring to the personal "moral compass", Investor 1 stated: "If I know I'm making money through the bad [companies] in the world because I'm investing, then somehow I have to create something good in return." Further Investor 2 explained: "So I include that for myself in my CO_2 calculator. It's important to me that I'm definitely below the average European CO_2 footprint with my family."

Investors also expressed that they participate in crowdlending for sustainable ventures for hedonistic reasons related to their *personal interests and joy*. For instance, Investor 11 stated: "[…] I kind of do that a little bit besides for fun, to somehow make my portfolio a little bit more interesting." Another described investing in crowdlending projects of sustainable projects as "adventurous" (Investor 15). In addition, crowd investors referred to their personal interest in specific project topics such as photovoltaic technology or certain project countries that were closely related to the sustainable ventures' field of activity.

Relatedly, crowdlending investments in sustainable projects can be considered a *substitute for the realization of own projects or entrepreneurial ventures* that individuals would like to undertake but lack the time or opportunity to do so. Given that circumstances do not always allow individuals to launch or participate in sustainable projects on their own, crowdlending provides investors with the opportunity to contribute to the implementation of

sustainable ventures and pursue their progress through their crowdlending investments instead. Investor 7 explained:

"I would like to finance my own huge photovoltaic system someday. […] It would be my thing and it would have to function, then I would be an entrepreneur. But I haven't managed to do that yet. And that's why it's also a bit of substitution via crowdfunding."

Other crowd investors stressed the desire to *establish a personal connection* with the project beneficiary or the crowdlending platform team. Building a relationship can create a feeling of trust and fulfill the needs of interpersonal contact and exchange of individual investors. As Investor 13 described:

"We had such a nice little [project] where they said the kids can go to school or do homework longer because they just get light. And I actually wrote to the village elders [a message] and got feedback."

Prosocial motives

Third, we identified prosocial motives as another consistent motive referenced by all crowd investors interviewed. Prosocial motives revolve around the societal impact of crowdlending investments in sustainable ventures (see Appendix C5). Having realized that monetary investments represent a "good lever" (Investor 4) to make a difference and create impact, crowd investors commonly emphasized the prosocial motive of *advancing environmental and societal change*. They, for example, stated that they promote change by fostering the shift to renewable energy around the globe or helping to improve the lives of people in the project country. With a focus on renewable energy, Investor 2 pointed out:

"It's actually more about pushing forward the energy transition worldwide. […] And that's what I'm trying to achieve through my volunteer work [...]. And through finances that are not invested in coal and fossil energy."

Further, Investor 3 highlighted: "[…] because of course I want my money to do something positive not only for me somewhere but also for the society or the population." In addition, crowd investors stressed that they *pursue sustainable values and beliefs* through supporting sustainable ventures with their investments. They often understand sustainability and ecological awareness as guiding principles of their lives that are also reflected in other

areas, such as their consumption behavior, and view their investment decisions as a way of fulfilling their civic responsibility. In this context, Investor 10 revealed: "Because at some point it became clear to me that my own consumption decisions are an important factor, not just my own ecological footprint." Subsequently, Investor 10 added: "We have to use the power of the consumer, which goes beyond consumption, also in the investment decision for our leverage [where] it is actually much bigger." In addition, Investor 11 clarified:

> "But for me, it's actually also clear that I pay attention to social and ecological criteria in my investments because I do that usually in my own life now, that is, my lifestyle. And also at the ballot box, not only for me as a consumer or investor but actually also just as a citizen or political fellow citizen."

Communal motives

Fourth, the crowd investors in our sample referred to communal motives that were linked to their influence on communities. Similar to personal motives, communal motives seem to be rather based on individual desires of investors and appeared less consistently than financial and prosocial motives throughout the conducted interviews (see Appendix C6). Investors who mentioned communal motives emphasized the motive of *encouraging others* to contribute to crowdlending. Some actively recommended crowdlending for sustainable ventures to their friends and acquaintances, while others aimed to become role models for others through their crowdlending activities. One investor referred to a desired "imitator effect" (5) to increase positive impact, while another investor in our study saw great potential in arousing the interest of other nonprofessional investors. In this context, Investor 4 described:

> "But if you look around now as an investor on the market in Germany about loans, there is as good as no interest for these. So some people might well come up with the idea of saying, okay, I'm going to invest in a solar project in an emerging country. And I think you need to encourage more people [...] to invest in such things."

Furthermore, investors stated that they can *influence local communities* by driving further implementation of renewable energy projects or stimulating imitation by local actors. As Investor 5 explained: "[…] and ultimately also to animate and also show there locally that

a whole lot is possible in the area of renewable energies." In addition, Investor 2 mentioned the importance of showing people in the region that "it is possible to work economically with such projects." According to this investor, showing communities that the projects being implemented can function *and* yield profit may encourage the local expansion of similar projects.

4.4.2 Crowd investor considerations in return-oriented crowdlending

The following stage of analysis revealed how the identified motives shape crowd investor decision making in return-oriented crowdlending for sustainable ventures and uncovered different considerations of crowdlending outcomes. The findings suggest that crowd investors in our sample appear to either emphasize or balance motives when forming their considerations regarding possible outcomes and potential financial losses in crowdlending. The tables in Appendix C7 and C8 present further evidence of these results.

Crowd investors who emphasized financial or personal motives reflected this emphasis in their *dominant return considerations*. They, for example, stated that "[…] having more than zero or minus [as an overall financial outcome from the investments]" (Investor 7) represented a prevailing goal for their investment in sustainable ventures. Investors with dominant return considerations referred typically to a strategic and long-term investment approach. Taking such a strategic perspective on crowdlending, Investor 1, for example, stated: "I realized that if I diversified broadly in crowdlending, I would get a roughly similar return. [...] So in principle, I can get the same return that I get from a fairly high-performing market-wide ETF (Exchange Traded Fund), but which is conventional." Further, investors who emphasize financial or personal motives seem to base their crowdlending decisions rather on hard facts, such as project duration or refinancing modalities, and put additional effort into understanding the business model and calculations. In this regard, Investor 7 also added: "This is about money and not about very big emotions." Hence, crowd investors with dominant return considerations tend to follow a *strategy-based approach* to decision making.

In contrast, crowd investors who emphasized either communal or prosocial motives overall showed *dominant charitable considerations*. In this context, they highlighted the fact that the "incentive is rather the contribution [itself]" (Investor 12). In this regard, Investor 10 outlined:

"[...] if the money was then completely gone, it would still be important to me that the investments had been made. And then […] I would also be satisfied with a purely nonfinancial return, [...], even if all the money was gone. But of course, that only works if the amounts are not that large. So that you just say, okay, otherwise, I just donated."

In addition, Investor 8 explained:

"And even if it doesn't lead to anything, it has at least led to something blossoming somewhere temporarily. And you never know what that will lead to. So it's the butterfly effect. And somehow it's still positive."

Therefore, investors focusing their decision making predominantly on charitable aspects appear to involve emotions in the decision-making process, relying on their gut feeling. In this context, Investor 6 described the decision-making approach in crowdlending as going "pretty much through the gut and less through the front brain." Further, Investor 8 explained that it is "such a bit of feeling" and Investor 10 described: "I hesitate much less. […] As long as I somehow think that the principle essentially corresponds to my values […]." Hence, their approach appears to be more "spontaneous" (Investor 4) and follows "no professional strategy" (Investor 6). Thus, in contrast to the strategy-based approach, other investors showed a rather *emotions-based approach* to crowdlending decision making.

However, the majority of investors in our sample explained that they would aim at least at the repayment of the initially invested amount and thus accept receiving no financial returns on their investment. As Investor 2 emphasized: "The main goal is to not make a big loss." In addition, Investor 3 noted: "First of all, it is important to me that I get my invested amount back at the end. And I see this interest payment as a benefit for me for the time being." Regarding their crowdlending decisions, the majority of investors in our sample engaged in a *blended approach* in their decision making, involving a mix of both strategy-based as well as emotion-

based elements. Investor 13, for example, described both the strategic procedure of continuously keeping a fixed "percent cut" over time in relation to the overall investment portfolio and going through all investments "once a month," while additionally referring to "a little bit of gut or flavor" (Investor 13) when it comes to making the actual project decision.

In summary, we observe a hybrid nature of considerations and approaches, highlighting the fact that—similar to prosocial crowdlending (e.g., Allison et al., 2015; Galak et al., 2011)—return-oriented crowdlending is situated somewhere between traditional investing and charitable giving. Our findings show that the variety of participation motives of individuals leads to a range of diverse considerations and approaches that influence individual decisions. In this context, the decision-making approaches can be understood as a hybrid concept based on a continuum anchored between financial return and charitable considerations.

4.5 Discussion

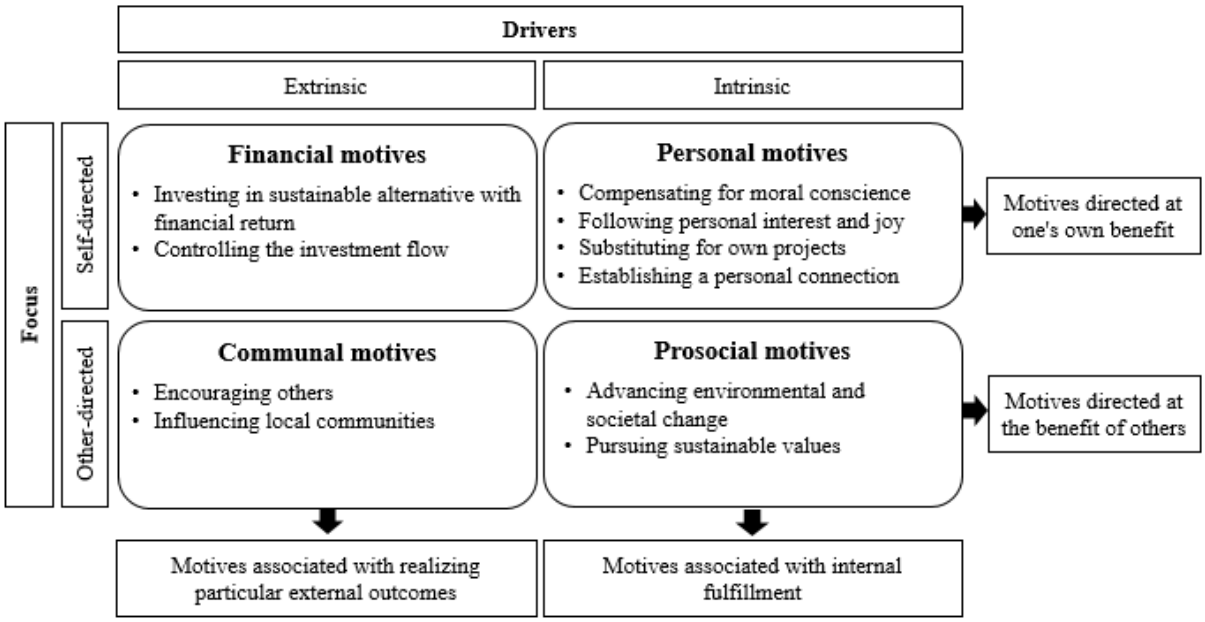
Drawing from the analysis of semi-structured interviews, this section delves into the discussion of findings and develops a model with the aim to enhance the understanding of why nonprofessional investors engage in return-oriented crowdlending for sustainable ventures and how their motives shape their decision-making approaches. The development of the model is informed by the theoretical lenses of intrinsic and extrinsic drivers of motives, as well as self-directed and other-directed focus of motives.

4.5.1 The role of focus and drivers of motives

As previous studies on crowdfunding motivation suggest that a granular classification can provide crucial explanatory value concerning the individuals' motives and related considerations in crowdfunding (e.g., Bagheri et al., 2019; Ryu & Kim, 2018), we refer to intrinsic and extrinsic drivers as well as self-directed and other-directed focus to develop a refined understanding of the identified motives and discuss them in the context of related

theory. Figure 4-2 illustrates the organization of the aggregate categories and themes according to the self-directed versus other-directed and intrinsic versus extrinsic dimensions.

Figure 4-2. Organization of motives according to drivers and focus



Self-directed motives driven by extrinsic factors

Financial motives are primarily extrinsically driven, as they relate to the external tangible outcomes of investing in crowdlending for sustainable ventures (e.g., Allison et al., 2015; Cholakova & Clarysse, 2015). These motives are linked to the extrinsic benefits that investors expect for themselves (Allison et al., 2015), classifying them as self-directed extrinsic motives. When describing financial motives, the interviewed investors often drew comparisons between crowdlending and traditional investment options, emphasizing financial goals such as saving for retirement. Therefore, crowdlending for sustainable ventures can be considered as a way to achieving their financial goals while retaining control of the flow of their investments. Aligning with the economic logic commonly associated with traditional investing (Galak et al., 2011), these observations reflect the findings from research on financial decision making, which highlights the individual's welfare from monetary outcomes (De Bondt & Thaler, 1995; Galak et al., 2011).

Self-directed motives driven by intrinsic factors

In contrast to financial motives, personal motives are intrinsically driven while being directed at the investors' own benefit. They relate to the personal fulfillment and satisfaction of crowd investors derived from the activity of investing in sustainable ventures itself (e.g., Cholakova & Clarysse, 2015). For example, the motive of compensation was often mentioned by the interviewed investors. This motive refers to the moral self-image of investors who feel the need to adjust (i.e., to compensate for) a perceived deficiency of their own social behavior (Warburg et al., 2021). From a theoretical perspective, this concept is connected to the principles of mental accounting (Thaler, 1985; Thaler, 1999), suggesting that individuals allocate their finances into distinct mental accounts and engage in moral balancing (e.g., Merritt et al., 2012; Ploner & Regner, 2013), striving to maintain a level of their self-image. Such motivation is known from the field of environmental decision making, where individuals engage in voluntary carbon offsetting for a product or service choice (e.g., Hahnel et al., 2020; Warburg et al., 2021). Further, the anticipated feelings of joy and excitement are consistent with findings from previous literature on reward-based and equity-based crowdfunding (e.g., Makki & Van Hemmen, 2022), while the need to build a personal connection was also observed in the context of donation-based crowdfunding (e.g., Bagheri et al., 2019; Choy & Schlagwein, 2016). Hence, personal motives are rooted in the psychological traits of the individual and embedded within their personal contexts and circumstances. The large range of identified personal motives underscores this inference, as the motives are subjective and differ in light of the investors' personal interests, ambitions, needs and desires, as well as their perceptions of social norms.

Other-directed motives driven by extrinsic factors

Communal motives aimed at encouraging others and influencing the local community can be considered as externally driven, as they are linked to the external recognition and the behavior of others and thus are based on an extrinsic outcome (Allison et al., 2015; Bagheri et

al., 2019). Within our study, the interviewees expressed a desire for adaptation and imitation by fellow crowd investors or local project initiators, underlining their orientation toward external recognition, awareness, and behavior originating from the broader community. This aspect aligns with findings from research in the fields of donation-based crowdfunding and charitable giving, where individuals often exhibit a concern for the image they convey to others (Allah Pitchay et al., 2022; Ariely et al., 2009; Choy & Schlagwein, 2016). Thus, this motive reflects concepts that are usually found in charitable giving, despite the fact that return-oriented crowdlending for sustainable ventures can generate financial gains for investors.

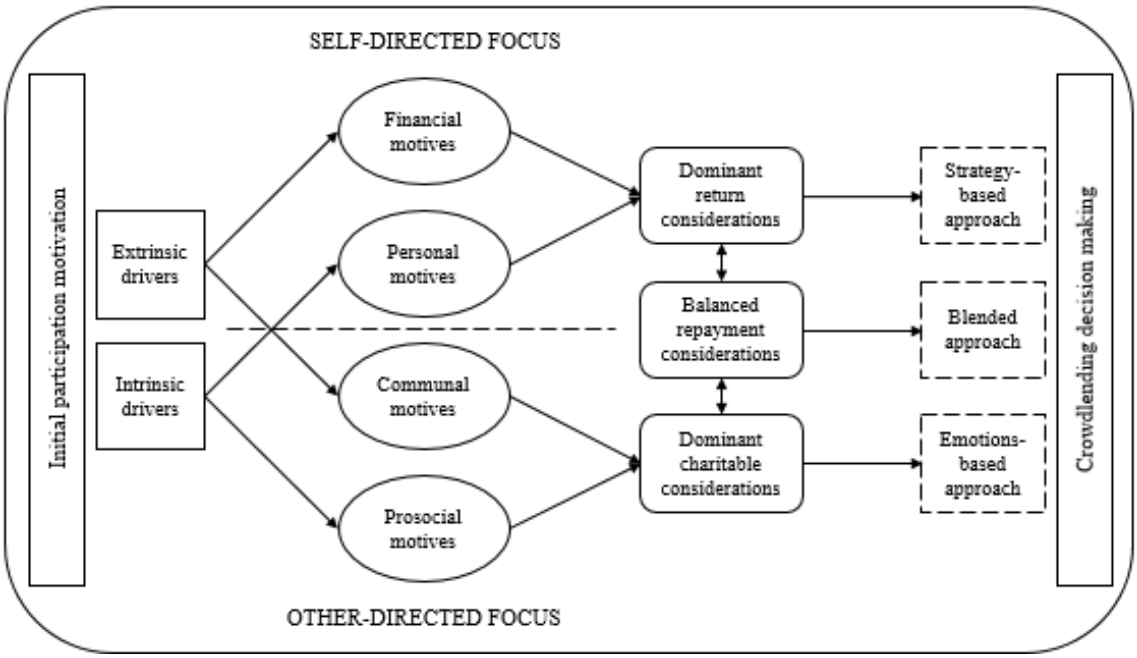
Other-directed motives driven by intrinsic factors

Prosocial motivations are intrinsically driven as they stem from the psychological gains resulting from the contribution process itself (Allison et al., 2015; Cholakova & Clarysse, 2015). These motivations focus on benefiting others, particularly in addressing societal issues and the greater common good. The interviewees in our study considered customers of sustainable ventures, the ventures' employees, or the society at large as the beneficiaries, and they expressed commitment to effecting specific social and/or environmental changes within their sphere of influence. Their actions are rooted in beliefs and values that often extend to different aspects of their lives, such as their consumer behavior, professional or volunteer activities, and political orientation. Such other-directed intrinsic motives are typically associated with the field of charitable giving. Research in this area has explored different concepts that may underlie the motives, from pure altruism to egoism (e.g., Allison et al., 2013; Andreoni, 1990). Accordingly, investors can be motivated by helping others, even though this motivation may not be entirely altruistic. For example, they might seek to invest in sustainable ventures to help others with the aim of making themselves feel good (e.g., Allison et al., 2013; Penz et al., 2022) also referred to as the "warm-glow effect" (Andreoni, 1990).

4.5.3 A motivation-centric model of decision-making approaches

Based on our observations, the model in Figure 4-3 illustrates the role of crowd investors' initial participation motivations for shaping their decision-making approaches in relation to outcome considerations. In particular, this model sheds light on how weighing the different underlying motives can lead to varying considerations of crowdlending outcomes.

Figure 4-3. A motivation-centric model of decision-making approaches in return-oriented crowdlending for sustainable ventures



While all crowd investors in our interviews referred to a combination of financial, personal, communal, and prosocial motives in terms of their participation in crowdlending for sustainable ventures, we found that they showed different tendencies to balance these motives. By revealing these tendencies, this study extends previous research exploring motives related to investments in sustainable ventures (e.g., Galak et al., 2011; Meng et al., 2022; Moysidou & Spaeth, 2016) and provides additional insights into how investors balance the different dimensions of these motives.

Thereby, our study recognizes that the weighing of motives leads crowd investors to consider crowdlending outcomes of their investments in different ways (dominant return considerations vs. balanced repayment considerations vs. dominant charitable considerations).

In particular, crowd investors who emphasized extrinsically or intrinsically driven self-directed motives described dominant return considerations, whereas investors who emphasized extrinsically or intrinsically driven other-directed motives described predominantly charitable considerations. However, the majority of the interviewed investors in our sample balanced the different motive types and stated that they would be satisfied with the repayment of the initially invested amount, thus accepting the possibility of receiving no financial return on their investments. In this case, they follow the logic inherent in prosocial crowdlending, where the main expectation is to get back the amount originally invested (e.g., Berns et al., 2020; Gafni et al., 2021).

Related to the different considerations, crowd investors tend to follow distinct approaches in their decision making (strategy-based approach vs. blended approach vs. emotions-based approach). As a result, investors showing dominant return considerations engage rather in a strategy-based decision-making approach that typically follows rationally derived steps under consideration of a long-term investment plan and/or portfolio strategy. Such investors are more likely to consider hard facts, such as the project's interest rate and project duration, and to conduct some (simple) form of due diligence before making their decision. In contrast, investors with dominant charitable considerations show more of an emotions-based approach that is characterized by spontaneous decision making based on their gut feeling after reading the project's description. The blended approach combines elements from both strategy-based and emotions-based decision making. Hence, these observations shed light on the hybrid nature of decision making in return-oriented crowdlending for sustainability ventures, which needs to be understood as a continuum.

Further, it is noteworthy that all of the interviewed crowd investors still perceived the possibility of earning a financial return as one relevant factor for their initial participation in this form of crowdfunding. Thus, financial motives drive crowd investors' choice of

crowdlending over prosocial crowdfunding or donation-based crowdfunding to fund sustainable ventures. In the course of the further decision-making process with regard to investing in sustainable ventures, however, balancing the different motive types leads to a range of outcome considerations and approaches from crowd investors. This finding is particularly interesting as it may distinguish return-oriented crowdlending from other forms of return-oriented financing, such as equity-based crowdfunding or sustainable venture capital. Research suggests that investors in the latter financing options typically center their considerations primarily around expected financial returns, even if investors may accept lower returns in the context of sustainable ventures compared to commercial ventures (Bocken, 2015; Vismara, 2019; Wehnert & Beckmann, 2021). In contrast, prosocial crowdlending and donation-based crowdfunding are mainly driven by specific causes, for example, in relation to environmental disasters or social deficiencies (e.g., Behl & Dutta, 2020; Ge et al., 2022), and hence a combination of prosocial and communal motives that show parallels to charitable giving (e.g., Bagheri et al., 2019; Choy & Schlagwein, 2016). With regard to prosocial and communal factors, return-oriented crowdlending for sustainable ventures within the sector of renewably energy also diverges from reward-based crowdfunding, where studies indicate that project innovativeness significantly influences investors, particularly within sectors such as technology and the film industry (Roma et al., 2017; Roma et al., 2023).

Some crowd investors in our sample adopted repayment considerations, while others showed charitable considerations by comparing crowdlending losses to donations. As our analysis of participation motivation suggests that financial motives play an important role in driving initial crowdlending engagement for all crowd investors, some crowd investors thus seem to shift and adapt their perceptions related to the expected financial crowdlending outcomes. In particular, they show tendencies to reframe their investment when considering potential losses and view it as a donation for a good cause. Such an adaptation of preferences

may be associated with theories around *ex post* rationalization (e.g., Eyster et al., 2021; Folli & Wolff, 2022), which state that individuals adapt their beliefs and attitude of prior choices, for example, as a consequence of cognitive dissonance (Festinger, 1957). This is important to know because researchers have recognized that rewards and outcomes of crowdfunding for sustainable projects are typically less tangible and less immediate, creating additional uncertainty (e.g., Messeni Petruzzelli et al., 2019). Typically, overcoming this uncertainty for sustainable ventures is conceptualized as a key role of the entrepreneurs, yet our findings show that the investors themselves can play a considerable part in this by reframing their views and *ex post* rationalizing their investment (and potential losses as nonetheless beneficial for normative goals) (e.g., Eyster et al., 2021).

