UNIVERSIDADE ESTADUAL DE CAMPINAS
Faculdade de Ciências Aplicadas

LUCAS PEREIRA DE MELLO

PATHWAYS FOR SUSTAINABLE COMPANIES TO ACHIEVE SUCCESS IN EQUITY CROWDFUNDING CAMPAIGNS: EVIDENCE FROM BRAZIL

CAMINHOS PARA EMPRESAS SUSTENTÁVEIS ALCANÇAREM SUCESSO EM CAMPANHAS DE EQUITY CROWDFUNDING: EVIDÊNCIAS DO BRASIL

LIMEIRA
2024

UNIVERSIDADE ESTADUAL DE CAMPINAS
Faculdade de Ciências Aplicadas

LUCAS PEREIRA DE MELLO

PATHWAYS FOR SUSTAINABLE COMPANIES TO ACHIEVE SUCCESS IN EQUITY CROWDFUNDING CAMPAIGNS: EVIDENCE FROM BRAZIL

CAMINHOS PARA EMPRESAS SUSTENTÁVEIS ALCANÇAREM SUCESSO EM CAMPANHAS DE EQUITY CROWDFUNDING: EVIDÊNCIAS DO BRASIL

Thesis presented to the School of Applied Sciences of the University of Campinas as a partial requirement for obtaining the title of Doctor in Administration.

Tese apresentada à Faculdade de Ciências Aplicadas da Universidade Estadual de Campinas como parte dos requisitos exigidos para obtenção do título de Doutor em Administração.

Orientador/Advisor: Prof. Dr. Gustavo Hermínio Salati Marcondes de Moraes
Coorientador/Co-advisor: Prof. Dr. Bruno Brandão Fischer

THIS DIGITAL FILE CORRESPONDS TO THE FINAL VERSION OF THE THESIS DEFENDED BY THE STUDENT LUCAS PEREIR DE MELLO AND ADVISED BY THE PROFESSOR DR. GUSTAVO HERMÍNIO SALATI MARCONDES DE MORAES.

ESTE EXEMPLAR CORRESPONDE À VERSÃO FINAL DA TESE DEFENDIDA PELO ALUNO LUCAS PEREIR DE MELLO, E ORIENTADA PELO PROF. DR. GUSTAVO HERMÍNIO SALATI MARCONDES DE MORAES.

LIMEIRA
2024

Ficha catalográfica
Universidade Estadual de Campinas (UNICAMP)
Biblioteca da Faculdade de Ciências Aplicadas
Ana Luiza Clemente de Abreu Valério - CRB 8/10669

M489p Mello, Lucas Pereira de, 1989-
Pathways for sustainable companies to achieve success in equity crowdfunding campaigns : evidence from Brazil / Lucas Pereira de Mello. – Limeira, SP : [s.n.], 2024.

Orientador: Gustavo Hermínio Salati Marcondes de Moraes.
Coorientador: Bruno Brandão Fischer.
Tese (doutorado) – Universidade Estadual de Campinas (UNICAMP), Faculdade de Ciências Aplicadas.

1. Modelos de negócios sustentáveis. 2. Conjuntos fuzzy. I. Moraes, Gustavo Hermínio Salati Marcondes de. II. Fischer, Bruno Brandão. III. Universidade Estadual de Campinas (UNICAMP). Faculdade de Ciências Aplicadas. IV. Título.

Informações complementares

Título em outro idioma: Caminhos para empresas sustentáveis alcançarem sucesso em campanhas de *equity crowdfunding* : evidências do Brasil
Palavras-chave em inglês:
Sustainable business models
Fuzzy sets
Área de concentração: Gestão e Sustentabilidade
Titulação: Doutor em Administração
Banca examinadora:
Gustavo Herminio Salati Marcondes de Moraes [Orientador]
Luiz Eduardo Gaio
Ieda Kanashiro Makiya
Tiago Fonseca Albuquerque Cavalcanti Sigahi
Danilo Soares Silva
Data de defesa: 10-12-2024
Programa de Pós-Graduação: Administração

Identificação e informações acadêmicas do(a) aluno(a)
- ORCID do autor: https://orcid.org/0000-0002-1894-1373
- Currículo Lattes do autor: http://lattes.cnpq.br/0387856096251989

Folha de Aprovação

Autor: Lucas Pereira de Mello
Título: Pathways for sustainable companies to achieve success in Equity Crowdfunding campaigns: evidence from Brazil
Natureza: Tese
Área de Concentração: Gestão e Sustentabilidade
Instituição: Faculdade de Ciências Aplicadas – FCA/Unicamp
Data da Defesa: Limeira-SP, 10 de dezembro de 2024.