4.6 Implications and limitations

Our qualitative study aimed to gain a refined understanding of why crowd investors engage in crowdlending for sustainable ventures and how these motives may shape their decision making. Grounded in our analysis of participation motives of return-oriented crowdlending for sustainable ventures, this study developed a motivation-driven model of decision-making approaches. Thereby, we extend existing research on motivations in return-oriented crowdlending, which has focused primarily on examining the influence of campaign attributes on crowd investor decisions (e.g., Bento, Gianfrate, & Groppo, 2019; Hörisch & Tenner, 2020; Pierrakis, 2019). While previous insights have been so far inferred in a detached manner from the underlying motives, our findings provide insights into the granularity of crowd investor motivation uncovering a multilayered combination of diverse financial, personal, prosocial, and communal motives. To summarize our study and its findings, we conclude by discussing the theoretical implications and contributions of our study (section 4.6.1), before focusing on its limitations as well as the opportunities it provides for future research (section 4.6.2) and outlining the practical implications of our findings (section 4.6.3).

4.6.1 Theoretical implications

First, our findings unveil the underpinnings of different motive types and disentangle their drivers and focus to provide a nuanced perspective on various layers of crowd investor motivation. These insights contribute significantly to the academic discourse on motivational factors in the realm of crowdlending (e.g., Choy & Schlagwein, 2016; Gerber & Hui, 2013; Tenner & Hörisch, 2021). In particular, previous motivational research in the field of crowdlending often tends to refer to two dimensions based on the distinction of financial and nonfinancial motivation (Hajiheydari & Delgosha, 2023). However, the multifaceted nature of motivation requires a more comprehensive consideration when studying motivation in sustainability-oriented crowdfunding (Reiss, 2012; Yoo et al., 2023). Complementing the financial and prosocial motives previously explored in research on prosocial crowdlending (e.g., Allison et al., 2015; Berns et al., 2020; Gafni et al., 2021; Galak et al., 2011), our findings provide novel insights on additional personal facets, such as the motive of compensating for a moral conscience, that open up new avenues for future research.

In this context, the results of our study show that investors participate in crowdlending to compensate for their behavior in other areas of life (i.e., mental accounting and moral balancing). Similar to other carbon offsetting situations known from environmental decision making, individuals seem to be aware and keep track of their environmental activities (Hahnel et al., 2020) to engage in compensatory behavior when they deviate from their desired moral level (Cornelissen et al., 2013; Ploner & Regner, 2013). This implies that crowd investors consider crowdlending as a part of their overall long-term economic strategy, which underlines a distinguishing characteristic of return-oriented crowdlending. The findings from our analysis further corroborate the argumentation from previous research stating that crowd investors build up a portfolio (Dorfleitner et al., 2023; Hornuf et al., 2021) consisting of both traditional investment options such as stocks and shares and crowdlending projects, which reveals

similarities to traditional investing (De Bondt & Thaler, 1995; Galak et al., 2011). Thereby, we close the previous gap in understanding the motives of the crowd of financially driven retail investors to include investments in sustainable ventures into their portfolio (e.g., Ormiston et al., 2015).

Second, by shedding light on how balancing diverse motives shapes the crowd investors' approaches to decision making through the different considerations of crowdlending outcomes, our analysis highlights the hybrid nature of crowdlending decisions (Allison et al., 2015; Galak et al., 2011). In this regard, return-oriented crowdlending differs from other forms of entrepreneurial finance, such as equity-based crowdfunding, business angels, or sustainable venture capital (Bocken, 2015). As considerations of investors within these financing options are still dominated by financial market logic, research on equity-based crowdfunding shows that investors tend to ultimately follow the motive of financial wealth creation (e.g., Nitani et al., 2019; Vismara, 2016). For example, in equity-based crowdfunding, the motive of helping others had no significant impact on investor decision making, whereas the motive to obtain a financial profit showed an impact (Cholakova & Clarysse, 2015). Thus, while previous research offers support for the influence of the financial market logic in return-oriented crowdlending (Kollenda, 2022; Pierrakis, 2019; Slimane & Rousseau, 2020), our findings show that investor considerations in return-oriented crowdlending can be also strongly shaped by other-directed and/or intrinsic motives. In particular, our observations revealed that some crowd investors may even adopt charitable considerations by focusing on nonfinancial returns for others.

By proposing a motivation-centric model for the decision-making process in return-oriented crowdfunding, we add to the ongoing discussions on the relevance of social and/or environmental impact with regard to different forms of investing. Our model helps scholars to further define the concept of crowdlending and link it to the broader landscape of sustainable venture financing (e.g., Bocken, 2015) and impact investing (e.g., Brest & Born, 2013;

Ormiston et al., 2015; Schlütter et al., 2024). The insights of our analysis provide a novel, in-depth investor perspective on the hybrid nature of crowd investor decisions and indicate the presence of contextual conditions that can shape investors' decision-making processes. Consequently, future research may leverage our findings to explore the specific contextual conditions that impact the conscious or subconscious weighing of motives and choice of particular decision-making approaches. In this respect, we propose that a perceived cognitive dissonance (Festinger, 1957) may lead crowd investors who find themselves in a conflict between the different motive types to adapt their considerations of crowdlending outcomes and thereby rationalize their choice of investing in crowdlending for sustainable ventures. Exploring this rationalization process and the related circumstances represents another fruitful avenue to advance our knowledge of crowd investor motives.

4.6.2 Limitations and future research avenues

First, our analysis is based on a crowdlending platform for sustainable ventures that primarily addresses investors in Germany. Given Germany's central location and influence in Europe, the German market may serve as a model for other European countries (e.g., Hörisch & Tenner, 2020). Thus, it seems likely that the uncovered findings would generalize to crowd investor behavior in other German-speaking countries (Austria and Switzerland). Yet the country-level political and economic situation (e.g., energy crisis, migration) can additionally influence both the investment opportunities on crowdlending platforms as well as the crowd's investing behavior. In this regard, market conditions and regulatory frameworks influencing crowdlending activity may vary cross-nationally (Moritz et al., 2015). Relatedly, crowdlending platforms for sustainable ventures may have different foci in terms of project types (e.g., reforestation or recycling rather than renewables) and target countries, as well as investment opportunities (i.e., the investment terms and type). Thus, future studies could compare crowd

investor motives and considerations not only across different countries but also across a range of different platform foci.

Second, relatedly, country-specific culture and values are likely to affect the individual motives for investing in crowdlending for sustainable ventures (Cholakova & Clarysse, 2015; Zhao et al., 2017). Researchers have proposed that "crowdfunding platforms focused on financing sustainability-oriented projects tend to prosper more in institutional contexts more active in promoting and supporting sustainability initiatives" (Messeni Petruzzelli et al., 2019, p. 146). While Germany is a country where residents value the benefits of a social market economy that balances profit-driven growth with social responsibility, the German population has been found to be relatively individualistic, with implications for their risk-aversion in their portfolio allocations (e.g., Breuer et al., 2014). Thus, future research on motives to participate in return-oriented crowdlending for sustainable ventures should take into account and compare the influence of contextual factors (e.g., national culture or institutional conditions) on investor motives. A first move in this direction is the survey-based comparative study by Hashinaga et al. (2023), in which the authors investigate crowdfunding intention in socially responsible crowdfunding across Switzerland, Japan, and China. They find a stronger correlation between other-oriented motives and sustainability goals in Switzerland versus the other two, in line with differences along the individualism/collectivism cultural dimension (Hashinaga et al., 2023).

Third, our study relies primarily on qualitative interviews and therefore self-reports. That being said, during the interviews we had the impression that respondents were answering our questions both truthfully and openly. Similarly, qualitative studies can suffer from recall bias: the farther back in time the object of recognition, the more pronounced this bias can be. Therefore, to minimize this risk, we considered this in our study design and interviewed investors who had invested in two or more projects, with their most recent investment made within the last six months at the time of contact.

Finally, our findings provide initial indications of the cognitive linkages between the weighing of motives and decision-making approaches. While the themes and nuanced motives uncovered during our interviews provide us with further insights into how crowd investors decide on their investments into sustainable ventures, the study's findings reveal many new insights. For example, it seems that some crowdlending investors are willing to forego profits and accept considerable risk of loss as a result of investing into sustainable ventures when focusing on the added sustainable value and reframing their (potential) losses to themselves and others as donations. Similarly, having fun seems to be a motivator for some investors, with implications for the potential influence of platform design. Based on the detailed perspective into the variety and nature of motives presented in this study, scholars could use experiments, fuzzy-set qualitative comparative analyses, or mixed-method approaches to test and further explore how and under which conditions these motives and considerations ultimately affect investor behavior. In this regard, scholars may directly compare the motives from crowdlending for sustainable ventures with those from other return-oriented crowdfunding types, such as equity-based crowdfunding.

4.6.3 Practical implications

By providing insights into the rationale for why and how retail investors participate in return-oriented crowdlending for sustainable ventures, this study offers practical implications for sustainable entrepreneurs, platform operators, and supporting institutions to adapt to the multilayered motivations of crowd investors. The insights can help both sustainable entrepreneurs and operators of sustainability-oriented crowdlending platforms recognize the diverse categories of motives that drive crowd investors and thus shape their strategies to engage and retain investors accordingly. Understanding that personal motives significantly influence crowdlending decisions for sustainable ventures, practitioners can implement measures to address common personal needs. For example, by acknowledging the desire for

compensation, sustainable entrepreneurs could proactively provide and regularly update accessible quantitative impact measures. In addition, introducing calculation mechanisms linked to the amount of investment, platform operators can guide morally driven investors to engage in compensatory behavior. Moreover, platforms could add elements of gamification to address crowd investors. Tapping into the different facets of personal motives to participate in crowdlending enables sustainable entrepreneurs and platform operators to more effectively customize strategies to engage investors in crowdlending projects. Further, sustainability-oriented platforms may appeal to the different decision-making approaches of crowd investors and offer them choices to receive project updates on both charitable aspects including emotional reporting elements (e.g., project stories, images, and videos) and financial aspects including strategic elements (e.g., due diligence aspects).

Finally, considering the current financial market landscape and the growing emphasis on global environmental and social concerns, retail investors are increasingly seeking alternative sustainable investment opportunities to diversify their portfolios. In light of this trend, supporting institutions and policymakers may leverage the momentum and promote crowdlending as a viable sustainable investment option for the retail investor segment. Current regulation, such as the Regulation of European Crowdfunding Services Providers (ECSP) for equity-based and lending-based crowdfunding, could take the crowd investors' versatile motives and needs with regard to sustainable ventures into account and add rules on the disclosure of sustainability-related information. Tailored support programs especially for sustainable entrepreneurs and specialized platforms could help incentivize retail investors' participation in sustainability-oriented crowdlending and foster a collaborative ecosystem that aligns with broader environmental, social, and financial goals. Institutional support, policies, and guidance on sustainability-related investments on crowdlending platforms are relevant to

exploit their full financing potential for sustainable ventures (Bento, Gianfrate, & Thoni, 2019; Hörisch, 2019).

5 Essay IV: Investing again after failure? Understanding crowd lenders' future investments in sustainable ventures[22]

Abstract

A significant number of crowdlending campaigns – including sustainable campaigns – fail after securing successful funding. Yet our understanding of how crowd lenders respond to failures of campaigns promising multiple values, such as realizing sustainable (social or environmental) value and financial return, remains limited. We conducted a vignette-based experiment investigating crowd lenders' reactions to failure in sustainable versus commercial campaigns. Our findings reveal uniform negative reactions to failure among lenders, irrespective of the initially promised values. However, in the aftermath of failure, socially compared to commercially framed campaigns experience higher subsequent investments the higher lenders' self-transcendence values. In contrast, lenders with high self-enhancement values showed lower subsequent investments in socially compared to commercially framed campaigns. We did not find any significant effect for environmentally framed campaigns. This study adds a failure perspective to research on sustainable crowdfunding by emphasizing the importance of aligning campaign values with lender values to mitigate the effect of failure and potentially promote forgiveness in subsequent investment decisions.

Keywords: crowdlending, failure, investment behavior, sustainable crowdfunding, human values

[22] Further versions of this chapter were accepted for presentation at international conferences, including:

- 2023 G-Forum Jahreskonferenz Entrepreneurship, Innovation und Mittelstand
- 2024 Social Entrepreneurship Conference
- 2024 European Academy of Management Conference (EURAM)
- 2024 Academy of Management Annual Meeting (AOM)

5.1 Introduction

Crowdfunding has grown to be an important funding option for a diverse range of ventures (Penz et al., 2022; Slimane & Rousseau, 2020) and an interesting investment option for the crowd (e.g., Mollick, 2014). At the same time, investment failure (Vanacker et al., 2019) plays a substantial role in crowdfunding: In the context of crowdlending, for instance, one-third of ventures fail to deliver on their promised values resulting in a failed investment for lenders (Civardi et al., 2024; Iyer et al., 2015). Recent research has started to explore failures in the context of crowdfunding (e.g., Dorfleitner et al., 2023; Hornuf et al., 2022; Kgoroeadira et al., 2019), examining aspects such as unsuccessful entrance into crowdfunding platforms (e.g., Kleinert et al., 2022), or entrepreneurs coping with unsuccessful campaigns (e.g., Piening et al., 2021; Rossi et al., 2023). However, there remains a gap in understanding funders' reactions to failures occurring after successful campaign funding (Hörisch, 2019), even though these reactions are essential for comprehending how such failures might affect future investment opportunities for ventures (Roccapriore et al., 2021; Rossi et al., 2023).

Failure can have particular consequences within crowdlending, where ventures offer loans at fixed interest rates and crowd lenders therefore expect a financial return on their investment (Böckel et al., 2021; Slimane & Rousseau, 2020). Given that crowd lenders often make repeated investment decisions over time (Andersen et al., 2019), the impact of such investment failures on their future behavior is of relevance (e.g., Dorfleitner et al., 2023; Hornuf et al., 2022; Piening et al., 2021). This becomes particularly important for ventures that promise multiple values (e.g., Bacq & Janssen, 2011) and aim to achieve sustainable value that encompasses both environmental and/or social values (e.g., Elkington, 2002), as these ventures face higher uncertainty and tend to encounter additional obstacles with regard to their entrepreneurial endeavors (Cervelló-Royo et al., 2020) leading to an increased risk of failure (e.g., Hoogendoorn et al., 2019). Thus, sustainable values not only play a vital role for the

successful funding of campaigns (Johnson & Schaltegger, 2020; Penz et al., 2022; Sher et al., 2020), but may also affect reactions to failure when multiple promises, such as financial return on investment and sustainable value (e.g., Bacq & Janssen, 2011), do not materialize after funding and, hence, result in an increased loss (Hornuf et al., 2022). Thus, we ask *how crowd lenders react to investment failures related to campaigns that made multiple promises including financial return on investment and sustainable value.*

To explore crowd lenders' reactions to failure, we combine theoretical knowledge from the literature on framing of sustainable campaigns (e.g., Anglin et al., 2022; Calic & Mosakowski, 2016; Parhankangas & Renko, 2017) with research on human values theory, because investment decisions have been recognized as being rooted in diverse human values (e.g., Dinh & Wehner, 2022; Nielsen & Binder, 2021; Tenner & Hörisch, 2021). First, our study proposes that the framing of a crowdlending campaign affects crowd lenders' future investment decisions after experiencing investment failure. In particular, sustainable compared to commercial campaigns may result in more adverse responses, as they lead to a double loss among investors. Second, we propose that crowd lenders' subsequent investment decisions depend on their self-transcendence and self-enhancement values (Schwartz, 1992). In particular, we suggest that crowd lenders with high levels of self-transcendence values (i.e., prioritizing others' welfare; Schwartz, 1992) act favorably with regard to subsequent investments in sustainable ventures after experiencing failure in the context of sustainability. In contrast, we expect crowd lenders with high self-enhancement values (i.e., prioritizing personal success; Schwartz, 1992) to invest less in the context of sustainability after experiencing investment failure due to the misalignment of values.

We conducted a vignette-based between-subject experiment with 221 nonprofessional investors to observe the causal reactions of crowd lenders to failure. Participants were presented with differently framed campaigns (i.e., social, environmental, or commercial) on which they

made investment decisions before funding, as well as subsequent investment decisions after receiving news of their failed investment. While we find no differences in the reactions when focusing on the campaign framing, there are differences in reactions when focusing on the interaction between the framing and the crowd lender's values. Specifically, subsequent investments are higher in socially compared to commercially framed campaigns by lenders with stronger self-transcendence values. In contrast, lenders with stronger self-enhancement values showed higher subsequent investments in commercially compared to socially framed campaigns.

Our study offers two key contributions to previous research. First, we delve into the post-funding phase (e.g., Civardi et al., 2024) with the perspectives surrounding failure within the domain of crowdfunding. By investigating failure in the post-funding phase, we extend prior work on pre-funding campaign success factors (e.g., Ahlers et al., 2015; Anglin et al., 2023; Bento, Gianfrate, & Groppo, 2019; Cappa et al., 2021; Huang et al., 2022), and build on previous research that initiated inquiries into the role of failure in crowdfunding (e.g., Jiang et al., 2021; Kleinert et al., 2022; Piening et al., 2021; Roccapriore et al., 2021; Rossi et al., 2023). Our results indicate that value alignment significantly influences crowd lenders' reactions to investment failure. The importance of value alignment with the campaign's values adds to previous studies in the pre-funding phase which show that alignment correlates with a higher willingness to support crowdfunding campaigns (Nielsen & Binder, 2021; Tenner & Hörisch, 2021). Thus, our study provides a basis to discuss different functions of campaign framings and their fit with crowd lenders' values in the pre-funding phase, such as positive emotional arousal in relation to funding, and in the post-funding phase, such as forgiveness after failure.

Second, our study advances the growing literature on trade-offs between economic, social, and sustainable values in sustainable crowdfunding (e.g., Cervelló-Royo et al., 2020; Parhankangas & Renko, 2017; Penz et al., 2022). Previous studies identified distinctions

between social, environmental, and commercial framings with respect to the pre-funding phase (e.g., Allison et al., 2015; Calic & Mosakowski, 2016; Tenner & Hörisch, 2021) and demonstrated that individual human values are influential in funding decisions (e.g., Dinh & Wehner, 2022; Nielsen & Binder, 2021; Tenner & Hörisch, 2021). In our study, we build on this knowledge to understand reactions to failure and add to the literature by showing that value alignment affects reactions to failures in socially versus commercially framed campaigns, but not in environmentally framed campaigns. Post-hoc analyses suggest that social framing evokes distinct responses, as participants assigned to the socially framed lending opportunity were less likely to switch their lending to a different campaign after experiencing failure. This finding extends the existing research on sustainable crowdfunding by highlighting the lasting influence of socially framed campaigns on crowd lenders' behavior, even after a failed investment.

5.2 Theoretical background and hypotheses

5.2.1 Crowdlending

Crowdlending, a debt financing model emerging from crowdfunding, has become a dominant form of funding ventures, providing financial returns for the crowd (Adlere & Saksonova, 2023). Notably, crowdlending emerged as the prevailing model within the crowdfunding market landscape, contributing to over 60% of the worldwide revenue in 2022 (GrandViewResearch, 2021), making it a significant player in the alternative finance landscape for young ventures (Block et al., 2018; Böckel et al., 2021). In this model, the crowd consists of predominantly nonprofessional retail investors who support ventures (i.e., peer-to-business) or individuals (i.e., peer-to-peer lending) through small loans with fixed interest rates via an online platform (Block et al., 2018; Slimane & Rousseau, 2020). Crowdlending can be conceptualized as a process encompassing two distinct phases: the pre-funding and the post-funding phase (Böckel et al., 2021; Messeni Petruzzelli et al., 2019; Wehnert & Beckmann, 2021). The pre-funding phase covers the period from campaign preparation to the end of the

funding target or deadline. In contrast, the post-funding phase involves reporting outcomes, providing returns, realizing planned actions, and making future investment decisions (e.g., Böckel et al., 2021). The pre-funding phase has been widely explored and researchers have adopted multiple perspectives, focusing on the interactions among crowd lenders, campaigns, entrepreneurs, and platforms (e.g., Belleflamme et al., 2015; Wehnert & Beckmann, 2021). Despite substantial knowledge on successful lending campaigns in the pre-funding phase, the post-funding phase has received less attention (e.g., Hörisch, 2019; Troise et al., 2022).

In the post-funding phase, failure assumes great importance, especially considering the relatively high frequency of venture failure within a decade (Roccapriore et al., 2021). Venture failure arises when "a fall in revenues and/or a rise in expenses are of such a magnitude that the firm becomes insolvent and is unable to attract new debt or equity funding; consequently, it cannot continue to operate under the current ownership and management" (Shepherd, 2003, p. 318). The impact of such failure extends beyond the entrepreneurs (e.g., Piening et al., 2021; Smollan & Singh, 2021) and also affects early-stage investors, for example, those involved in private equity funds. The experience of a venture failure signifies an investment failure for investors and affects their perception of risk and evaluation of future campaigns (Roccapriore et al., 2021). Similar to early-stage equity investors, crowd lenders often continue to invest and build their portfolios after experiencing investment failure (Andersen et al., 2019), though their priorities may shift (Dorfleitner et al., 2023). Empirical findings indicate that after an investment failure in crowdlending, also referred to as loan default, crowd lenders tend to reduce their subsequent investments in crowdlending and alter their investment portfolios, up to the discontinuation of their crowdlending activity (Dorfleitner et al., 2023). However, the magnitude of the crowd's reaction to investment failure seems to be related to the type of campaign they have invested in (Hornuf et al., 2022). Research in the realm of equity-based crowdfunding highlights that individuals who prioritized sustainable campaigns react more

negatively to failure than those favoring commercial campaigns. Notably, in the context of sustainable campaigns, crowd funders demonstrate heightened sensitivity and responsiveness when confronted with failures (Hornuf et al., 2022).

5.2.2 The effects of sustainable framing amid failure

The concept of framing has been extensively studied in the management literature, exploring various aspects and dimensions (Cornelissen & Werner, 2014). It is proposed that framing involves the deliberate and precise curation, presentation, and structuring of information (Giorgi & Weber, 2015). The purpose of framing is to capture the audience's attention by distinguishing and highlighting essential information from the context, encouraging individuals to take actions in alignment with a specific objective. For example, framing a campaign or its product as green evokes characteristics associated with ecological responsibility, indicating a dedication to environmental preservation (Defazio et al., 2021). In the crowdlending context, ventures utilize framing techniques to engage the crowd lenders and garner support for their campaigns. Existing literature has suggested that framing a campaign as sustainable helps to attract funds from crowd investors in the pre-funding phase (e.g., Allison et al., 2015; Hörisch & Tenner, 2020; Nielsen & Binder, 2021). However, the crucial aspect yet to be explored is to which extent the sustainable framing remains influential after crowd lenders encounter an investment failure, which marks a negative personal experience for them. This becomes evident in the post-funding phase where lenders gain first-hand experience with the venture and are supposed to receive tangible outcomes (Andersen et al., 2019; Hörisch, 2019).

Crowd lenders who invest in campaigns promising sustainable values typically hold higher expectations for positive impact beyond financial returns (Bocken, 2015). Consequently, encountering failure in such campaigns creates a double loss situation for lenders, who not only suffer a financial loss but also miss out on the expected sustainable benefits, which differs from campaigns primarily focused on commercial gain (Hornuf et al., 2022). Given the limited

information available for crowdlending decisions (Hoegen et al., 2018), crowd lenders tend to heavily rely on their personal experiences and perceptions (Bento, Gianfrate, & Thoni, 2019; Dorfleitner et al., 2023). When these experiences include failure, particularly in campaigns framed around sustainability values, it can diminish their confidence in similar future campaigns. This double loss—both financial and sustainable—may trigger cognitive stress (Thoits, 1995), leading to a reluctance to reinvest as lenders seek to avoid the potential frustration of repeated losses. Therefore, we hypothesize:

Hypothesis 1. *In crowdlending, investments after experiencing investment failure are lower (a) for promised social versus commercial value, and (b) for promised environmental versus commercial value.*

5.2.3 Boundary conditions for sustainable framing amid failure

Decision making in crowdlending is driven by the characteristics of crowd lenders (e.g., Tenner & Hörisch, 2021). When examining the role of sustainable framing in the pre-funding phase, research has highlighted the role of crowd lenders' personal values (e.g., Dinh & Wehner, 2022; Nielsen & Binder, 2021; Tenner & Hörisch, 2021). Values, which serve as an individual's guiding principles for assessing actions and events even in ambiguous situations (Bardi & Schwartz, 2003; Schwartz, 1992), are central to understanding crowdfunding investor behavior. Human value theory (Schwartz, 1992) identifies ten core values reflecting fundamental manifestations, like universalism, benevolence, tradition, conformity, security, power, achievement, hedonism, stimulation, and self-direction (Schwartz, 2012). Beyond defining specific values, the theory emphasizes the relationships of these values in higher-order dimensions (e.g., self-enhancement, self-transcendence) to explain whether values are corresponding (e.g., striving for self-direction and striving for power) or incompatible with each other (e.g., striving for achievement goals vs. striving for benevolence goals) (Schwartz, 2003, 2012). As previous studies have indicated that values relate to behavior in real-life situations,

this theory provides a valuable framework for understanding the role of values of crowd lenders during their decision-making processes.

In the context of ventures promising sustainable values, the higher-order dimensions of self-transcendence and self-enhancement impact evaluations and behaviors (e.g., Kruse et al., 2019; Yahyaoui et al., 2023). *Self-transcendence* includes *universalism* and *benevolence*, reflecting environmental commitment and nurturing relationships (Schwartz, 2012). Conversely, *self-enhancement values*, like *power* and *achievement*, drive dominance or success-seeking behaviors. Individuals high in self-enhancement are self-driven and goal-focused (Schwartz, 2012).

Recent research has underscored the significance of human value alignment with campaign frames in the context of crowdfunding (e.g., Nielsen & Binder, 2021; Tenner & Hörisch, 2021). The manner in which a campaign is presented has a considerable impact on an investor's inclination to contribute funds. Funders who align with the values framed in a campaign demonstrate a higher propensity to support it (Nielsen & Binder, 2021). Considering prior findings that individuals draw on their values during situations requiring careful deliberation (Bardi & Schwartz, 2003), we propose that the self-transcendence and self-enhancement values of crowd lenders are crucial in understanding variations in future investment behavior in ventures that emphasize sustainable values.

Specifically, we expect that crowd lenders with high self-transcendence values will persist in their investments in campaigns that promise sustainable values, despite the negative personal experiences of failures. The expectation arises from the fact that individuals with high self-transcendence values strongly commit themselves to sustainable causes, driven by their dedication to safeguarding both people and the environment (Schwartz, 1994). Their value alignment with campaigns that promise sustainable values is likely to persist even after encountering investment failure, as personal values represent enduring motivational patterns

(Schwartz, 2012). The orientation of individuals with high self-transcendence values toward safeguarding the environment and society stems from their awareness of the potential consequences of failing to protect vital resources (Schwartz, 2012). Consequently, they may view investing in similar campaigns after a failure as a means of making a positive contribution to societal and environmental well-being. Moreover, individuals guided by self-transcendence values may exhibit greater resilience (e.g., Russo et al., 2021) due to their strong commitment to the welfare of society and the environment, as well as their inclination toward forgiveness (Schwartz, 2012). Thus, when faced with a double loss—a financial loss and the loss of sustainable value—their commitment and focus on long-term positive change may help mitigate the immediate loss. Although failure can indeed induce cognitive stress (Thoits, 1995), aligning one's actions with one's values offers a coping mechanism (de Groot & Steg, 2008). As a result, individuals prioritizing self-transcendence values are more likely to make subsequent investments that align with their values, even in challenging circumstances. In light of these considerations, we hypothesize:

Hypothesis 2*. In crowdlending, investments after experiencing investment failure are higher (a) for promised social versus commercial value, and (b) for promised environmental versus commercial value, the higher crowd lenders' self-transcendence values.*

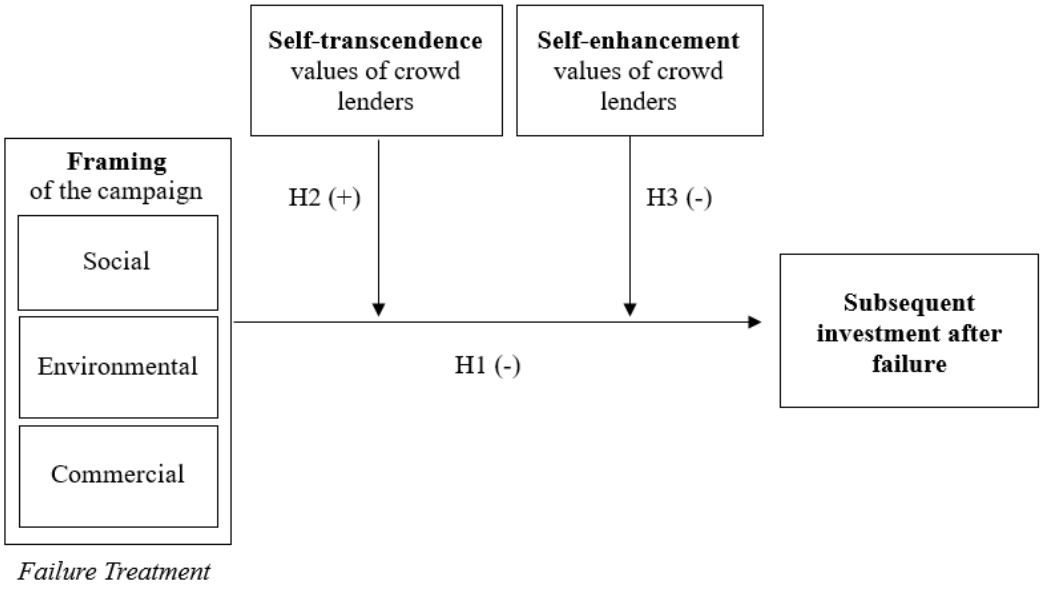
In contrast to the buffering effect of self-transcendence, we argue higher self-enhancement values make crowd lenders less likely to make subsequent investments in campaigns promoting sustainable values. This is because individuals with a higher level of self-enhancement values tend to prioritize personal success and material gains over sustainability concerns (Schwartz, 2012), rendering them less inclined to support campaigns framed around sustainability (e.g., Nielsen & Binder, 2021; Tenner & Hörisch, 2021). Social and environmental campaigns usually require altruism (e.g., Allison et al., 2013; Cecere et al., 2017), misaligned with self-focused self-enhancement values (Schwartz, 2012). This

incongruence may give rise to cognitive dissonance and stress of crowd lenders (e.g., de Groot & Steg, 2008), worsened by negative experiences like investment failure (Thoits, 1995). As a coping mechanism to avoid similar stress in the future, individuals with higher self-enhancement values may tend to act congruently with their values (de Groot & Steg, 2008), leading them to steer clear of sustainable investment options. Instead, they are more inclined to favor campaigns that align with their self-enhancement values, thereby seeking to ensure an alignment between their personal values and investment choices. Thus, we hypothesize:

Hypothesis 3. *In crowdlending, investments after experiencing investment failure are lower (a) for promised social versus commercial value, and (b) for promised environmental versus commercial value, the higher crowd lenders' higher self-enhancement values.*

Figure 5-1 illustrates the assumed relationships of our theoretical model.

Figure 5-1. Theoretical model



5.3 Method

To understand crowd lenders' reactions to investment failure, we conducted an experimental vignette between-subjects study, a method pioneered by Rossi et al. (1982) to measure social judgments. Vignettes are brief presentations of a fictional circumstance representing different characteristics (Aguinis & Bradley, 2014; Atzmüller & Steiner, 2010).

Participants read the vignettes and provided their perceptions, evaluations, and decisions in response. The choice of a vignette experiment was particularly suitable for addressing our research question, as it allowed for the analysis of causal relationships at the individual level of crowd lenders' decisions (Aguinis & Bradley, 2014; Hsu et al., 2017). While the existing literature on crowdfunding has primarily relied on platform content analysis to examine crowd funders' subsequent investing behavior (e.g., Dorfleitner et al., 2023; Hornuf et al., 2022), which has greatly contributed to our understanding of the phenomenon, platform analysis also has constraints, particularly when attempting to examine the impact of values on behavior (Nielsen & Binder, 2021). By employing an experimental vignette study, which has been previously applied in entrepreneurship research (Fellnhofer & Deng, 2024; Mueller & Shepherd, 2016), we aim to go beyond the constraints of platform analysis and study decision making from a psychological perspective in the case of failure.

Because we focus on the differences in crowd lenders' behavior after experiencing investment failure in sustainable ventures, we varied the promised values of the crowdlending campaigns by emphasizing different aspects (i.e., promised social, environmental, or commercial value) and, afterward, letting all crowd lenders experience an investment failure. To test our hypotheses, we conducted analysis of variance (ANOVAs) and (moderated) regression analyses (OLS). The moderation variables, namely self-enhancement and self-transcendence values, were collected directly from the participants.

5.3.1 Sample

We specifically targeted subjects with prior investment experience in stocks, funds, and similar financial products to represent real investors (e.g., Hsu et al., 2017). To assess investment experience, participants were asked a series of questions to determine their

familiarity with securities, stocks, and other investment instrument.[23] To collect our sample, we used an ISO 20252:2019 certified panel service provider based in Berlin.

To identify the necessary sample size, we used an a-priori power analysis drawing on G*Power (Faul et al., 2009). We chose a significance level of $\alpha = 0.05$ and a power level of $1\text{-}\beta = 0.99$, which provided a conservative estimate for the required sample size. Following Cohen's (1988) guideline, we selected a medium effect size index of 0.15. Using a linear multiple regression with a fixed model and a single regression coefficient, the power analysis indicated that we would need at least 125 participants to achieve sufficient statistical power. This study fulfilled the requirement based on this power analysis by recruiting 226 participants (aiming for 70 participants per vignette) during a two-week period in June 2023. Two participants were excluded from the analysis due to zero-variance in their responses, which was attributed to their selection of extreme values on the given Likert scale (i.e., 1 and 7). Three further participants were excluded due to lacking investment experience and providing implausible answers (e.g., age: 24 and investment experience: 40 years). Thus, our final sample consisted of 221 experienced retail investors (55.2 percent female). On average, participants had 10.51 (SD = 10.02) years of investment experience, were on average 45.00 (SD = 13.95) years old, had 22.06 years (SD = 13.22) of employment experience, and 51.6 percent had a monthly income above 3,001 Euros.

5.3.2 Research design

To examine participants' subsequent investment decisions following an investment failure, we designed an experimental setting involving both the pre-funding phase where participants were asked to make an initial investment decision and the post-funding phase where they faced the failure of their investment. This approach aimed to create a more realistic

[23] The targeting of participants with investment experience was informed by insights from an internal customer survey with crowd lenders from the German crowdlending platform *bettervest.com*. The survey results revealed that a significant proportion of bettervest's lenders possess prior experience with shares for example, indicating their qualification as real investors. Thus, we obtained a sample of participants with investment experience.

decision-making context that resembled actual investment scenarios. The pre-funding phase increased the authenticity of the subsequent investment failure and allowed for a more comprehensive understanding of participants' reactions (e.g., Schaubroeck & Williams, 1993). The experiment commenced with a uniform introduction provided to all participants, presenting the concept of crowdlending and prompting them to envision themselves on a return-oriented crowdlending platform called *Investia* (see Appendix D1). Alongside general information, participants were informed about the potential occurrence of investment failure, which could lead to a partial or total loss of their investment.

To model the pre-funding phase, participants engaged in a task before making the initial investment decisions that allowed them to earn the funds necessary for the allocation. This task-connected approach enhances engagement and realistic value perception (e.g., Baumeister et al., 1998), making earned money more tangible compared to simply receiving it as a gift (Loewenstein & Issacharoff, 1994). The task involved counting the number of 'I' letters in a presented definition of crowdlending to promote recall. Participants who deviated from the correct answer by 20 percent or lower proceeded, and all others were excluded. Upon successful completion of the task, participants were informed that they would receive 10,000 Euros as a reward for their performance, which they could subsequently invest. We decided to award participants a generous amount—10,000 Euros—to provide them with adequate funding possibilities for their investment, considering that investments above 1,000 Euros are also common in crowdlending.[24]

Afterward, participants were randomly assigned to one of the three experimental vignettes, each promising a different value: social (n = 76), environmental (n = 73), or

[24] An analysis was conducted to determine the mean investment per campaign within a subset of 15 campaigns that were randomly extracted from the historical records of the *bettervest.com* platform spanning recent years. The calculation methodology involved the division of the cumulative investment amount by the corresponding count of investors participating in each individual campaign. The resultant average investment per project was €1,173. Accordingly, we have set an upper limit of €10,000 to give participants sufficient realistic flexibility.

commercial (n = 72). By employing these three experimental vignettes, we followed the approach taken by previous studies that have examined differences between these campaign values, supporting the triple bottom line (e.g., Nielsen & Binder, 2021; Siebeneicher & Bock, 2022). The socially framed campaign focused on developing a digital platform to facilitate the integration of refugees into the German labor market, with a goal of integrating 6,000 refugees annually. The environmentally framed campaign centered around a digital platform for renting reusable takeaway boxes in the catering industry, aiming to reduce approximately 6,000 CO_2 emissions per year. The commercially framed campaign aimed to boost revenue by creating a digital platform for financial advice, providing investors with expertise and coaching, and targeting the acquisition of around 6,000 new customers annually (for the detailed vignettes, see Appendix D2). The concrete quantification of the goals and benefits of the ventures provided more realism and allowed participants to assign an appropriate value to the project and its impact (Heeb et al., 2023; Hornuf & Siemroth, 2023). As we focus on return-oriented crowdlending, participants were offered a hypothetical financial return of 7 percent over the project duration of two years, in addition to repayment of their loan if the crowdlending project was successful. A standardized sentence on the high growth potential and profit margins of the respective venture, based on pretest feedback, was included for consistency.

In the first investment scenario, participants were asked to allocate their self-earned fictitious investment allocation between 0 and 10,000 Euros to the assigned campaign as their first investment decision. Participants then responded to a series of questions regarding their intentions and emotions. Afterward, all participants received a failure message of the assigned manipulated campaign. An email from the crowdlending platform Investia informed the participants about the investment failure due to unforeseen problems of the venture and announced that crowd lenders lost their initial investment and would not receive any return (see Appendix D3). Subsequently, participants were again given the task of counting the number of

'a' letters in the crowdlending definition to earn their money, which they could use to make a subsequent investment after failure. They were asked about allocating their subsequent investment, between 0 and 10,000 Euros, to a campaign with a similar campaign framing to which they were assigned in the pre-funding phase. Participants then had to respond to a series of questions about their motivation, human values, and characteristics. Subsequently, they were presented with a hypothetical choice question, asking them to express their propensity to either stay with the allocated campaign for their future investment after the experienced failure, choose a differently framed venture, or opt for no further investment (e.g., Cholakova & Clarysse, 2015). This exploratory question allows us to examine how the initial framing influences the future investment decision in campaigns that promise sustainable or commercial value, or how it leads to the investment activity being discontinued altogether.

5.3.3 Measures

Dependent variable. Our dependent variable was the *subsequent investment after investment failure*. We followed previous experimental research that operationalized the invested allocation of the crowd lenders as a success indicator (Kanze et al., 2018; Shneor & Vik, 2020). In the experiment, participants were asked to imagine being in a crowdlending situation where they could invest up to 10,000 Euros they had earned themselves (for more details, see 'Research Design'). After experiencing a failure in their initial investment, participants were given the opportunity to invest a new amount of earnings in a campaign (i.e., How much of your 10,000 Euros would you like to invest in start-ups like Socialy through crowdlending?).

Independent variable. To measure the effects of the socially framed and environmentally framed campaign in comparison to the commercially framed campaign, we chose the commercial campaign as the reference category. Hence, we built two dummy variables that reflected our vignettes (commercial value was coded with 0).

Moderator variable. The crowd lenders' value orientation was measured with questions from the Portrait Values Questionnaire, which is based on Schwartz's basic human value theory (Schwartz, 2003). Following prior studies in the context of socially and environmentally framed campaigns (e.g., Dinh & Wehner, 2022; Nielsen & Binder, 2021; Tenner & Hörisch, 2021), specific *self-transcendence* values (i.e., universalism and benevolence), along with *self-enhancement values* (i.e., power and achievement), were included in the experiment. The Portrait Value Questionnaire employed concise descriptions of fictional individuals as a means of implicitly capturing participants' values. Subsequently, participants were asked to rate the extent to which the described person resembled themselves on a Likert scale ranging from 1 (*not resembling me at all*) to 7 (*strongly resembling me*). Cronbach's alpha for self-transcendence values was .81 and for self-enhancement values .82.

Control variables. In our study, we included several control variables that previous research has indicated as influential in the decision-making process of crowdlending (e.g., Penz et al., 2022) (see Appendix D4). First, we controlled for socio-demographic characteristics as Tenner and Hörisch (2021) observed the impact of certain characteristics on crowdlending decisions. Accordingly, we controlled for age, gender, and investment experience. Additionally, to enhance the validity of participants' responses, we integrated a measure of social desirability (Penz et al., 2022), employing the scale by Haghighat (2007). Finally, recognizing the significant role of risk willingness in crowdfunding decisions (e.g., Wasiuzzaman et al., 2022), we utilized the risk-taking scale developed by Menkhoff and Sakha (2016) in collaboration with the German Institute for Economics Science.

5.3.4 Implementation and manipulation checks

We have undertaken great efforts to ensure that the study is designed in a way that minimizes the risk of potential biases (Podsakoff et al., 2012). Therefore, we implemented various checks to ensure high quality data. First, we conducted a manipulation check after each

of the three vignettes to ensure participants' comprehension of the vignettes (Shadish et al., 2002). Participants were asked to select the correct value of the campaign. For example, for those who read the environmental vignette, the correct response was: "An environmental value is central to the young venture and its activities." And for those who read the social vignette: the correct response was: "A social value is central to the young venture and its activities." Similar instructions were provided for the third vignette, which focused on commercial value. An incorrect response resulted in exclusion from the experiment.

Second, we included an attention check to improve data quality. This check required participants to select a specific response option (e.g., "For this item, please select 'strongly disagree'"). Participants who successfully passed the attention check were allowed to continue participating in the experiment, while the others were excluded (Barber et al., 2013; Kung et al., 2018). Third, we also implemented a reality check (Maute & Dubés, 1999) for both manipulations with three items measuring the realism ("How realistic was the described situation?"; scale between 1 (*not realistic at all*) to 7 (*very realistic*); campaign value: $M = 4.32$, $SD = 1.47$, investment failure: $M = 5.46$, $SD = 1.50$), and ("How well were you able to put yourself into the described situation?"; scale between 1 (*not so well*) to 7 (*very well*); campaign value: $M = 4.70$, $SD = 1.58$, investment failure: $M = 5.55$, $SD = 1.48$), and validity ("Hands on your heart, how carefully did you read the scenario?"; scale between 1 (*not very carefully*) to 7 (*very carefully*); campaign value: $M = 5.33$, $SD = 1.42$, investment failure: $M = 6.19$, $SD = 1.14$).

Fourth, our vignettes exhibited parallel structure and word count, featuring German start-ups creating digital platforms. In the vignettes, users have access to tailored services for diverse goals through an app. Each vignette followed a uniform pattern, emphasizing core aims like waste reduction, revenue growth, or refugee workforce inclusion. All offer a 7% interest rate, signaling strong growth and profit potential in their sectors. Presumably, each business plan is solid and aimed at positive outcomes (for the detailed vignettes, see Appendix D2).

5.3.5 Analysis

Our main analysis focused on examining our hypotheses to gain an understanding of how investment failures influence future investment decisions in a similar campaign with the same promised value. We utilized one-way ANOVA to compare the relationship between the promised value of the campaign and the allocation of the subsequent investment. Additionally, we employed the ordinary least squares regression (OLS) model to evaluate the influence of both the promised campaign value and human values on the post-funding investment made by the crowd lenders. Robust standard errors were evaluated to address potential heteroscedasticity concerns, and the variance inflation factor (VIF) was examined to detect any possible issues of multicollinearity. It is worth noting that all VIF values remained well below the recommended threshold values (i.e., < 5; Cohen et al., 2002), ensuring the absence of significant multicollinearity. We included the investment allocation from the pre-funding phase as a control variable in our calculations to account for the potential impact of different initial investments on the subsequent investment decisions in the post-funding phase. This helps to ensure that any observed differences in the investment after failure between vignettes are not due to differences in the initial investment. In addition, we performed several procedures to enhance the clarity of randomizations and avoid potential bias commonly caused by social desirability, willingness to take risks, investment experience, age, and gender (Podsakoff et al., 2012). Overall, no significant effects of these influential factors were observed in our analysis. Finally, we conducted an additional post hoc analysis based on OLS to complement our results.

5.4 Results

Table 5-1 shows the descriptive statistics including means, standard deviations, and correlations of our variables. The subsequent investment after failure was between a minimum of 50 and a maximum of 10,000 Euros.

Table 5-1. Means, standard deviations, and correlations

Variable	*Min*	*Max*	*M*	*SD*	1	2	3	4	5	6	7	8	9
1. Investment allocation t1	50.00	10,000.00	4,152.30	2,616.24									
2. Investment allocation t2	50.00	10,000.00	3,251.36	2,599.01	.76**								
3. Investment allocation Δ_{t2-t1}	-9,000.00	3,500.00	-900.94	1,789.78	-.35**	.33**							
4. Self-transcendence	1.00	7.00	5.21	1.08	.22**	.15**	-.10						
5. Self-enhancement	1.00	7.00	3.78	1.31	-.01	.01	.02	.02					
6. Gender	1.00	2.00	1.45	.50	-.07	-.02	.07	-.13	.12				
7. Age	18.00	69.00	45.00	13.95	.15*	.05	-.14*	.12	-.33**	-.12			
8. Investment experience	1.00	40.00	10.51	10.02	.11	.02	-.13	.05	-.08	.07	.54**		
9. Social desirability	1.00	2.00	1.36	.26	-.07	-.08	-.01	-.02	-.03	.10	.07	.01	
10. Willingness to take risk	1.00	7.00	3.45	1.30	.05	.10	.07	.05	.27**	.29**	-.25**	-.06	-.02

Note. $N = 221$; gender: female = 1, male = 2; investment experience in years; social desirability: yes = 1, no = 2.
** $p < 0.01$
* $p < 0.05$

In the following, we present the results of (1) our main analysis and (2) our post hoc analysis to provide a comprehensive picture of how the framing of the investment opportunity shapes crowd lenders' subsequent investment choices.

5.4.1 Main analysis

An ANOVA was conducted to examine the different effects between promised sustainable (i.e., social, environmental) and commercial values on the subsequent investment after investment failure, which served as the dependent variable. The results indicate that there are no significant differences between the socially framed campaign (M = 3,164.54, SD = 2,560.59), environmentally framed campaign (M = 3,245.25, SD = 2,778.98), and commercially framed campaign (M = 3,349.21, SD = 2,480.97) in terms of subsequent investment after failure, $F(2, 218) = .093$, $p > .05$. Therefore, Hypotheses 1a and 1b are not supported. Although the subsequent investment after failure was significantly lower than the initial investment (M = -900.94, SD = 1,789.78), $t(220) = -7.48$, $p < .001$, there was no difference in subsequent investment after failure in terms of the promised campaign value.

Table 5-2 presents the findings of our moderation analysis, conducted using OLS. Specifically, we examined Hypotheses 2a and 2b, which investigated whether the interaction between self-transcendence values and the promised campaign value predicts subsequent investments after failure. The results (Models 3 and 4) revealed that self-transcendence values of crowd lenders significantly moderate the effect between a socially framed campaign and investment after failure compared to a commercially framed campaign (b = 559.92, $p < .05$). However, no moderated effect of self-transcendence values was observed between an environmentally framed campaign and investment after failure compared to a commercially framed campaign (b = -156.35, $p > .05$). Thus, Hypothesis 2a can be supported, while Hypothesis 2b is rejected.

Table 5-2. Regression coefficients, standard errors, and model summary after failure

Variable	DV = Subsequent investment after investment failure															
	Model 1				Model 2				Model 3				Model 4			
	b	*SE*	*β*	*p*	*b*	*SE*	*β*	*p*	*b*	*SE*	*β*	*p*	*b*	*SE*	*β*	*p*
Controls																
Investment allocation t1	.76	(.04)	.77	<.001	.77	(.05)	.77	<.001	.75	(.05)	.76	<.001	.77	(.05)	.77	<.001
Gender	120.93	(244.25)	.02	.62	122.47	(247.43)	.02	.65	126.58	(245.42)	.02	.61	140.20	(251.79)	.03	.58
Age	-3.20	(10.26)	-.02	.75	-3.72	(10.79)	-.02	.73	-.20	(10.82)	.00	.99	-3.32	(10.82)	-.02	.76
Investment experience	-13.91	(13.78)	-.05	.31	-13.60	(13.91)	-.05	.33	-13.86	(13.79)	-.05	.32	-13.26	(13.94)	-.05	.34
Social desirability	-250.85	(451.10)	-.02	.58	-251.19	(453.05)	-.02	.58	-248.23	(449.21)	-.02	.58	-244.10	(453.86)	-.02	.59
Willingness to take risk	89.15	(94.70)	.04	.35	96.92	(97.12)	.05	.32	104.89	(96.37)	.05	.28	99.34	(97.34)	.05	.31
Main effects																
Social	-1.65	(378.88)	.00	.99	-2.50	(280.34)	.00	.99	-5.64	(277.97)	.00	.98	1.13	(280.81)	.00	1.00
Environmental	-13.52	(282.68)	-.00	.96	-12.50	(248.25)	-.00	.97	-28.72	(281.94)	-.01	.92	-13.11	(284.67)	.00	.96
Self-transcendence (ST)					-37.91	(119.25)	-.01	.75	-193.58	(138.70)	-.07	.16	16.96	(148.58)	.01	.91
Self-enhancement (SE)					-32.95	(124.74)	-.01	.79	12.78	(125.50)	.00	.92	-24.86	(125.60)	-.01	.84
Interaction Terms																
Social x ST									559.92	(260.83)	.11	.03				
Environmental x ST													-156.35	(251.88)	-.03	.54
Social x SE																
Environmental x SE																
Constant		228.73		.80		221.71		.80		88.79		.92		151.31		.87
R^2		.59				.59				.60				.59		

Note. N = 221, b = unstandardized effect, *SE* = standard error, β = standardized effect, DV = dependent variable, Reference category is commercially framed campaign, Social = socially framed campaign, Environmental = environmentally framed campaign, Gender: female = 1, male = 2.

Table 5-2 continued. Regression coefficients, standard errors, and model summary after failure

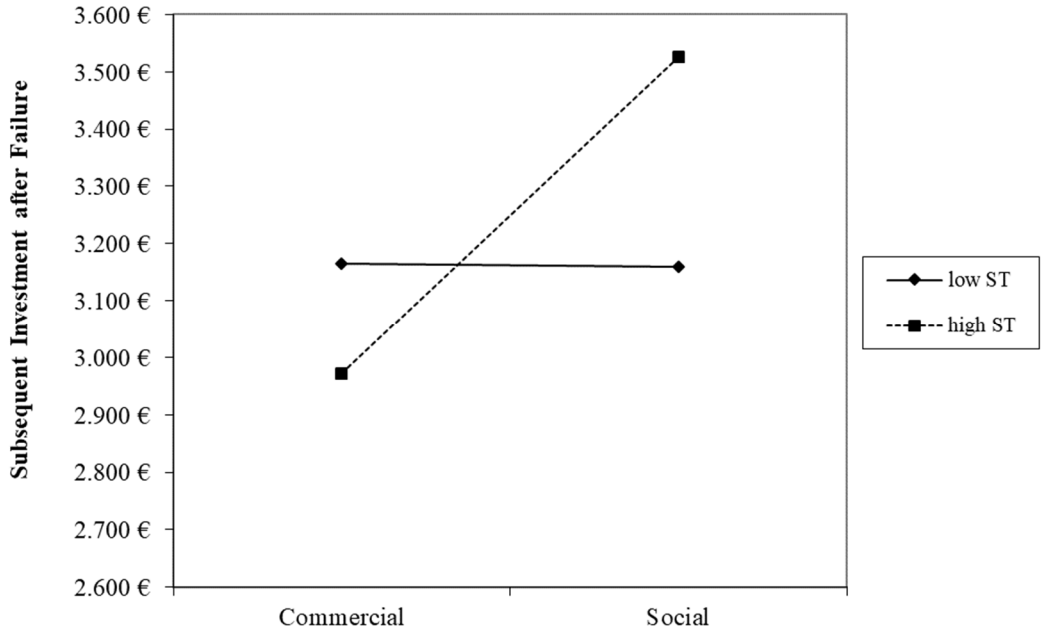
DV = Subsequent investment after investment failure												
Variable	Model 5				Model 6				Model 7			
	b	*SE*	*β*	*p*	*b*	*SE*	*β*	*p*	*b*	*SE*	*β*	*p*
Controls												
Investment allocation t1	.76	(.04)	.77	<.001	.77	(.04)	.77	<.001	.75	(.05)	.75	<.001
Gender	104.37	(245.21)	.02	.67	112.70	(248.15)	.02	.65	109.90	(247.78)	.02	.66
Age	-2.73	(10.70)	-.01	.79	-3.73	(10.82)	-.02	.73	.29	(10.75)	.00	.98
Investment experience	-14.08	(13.78)	-.05	.31	-13.59	(13.94)	-.05	.33	-14.30	(13.70)	-.06	.30
Social desirability	-194.14	(449.67)	-.02	.66	-251.78	(454.57)	-.02	.58	-209.42	(446.81)	-.02	.64
Willingness to take risk	93.33	(96.25)	.05	.33	97.07	(97.48)	.05	.32	106.33	(95.79)	.05	.27
Main effects												
Social	-23.76	(277.96)	-.00	.93	-2.68	(281.09)	.00	.99	-45.57	(276.45)	-.01	.87
Environmental	-48.11	(282.13)	-.00	.86	-12.27	(285.03)	.00	.97	-62.96	(280.24)	-.01	.82
Self-transcendence (ST)	-68.88	(118.99)	-.03	.56	-37.51	(120.31)	-.01	.76	-248.47	(189.47)	-.10	.19
Self-enhancement (SE)	169.23	(153.81)	.07	.27	-30.68	(146.30)	-.01	.83	387.89	(208.93)	.15	.06
Interaction Terms												
Social x ST									558.83	(287.20)	.11	.05
Environmental x ST									102.63	(275.79)	.02	.71
Social x SE	-526.80	(238.52)	-.12	.03					-685.63	(277.49)	-.16	.01
Environmental x SE					-7.43	(249.27)	.00	.98	-385.22	(287.87)	-.08	.18
Constant		173.28		.84		222.10		.80		92.89		.92
R^2		.60				.59				.61		

Note. N = 221, *b* = unstandardized effect, *SE* = standard error, *β* = standardized effect, DV = dependent variable, Reference category is commercially framed campaign, Social = socially framed campaign, Environmental = environmentally framed campaign, Gender: female = 1, male = 2.

Furthermore, we examined Hypotheses 3a and 3b, which investigated whether the interaction between self-enhancement values and the promised campaign value predicts subsequent investment after failure. The results (Models 5 and 6) indicated that the self-enhancement values of crowd lenders significantly moderated the effect between a socially framed campaign and subsequent investment after failure compared to a commercially framed campaign (b = -526.80, p < .05). However, no significant moderation effect of self-enhancement values was found between an environmental campaign and subsequent investment after failure compared to a commercial campaign (b = -7.43, p > .05). Thus, we find support for Hypothesis 3a and reject Hypothesis 3b.

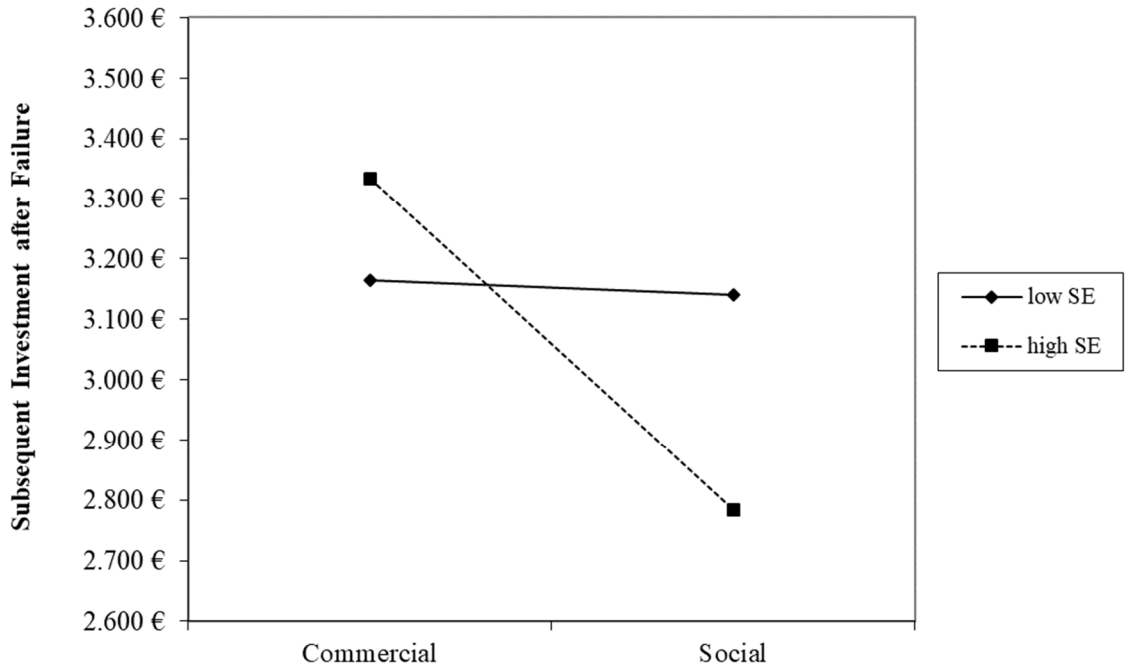
Figures 5-2 and 5-3 illustrates the significant interaction effects between socially versus commercially framed campaigns and human values on subsequent investment after failure.

Figure 5-2. Interaction effects between campaign framing and self-transcendence values



Note. Interaction effects between social vs. commercial campaign framing and self-transcendence values, N = 221.

Figure 5-3. Interaction effects between campaign framing and self-enhancement values



Note. Interaction effects between social vs. commercial campaign framing and self-enhancement values, $N = 221$.

5.4.2 Post hoc analysis

The focus of our post hoc examination was to investigate the potential switching behavior of crowd lenders between different subsequent investment options (social, environmental, commercial framing, and no investment) after experiencing investment failure in their assigned campaign. Participants' choice of subsequent investment options served as the dependent variable. We conducted a one-way multivariate analysis of variance (MANOVA). The results of the MANOVA indicated a statistically significant difference between participants' initially assigned campaign framing and their choices of the different subsequent investment options, $F(6,432) = 2.512$, $p < .05$. To explore the differences in choice in more depth, we conducted a post hoc univariate analysis of variance for each of the four options (each serving as the dependent variable). Our findings revealed a statistically significant difference between participants' initial campaign frame and choice of the subsequent social investment

option, $F(2,0.852) = 6.242$, $p < .05$. In contrast, our analysis demonstrated no statistically significant difference between participants' initially presented frame and choice of the subsequent environmental investment option ($F(2,0.171) = 0.852$, $p > .05$), the subsequent commercial investment option ($F(2,0.223) = 0.897$, $p > .05$), or the decision not to choose a subsequent investment option ($F(2, 0.129) = 1.496$, $p > .05$). To further illuminate the distinctions among the significant ANOVA, we performed pairwise comparisons using Tukey's HSD test. Results indicated that participants initially exposed to social framing were significantly more inclined to choose the subsequent social investment option after experiencing investment failure compared to participants initially exposed to environmental, $p = .03$ ($M_{Diff} = .152$, 95% - CI[.01, .30]) or commercial framing $p = .002$ ($M_{Diff} = .206$, 95% - CI[.06, .35]). Conversely, participants initially exposed to environmental, $p = .03$ ($M_{Diff} = -.152$, 95% - CI[-.30, -.01]) and commercial framing, $p = .002$ ($M_{Diff} = -.206$, 95% - CI[-.35, -.06]), were less likely to choose a subsequent social investment option after their previous investment failed compared to participants who were initially exposed to social framing.

5.5 Discussion

Our study aimed to explore crowd lenders' investment behavior after failure by untangling the effects of different campaign promises (i.e., social, environmental, commercial) depending on crowd lenders' values. By providing insights into the lenders' reactions to failure within the crowdfunding context, our experimental study fosters a deeper understanding of how negative experiences may shape future funding behavior (Roccapriore et al., 2021; Rossi et al., 2023). While all lenders react negatively to an investment failure independent of the framing, socially compared to commercially framed campaigns experience higher subsequent investments when lenders' self-transcendence values are stronger. Likewise, investors with strong self-enhancement values show higher subsequent investments in commercially

compared to socially framed campaigns after investment failure. We do not find a significant effect in comparison to environmentally framed campaigns. Thus, value (mis)alignment with socially framed campaigns seems important to understand how crowd lenders invest after failure. Building on these results, our study holds several theoretical and practical implications.

5.5.1 Implications for our understanding of failure in crowdfunding

Based on the growing literature, that examines the influence of failure in crowdfunding (e.g., Dorfleitner et al., 2023; Kgoroeadira et al., 2019; Piening et al., 2021), our research contributes by elucidating the impact of investment failure on funder decisions. We extend our inquiry beyond examining failures in the prefunding phase (i.e., what happens after unsuccessful campaigns), which primarily addressed platforms' reactions (Kleinert et al., 2022) and entrepreneurs' coping mechanisms (e.g., Gottschalk & Müller, 2022; Piening et al., 2021; Rossi et al., 2023), to examine failures in the post-funding phase (i.e., what happens after successful campaigns) and how funders cope with failure. Our findings distinctly reveal that failure shapes funders' decision making when considering future investments. This finding is of particular importance given the recurring involvement of funders and entrepreneurs in the crowdfunding landscape (Andersen et al., 2019; Lee & Chiravuri, 2019), underscoring the importance of historical experience in influencing future investment decisions and, consequently, in securing funding for entrepreneurial ventures.

Moreover, our study enhances discussions on the role of campaign framing. Contrary to the notion that lenders suffer a double loss when they experience a failure in sustainable campaigns that promise a financial return (Hornuf et al., 2021) , we observed uniform negative reactions to failure among lenders, irrespective of the initially promised values. The negative reactions to failure among different campaigns align with previous research in the peer-to-peer lending domain (Dorfleitner et al., 2023). While our main analysis did not reveal any significant effects of campaign framing on subsequent investment after a failure, our post hoc analysis did

identify distinctions in how an initial campaign framing may affect funders' reactions to failure. Interestingly, in our between-subject design, we observed a "sticky effect," where crowd lenders who were randomly assigned to the socially framed campaign were significantly more likely to make subsequent investments in campaigns with a similar social framing when presented with new investment opportunities (i.e., social, environmental, commercial framing, or no option) after the failure of their initial investment. In contrast, we also observed a "repulsive effect" when crowd lenders were randomly provided with an initial environmental or commercial campaign because the likelihood of subsequent investment in social campaigns was significantly lower compared to environmental and commercial options after they experienced failure. While these effects generally underscore the particularity of the social framing, they may also indicate a nudging effect that social framing initially produces, maybe because crowd lenders were engaged in the social framing and discovered its general value despite failure. The framing effects warrant further examination across different crowdfunding types as our findings in the crowdlending context differ from those in the equity domain (Hornuf et al., 2021). This underscores the importance of systematically differentiating between crowdfunding types and understanding the characteristics of the funders associated with each.

5.5.2 Implications for our understanding of sustainable crowdfunding

Moreover, our study builds upon the expanding body of literature on sustainable crowdfunding research (e.g., Allison et al., 2015; Calic & Mosakowski, 2016; Shevchenko et al., 2020) by showing how crowd lenders' personal values explain differences in their reactions to investment failure of socially versus commercially framed campaigns. Our findings emphasize an enduring influence of value alignment with social framing on subsequent investment decisions following investment failure, in contrast to the effects observed with commercial campaigns. The absence of alignment between personal values and campaign framing, particularly in the context of failure experiences, significantly reduces funding levels

for campaigns with social values compared to those emphasizing commercial values. Regarding environmental campaign framing, we did not observe alignment or misalignment effects. This suggests that value alignment with socially framed campaigns may lead to a greater forgiveness from lenders compared commercially framed campaigns, in contrast to environmentally framed ones.

Specifically, strong self-transcendence values do predispose funders to support socially framed campaigns after failure; however, they do not favor environmentally framed ones (e.g., Nielsen & Binder, 2021; Tenner & Hörisch, 2021). The discrepancy in funders' preferences between these framings may be attributed to emotional resonance (Parhankangas & Renko, 2017) that high self-transcendence values create for societal concerns, fostering a greater propensity to forgive (Schwartz, 2012). Social issues may be perceived as more tangible and immediately impactful within a social group which aligns with the values of funders possessing strong self-transcendence values. In contrast, environmental causes may feel less connected to social groups, diminishing support from individuals with high self-transcendence values (Schwartz, 2012). Alternatively, funders backing environmental campaigns might prioritize values like openness to change, aligning them with innovative campaigns that facilitate positive transformations (e.g., Shepherd & Patzelt, 2011).

Furthermore, strong self-enhancement values were observed to provide diminished support for socially framed campaigns after failure. This finding implies that the warm-glow effect, which holds significant relevance as a motivational pattern in sustainable crowdfunding literature (e.g., Allison et al., 2013; Hörisch & Tenner, 2020), displays reduced influence among crowd lenders with pronounced self-enhancement values following an encounter with an investment failure. While the warm-glow effect might manifest in the pre-funding phase, where individuals derive self-satisfaction from supporting social causes (Cecere et al., 2017; Dinh & Wehner, 2022), experiencing an investment failure in this context may amplify their concern

for maintaining a positive image. Consequently, preserving their image becomes more impactful than self-satisfaction in shaping their subsequent investment decisions.

5.5.3 Practical implications

Our study offers valuable insights into the behavior of crowd lenders in terms of subsequent investments after previous failure experiences, providing practical implications for both entrepreneurs and crowdlending platforms. First, in terms of crowdlending campaign strategies, it is worth noting that incorporating multiple value propositions within a campaign does not appear to significantly decrease subsequent investment. This implies that entrepreneurs can consider diversifying their promises to encompass various aspects, including sustainable and financial values, without being overly concerned about a substantial drop in investment, even in cases where lenders have previously experienced investment failure. Second, it is essential to delve deeper into the alignment of campaign values with the lenders' values. This perspective encourages entrepreneurs to craft comprehensive narratives that resonate with a broader audience while staying true to their mission. Particularly, when a campaign attracts a considerable number of individuals primarily driven by self-enhancement values, the impact of social values may be less favorable. Therefore, carefully choosing the right crowdfunding platform becomes crucial for socially oriented ventures. Depending on the platform's funder base and prevailing culture, a campaign may predominantly attract self-transcendent individuals who prioritize collective and societal benefits or self-enhancing individuals who seek personal gains. This underscores the importance of fundraisers selecting crowdfunding platforms that align with their campaign's intended audience and values, ultimately enhancing their chances of success.

5.5.4 Limitations and future research implications

As every other study, our experiment is not without limitations due to our chosen materials, methods, and sample which point to potential directions for future research (Simons et al., 2017).

First, our vignettes offer a suitable way to study real-life behavior and possess good predictive power for real behavior. However, experimental designs may yield smaller effects due to their simplification, but uncover meaningful casual relationships among variables (e.g., Podsakoff & Podsakoff, 2019; Taylor, 2006). While aiming to replicate a realistic crowdlending campaign, we can only simulate certain attributes of the genuine lending campaign. It is important to recognize that investments in crowdlending are intricate, dependent on the interplay of various project attributes, including elements such as images and videos, which collectively shape and influence the behavior of crowd lenders (e.g., Parhankangas & Renko, 2017). Hence, to address these limitations, future research should explore how crowd lenders make decisions in projects with diverse attributes.

Second, our study relies on decisions made with fictional monetary amounts, potentially leading to different effects compared to studies using real money and real platform data. Future research could benefit from merging the strengths of experimental design with real platform data to test external validity and offer a comprehensive perspective on the behavior of crowd lenders.

Third, it is important to emphasize that in our manipulation of failure, we did not include a specific causal attribution for investment failure. Although our reality checks revealed that participants categorized investment failure as realistic, it is important to acknowledge that the lack of a defined cause could be a limitation because different causes of failure may lead to different reactions (e.g., Nutt, 1999). Hence, future research should delve into the influences of different reasons for failure, as they may shape subsequent investment decisions.

Fourth, while our chosen between-subject design is valuable for comparing behaviors and reactions (Aguinis & Bradley, 2014), it is essential to recognize the potential relevance of a within-subject design. In real life, individuals often have the opportunity to make choices from a set of options (Charness et al., 2012), akin to the scenarios seen in crowdlending investments. Consequently, funders' responses to failure may vary depending on whether their personally selected option failed. However, it is worth noting that our between-subject design holds significant value because it provides the relevant advantage of a randomized sample occurring before the experience of failure.

Fifth, with regard to our sample, we specifically chose a German context, which can be seen as representative of other European countries (Hörisch & Tenner, 2020). However, our findings may not be readily applicable beyond this European context due to distinct institutional factors that significantly influence individual reactions (Schwartz, 1994), reactions to failure (Lewis et al., 2010), and preferences for sustainable values, which can vary among national cultures (Bento, Gianfrate, & Groppo, 2019). To enhance the reliability of our results and gain deeper insights, it would be beneficial to engage in cross-continental studies.

5.6 Conclusion

The growing frequency of failures in the crowdlending landscape requires a deeper understanding of funders' reactions, as they are key to shaping future funding opportunities. Through our experimental approach, we discover that human values significantly moderate crowd lenders' future investment behavior when it comes to socially and commercially framed campaigns. This finding suggests that the framing of a crowdlending campaign aligned with the human values of funders significantly mitigates the negative effect of investment failures and may encourage forgiveness when it comes to future investment decisions in social campaigns.

6 Concluding discussion of the dissertation

6.1 Summary of findings

Comprising four essays and employing both qualitative and quantitative methodologies—an integrative literature review, conjoint and latent class analysis, semi-structured interviews, and a vignette experiment—this dissertation delivers nuanced perspectives to address how underlying individual-level mechanisms and motivational factors influence investor decisions in sustainability-oriented crowdfunding. In this context, the integrative literature review in *Essay I* explores how various theoretical mechanisms, such as signaling theory (Spence, 1973) or self-determination theory (Deci & Ryan, 1985, 2012), are applied related to different research levels in the emerging field of sustainability-oriented crowdfunding. *Essay II* focuses on the individual investor level and deals with the question of whether and how crowd investors differ in the factors that drive their decision making, revealing four segments with distinct preference structures. *Essay III* illuminates the research question of why crowd investors engage in return-oriented crowdlending for sustainable ventures and how their motives shape their decision-making approaches. The qualitative insights show that financial, personal, communal, and prosocial investor motives can be classified into different types based on motivational drivers (i.e., intrinsic vs. extrinsic) and focus (i.e., self- vs. other-directed) and these motives are weighed in the decision-making process. Finally, *Essay IV* deals with the question of how crowd investors react to investment failures related to ventures that made multiple promises including financial return and sustainable value. The findings show that human values moderate crowd investors' reinvestment behavior, particularly in socially versus commercially framed campaigns. Specifically, while losses in both types of campaigns lead to negative reactions, negative reactions are less pronounced in socially framed campaigns. In the following, first the findings of *Essay I* are detailed, followed by the combined empirical findings of *Essays II-IV*.

Essay I represents a review of the existing literature on sustainability-oriented crowdfunding based on an analysis of 157 articles across 16 research disciplines. The derived framework identifies three key theoretical research levels (i.e., individual, transactional, and institutional) and reveals their linkages with reference to the different dimensions of the crowdfunding process. In addition, it shows how antecedents (e.g., the social and/or ecological orientation of the venture) relate to short- versus long-term outcomes (e.g., crowdfunding campaign success) across the three levels and corresponding crowdfunding process phases (i.e., [pre-]funding and post-funding phase). While the existing literature focuses on the individual (e.g., Allison et al., 2013; Maehle et al., 2021) and transactional research level (e.g., Anglin et al., 2020; Gama et al., 2023) related to short-term outcomes, gaps still exist in exploring the institutional level, long-term outcomes, and the specific context of diverse crowdfunding forms. By revealing research gaps and systematically linking the individual, transactional, and institutional research levels, *Essay I* not only establishes the foundation for *Essays II-IV* within this dissertation but also identifies the following seven future research opportunities: (1) the effects of individual antecedents on the participation in different crowdfunding forms; (2) the impact of campaign antecedents on long-term campaign outcomes; (3) the effects of long-term campaign outcomes on individual outcomes with respect to the post-funding phase; (4) the interrelation of crowdfunding forms and the sustainable entrepreneurship ecosystem; (5) the impact of the ecosystem on shaping institutional environments and contexts; (6) the effects of contextual and environmental factors on the development and prevalence of different crowdfunding forms; and (7) the impact of institutional and cultural factors on individual actors.

Essays II, III, and *IV* address the first and the third research opportunities outlined in *Essay I* by examining motivations and values from an individual perspective. Specifically, the essays delve into the research theme of mixed investor motivations, helping to enhance the current understanding of the interplay between self-enhancement and self-transcendence

values, intrinsic and extrinsic motives, as well as self- and other-directed motives within return-oriented crowdlending. Drawing on psychological theories such as the human value theory (Schwartz, 1992, 2003), the essays underscore the importance of diverse decision-making structures with preferences for social, ecological, or financial goals among crowdlending investors. The combined findings of these three essays suggest that psychological and behavioral effects rooted in investor motivation and values play a significant role in both initial investment decisions and their reinvestment behavior following failure. Thus, the synthesis of these results can be summarized as highlighting (1) *the heterogeneity of investor motivations*, (2) *the hybrid nature of investor decision making*, and (3) *the dynamics of value alignment throughout the crowdlending process.* The following discussion outlines how each essay's findings contribute to these three identified themes.

Heterogeneity of investor motivations. Crowdlending for sustainable ventures occupies a middle ground between traditional investing and charitable giving (e.g., Galak et al., 2011), appealing to private investors motivated by a spectrum of factors from financial gain to sustainable goals. In light of this, *Essay II* reveals four segments with heterogeneous preferences for sustainability- and loan-related campaign attributes: loan-first, fin-social, fin-ecological, and impact-first investors. In the context of sustainability-oriented crowdlending that offers financial returns, the majority of crowd investor segments form their decisions primarily around financial returns from the loan. However, impact-first investors base their decisions mainly on ecological and social impact goals and can be clearly differentiated from the other three segments. Further, *Essay III* uncovers the underlying layers of investor motivations, identifying financial, personal, communal, and prosocial motives. These findings suggest that investors' participation in sustainability-oriented crowdlending can be driven by multiple layers of motivations including a wide range of personal motives that are intrinsically driven and self-directed. For example, compensating for moral conscience related to behavior

in other aspects of life is a typical personal motive in sustainability-oriented crowdlending. This tendency can be linked to further psychological effects like mental accounting and moral balancing (Cornelissen et al., 2013; Ploner & Regner, 2013) and is similar to carbon offsetting behavior in environmental decision making (Hahnel et al., 2020). By identifying four investor segments and detailing the distinct values and types of motives that impact crowd investor decisions, this dissertation expands on previous research by revealing a broader range of motivational mechanisms in sustainability-oriented crowdfunding (e.g., Calic & Mosakowski, 2016; Penz et al., 2022).

Hybrid nature of investor decision making. Essay III shows that crowd investors may differ in how they approach decision making, observing the following three approaches: strategy-based approach, emotions-based approach, and blended approach. Investors following the strategy-based approach tend to base their decision on rational steps, such as assessing project details like interest rates and duration or conducting some form of due diligence. In addition, their decision making refers to their long-term investment plans or portfolio strategies. Conversely, investors following an emotions-based approach tend to make spontaneous decisions based on project descriptions and gut instincts. A blended approach combines aspects of both strategies. Revealing how the diverse underlying motives shape investor considerations and thus the engagement in distinct decision-making approaches underscores the hybrid nature of decisions in return-oriented crowdlending for sustainability ventures. Thus, the findings of *Essay III* further expand upon the traditional two-dimensional view in previous research that mostly distinguishes financially from nonfinancially motivated decisions (Hajiheydari & Delgosha, 2023; Reiss, 2012; Yoo et al., 2023).

Dynamics of value alignment throughout the crowdlending process. The combined findings of *Essay II* and *Essay IV* reveal the important role of human values for crowd investor decision making in sustainability-oriented crowdlending with financial returns. For instance,

Essay II's findings surprisingly indicate that self-enhancement values related to one's personal success increase the likelihood of investors preferring social over ecological goals, while still prioritizing high financial returns. This suggests that projects with high social impact goals may attract investors who prioritize their own interests, a phenomenon that can be explained by the warm-glow effect (Andreoni, 1990). According to this theory, investors select projects with high social impact to enhance their positive self-perception (Allison et al., 2013). In addition, *Essay IV* highlights the role of value alignment in the post-funding phase of sustainability-oriented crowdlending related to the campaign's sustainability goals (i.e., social, ecological, commercial). The results of *Essay II* indicate the influence of self-enhancement values on choosing projects with high social impact goals in the (pre-)funding phase. However, the results of *Essay IV* suggest that stronger self-transcendence values are related to higher reinvestments in social campaigns compared to commercial campaigns after investment failure. Hence, aligning social campaigns with the investors' values can affect their decision making in both the pre- and the post-funding phases. While emphasizing the positive benefits for oneself, such as a positive image within society, may influence initial investment decisions, emphasizing benefits for others may potentially mitigate the negative effects of investment failures by promoting a feeling of forgiveness in reinvestment decisions. Thereby, these findings answer the calls for generating insights into crowd investor decisions at the individual level (e.g., Calic & Mosakowski, 2016) and add to the initial studies that point toward the importance of value alignment in other crowdfunding contexts (e.g., Nielsen & Binder, 2021; Tenner & Hörisch, 2021).

6.2 Theoretical implications

Drawing from the summarized findings, this dissertation proposes integrated theoretical implications that build upon the three identified themes: (1) *heterogeneity of investor*

motivations, (2) *the hybrid nature of investor decision making*, and (3) *dynamics of value alignment throughout the crowdlending process*.

Heterogeneity of investor motivations. Essay III finds that there are four motive types linked to crowd investor decision making: financial, personal, prosocial, and communal. Researchers could use these four different motive types to incorporate additional variables in future quantitative studies, enhancing the common understanding of the theoretical mechanisms linked to heterogeneous preferences and motivations in sustainability-oriented crowdfunding. With respect to the identified impact-first segment as revealed in *Essay II*, it remains unclear to which extent prosocial or communal motives dominate the choices made by investors and which particular emotional reactions this may trigger, opening up fruitful avenues for future research. To address the research gap on the institutional research level identified in *Essay I*, scholars could explore how country-level differences and sociocultural aspects shape the composition of different motives in sustainability-oriented crowdlending. Building on recent research suggesting that the perceived importance of sustainability goals is related to the country's culture (e.g., Cumming et al., 2024), future research could further involve country-level factors in their studies of investor motivations. Collectivist societies, which emphasize group orientation, for example, may prioritize social goals such as the elimination of poverty over environmental goals such as climate change.

Hybrid nature of investor decision making. Essay III emphasizes the hybrid nature of investors' considerations and decision making, ranging from strategy-based to emotions-based decision-making approaches. Future research could, for example, study the specific factors that influence the conscious or subconscious selection of a particular decision-making approach and the resulting influence on funding behavior. While *Essay III* shows that different motives may shape the decision making of investors, it remains unclear whether a strategy-based, emotions-based, or blended approach leads to a higher funding outcome or better reinvestment rates in

sustainable ventures. In addition, examining the extent to which primarily financially driven investors are associated with a moral compensation effect could enhance our understanding of hybrid decisions in sustainability-oriented crowdlending. Given the tendency of some financially motivated crowd investors to adjust their perceptions of expected returns and potential losses, future research could examine when these losses are perceived as donations. Theories of ex post rationalization (e.g., Eyster et al., 2021; Folli & Wolff, 2022), which suggest that individuals adapt their beliefs and attitudes to align with prior choices—for example, to reduce cognitive dissonance (Festinger, 1957)—could serve as a valuable lens for such investigations.

Dynamics of value alignment throughout the crowdlending process. Future studies could investigate the nuanced dynamics of value alignment, particularly how alignment with the self-enhancement and self-transcendence values of sustainable crowdfunding campaigns influences investors' responses over time. Specifically, while *Essay IV* shows that investors' negative reactions to a failed investment are mitigated when the venture's social goals align with the investor's self-transcendence values, it remains unclear how this effect develops over time and persists in the face of ongoing losses. In addition, comparing how values interact with investment success compared to investment failure represents another fruitful future research avenue. This involves investigating how investor responses to campaign outcomes vary when there is a closer alignment with the core values of the sustainable venture. Building on the findings of *Essay I*, further investigation into cultural value contexts could reveal additional values-based factors influencing investment decisions. For example, examining to which extent investors are influenced by the values and concerns held by their culture can shed light on the contextual factors that either strengthen or weaken the impact of individual values on decision making. Finally, as investors integrate crowdlending into their long-term economic strategies, future research could examine how extended periods of losses or successes in sustainability-

oriented crowdlending impact their overall asset allocation toward sustainable investments. Understanding these dynamics could provide deeper insights into how crowdlending aligns with broader sustainable investment strategies and influences long-term financial planning.

6.3 Practical implications

In the evolving landscape of crowdfunding and sustainability, which encompasses a variety of crowdfunding forms, perspectives, and investors' motivations, stakeholders need insights into the dynamics of different crowdfunding forms and the involved crowd investors to navigate them effectively and leverage their full potential. In this regard, understanding the impact of multifaceted motivations and values on crowd investor decisions in the short- and long-term is crucial for informing policymakers, supporting institutions, platform operators, and sustainable entrepreneurs.

Understanding the spectrum of motives behind investor participation and the hybridity of decision making in sustainability-oriented crowdlending enables sustainable entrepreneurs and platform operators to develop targeted communication plans tailored to the distinct preferences of different investor segments. Moreover, insights into the behavior within these segments provide valuable information for creating effective strategies to engage investors according to their individual motivations and preferences. In this context, allowing investors to customize a view of reporting indicators on the crowdlending platform focused on social, environmental, or financial progress of the funded ventures can increase their individual involvement and foster reinvestments. Furthermore, sustainable entrepreneurs can harness the dynamics of value alignment to gain long-term investor support. By aligning sustainability-oriented campaign objectives and messages with the target investor segment's self-enhancement and self-transcendence values, they may foster a sense of resonance and connection with their audience. For instance, campaigns clearly emphasizing the environmental and societal impact of return-oriented crowdlending may attract investors with high self-

transcendence values, who prioritize well-being of others and the environment. These campaigns could incorporate visual imagery that evokes emotions to support emotion-based decision making. Similarly, campaigns highlighting the personal benefits of supporting impactful ventures can resonate with investors who hold high self-enhancement values. These campaigns could include comprehensive financial information and detailed business plans to appeal to investors who engage in strategy-based decision making. Lastly, value-aligned communication is especially important when addressing post-funding challenges and failures inherent to socially oriented entrepreneurial ventures. For example, leveraging the tendency of investors with high self-transcendence values to forgive failures can help mitigate the negative effect of losses and encourage continued investment in campaigns with social goals. Thus, defining the target investor segment based on the value focus of the sustainable venture is crucial for entrepreneurs.

Additionally, platform operators may enhance the investors' crowdlending experience by integrating interactive platform features and impact calculations—such as the potential savings of CO_2 emissions made possible by a given crowdfunding project—to appeal to the investors' desire of moral compensation. They can further leverage the insights into value alignment throughout the crowdlending process to create communication campaigns that demonstrate how crowdlending projects align with the broader context of environmental and social development, as well as economic growth. Moreover, as data availability improves, evaluating both the sustainability impacts and economic viability of funded ventures will yield crucial insights for optimizing investment activities in sustainability-oriented crowdlending. Investors themselves can leverage these insights to assess the effectiveness of their investments in line with their values and make informed adjustments to how they allocate investment funds to future campaigns.

Lastly, if policymakers seek to foster a more sustainable economy and support crowdlending initiatives, acknowledging both the sustainability-oriented motives and the increased uncertainty associated with the financial returns offered by investment made in sustainable ventures can represent an impactful measure. For examples, losses incurred by crowd investors who support sustainable ventures could be classified as a tax-deductible cost. Furthermore, policymakers can leverage the insights on repeated funding behavior to develop support programs that promote a resilient investor community, ultimately fostering sustainable economic growth. Effective institutional support, policies, and guidance on sustainability-related investments within crowdlending platforms are pivotal in maximizing their potential to finance sustainable venture (Bento, Gianfrate, & Thoni, 2019; Hörisch, 2019). By establishing crowdlending support that is better tailored to the needs of investors, institutional actors can encourage crowdlending participation and cultivate a collaborative and supportive ecosystem of sustainability-oriented investors, entrepreneurs, and platform operators.

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Appendix

Appendix A (Essay I) – Articles included in the literature review

	Article	Research field	Type	Method	Crowdfunding form(s)	Main focus	Key findings	Theoretical lenses	Geo-graphy
1	Behl, Sampat, and Raj (2023)	Operations Research and Management Science	Empirical-quantitative	Survey	Donation-based	The role of social relatedness linked to intrinsic motivation for repeated funding	Social relatedness influences a backer's intrinsic motivation, leading to repeated funding behavior; Gamification moderates this relationship	Self-determination theory	India
2	Corsini and Frey (2023)	Information Management	Empirical-quantitative	Survey	Reward-based	The success factors of environmentally sustainable product campaigns considering customer needs, technology and target market	Crowdfunding not ideal for new customer needs or technologies; Financing sustainable niche market products more successful than financing mass market products	Product search matrix	U.S.
3	Gama, Correia, Augusto, and Duarte (2023)	Entrepreneur-ship and Small Business Management	Empirical-quantitative	Secondary data analysis	Prosocial lending-based	Deployment of signals by microfinance institutions (MFIs) and refugee entrepreneurs on crowdfunding platforms	Campaigns affiliated with a MFI signaling lower default rates, high profitability, an entrepreneurial support orientation, transnational operations and digital focus achieve better crowdfunding outcomes	Signaling theory	U.S.
4	Hornuf and Siemroth (2023)	Economics	Empirical-quantitative	Experiment	Return-oriented lending-based	Crowdfunding backers' behavior in response to newsletter framing	Ecological framing increases newsletter clicks; Older investors respond more to a return framing than younger investors, while men respond less than women	n.a.	Germany
5	Leone, Pietronudo, Gabteni, and Carli (2023)	Ethics, Corporate Social Responsibility, Management	Empirical-qualitative	Case studies (multiple)	Reward-based	The potential of reward-based crowdfunding to design and orchestrate a circular business model	Crowdfunding shapes circular business models in informational mechanisms, collaborative innovation networks, and marketing aspects	Circular business model	U.S.
6	Liang, Hu, Li, and Meng (2023)	Information Management	Empirical-quantitative	Survey	Reward-based	The effects of perceived sustainability orientation on backers' value-co-creation behavior	Perceived sustainability orientation impacts value-co-creation behavior via perceived affective reaction, self-effectiveness; It further impacts participation behavior through perceived risk	Theory of planned behavior, agency theory, rational choice theory, affective events theory, perceived self-effectiveness, risk perception theory	China

7	Mendoza, Parra Oller, Rezola, and Suarez (2023)	Entrepreneur-ship and Small Business Management	Empirical-quantitative	Survey	Equity-based	The impact of sustainability on the success probability of investment campaigns	Sustainability-related factors do not increase the chances of crowdfunding success	n.a.	U.S.
8	Pan and Dong (2023)	Sector Studies	Empirical-quantitative	Secondary data analysis	Donation-based	External and internal quality signals related to donation-based crowdfunding success	While internal signals (updates and predefined duration) positively influence crowdfunding success, the role of external signals (platform and award) is less certain	Signaling theory	China
9	Sabzehzar, Burtch, Yili and Raghu (2023)	Information Management	Empirical-quantitative	Secondary data analysis, natural experiment	Prosocial lending-based	The influence of religious differences on prosocial crowdfunding	Religion distance has a significant negative effect on funding activity; The backers' offline social context moderates this relationship, while online context amplifies it	Conflict theory, groupthink theory	U.S.
10	Vásquez-Ordóñez, Lassala, Ulrich, and Ribeiro-Navarrete (2023)	Ethics, Corporate Social Responsibility, Management	Mixed	Fuzzy set qualitative comparative analysis	Return-oriented lending-based	Variables that influence the performance of crowdlending campaigns for renewable energy projects	Platform communication, firms' sustainability orientation, loan characteristics and social networking represent influencing variables; Effective communication between participants is crucial	n.a.	Spain
11	Yoo, Jhang, Song, and Shin (2023)	Information Management	Empirical-quantitative	Secondary data analysis	Prosocial lending-based	Conceptual framework to delineates the relationship between backers' three utilities and informational cues	Funding success increases when borrowers smile or when the target amount is smaller; Relationship between funding success and target amount is moderated by smiling when social-tie words are used	Three-component utility model	U.S.
12	Allison, Anglin, Davis, Oo, Seyb, Short and Wolfe (2022)	Entrepreneur-ship and Small Business Management	Empirical-quantitative	Secondary data analysis	Donation-based	Language-based cues of personality traits embedded in charitable appeal of crowdfunding campaigns	Donation effects increase for appeals highlighting the pandemic's impact on the business; Language-based cues of personality traits are related to public support when embedded in charitable appeal	Identifiable victim effect	U.S.
13	Anglin, Courtney, and Allison (2022)	Entrepreneur-ship and Small Business Management	Empirical-quantitative	Secondary data analysis	Reward-based	Funding differences between social and commercial ventures related to the influence of entrepreneur gender and race for social versus commercial ventures	Women experience better funding performance when funding a social venture, the effect is larger for women of color; Men of color experience worse performance when funding a social venture	Role congruity theory	U.S.
14	Anglin,.Milanov, and Short (2022)	Ethics, Corporate Social Responsibility, Management	Empirical-quantitative	Secondary data analysis, experiment	Prosocial lending-based	The tension regarding the effects of religious expression on crowdfunded microfinance funding outcomes	Religious expression has a negative impact on funding, especially for women; The negative influence of religious expression is attenuated	Role congruity theory	U.S.

							when individual lenders exhibit higher levels of religiosity		
15	Banerjee (2022)	International Business, Area	Empirical-qualitative	Interviews	Donation-based	The training of local NGO staff to market their projects in digitally affective ways on social media	Modern technological tools influence the creation of affective social bonds and social capital to mobilize donors	Social capital theory	India
16	Butticè and Useche (2022)	Entrepreneur-ship and Small Business Management	Empirical-quantitative	Secondary data analysis	Reward-based	The role of internal social capital on the composition of backers attracted by US-born versus immigrant entrepreneurs	Immigrant entrepreneurs attract fewer backers located in the host country but receive more funding from backers located in their home country; Entrepreneurs' social capital positively moderates these relationships	Social capital theory	U.S.
17	Caputo, Schiocchet, and Troise (2022)	Social Sciences	Mixed	Fuzzy set qualitative comparative analysis	Equity-based	The role of the elements of sustainable business models as success discriminants of equity crowdfunding campaigns	Elements of sustainable business models positively influence campaign outcomes; Negative outcomes can be associated with campaign-related features	Collective action theory	Italy
18	Cox, Tosatto, and Nguyen (2022)	Entrepreneur-ship and Small Business Management	Empirical-quantitative	Secondary data analysis	Reward-based, donation-based, equity-based	Completion contributions in relation to the funding deadline proximity	Completion contributions vary positively with proximity to funding deadlines; Relationship is more pronounced for all-or-nothing than for keep-it-all and for donation-based platforms compared to equity-based platforms	Theory of impact philanthropy, goal gradient theory	U.S., U.K.
19	Davies and Giovannetti (2022)	Innovation	Empirical-quantitative	Secondary data analysis	Prosocial lending-based	Novel construct for social capital, latent network capital, to examine gender gap in crowdfunding	The latent network capital elasticity of the amount of funds is lower for women-led than for male-led projects	Social capital, latent network	U.S.
20	De Crescenzo Monfort, Felicio, and Ribeiro-Navarrete (2022)	Sector Studies	Mixed	Fuzzy set qualitative comparative analysis	Donation-based	Content communication and endorsement from third-party to reduce information asymmetry	The relevance of content communication appears to vary depending on the presence of a third-party investor	Information asymmetry	Italy
21	Dinh and Wehner (2022)	Sector Studies	Empirical-quantitative	Experiment	Return-oriented lending-based	The role of human values to explain differences of crowd investors	The majority of backers base their funding decisions on financial return rates; Backers with high self-transcendence values focus on ecological impact goals, while backers with high self-enhancement values prefer social goals	Theory of human values	Germany

22	Emanuel-Correia, Duarte, Gama, and Augusto (2022)	Finance	Empirical-quantitative	Secondary data analysis	Prosocial lending-based	Loan access for refugee entrepreneurs and the effect discrimination in this setting	While the perceptions of campaigns involving refugee entrepreneurs is positive; Female refugee entrepreneurs experience discrimination	Signaling theory, framing theory	U.S.
23	Figueroa-Armijos and Berns (2022)	Ethics, Corporate Social Responsibility, Management	Empirical-quantitative	Secondary data analysis	Prosocial lending-based	The role of vulnerability in successfully raising funds in a prosocial crowdfunding context	Being associated with vulnerable populations is negatively related to successful funding; Female or rural key framing of vulnerability increases the likelihood of funding	Framing theory, information asymmetry	U.S.
24	Gao, Guo, and Tang (2022)	Information Management	Empirical-quantitative	Secondary data analysis, quasi-experiment	Prosocial lending-based	The effectiveness of matching subsidies in influencing funding outcomes and backer behavior	Contributions to matched and unmatched loans increase compared to their prematching counterparts, indicating a positive spillover effect on unmatched loans	Theory of displacement effects, spillover effects, crowding-out theory	U.S.
25	Ge, Zhang, and Zhao (2022)	Information Management	Empirical-quantitative	Secondary data analysis	Donation-based	The impact of expressions of sadness, anxiety and fear across different categories (medical assistance, education assistance, disaster assistance and poverty assistance)	The expression of sadness, anxiety and fear shows different effects across the categories; No effects were found for the poverty assistance category	Emotional contagion theory, emotions-related approach, avoidance orientation theory	China
26	Guillochon (2022)	Economics	Empirical-quantitative	Secondary data analysis	Return-oriented lending-based, equity-based	The factors influencing the number of investors and the duration of successful renewable energy campaigns	Media coverage increases the number of investors participating in campaigns and shortens the campaign duration	Social capital theory	France
27	Hoos (2022)	Accounting	Mixed	Experiment	Donation-based	The influence of signaling a social entrepreneur's reputation and accountability on backers' decisions	Signaling accountability based on a social impact measurement system is a better strategy than reputation building or sending both signals simultaneously	Signaling theory	France
28	Hornuf, Stenzhorn, and Vintis, (2022)	Innovation	Empirical-quantitative	Secondary data analysis	Equity-based	The effect of investor motives linked to a default shock in equity crowdfunding	A default shock occurs immediately after the event or if investors experience more than two insolvencies; Sustainability-oriented backers pledge larger amounts of money and invest in more campaigns, reacting more sensitively after experiencing a default	Prospect theory, utility function	Austria, Germany
29	Jang and Chu (2022)	Marketing	Empirical-quantitative	Secondary data analysis	Donation-based	The effectiveness of a negatively framed messages on campaign success	Negatively framed messages resulted in a greater number of backers and sharing of the message	Fairness equilibrium theory, mood management theory, signaling theory,	Inter-national

							via social media, but smaller individual donation amounts	self-determination theory	
30	Kollenda (2022)	Finance	Empirical-quantitative	Secondary data analysis	Return-oriented lending-based	Conflicting objectives between generating financial returns and generating social impact	Backers' decisions are influenced by financial returns; A variation in financial returns can crowd out dimensions of social impact	Theory of crowding out	Nether-lands
31	Kuo, Lin, and Liu (2022)	Marketing	Empirical-quantitative	Experiment	Reward-based	The impact of message framing and cause-related marketing on the intentions of backers	Negative message framing results in higher funding intentions; Narratives with cause-related marketing show a significant effect on increasing funding intentions	Framing theory, regulatory focus theory	Taiwan
32	Li, Hou, Guan, and Chong (2022)	Information Management	Empirical-quantitative	Survey	Donation-based	The roles of social experience, empathy and personal impulsiveness on donation intention	Empathy mediates the relationship between campaigns and donors; Social influence positively influences empathy and donation intention; Personal impulsiveness moderates the relationship	Cognitive evaluation theory	China
33	Logue and Grimes (2022)	Strategy	Empirical-qualitative	Case study (single), secondary data analysis	Donation-based	The generation of an institutional infrastructure through civic crowdfunding platforms to grow and to pursue a social mission	The development of an institutional infrastructure involving boundaries, bridges, and blueprints is important to overcome these dilemmas when social mission platforms attempt to navigate user growth	Institutional infrastructure	U.K.
34	Luo, Ge, and Wang (2022)	Information Management	Empirical-quantitative	Secondary data analysis	Prosocial lending-based	The effects of prosocial crowdfunding on the sustainability and interest rates of traditional MFIs	After joining the prosocial platform Kiva, MFIs' sustainability improves and the interest rates decrease	n.a.	U.S.
35	Manning, Rauch, and Vavilov (2022)	Strategy	Empirical-qualitative	Case studies (multiple)	Reward-based	The mobilization of critical resources from local ecosystems	The circular strategy of resource mobilization is mainly applied by social ventures, while the cumulative strategy is mainly applied by commercial high-tech ventures	Institutional ties	U.S.
36	Mansouri and Momtaz (2022)	Entrepreneur-ship and Small Business Management	Empirical-quantitative	Secondary data analysis, natural experiment	n.a. (Equity-based)	The effect of sustainability orientation on the short- and long-term performance of blockchain-based crowdfunding campaigns	Sustainability orientation has a positive influence on the ventures' short-term valuation and a negative influence on their post-funding performance	Financial equilibrium theory, sustainability-related equilibrium theory	n.a.
37	Mitra, Janssen, Hermans, and Kickul (2022)	Entrepreneur-ship and Small	Empirical-quantitative	Survey	Reward-based	The influence of natural and material rewards and of prosocial motivation on the	Natural rewards positively influence the crowds' willingness to fund the social campaign; Prosocial	Self-leadership theory	France

		Business Management				backers' willingness to fund a social crowdfunding campaign	motivation mediates this relationship		
38	Naimi, Arenas, Kickul, and Awan (2022)	Entrepreneur-ship and Small Business Management	Empirical-quantitative	Secondary data analysis	Prosocial lending-based	The impact of cognitive and emotional appeals to attract funding	Cognitive appeals can attract more funding than emotional appeals; (Negative) affective language may be negatively related to funding	Elaboration likelihood model of persuasion, theory of emotions as social information	U.S.
39	Nakagawa and Kosaka (2022)	Innovation	Mixed	Latent dirichlet allocation topic modeling; Survey	Reward-based	Social issues that campaigns address and related emphatic feelings	Cognitive empathy is positively related to issues in which people are willing to invest; Empathy affects the success of fundraising in combination with the profitability of the issue	Theory of empathy, empathy–altruism hypothesis	Japan
40	Parhankangas and Colbourne (2022)	Entrepreneur-ship and Small Business Management	Empirical-qualitative	Netnography	Reward-based, donation-based	The emancipatory potential of Indigenous crowdfunding campaigns	Typology of indigenous emancipatory crowdfunding across commercial, cultural, community, and activist campaigns	n.a.	U.S., Australia
41	Penz, Hörisch, and Tenner (2022)	Innovation	Empirical-quantitative	Experiment	Return-oriented lending-based	The influence of different framing and benefits on the decisions of backers	While altruistic cues are more effective than egoistic cues, egoistic benefits (i.e., interest payments) are more important than altruistic benefits (i.e., environmental impact)	Warm-glow theory, framing theory	Germany
42	Otte and Maehle (2022)	Sector Studies	Mixed	Fuzzy set qualitative comparative analysis	Reward-based	The combinational impact of emotions, updates, duration, amount, gender, location	Crowdfunding success of cleantech projects is highly contextual and a complex combination of success factors	n.a.	U.S.
43	Quigley and Patel (2022)	Entrepreneur-ship and Small Business Management	Empirical-quantitative	Secondary data analysis	Prosocial lending-based	The interaction between the backers' gender and gender egalitarianism practices of the backer's home culture in terms of funding amount	Female backers raise less funding than male backers; This effect is moderated by gender egalitarianism practices	Gender role theory, cultural theory	U.S.
44	Rama, Jiang, Johan, Liu, and Mai (2022)	Finance	Empirical-quantitative	Secondary data analysis	Donation-based	The effect of religiosity and social orientation on crowdfunding	Narratives of religious identity and social orientation have a positive effect on crowdfunding success	Moral foundation theory, cultural theory	U.S., U.K., Malaysia
45	Sherman and Axelrad (2022)	Entrepreneur-ship and Small Business Management	Empirical-quantitative	Survey	Reward-based, donation-based	The influence of funding experience in reward and donation-based crowdfunding on well-being	Intrinsic funding motivation is associated with the sense of meaning in life	Theory of well-being	Israel

46	Siebeneicher and Bock (2022)	Innovation	Empirical-quantitative	Secondary data analysis	Reward-based	The effect of the relationship between sustainable values and personal value on crowdfunding success	Sustainable and personal values positively affect crowdfunding success; The marginal relation increases for teasers but decreases for descriptions	Signaling theory	U.S.
47	Song, Li, and Sahoo (2022)	Operations Research and Management Science	Empirical-quantitative	Secondary data analysis	Donation-based	Matching of returning donors to campaigns in donation-based crowdfunding	Primarily egoistic factors motivate donations; Over the course of a campaign, egoistic and altruistic motivations play a symbiotic role	Theory of altruistic utility (altruism)	U.S.
48	Yacoub, Mitra, Ratinho, and Fatalot (2022)	Entrepreneur-ship and Small Business Management	Empirical-qualitative	Case studies (multiple)	Reward-based, Donation-based, Equity-based	The relation between entrepreneurs' motivation and different crowdfunding types	Sustainable entrepreneurs choose among different crowdfunding types based on six drivers: create the craze, springboard for another project, sales argument, production funding and test the market	n.a.	France
49	Zhang, Cheng, Liu, Zhao, Xu, and Li (2022)	Information Management	Empirical-quantitative	Secondary data analysis	Prosocial lending-based	The influence of backers' experience and social connection on retention	Profit language and the failure of past participation are negatively related to retention; Friends or lending teams are positively related to retention	Self-determination theory	U.S.
50	Bergmann, Burton, and Klaes (2021)	Economics	Empirical-quantitative		Reward-based, donation-based, return-oriented lending-based, equity-based	Public opinions about the role of crowdfunding investment for the renewables sector	Prior experience with crowdfunding, and previous investments in renewables key influencing factors; Crowdfunding considered a viable alternative to traditional investments	n.a.	Europe
51	Cason, Tabarrok, and Zubrickas (2021)	Economics	Empirical-quantitative	Experiment	Donation-based	The assurance contract mechanism in the context of crowdfunding for public goods	Refund bonuses can increase the success rate by 50%; Taking into account campaign failures, refund bonuses can be financially self-sustainable	Theory of strategic complements, theory of conditional cooperation	U.S.
52	Chan, Moy, Schaffner, and Torgler (2021)	Ethics, Corporate Social Responsibility, Management	Empirical-quantitative	Secondary data analysis	Reward-based	The influence of verbal cues of money saliency and sustainability intention on funding outcomes	Money cues have a negative impact on funding behavior; This effect is mitigated for sustainability-oriented projects	n.a.	U.S.
53	Chen, Dai, Wang, Yang, Li, and Wei (2021)	Information Management	Empirical-quantitative	Survey	Donation-based	Extrinsic and intrinsic motivations in donation-based crowdfunding	Perceived ease of use, self-efficacy and social connection positively impact backers' donation intentions through a combined extrinsic and intrinsic motivations	Self-determination theory	China

54	Chung, Li, and Jia (2021)	Marketing	Empirical-quantitative	Secondary data analysis	Reward-based	The impact of backers' social networks on their funding behavior	Node-level factors (e.g., centrality) have a greater impact on technology-oriented campaigns, while tie-level factors (e.g., embeddedness) have a stronger effect on social-oriented campaigns	Social network theories, cognitive balance theory	China
55	Corsini and Frey (2021)	Information Management	Empirical-quantitative	Secondary data analysis	Reward-based	The success determinants of projects developing sustainable products	The impact of crowdfunding on the development and commercialization of sustainable products is marginal; Using generic sustainability keywords in campaigns may weaken the success	Diagnostic theory	U.S.
56	Defazio, Franzoni, and Rossi-Lamastra (2021)	Ethics, Corporate Social Responsibility, Management	Empirical-quantitative	Secondary data analysis	Reward-based	The crowdfunding conditions that impact contributions to projects expressing a prosocial orientation	Prosocial framing is positively related with crowdfunding success when being moderately emphasized; Crowdedness on the platform increases the positive effect of prosocial orientation	Framing theory	U.S.
57	Dorfleitner, Oswald, and Zhang (2021)	Ethics, Corporate Social Responsibility, Management	Empirical-quantitative	Secondary data analysis	Prosocial lending-based	The antecedents of funding success in prosocial lending-based crowdfunding	Social underwriting by a third party and the description texts signaling trust are the main antecedents of funding success; Backers prefer to fund women and groups as well as, for non-endorsed loans, individuals with an immigration background	Signaling theory, information asymmetry	U.S.
58	Feola, Vesci, Marinato, and Parente (2021)	Entrepreneur-ship and Small Business Management	Empirical-quantitative	Survey	Equity-based	Segmentation of backers according to confidence in team and venture, financial pledge and project attractiveness, platform characteristics, community driver, and societal driver	Four clusters: (1) venture trustful; (2) crowdfunding technicians; (3) financial investors, talent scouters; (4) social dreamers	Theory of work motivation	Italy
59	Gafni, Hudon, and Périlleux (2021)	Ethics, Corporate Social Responsibility, Management	Empirical-quantitative	Secondary data analysis	Prosocial lending-based	Influence of the loan purpose—business investment versus basic necessities—on the campaign success in crowdfunding	Basic need loans are funded more rapidly than business loans; Females are funded more rapidly than men for basic need loans	Self-determination theory	U.S.
60	Gama, Emanuel-Correia, Augusto, and Duarte (2021)	Economics	Empirical-quantitative	Secondary data analysis	Prosocial lending-based	The effect of a traditional versus modern loan purpose on crowdfunding success	Campaigns promoting modern-sector business loans lead to faster funding; In this context, large loans are more appealing to lenders; Female entrepreneurs have an advantage over men	Economic development theory	U.S.

61	Kim and Hall (2021)	Social Sciences	Empirical-quantitative	Survey	Reward-based, donation-based, return-oriented lending-based, equity-based	The influence of values and attitudes on crowdfunding behavior for campaigns in relation to the sustainable development goals	Value impacts attitude, personal norm, and social norm, which positively influence participation; Conscientiousness, extraversion, agreeableness, and neuroticism have a moderating influence	Value-attitude-behavior model, personality theory	Korea
62	Kim and Hall (2021)	Sector Studies	Empirical-quantitative	Survey	n.a.	The behavior of backers in terms of goal direction, risk, and intervention as influencing factor	Perceived risk and intervention play relevant roles within the extended model of goal-directed behavior in sustainability-oriented crowdfunding	Theory of planned behavior, extended model of goal-directed behavior, risk theory, intervention theory	Korea
63	Kragt, Burton, Zahl-Thanem, and Otte (2021)	Sector Studies	Empirical-quantitative	Survey, experiment	Reward-based, donation-based, return-oriented lending-based	The agricultural entrepreneurs' interest in and preferences for setting up crowdfunding campaigns	Farmers are hesitant to publicly participate in crowdfunding; Well-designed campaigns can provide an effective instrument to engage particular groups of farmer	n.a.	Norway
64	Maehle, Otte, Huijben, and de Vries (2021)	Sector Studies	Mixed	Secondary data analysis	Reward-based, donation-based, return-oriented lending-based, equity-based	The climate change frames of environmental entrepreneurs' crowdfunding project descriptions	Promotion goal frame, humans-related impact frame, positive valence frame, and near future and now time frame prevail	Framing theory, regulatory focus theory	Nether-lands, Norway, U.S., U.K.
65	Saluzzo and Alegre (2021)	Innovation	Empirical-quantitative	Secondary data analysis	Prosocial lending-based	The role of third-party endorsements on crowdfunding success in the prosocial context	A pro bono endorsement provides the best equilibrium between the number of backers and the individual investment amount	Signaling theory	U.S.
66	Nguyen, Hoang, Do, Ngo, Nguyen, Nguyen, and Nguyen (2021)	Innovation	Empirical-qualitative	Case studies (multiple)	Return-oriented lending-based	The application of blockchain technology on crowdfunding platforms	There are facilitators of the social value creation through blockchain technology and barriers of application; Four themes emerge: reliability, transparency, trustworthiness, and social value	n.a.	n.a.
67	Nielsen and Binder (2021)	Entrepreneur-ship and Small Business Management	Empirical-quantitative	Experiment	Reward-based	The role of value framing for a successful campaign outcome	Projects with altruistic framing are more likely to be funded than projects with egoistic or environmental framing; Framing should be in line with the personal values of backers	Framing theory, theory of human values	n.a.
68	O'Reilly, An Bhaird, and Cassells (2021)	Operations and Technology Management	Empirical-quantitative	Secondary data analysis	Equity-based	The successful funding of ventures in the Cleantech sector across 16 European countries	Lower total assets and higher cash balances are related to greater funding amounts; Pre-funding, illiquid ventures raise less and firms	Signaling theory	Europe

							with greater assets raise more funding; Post-funding ventures raise greater amounts of external equity		
69	Pabst, Wayand, and Mohnen (2021)	Sector Studies	Empirical-quantitative	Experiment	Reward-based	The impact of different types of third-party seals (i.e., issued by a governmental entity or not) influence crowdfunding success	The third-party seal for a sustainability project must match the project's attributes, otherwise backers refrain from funding	Signaling theory	Germany
70	Ravishankar (2021)	Information Management	Empirical-qualitative	Case study	Prosocial lending-based	The hybrid orientation (i.e. online, offline) of prosocial lending-based crowdfunding platforms	Five clusters of digital actions: (1) attention-building, (2) credibility-building, (3) empathy-building, (4) intermediary relationship-building, (5) borrower relationship-building	n.a.	India
71	Robiady, Windasari, and Nita (2021)	Marketing	Empirical-quantitative	Secondary data analysis	Donation-based	The impact of direct versus indirect storytelling on social crowdfunding campaigns	Storytelling techniques positively influence customer engagement and funding, especially the direct storytelling technique	Commitment trust theory	Indonesia
72	Roma, Vasi, Testa, and Perrone (2021)	Operations and Technology Management	Empirical-quantitative	Secondary data analysis	Reward-based	The impact of the ventures' environmental sustainability orientation on the funding performance and ability to secure venture capital	Environmental sustainability orientation positively impacts the likelihood of receiving subsequent venture capital; The negative impact on funding performance has an indirect negative influence	Economic theory, rational choice theory	U.S.
73	San Martín, Hernández, and Herrero (2021)	Sector Studies	Empirical-quantitative	Survey	Reward-based	Attitude toward crowdfunding in tourism as a socially responsible investment	Intentions to fund are affected by the individuals' attitude concerning the project as well as their general attitude concerning crowdfunding	Theory of reasoned action, theory of planned behavior, attitude formation theory	Spain
74	Simpson, Schreier, Bitterl, and White (2021)	Marketing	Empirical-quantitative	Experiment	Reward-based	Differences in decision making in crowdfunding versus purchasing a product	Compared to traditional purchase behavior, crowdfunding more strongly activates an interdependent mindset, increasing consumer demand for positive social and/or environmental impact	Collective efficacy, interdependent self-construal	Inter-national
75	Taylor-Gooby, Petricek, and Cunliffe (2021)	Social Sciences	Empirical-quantitative	Secondary data analysis, natural experiment	Donation-based	Backer behavior in donation-based crowdfunding during the Covid19 crisis	Policy discourse emphasizing common humanity in the face of a collective challenge, rather than social divisions, can help build social cohesion	n.a.	U.K.

76	Tenner and Hörisch (2021)	Sector Studies	Empirical-quantitative	Survey	Reward-based, Return-oriented lending	Characteristics of backers in in sustainability-oriented crowdfunding	Typical backer of sustainability-oriented crowdfunding projects is young, well-educated, familiar with crowdfunding and holds low levels of self-enhancement and conservative values	Theory of human values	Germany
77	Troise, Tani, Dinsmore, and Schiuma (2021)	Innovation	Empirical-quantitative	Survey	Equity-based	The exploitation of knowledge-based crowd inputs by agri-food businesses	Agri-food businesses use knowledge-based inputs for organizational innovation to foster social sustainability and for product innovations to enhance economic and environmental sustainability	n.a.	Italy
78	Anglin, Short, Ketchen, Allison, and McKenny (2020)	Entrepreneur-ship and Small Business Management	Empirical-quantitative	Secondary data analysis	Prosocial lending-based	Entrepreneurs' MFI affiliation, in particular the financial and social performance, as third-party signal	MFI affiliation represents a key signal for entrepreneurs; MFI's financial and social performance have an effect on the likelihood of funding	Signaling theory	U.S.
79	Ba, Zhao, Zhou, and Song (2020)	Information Management	Empirical-quantitative	Secondary data analysis	Donation-based	Differences between four project categories based on project descriptions; Spatial patterns in the flow of cross-regional donations	Type of project executors is related to success; Flow of donations tends to be focused on a few developed regions	Local bias	China
80	Behl and Dutta (2020)	Information Management	Empirical-quantitative	Survey	Donation-based	Impact of gamification on the behavior of donors on platforms related to disaster relief operations	Gamification has a positive effect on the behavior of donors; This effect is moderated by information quality and voluntariness	Self-determination theory	Inter-national
81	Berns, Figueroa-Armijos, da Motta Veiga, and Dunne (2020)	Ethics, Corporate Social Responsibility, Management	Empirical-quantitative	Secondary data analysis	Prosocial lending-based	Strategic or altruistic motives of lenders in prosocial lending-based crowdfunding platforms	Signals of quality and low risk have a positive influence on funding success; Especially, the combination of high financial and high social appeal	Social responsibility, altruism versus self-interest	U.S.
82	Bourcet and Bovari (2020)	Economics	Empirical-quantitative	Survey	Return-oriented lending-based, equity-based	Motivations of citizens to crowdfund renewable energy projects	General opinion about the renewable energy sector, its durability and the transparency of investment opportunities have a positive influence	n.a.	France
83	De Crescenzo, Baratta, and Simeoni (2020)	Sector Studies	Mixed	Fuzzy set qualitative comparative analysis (secondary data)	Reward-based, donation-based, return-oriented lending-based, equity-based	The factors influencing the financial involvement of citizens in projects related to renewable energy and energy efficiency with regard to	Social network links and project descriptions in English have a positive effect on citizen engagement; cooperative and crowdfunding models can be combined	Innovation helix framework theory	E.U.

						cooperative and crowdfunding models			
84	Dorfleitner, Oswald, and Röhe (2020)	Economics	Empirical-quantitative	Secondary data analysis	Prosocial lending-based	Characteristics of MFIs in crowdfunding based on the prosocial lending-based platform Kiva	MFIs' social performance related to loans to women and the interest rate are main antecedents of refinancing on Kiva	Warm-glow theory, life-cycle theory	U.S.
85	Gooch, Kelly, Stiver, van der Linden, Petre, Richards, Klis-Davies, MacKinnon, Macpherson, and Walton (2020)	Information Management	Mixed	Secondary data analysis, interviews	Donation-based	Feasibility of crowdfunding to finance projects that are led by communities	Crowdfunding is suitable for funding projects led by communities, creating a sense of empowerment and ownership for project initiators and increases community awareness of a project	n.a.	U.K.
86	Herzenstein, Dholakia, and Sonenshein (2020)	Marketing	Empirical-quantitative	Secondary data analysis, field experiment, laboratory experiment	Reward-based	The effect of the number of options on the contribution likelihood in prosocial projects	When offering more options, the contribution likelihood primarily decreases and then increases resulting in a U-shaped relationship for prosocial projects	Cognitive processing, choice overload effect, self- versus other-focused decisions	U.S.
87	Hörisch and Tenner (2020)	Innovation	Empirical-quantitative	Secondary data analysis	Return-oriented lending-based, equity-based	Influence of the ventures' environmental and social orientation on crowdfunding success	Positive relationship between environmental orientation and crowdfunding success, while no significant relationship is found for social orientation	Warm-glow theory	U.S., Germany
88	Langley, Lewis, McFarlane, Painter, and Vradis (2020)	Social Sciences	Empirical-qualitative	Case studies (multiple)	Reward-based, donation-based, return-oriented lending-based, equity-based	The relationship between crowdfunding and cities	Crowdfunding facilitates social entrepreneurship, supports real-estate speculation and enables solidarity economies	Urban governance, complex adaptive systems	Germany
89	Li, Wu, Hsieh, and Liou (2020)	Information Management	Empirical-quantitative	Experiment	Donation-based	Identification of appropriate donors to increase engagement in crowdfunding	Relationships between donors and project initiators, information on user preferences, and funding dynamics lead to a match of donors and project initiators	Social networks	U.S., Inter-national
90	Martínez-Climent, Guijarro-García, and Carrilero-Castillo (2020)	Entrepreneur-ship and Small Business Management	Empirical-qualitative	Fuzzy set qualitative comparative analysis (survey)	Return-oriented lending-based	The role of intrinsic and extrinsic investor motivation in lending-based crowdfunding	Investors attaching high relevance to economic returns and/or low relevance to corporate social responsibility, invest a low percentage of their wealth	Stakeholder theory, risk theory, cognitive evaluation theory, life-cycle theory	Spain

91	Predkiewicz and Kalinowska-Beszczynska (2020)	Entrepreneur-ship and Small Business Management	Empirical-quantitative	Secondary data analysis	Reward-based	Factors that influence the success of ecologically oriented projects	Updates, comments, and targeted amount have impact on crowdfunding success; Higher success probability of water saving projects	Information asymmetry, altruism	U.S., U.K., E.U.
92	Shevchenko, Pan, and Calic (2020)	Social Sciences	Empirical-quantitative	Secondary data analysis	Prosocial lending-based	Effect of an environmental orientation on the financial decisions of project initiators related to microfinance	An environmental orientation results in higher funding requests and longer payback periods; Nonetheless, it increases the likelihood of payback	Paradox theory	U.S.
93	Slimane and Rousseau (2020)	Sector Studies	Empirical-quantitative	Secondary data analysis	Return-oriented lending-based	Factors influencing the crowdfunding success of projects within the renewable energy sector	Economic factors of the project (e.g., interest rate, targeted amount, firm size, financial performance) have a large influence on campaign success	Information asymmetry, social capital theory	France
94	Testa, Roma,Vasi, and Cincotti (2020)	Social Sciences	Empirical-qualitative	Secondary data analysis	Reward-based	Characteristics of sustainability-oriented products/services influencing the likelihood of success in crowdfunding	Emphasizing egoistic product characteristics more important than emphasizing altruistic characteristics	Theory of purchasing behaviors, altruism versus self-interest	U.S.
95	Bagheri, Chitsazan, and Ebrahimi (2019)	Innovation	Empirical-qualitative	Interviews	Donation-based	Motivations (intrinsic and extrinsic) of donors to engage in crowdfunding	Donors are driven by intrinsic and extrinsic motivations in combination	Self-determination theory	Iran
96	Bento, Gianfrate, and Groppo (2019)	Innovation	Empirical-quantitative	Secondary data analysis	Return-oriented lending-based	The extent to which risk is considered in the expected return of renewable energy crowdfunding projects	Project returns are not consistent with the technology-related risks after country risk has been accounted for	Bounded rationality, cognitive bias, cultural theory	Europe
97	Bento, Gianfrate, and Thoni (2019)	Sector Studies	Empirical-quantitative	Secondary data analysis	Reward-based	The extent to which project attributes influence crowdfunding success and venture survival	Sustainable mission has a positive impact on crowdfunding outcomes; The average survival rate after one year amounts to over 70%	Self-determination theory	U.S.
98	Brent and Lorah (2019)	Regional Studies, Planning and Environment	Empirical-quantitative	Secondary data analysis	Donation-based	The distributional influence of donation-based crowdfunding and interpretations for policymakers	Local donations are as relevant as donations from outside their community; neighborhood income has no influence	n.a.	U.S.
99	Butticè, Colombo, Fumagalli, and Orsenigo (2019)	Innovation	Empirical-quantitative	Secondary data analysis	Reward-based	The impact of institutional settings in different countries on the diffusion of green crowdfunding projects	Green crowdfunding projects are more diffused in countries with a limited environmental sustainability orientation	Institutional theory	U.S.

100	Cheng, Chen, and Chen (2019)	Finance	Empirical-quantitative	Experiment	Donation-based	The behavior of donors in a public goods game with regard to social capital	Social capital can foster collaboration to attract more donations	Social capital theory, game theory	China
101	Dai and Zhang (2019)	Marketing	Empirical-quantitative	Secondary data analysis, survey	Reward-based	The prosocial motivation of crowdfunding backers	Projects raise funds more quickly just before they reach their funding goal; this effect is amplified when nature of the project evokes prosocial motivation and the project initiator is an individual	Goal gradient theory	U.S.
102	Hörisch (2019)	Sector Studies	Empirical-quantitative	Secondary data analysis	Return-oriented lending-based	The implementation of measures and disclosure of ecological benefits after successful crowdfunding	The project measures are generally implemented; Yet few projects provide information on the created ecological benefits	Information asymmetry, agency theory	Germany
103	Hong and Ryu (2019)	Information Management	Empirical-quantitative	Secondary data analysis	Reward-based	The effect of government involvement in crowdfunding with respect to public goods projects	Crowdfunding projects with government involvement are more successful than comparable projects without government involvement	Information asymmetry, moral hazard	Korea
104	Hsieh, Hsieh, and Vu (2019)	Finance	Empirical-quantitative	Secondary data analysis	Reward-based	The extent to which projects related to social movements are more successful than general projects	Projects related to social movements have greater funding success than other projects; the impact of such projects is more prominent during times of social movements	Capacity theory	Taiwan
105	Jancenelle, Javalgi, and Cavusgil (2019)	International Business, Area	Empirical-quantitative	Secondary data analysis	Prosocial lending-based	The extent to which on funding speed is influenced by the backers' cultural alignment with their own country	Cultural alignment is negatively related to funding speed suggesting that backers prefer a cultural misalignment	Institutional theory, cultural entrepreneurship tension	USA
106	Laurell, Sandström, and Suseno (2019)	Innovation	Empirical-qualitative	Secondary data analysis	n.a.	The extent to which sustainability is integrated within the public discourse on crowdfunding in social media	The relation between crowdfunding and sustainability in social media is limited; Mainly professional actors deal with both topics	n.a.	n.a.
107	Lee, Bian, Karaouzene, and Suleiman (2019)	Information Management	Empirical-quantitative	Secondary data analysis	Donation-based	The impact of linguistic style and message substance on funding outcomes in civic crowdfunding	Psychological language (i.e., positive affective and perceptual language) positively influences funding success; Extensive use of social language has a negative effect on funding success	Elaboration likelihood model of persuasion	U.K.
108	Li and Wang (2019)	Information Management	Empirical-quantitative	Secondary data analysis	Reward-based	Funding and sharing behavior of backers at different stages in relation to the funding threshold	Goal proximity and prosocial orientation of projects (public goods) have a positive influence on the prosocial behavior of backers	Goal gradient theory	U.S.

109	Mejia, Urrea, and Pedraza-Martinez (2019)	Operations and Technology Management	Empirical-quantitative	Experiment	Donation-based	The influence of transparency and work-related updates on donations	Updates and certification have a positive impact on donations; Each work-related word and certification in an update increases funding	Signaling theory	U.S.
110	Moleskis, Alegre, and Canela (2019)	Sector Studies	Empirical-quantitative	Secondary data analysis	Prosocial lending-based	The factors influencing funding success across entrepreneurial and humanitarian projects	Gender bias and risk signals show a stronger impact on the likelihood of funding success for entrepreneurial projects, home bias more strongly affects humanitarian projects	Signaling theory, behavioral bias	U.S.
111	Presenza, Abbate, Cesaroni, and Appio (2019)	Innovation	Empirical-qualitative	Case study	Donation-based	Stimulation and support of successful social innovation projects in donation-based crowdfunding	The platform acts as a hub and facilitates interactions and relationships between the different actors, creating an ecosystem for social crowdfunding	Theory of multi-sided markets	Italy
112	Sasaki (2019)	Psychology (general)	Empirical-quantitative	Secondary data analysis	Donation-based	The influence of preceding donations on the donation of a subsequent donor	As the number of recent donations increases, the likelihood that a subsequent donor will match the donation amount of previous donors increases	Theory of conformity behavior, social impact theory	Japan
113	Schwittay (2019)	International Business, Area	Empirical-qualitative	Case study	Prosocial lending-based	How prosocial lending supports humanitarians through the mediated production of affective investments	Prosocial lending engages backers through affective investments, i.e., financial, social, and emotional commitments to distant individuals	Theory of moral sentiments, humanitarian affect	U.S.
114	Tsai and Wang (2019)	International Business, Area	Mixed	Secondary data analysis, case studies (multiple)	Donation-based	The extent to which donation-based crowdfunding represents a medium for policy advocacy	Majority of projects have no policy objectives; Of those with policy objectives, nearly two-thirds have an impact on the agenda or contribute to policy change	Agenda-setting theory	China
115	Vismara (2019)	Innovation	Empirical-quantitative	Secondary data analysis	Equity-based	The attractiveness of sustainability orientation of ventures in equity-based crowdfunding	Sustainability orientation does not increase crowdfunding's chances of success; It does not attract more professional investors, but it does attract more non-professional investors	Institutional theory, cultural theory, signaling theory, identity theory	U.K.
116	Wang, Li, Kang, and Zheng (2019)	Information Management	Empirical-quantitative	Survey	Donation-based	The factors in relation to self-identity and social identity as mediating constructs that influence donor intentions in crowdfunding	Sense of self-worth, face concern, moral obligation, perceived donor effectiveness, social interaction, and referent network size have a positive influence on donation intentions and are mediated by self-identity and social identity	Self-determination theory, identity theory, social identity theory	China

117	Wehnert, Baccarella, and Beckmann (2019)	Innovation	Empirical-quantitative	Experiment	n.a.	The influence of crowdfunding on consumers' product perceptions and trust in sustainability attributes	Depending on the level of product complexity, crowdfunding success represents an influential signal on the perceptions and the credibility of sustainability product attributes	Signaling theory	n.a.
118	Xiang, Zhang, Tao, Wang, and Ma (2019)	Marketing	Empirical-quantitative	Secondary data analysis	Reward-based, equity-based	The impact of the emphasis of message appeals in a crowdfunding for consumers and investors	Emphasis on information (emotion) positively impacts consumers (investors); Decision control, social orientation, and reward tangibility are conditional factors	Elaboration likelihood model of persuasion	China
119	Zhou and Ye (2019)	Sector Studies	Empirical-quantitative	Secondary data analysis	Donation-based	How demonstration of legitimacy, arguments for worthiness, and social network influence project outcomes	Organizational competence, use of concrete personal stories in the project description, low-risk solutions and mobilization of social networks are relevant for funding success	n.a.	China
120	Carè, Trotta, Carè, and Rizzello (2018)	Ethics, Corporate Social Responsibility, Management	Empirical-qualitative	Case studies (multiple)	Reward-based, donation-based	The implications of civic crowdfunding for civic and urban areas based on six smart cities	Civic crowdfunding can involve actors in smart city projects through aspects such as sense of civic duty, empathy, and sense of belonging to an urban area or territory	n.a.	Italy
121	Chen, Chen, Chen, and Xie (2018)	Sector Studies	Empirical-quantitative	Secondary data analysis	Reward-based	The mechanisms that accelerate China's economic transition regarding sustainable entrepreneurship and the government's policies	Public opinion has an effect on public demand; Ecological issues increase demand for cleaner air products via sustainable crowdfunding	System dynamics theory, market theory	China, U.S.
122	Cox, Nguyen, Thorpe, Ishizaka, Chakhar, and Meech (2018)	Information Management	Empirical-quantitative	Secondary data analysis, survey	Prosocial lending-based	The extent to which the self-presentation of lenders has an influence on crowdfunding behavior	Self-presenting lenders with publicly visible profiles make a larger number of loans than those without profiles	Self-presentation theory, altruism	U.K.
123	Hong, Hu, and Burtch (2018)	Information Management	Empirical-quantitative	Secondary data analysis	Reward-based	The influence of prosocial orientation of projects, the social network structure among individuals sharing the projects, and the volume of social media activity on funding success	Twitter activity leads to an increased funding for prosocial oriented crowdfunding projects when users' networks exhibit greater embeddedness	Social network embeddedness, public goods theory	U.S.
124	Jancenelle and Javalgi (2018)	Entrepreneur-ship and Small Business Management	Empirical-quantitative	Secondary data analysis	Prosocial lending-based	The effectiveness of moral cues to attract backers within prosocial lending-based crowdfunding	Projects stressing universal moral foundations are funded more rapidly than projects stressing conservative moral foundations	Moral foundation theory	U.S.

125	Jancenelle, Javalgi, and Cavusgil (2018)	International Business, Area	Empirical-quantitative	Secondary data analysis	Prosocial lending-based	Backers' reactions to economic (market orientation) and normative cues in profile narratives (positive psychological capital) in prosocial lending	Prosocial lenders seem more prone to fund projects stressing current need or concern for people than projects stressing economic success or normative expectations of positive outcomes in the future	Signaling theory	U.S.
126	Lagazio and Querci (2018)	Ethics, Corporate Social Responsibility, Management	Empirical-quantitative	Secondary data analysis	Reward-based	The multifaceted success factors of crowdfunding projects	Social-impact projects decrease the likelihood of success; Mixed, small-sized and prolonged projects with large entrepreneurial teams are more likely to be funded	Altruism, warm-glow theory, goal-setting theory, resourced-based view, information processing theory, social identity theory, social networks, information asymmetry	U.S.
127	Li, He, Song, Yang, and Zhou (2018)	Social Sciences	Empirical-quantitative	Survey	Donation-based	The impact of performance expectancy, effort expectancy, social influence, facilitating conditions, sense of trust, and experience expectation on the donation intention	Social influence, sense of trust, effort expectancy, and performance expectancy significantly affect the intention of donors to contribute to donation-based crowdfunding	Unified theory of acceptance, theory of reasoned action, theory of planned behavior	China
128	Moss, Renko, Block, and Meyskens (2018)	Entrepreneur-ship and Small Business Management	Empirical-quantitative	Secondary data analysis	Prosocial lending-based	The allocation of funding to ventures that communicate hybrid aims, or to those that communicate a single aim	Backers allocate funding more rapidly to ventures that communicate a single aim	Category membership, category spanning	U.S.
129	Ryu and Kim (2018)	Information Management	Empirical-quantitative	Survey	Reward-based	How project characteristics differ by the type of entrepreneur and which characteristics are relevant for achieving funding success	The entrepreneurs' motivations for creating the projects are linked to investor-perceived project characteristics and crowdfunding performance	Self-determination theory, self- versus other oriented behavior	South Korea
130	André, Bureau, Gautier, and Rubel (2017)	Ethics, Corporate Social Responsibility, Management	Empirical-quantitative	Secondary data analysis	Reward-based (and donation-based)	The effect of reciprocal giving relationships on the success of reward-based crowdfunding projects	Crowdfunding platforms foster relationships relying on reciprocal giving, beyond the usual opposition between altruistic and selfish motivations	Theory of reciprocal giving	France
131	Chen, Chen, Liu, and Mei (2017)	Economics	Empirical-quantitative	Secondary data analysis, experiment	Prosocial lending-based	The effects of team competition on prosocial lending activity on the platform Kiva	Lenders who join teams invest in more loans per month than those who do not; Lenders invest in more loans when exposed to a goal-setting and coordination message	Social identity theory	U.S.

132	Cumming, Leboeuf, and Schwienbacher (2017)	Economics	Empirical-quantitative	Secondary data analysis	Reward-based	The influence on country-level factors in the context of cleantech crowdfunding	Cleantech crowdfunding is more common in countries with low levels of individualism and more common when oil prices are rising	Information asymmetry, signaling theory	U.S.
133	Manning and Bejarano (2017)	Strategy	Empirical-qualitative	Case studies (multiple)	Reward-based	How project narratives are framed and interlinked to attract crowdfunding backers	Projects narratives are linked to different styles related to the tangibility of outcomes, the complexity of technology, and the social orientation of projects	n.a.	U.S.
134	Parhankangas and Renko (2017)	Entrepreneur-ship and Small Business Management	Empirical-quantitative	Secondary data analysis	Reward-based	How the linguistic style of crowdfunding projects impacts the success in raising funds	Linguistic styles making the projects and their initiators more comprehensible and relatable to backers increase the success of social projects, but barely have an influence for commercial projects	Language expectancy theory	U.S.
135	Riggins and Weber (2017)	Information Management	Empirical-quantitative	Secondary data analysis	Prosocial lending-based	The impact of identification bias and information asymmetries on MFI funding decisions	Lenders base decisions on personal identification with borrowers; Identification biases result in inefficient investment decisions	Information asymmetry, signaling theory, identification theory, identification bias	U.S.
136	Zheng, Xu, Wang, and Chen (2017)	Information Management	Empirical-quantitative	Survey	Reward-based	The relationships between successful crowdfunding implementation and community benefit	Satisfaction of backers is positively related to the timely delivery of rewards and the fulfillment of specifications	n.a.	China
137	Calic and Mosakowski (2016)	Ethics, Corporate Social Responsibility, Management	Empirical-quantitative	Secondary data analysis	Reward-based	Whether and how a sustainability orientation influences entrepreneurs' ability to collect funding	A sustainability orientation has a positive influence on funding success; This relationship is partially mediated by creativity and third-party endorsements of the projects	Institutional settings, legitimacy	U.S.
138	Gleasure and Feller (2016)	Information Management	Empirical-quantitative	Secondary data analysis	Donation-based	Donation behavior in charitable crowdfunding based on the distinction between pure altruism and warm-glow motivations	Donations to organizations are influenced by outcome-related factors; Donations to individuals are influenced by interaction-related factors	Altruism, warm-glow theory	U.S.
139	McLean (2016)	Social Sciences	Empirical-qualitative	Case study	n.a.	The institutional transformation of a climate change organization by using the more-than-real notion with regard to the Anthropocene concept	The activist movement and the intersection of desire and political intervention are evident in the support that emerged with anger and disbelief	n.a.	Australia

140	Vasileiadou, Huijben, and Raven (2016)	Sector Studies	Empirical-qualitative	Secondary data analysis	Donation-based, reward-based, return-oriented lending-based, equity-based	The potential of crowdfunding focused on renewable energy projects to emerge and change energy and the financial regimes	Limited learning processes and limited support from regime actors indicate a low level of break-through potential; Platforms focused on renewable electricity with an investment-based model appear most successful	Multilevel perspective theory	Nether-lands
141	Allison, Davis, Short, and Webb (2015)	Entrepreneur-ship and Small Business Management	Empirical-quantitative	Secondary data analysis	Prosocial lending-based	The influence of linguistic cues framing entrepreneurial narratives as an opportunity to help others or as a business opportunity	Backers funding behavior is positively associated with the opportunity to help others and less positively with the business opportunity	Self-determination theory, cognitive evaluation theory	U.S.
142	Ashta, Assadi, and Marakkath (2015)	Strategy	Empirical-qualitative	Case study	Prosocial lending-based	Strategic challenges faced by crowdfunding platforms through the evolution of an old sector (social group lending) to a high-technology-based stage (peer-to-peer lending)	Crowdfunding platforms in a developing country face challenges due to supply-side and demand barriers with regard to legal status, interest rates for loans, and transparency	n.a.	India
143	Davies (2015)	Social Sciences	Empirical-qualitative	Case studies (multiple)	Donation-based	How testing and reimagining occurs in civic crowdfunding and reveals practical concerns	Civic crowdfunding platforms and the participants on these platforms use rhetoric and practices that are often provocative and conflicting	n.a.	U.S., U.K., Brazil
144	Genevsky and Knutson (2015)	Psychology (general)	Empirical-quantitative	Secondary data analysis, experiment	Prosocial lending-based	Whether neural affective mechanisms known from charitable giving also influences microlending	Neural affective mechanisms influence microloan success; Positive affective features of photographs promoted the success of those requests	Affect theory, arousal theory	U.S.
145	Hörisch (2015)	Sector Studies	Empirical-quantitative	Secondary data analysis	Reward-based	How the ecological orientation of crowdfunding projects influences their likelihood of successful funding	In the dataset used, no positive connection between environmental orientation and crowdfunding success can be observed	Contract failure theory, rational choice theory, public goods theory	U.S.
146	Jenq, Pan, and Theseira (2015)	Economics	Empirical-quantitative	Secondary data analysis	Prosocial lending-based	Bias with regard to attractiveness and ethnicity in online charitable microfinance lending	Lenders on a microfinance crowdfunding platform appear to prefer attractive, lighter-skinned, and less obese project initiators; Project initiators appearing needy, honest and creditworthy also collect funding faster	Attractiveness bias	U.S.
147	Moss, Neubaum, and Meyskens (2015)	Entrepreneur-ship and Small Business Management	Empirical-quantitative	Secondary data analysis	Prosocial lending-based	The extent to which virtuous and entrepreneurial project narratives on prosocial lending platforms represent relevant	Autonomy, competitive aggressiveness, and risk taking are positively related to project success; Conscientiousness, courage,	Signaling theory	U.S.

						signals and influence funding success	empathy, and warmth are negatively related to project success; Proactiveness, conscientiousness, courage, warmth, or zeal are negatively related to payback		
148	Burtch, Ghose, and Wattal (2014)	Information Management	Empirical-quantitative	Secondary data analysis	Prosocial lending-based	Transaction patterns between individuals considering the dual roles of geographic distance and cultural differences on lenders' decisions about which borrowers to support	Lenders prefer culturally similar and geographically proximate borrowers	Cultural theory	U.S.
149	Lehner (2014)	Entrepreneur-ship and Small Business Management	Empirical-qualitative	Case studies (multiple)	Reward-based, Return-oriented lending-based, equity-based	Entrepreneurial routes by using the sociological perspectives of "Bourdieu's four forms of capital"	Crowdfunding helps to form the actual opportunity and to disperse information; The constant exchange of ideas with the crowd, leads to norm–value pairs between the funders and the entrepreneurs	Social capital	U.S., U.K., Austria, Germany
150	Lehner and Nicholls (2014)	Entrepreneur-ship and Small Business Management	Empirical-qualitative	Case study	n.a.	The motivations of individuals considering a public–private partnership scheme to leverage the "power of the many"	Crowdfunding can result in higher legitimacy serving as a positive signal to investors; Policymakers need to provide attractive participation schemes, while protecting the interests of individuals and organizations	Legitimacy	U.K.
151	Meer (2014)	Economics	Empirical-quantitative	Secondary data analysis	Donation-based	The effects of the price of giving —the amount an individual must give for one dollar to increase to the donation activity—on donations	A higher price of giving is linked to lower chances of a project being funded; Higher competition has a negative effect on the likelihood of a project being funded	Price of giving	U.S.
152	Allison, McKenny, and Short (2013)	Entrepreneur-ship and Small Business Management	Empirical-quantitative	Secondary data analysis	Prosocial lending-based	The characteristics of entrepreneurial narratives that are related to how fast entrepreneurs collect funding	Narratives using language of blame and present concern lead to faster funding, while narratives of accomplishment, tenacity, and variety lead to slower funding	Warm-glow theory	U.S.
153	Bajde (2013)	Marketing	Empirical-qualitative	Secondary data analysis	Prosocial lending-based	The ideological factors that make lending through Kiva meaningful to project initiators and backers	Kiva's ideology legitimizes "marketized philanthropic" practices by relying on alternative conceptions of poverty, social progress, and philanthropy	n.a.	U.S.

154	Chemin and de Laat (2013)	Economics	Empirical-quantitative	Secondary data analysis	Return-oriented lending-based	The warm glow experienced by individual investors to increase lending	Lower interest rates apply for projects serving poverty reduction, social responsibility, or the advancement of women; The interest rates are related to the better repayment of these projects	Warm-glow theory	Denmark
155	Cryder, Loewenstein, and Seltman (2013)	Psychology (general)	Empirical-quantitative	Experiment	Prosocial lending-based	The influence of perceptions of personal impact related to funding goals	Prosocial lending increases when the projects are close to reaching their funding goals	Goal gradient theory	U.S.
156	Stephen and Galak (2012)	Marketing	Empirical-quantitative	Secondary data analysis	Prosocial lending-based	The relative impacts of traditional earned media and social earned media on sales as well as the ways in which earned media types influence one another	Both traditional and social earned media affect sales; Per-event sales impact of traditional earned media activity is larger than for social earned media	Paid, owned, and earned media	U.S.
157	Galak, Small, and Stephen (2011)	Marketing	Empirical-quantitative	Secondary data analysis	Prosocial lending-based	The characteristics of project initiators who promote lending through the platform Kiva	Lenders prefer individual borrowers over groups; They also prefer individuals who are socially close to them regarding gender, occupation, and first name initial	Identifiable victim effect, similarity effect, social distance theory	U.S.

Appendix B (Essay II) – CAIC and BIC values and corresponding group sizes for different numbers of groups as latent class solutions

Latent classes	CAIC (delta)	BIC (delta)	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7
1	9,500	9,489	353 (100%)						
2	8,827 (-7.1%)	8,804 (-7.2%)	270 (76%)	83 (24%)					
3	8,444 (-4.0%)	8,409 (-4.2%)	154 (44%)	135 (38%)	64 (18%)				
4	8,290 (-1.6%)	8,243 (-1.7%)	137 (39%)	104 (29%)	61 (17%)	51 (14%)			
5	8,233 (-0.6%)	8,174 (-0.7%)	118 (33%)	107 (30%)	51 (14%)	51 (14%)	**26** (7%)		
6	8,211 (-0.2%)	8,140 (-0.4%)	103 (29%)	72 (20%)	58 (16%)	50 (14%)	49 (14%)	**21** (6%)	
7	8,205 (-0.1%)	8,122 (-0.2%)	68 (19%)	65 (18%)	64 (18%)	59 (17%)	54 (15%)	**24** (7%)	**19** (5%)

Note: The number of classes that minimizes the CAIC value is 7; the CAIC value for 8 classes is 8,211 (+0.1%). The group sizes depicted in bold correspond to 5.4%, 5.9%, 6.8%, and 7.4% of the total sample size and are therefore discarded.

Appendix C1 (Essay III) – Interview guideline

Opening question:

1. "Please start by telling me about yourself and how you came to invest in young companies with environmental and social goals via crowdlending."

Main questions:

2. "How did you get involved with crowdfunding?"

3. "What characterizes this type of investing for you?"

4. "Which touchpoints with sustainability have there been so far?"

5. "Can you tell me about your goals for your crowdlending investments?"

6. "Please describe what drives you in the process."

7. "Please describe the considerations and steps you take before making an investment in a project through the crowdlending platform."

8. "Can you describe to me how you feel after an investment has been made?

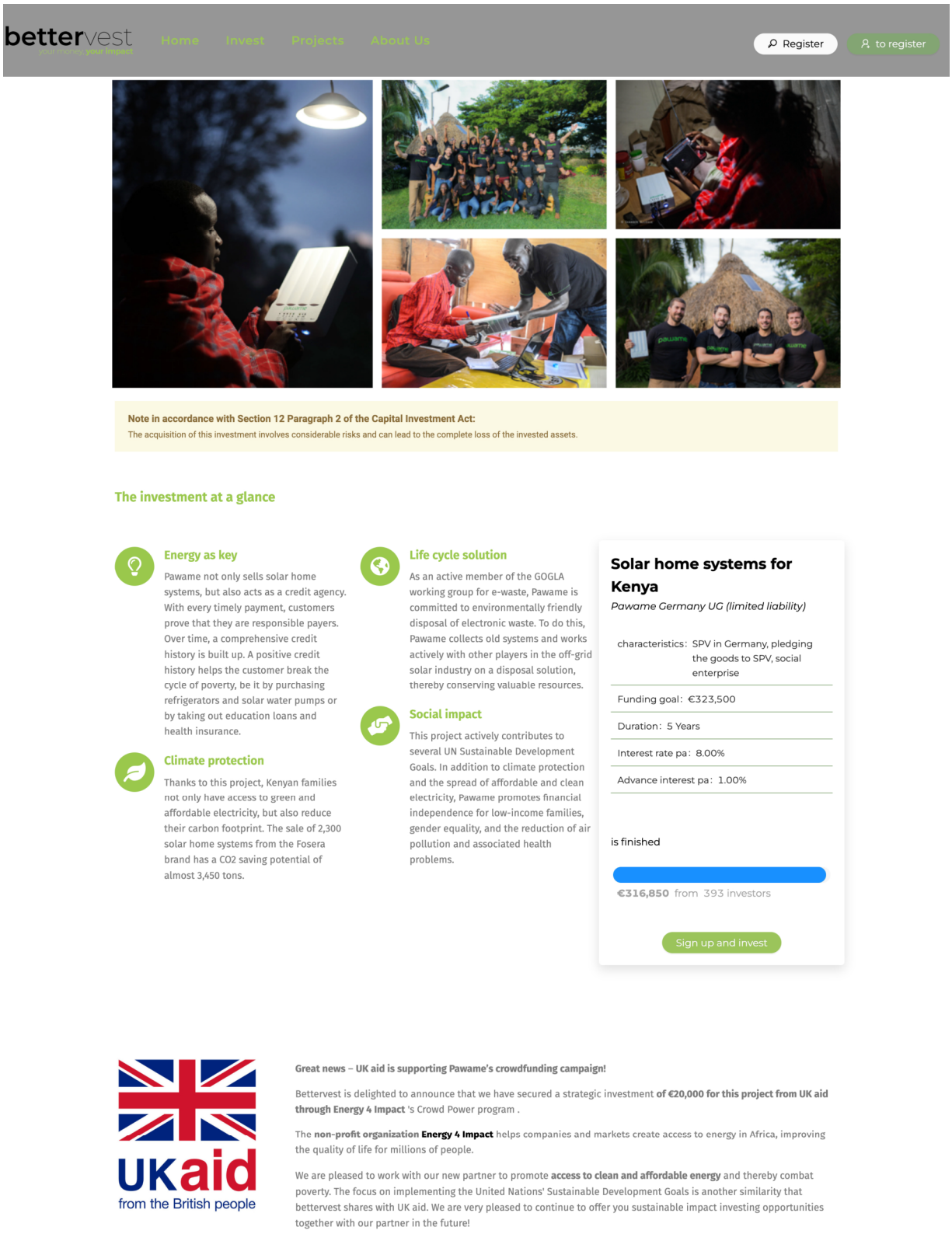
9. "And what happens after an investment has been made?"

10. "How does the progress of the current projects you have invested in affect further investments?"

Concluding question:

11. "Looking ahead: What are your plans for further crowd investments of this kind?"

Appendix C2 (Essay III) – Illustrative example of the crowdlending campaign description for the project "Solar home systems for Kenya" from the bettervest platform[25]



[25] https://www.bettervest.com/de/project/pawame-1 (accessed on May 5, 2024).

Appendix C2 (continued) – Illustrative example of the crowdlending campaign description for the project "Solar home systems for Kenya" from the bettervest platform[26]

ENERGY4IMPACT
ACCELERATING ACCESS TO ENERGY

UN development goals

Project description

– background

70% of sub-Saharan households do not have access to electricity and around the same number of people lack access to financial services. The associated daily challenges of life severely limit an individual's ambitions. The simplest tasks are laborious without electricity, daylight is required to work and study, and even entertainment is in short supply. The situation is no better in Kenya, where around 40% of the rural population is connected to the electricity grid.

The Kenyan company Pawame has made it its mission to defy this injustice . For *Pawame*, the key to a modern life lies in the provision of energy, which is why this project aims to finance **2,300 solar home systems for Kenya's residents. This means that** *Pawame*'s customers receive **clean, sustainable solar power** and can get rid of harmful kerosene lamps and candles. Additionally, *Pawame* offers reliable customers access to **financial services** .

+ particularities
+ Sustainable and social development
+ Climate and environmental protection
+ Financing and repayment
+ Webinar

Pawame introduces himself

For subtitles, please press the CC button in the bottom right corner of the screen.

[26] https://www.bettervest.com/de/project/pawame-1 (accessed on May 5, 2024).

Appendix C2 (continued) – Illustrative example of the crowdlending campaign description for the project "Solar home systems for Kenya" from the bettervest platform[27]

The borrower

pawame

Pawame Germany UG (limited liability)
c/o Cormoran GmbH
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Germany

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Pawame Kenya Limited is a Kenyan company based in Nairobi,founded **in 2016 by Nick Sparks, Majd Chaaya and Alexandre Allegue** . The company's goal is to offer people who were previously not connected to the power grid access to clean, sustainable energy and thus contribute to improving the quality of life of these people. *Pawame* believes that access to electricity is the first step to financial independence, which in turn offers many opportunities and opens new doors. For this reason, the company has focused on selling solar home systems to underserved communities and regions, always keeping the customer at the center. The building blocks of sales, granting of credit to end customers and good after-sales support are the key elements of the business model.

In more than 3 years of existence, *Pawame* has already sold around **12,000 solar home systems** . Of these, 1,500 customers have **already paid off their system** . The company plans to reach cash flow breakeven by the end of the first quarter of 2020.

Pawame is currently planning to expand into other African countries such as Nigeria. *Pawame* is also innovative in the product area and focuses on expanding the product range through, for example, high-power systems, new financial services and the further development of its own modular, adaptive software structure.

Pawame has received several awards for his work. In 2018, the company was included in the ***Disrupt 100 Index*** , the same year it received an award for social impact from the ***Harvard Alumni Club*** of the United Arab Emirates. In 2019, chairman and co-founder Alexander Allegue won the ***Middle East Solar Industry Association's*** Entrepreneur **of the Year** award .

For the crowdfunding campaign on bettervest, *Pawame* founded a so-called "special purpose vehicle" called *Pawame Germany UG (limited liability)* . This acts as a borrower in this project and forwards the collected capital to the Kenyan *Pawame Kenya Limited* .

Figures, facts and further information

− **product**

An **SHS** consists of a solar panel, a battery with a battery management system and a payment system with pay-as-you-go (PAYG) technology. The products have a modular structure and can be expanded with additional solar modules and battery blocks as well as lamps, fans, radios or televisions depending on your requirements and financial possibilities. There are also charging options for mobile phones, smartphones and other USB devices. ***Pawame*** has designed two different models for its customers: **PawaHome** and **PawaHomeTV** .

PawaHome

The smaller basic model **PawaHome** consists of a 10 watt solar panel, a 12 volt battery system and a pay-as-you-go payment system. It is equipped with 4 lamps, each with a brightness of 120 lumens, a rechargeable flashlight with 200 lumens and a radio. Cell phones can also be charged using various adapters.

PawaHomeTV

The larger and more luxurious **PawaHomeTV** system follows the same structure as the PawaHome, but has a larger solar panel with an output of 35 watts and a larger battery with a charging capacity of 10 amp hours. In addition to the lamps, flashlight and radio, customers of this system receive a 24-inch television.

The design of the systems comes from Germany and both models have been tested and certified by ***Lighting Global*** , an initiative of the World Bank Group. The manufacturer gives a three-year guarantee on the solar panels, batteries and lamps, and one year on the flashlight, radio and television.

+ **Business model**

+ **partner**

+ **Cash flow plan summary**

+ **Country profile Kenya**

[27] https://www.bettervest.com/de/project/pawame-1 (accessed on May 5, 2024).

Appendix C2 (continued) – Illustrative example of the crowdlending campaign description for the project "Solar home systems for Kenya" from the bettervest platform[28]

Like bettervest, we believe we are doing something the public wants to support, and we look for ways to involve people from around the world in our mission to provide energy for Kenya's residents.

Nil Vereshchagin
Managing Director of Pawame Germany UG (limited liability)

Key data

Borrower	Pawame Germany UG (limited liability)
Investment type	Subordinated loan
Loan volume	323,500 EUR
Duration	5 years
Return	8% pa
Repayment and interest payment	annuity

Documents

Investment information sheet

Risk warnings

The remaining documents are only visible to logged in users.

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[28] https://www.bettervest.com/de/project/pawame-1 (accessed on May 5, 2024).

Appendix C3 (Essay III) – Financial motives

Illustrative quotes	**First-order concept**	**Second-order theme**	**Aggregate dimension**
That was my starting point. ETFs. I realized, okay, it's quite easy to make money with this. But sustainability criteria are difficult [to validate with respect to ETFs]. (1)	- Investing in alternative option compared to conventional options at banks - Aiming for attractive interest rates - Investing with sustainability criteria	Investing in sustainable alternative with financial return	Financial motives
The first is to invest one's money, one's savings, in such a way that it has a chance of retaining its value in the long term or even growing. But above all, to ensure, so to speak, on the international financial markets that one does not contribute to financing the bad in the good case. (7)			
So the first motivation was that I wanted to invest money. So when I started, that was the time when I also started working, so having a permanent job and an income, and you have to think about what you're going to do with it. (12)			
I have the possibility to effect that actually physically somewhere a solar plant is built, which ensures every year that hundreds of kilos of CO^2 do not end up in the atmosphere. […] The money that goes into it ensures that these solar plants and so on are built there. This direct link to the individual project which I invest in. (9)	- Directly investing in local solar plants - Having a choice in which project the money flows, as opposed to funds	Controlling the investment flow	
In the retail segment, it's actually one of very few opportunities where you can invest directly in projects. [...] In private investing, there are actually very few options other than stock trading and funds and so on. And this is a new possibility, to really provide fresh capital to projects that have a social or ecological added value [...]. (10)			
[…] Because I can choose projects myself and not somehow find investors who can make it possible and invest in the big stock fund […]. (11)			

Appendix C4 (Essay III) – Personal motives

Illustrative quotes	**First-order concept**	**Second-order theme**	**Aggregate dimension**
If I know I'm making money through the bad [companies] in the world because I'm investing, then somehow I have to create something good in return. (1)	- Counterbalancing conventional investments - Compensating own CO_2 production - Following moral conscience	Compensating for moral conscience	Personal motives
So I include that for myself in my CO_2 calculator. It's important to me that I'm definitely below the average European CO_2 footprint with my family. (2)			
[…] it eases the conscience a bit. You produce CO_2 and then through investments that save CO_2, you also save CO_2. (8)			
But with the emergence of solar energy, of course, it was an exciting topic. I mean, physics is what interests me. And so that was just always a topic. (8)	- Personal interest in target countries - Personal background and interest related to photovoltaic technology - Feeling excitement and joy	Following personal interest and joy	
That is, I kind of do that a little bit besides for fun, to somehow make my portfolio a little bit more interesting. (11)			
Mixture of adventure and good will. (15)			
I would like to finance my own huge photovoltaic system someday. The problem is that it's so hard to get hold of roofs and open spaces. They are all totally overrun. And that would actually be my wish. That is a real investment in assets. It would be my thing and it would have to function, then I would be an entrepreneur. But I haven't managed to do that yet. And that's why it's also a bit of substitution via crowdfunding. (7)~	- Substituting for own entrepreneurial endeavors and projects - Financing charitable projects, as time for own implementation is lacking	Substituting for own projects	
And if you just can't implement it in a private context, yes, how can you invest money in that […]. (8)			
So, you want to do things yourself or implement things. But maybe you don't have the time or the possibilities. And then one sees in such projects: Okay, someone is doing something good. And then you want to support it. So that's actually the main reason, I would say. (15)			
I always have feedback. In some cases, I can even reach the companies directly. I am kept up to date and I have, let's call it a good cause of investment […]. We had such a nice little [project] where they said the kids can go to school or do homework longer because they just get light. And I actually wrote to the village elders and got feedback. (13)	- Getting in touch with project owners or beneficiaries for personal feedback - Establishing relation to the platform team - Visiting the project country and site	Establishing a personal connection	
With crowdfunding, I can maybe just go there at some point and have a look. When I invest in a conventional investment fund, I don't have a personal relationship with what happens with my money. (6)			

Appendix C5 (Essay III) – Prosocial motives

Illustrative quotes	**First-order concept**	**Second-order theme**	**Aggregate dimension**
It's actually more about pushing forward the energy transition worldwide. […] And that's what I'm trying to achieve through my voluntary work [...]. And through finances that are not invested in coal and fossil energy, to push such things forward worldwide. (2)	- Moving forward the energy transition - Doing good for the society - Fostering a socio-ecological change	Advancing environmental and societal change	Prosocial motives
[…] because of course I want my money to do something positive not only for me somewhere, but also for the society or the population. (3)			
So the desire to promote sustainability is very much in the foreground. Of course, you could also make life easier for yourself and choose other forms of investment, but I do have an intrinsic motivation, so to speak. (7)			
Because at some point it became clear to me that my own consumption decisions are an important factor, not just my own ecological footprint. Or also: We have to use the power of the consumer, which goes beyond consumption, also in the investment decision for our leverage when it is actually much bigger. (10)	- Taking on civic responsibility - Understanding sustainability and ecological awareness as a life principle	Pursuing sustainable values	
But for me it's actually also clear that I also pay attention to social and ecological criteria in my investments, because I do that usually in my own life now, that is, my lifestyle. And also at the ballot box, not only for me as a consumer or investor, but actually also just as a citizen or political fellow citizen. (11)			
I somehow have a relatively green attitude from the beginning. I was very interested in Greenpeace's activities back in the day. (18)			

Appendix C6 (Essay III) – Communal motives

Illustrative quotes	**First-order concept**	**Second-order theme**	**Aggregate dimension**
So some people might well come up with the idea of saying, okay, I'm going to invest in a solar project in an emerging country. And I think you need to encourage more people [...] to invest in such things. (4)	- Encouraging others to invest - Acting as a role model for others - Stimulating thoughts on societal issues	Encouraging others	Communal motives
To have this, yes, as I said, perhaps the imitator effect. (16)			
Yes. I hope that I can set an example for people who haven't bothered or thought about it before. (2)			
And ultimately also to animate and also show there locally that a whole lot is possible in the area of renewable energies. (5)	- Driving further implementation of renewable energy projects - Stimulating imitation by local actors	Influencing local communities	
That people earn money in the region and show that you can work economically with such projects. And that this then spreads and, if possible, is then expanded and then, yes, investors from their own country come up with the idea of doing such things themselves. (2)			

Appendix C7 (Essay III) – Considerations of crowdlending outcomes

Illustrative quotes	First-order concept	Second-order theme	Aggregate dimension
From a logical point of view, I thought, if I can achieve a certain high return with a broadly diversified ETF, I can also achieve it in an alternative way. And then I realized that if I diversified broadly in crowdlending, I would get a roughly similar return. (1)	- Expecting an overall financial gain in view of the risk - Aiming to make some profit	Dominant return considerations	Considerations of crowdlending outcomes
Having more than zero or minus is a motivation. (7)			
Or the motivation, of course, combined with a profit strategy, so capital gain I mean in this sense. […] But as I said, there is always a risk. And you have to be aware of that. (16)			
The main goal is not to make a big loss. So even if I were to pay a few euros more, I wouldn't find that so bad. (2)	- Accepting zero financial gains - Aiming at repayment of invested amount - No bigger losses as primary goal	Balanced repayment considerations	
First of all, it is important to me that I get my invested amount back at the end. And I see this interest payment as a benefit for me for the time being. (3)			
If I get my invested money back out. So if it's a plus minus zero game, I'm actually already satisfied. (13)			
So that we, let's say, at least get a value out of it, like we paid in. (14)			
So, overall, I haven't made a minus right now. And then that's okay, I'd say. (15)			
So basically, first of all, the hope that [...] something doesn't go completely wrong, and that I'm suddenly left sitting on my capital. (9)			
[...] if the money was then completely gone, it would still be important to me that the investments had been made. And then […] I would also be satisfied with a purely nonfinancial return, [...], even if all the money was gone. But of course, that only works if the amounts are not that large. So that you just say, "Okay. Otherwise, I just donated." (10)	- Considering losses as donations for projects - Focusing on charitable impact and opportunity to help	Dominant charitable considerations	
So my incentive is rather this contribution and to accept that perhaps one also loses money, than the return then per se. (12)			
And even if it doesn't lead to anything, it has at least led to something blossoming somewhere temporarily. And you never know what that will lead to. So it's the butterfly effect. And somehow it's still positive. (8)			
But then it doesn't matter what the project duration is or anything else, because either I get something back or I lose it. Then it's just like that. (6)			

Appendix C8 (Essay III) – Approach to decision making

Illustrative quotes	**First-order concept**	**Second-order theme**	**Aggregate dimension**
And then I realized that if I diversified broadly in crowdlending, I would get a roughly similar return. And that was really an amazing realization for me. So I can basically get the same return that I get from a fairly high performing market wide ETF, but which is conventional, I can also get via broadly diversified crowdlending (1)	- Calculating profitability of business models - Conducting information research and due diligence - Diversification as strategy to spread the risk across many crowd investments with the aim of reducing the overall risk of loss and/or improving the chances of profit	Strategy-based approach	Approach to decision making
And that's why I have the greatest confidence that I understand the business models of such crowd investors. For me, this is a very, so to speak, predictable investment that can basically pay off very well. Especially in countries where there are feed-in tariffs and very high fossil energy prices, so to speak. Of course, you can be very competitive with photovoltaics. (7)			
So, it wasn't impulsive, but I really looked and researched where I could invest, and I already knew how much money I was putting into it, it was just more calculated, it wasn't kind of gut feeling, but it was good, checked off my to-do list. I put it in my Excel sheet where I track all my finance activity. (11)			
What is the more useful investment for me now? And if I then have two projects of equal value in terms of utility, I decide on the one with the higher probability of return. (18)			
Then I try a little bit, if it's possible, to do my due diligence and see [what will happen]. Okay. Is there already feedback in the local press about these companies and stuff? To minimize a little bit, if it's possible, my risk. (9)			
I don't have a particularly planned approach. It's actually very spontaneous. It's just projects that have appealed to me. (4)	- Spontaneous approach - Following inner gut feeling - Acting with the heart rather than with the mind	Emotions-based approach	
So I don't approach it very professionally or businesslike or with a lot of thought. (4)			
And the whole thing just goes pretty much through the gut and less through the front brain. (6)			
So it's actually irrational. So it's just... One simply acts with the heart rather than with the mind. Because from a rational point of view it is quite clear, it is actually irrational acting. Since it is not based on bare numbers. It's simply a matter of taking heart and saying: "I want to give this company a chance. Or the person who's investing there." (8)			
But that's not exactly measured now. So that's where I say that's rather emotional. (8)			
Those were all gut decisions, […], I do it for fun and then when I sit down for an hour and look at the site, I usually do it right away. (12)			
So, it's more a feeling than a specific indicator or something. Otherwise, since there aren't that many projects that are offered, I'm usually on board relatively quickly when something new comes along. (17)			

Appendix D1 (Essay IV) – Hypothetical scenario initial investment

You have a well-paid job and already invest a fixed percentage of your income in the financial market. You recently read an article about crowdinvesting and now want to invest in projects of young ventures via a crowdinvesting platform. Crowdinvesting allows you, as a private investor, to support young ventures while earning an attractive financial return.

Crowdinvesting aims to aggregate capital via the internet for the implementation of projects by young ventures. Projects are financed by a large number of investors through small loans at fixed interest rates.

On the crowdinvesting platform INVESTIA, you can read the project description of a young venture seeking seed capital. The project presented offers a financial return of 7%. If the project is successful, you will receive a return on your investment, including the return, over the project's duration of two years. If the project is not successful, you may lose all or part of your investment.

Appendix D2 (Essay IV) – Vignettes

Vignette socially framed campaign

The young venture SOCIALY is building a digital platform to integrate refugees into the German labor market.

Through an app, refugees can access relevant expertise and learning content to start a career in the German labor market. In this way, SOCIALY helps refugees to build a new life for themselves and at the same time helps other companies to benefit from diversity in the labor market. SOCIALY plans to generate revenue from the use of the platform by companies, which will be used to repay the investment.

The integration of refugees into the labor market is a key goal for the young venture and its activities. SOCIALY plans to provide 6,000 refugees with a career in the German labor market each year.

The project presented offers a return on investment of 7%.

The project is located in an industry with high growth potential and high profit margins. Assume that the business plan looks good.

Vignette environmentally framed campaign

The young venture ECOLY is building a digital platform for the rental of reusable containers for takeaway food from restaurants in Germany.

Through an app, consumers can rent reusable containers from partner restaurants for free and return them to all participating restaurants within 14 days. In this way, ECOLY aims to significantly reduce waste from disposable packaging and thus counteract the waste of resources. Through the use of reusable containers, ECOLY plans to generate revenue from the restaurants, which will be used to repay the investment.

Reducing CO2 emissions is a central goal of the young venture and its activities. ECOLY plans to save approximately 6,000 tons of CO2 emissions per year.

The project presented offers a 7% return on investment.

The project is located in an industry with high growth potential and high profit margins. Assume that the business plan looks good.

Vignette commercially framed campaign

The young venture FINLY is building a digital platform for providing financial advice to investors in Germany.

Through an app, investors can access expert knowledge and coaching to create a personal financial plan. In this way, FINLY aims to provide modern access to the financial market and automated investments. FINLY plans to generate revenue from investments made in the app and through partner companies, which it will use to repay the amount invested.

Increasing the company's revenue is a central goal of the young venture and its activities. FINLY plans to reach approximately 6,000 customers annually.

The project presented offers a 7% return on investment.

The project is located in an industry with high growth potential and high profit margins. Assume that the business plan looks good.

Appendix D3 (Essay IV) – Hypothetical scenario investment failure

After a while, you receive an email informing you of the status update of the project on the crowdinvesting platform. You log in to your investor area and the project description appears again:

Dear Investor,

We would like to inform you that during the implementation of the project of the young venture ECOLY/FINLY/SOCIALY, unforeseen problems arose, which ultimately led to the failure of the project. Therefore, we regret to inform you that the repayment of the investment has failed. This means that all investors have lost their investment and will not receive any return.

We regret this and remind you that this type of investment carries a risk of total loss. We would be pleased if you would continue to invest via the platform to support the ideas of young ventures.

Yours sincerely

Your Investia Team

Appendix D4 (Essay IV) – Control variables

Control variable	Item	Scale	Source
Age	What is your age in years?	-	e.g., Tenner & Hörisch (2021)
Gender	Which gender do you feel you belong to?	Female, male, divers, other	
Investment experience	Approximately how many years of investment experience do you have?	-	e.g., Dinh & Wehner (2022); Penz et al., (2022)
Social Desirability	Would you smile at people every time you meet them?	Yes/No	Haghighat (2007)
	Do you always practice what you preach to people?		
	If you say to people that you will do something, do you always keep your promise no matter how inconvenient it might be?		
	Would you ever lie to people?		
Willingness to take risks	Are you generally a person who is fully prepared to take risks or do you try to avoid taking risk?	Likert scale 1-7	Menkhoff & Sakha (2016)
	When thinking about investing and borrowing are you a person who is fully prepared to take risk or do you try to avoid taking risk		