BANCA EXAMINADORA:

Prof. Dr. Gustavo Herminio Salati Marcondes de Moraes (orientador)
Faculdade de Ciências Aplicadas - FCA/Unicamp

Prof. Dr. Luiz Eduardo Gaio (membro)
Faculdade de Ciências Aplicadas - FCA/Unicamp

Prof. Dr. Ieda Kanashiro Makiya (membro)
Faculdade de Ciências Aplicadas - FCA/Unicamp

Prof. Dr. Tiago Fonseca Albuquerque Cavalcanti Sigahi (membro externo)
Universidade de São Paulo

Prof. Dr. Danilo Soares Silva (membro externo)
Universidade Católica Portuguesa

A Ata da defesa com as respectivas assinaturas dos membros encontra-se no SIGA/Sistema de Fluxo de Dissertação/Tese e na Secretaria do Programa da Unidade.

DEDICATÓRIA

Dedico este trabalho ao meu orientador, Prof. Gustavo Salati, pela paciência, dedicação e parceria que já dura anos. Sua orientação constante foi essencial para que o doutorado fosse viável e, sem ela, não teria sido possível chegar até aqui. Agradeço também ao meu coorientador, Prof. Bruno Fischer, pela colaboração e pelos valiosos conselhos, sempre enriquecendo minha pesquisa com suas reflexões e expertise.

À professora Ieda, pelos insights profundos gerados na disciplina de Sustentabilidade, que se tornaram fundamentais para a estruturação dos arquétipos dos modelos de negócios sustentáveis nesta pesquisa.

À Damaris, que me ajudou de forma incansável na coleta de dados, tornando um processo desafiador muito mais leve e eficiente.

À minha esposa Stefani, pelo apoio incondicional, pela compreensão nos momentos de ausência nos finais de semana e pela paciência durante os períodos mais intensos da tese.

Aos colegas do programa, que de alguma forma me apoiaram, seja com uma palavra de incentivo, seja com uma troca de ideias enriquecedora.

E, especialmente, à minha mãe, Tânia, que sempre me incentivou quando o assunto era estudos. Sem ela, eu jamais teria chegado até aqui.

“If you think Education is expensive, try ignorance”

Derek Bok

ABSTRACT

This study explores the conditions that contribute to successful outcomes for startups adopting sustainable business models (SBMs) on Brazilian equity crowdfunding (ECF) platforms. Despite the growing popularity of ECF as a financing alternative, particularly for sustainability-driven companies, there is limited understanding of how specific factors influence funding success in this context. The research addresses this gap by identifying and testing the key conditions that affect both the amount raised and the funding percentage in ECF campaigns. The study first classified 49 campaigns from 44 companies based on their SBM archetypes (SBMAs) and then applied the asymmetric technique fuzzy-set Qualitative Comparative Analysis (fsQCA), to identify the complex interactions between these conditions. The sample was obtained by hand-collecting data searched in the mandatory information that ECF platforms need to disclose to the Comissão de Valores Mobiliarios (CVM), combined with further searching on these platforms. Results evidenced the diversity of pathways that can lead to successful outcomes, but reinforced the importance of human capital, governance signals, and professional investors (target amount and funding percentage). Also, some pathways where a high sustainability classification was a core cause for the reach of the desired outcome demonstrated the importance of effectively communicating sustainability, since there are some investors highly motivated by sustainability alone. In the end, nine recommendations for sustainable companies that desire to raise funds through ECF platforms were made: communicate sustainability effectively; build a strong top management team; engage professional investors; strongly consider lead investors; seek third-party endorsements; focus on quality over quantity of financials; understand investors' motivations; set realistic funding targets; and do not ignore scalability. The originality of this research consists in classifying ECF campaigns according to the hierarchical SBMAs, as well as drawing from literature aspects that differentiate ECF from other forms of financing and using it to evaluate what set of features lead to successful outcomes in ECF campaigns, all for the first time.

Keywords: equity crowdfunding; sustainable business models; sustainable business models archetypes; alternative finance; fsQCA.

RESUMO

Este estudo explora as condições que contribuem para resultados bem-sucedidos de startups que adotam modelos de negócios sustentáveis (SBMs) em plataformas brasileiras de *equity crowdfunding* (ECF). Apesar da crescente popularidade do ECF como alternativa de financiamento, particularmente para empresas voltadas para a sustentabilidade, há uma compreensão limitada de como fatores específicos influenciam o sucesso do financiamento nesse contexto. A pesquisa aborda essa lacuna identificando e testando as principais condições que afetam tanto o valor arrecadado quanto o percentual de financiamento nas campanhas da ECF. O estudo primeiro classificou 49 campanhas de 44 empresas com base em seus arquétipos de SBM (SBMAs) e, em seguida, aplicou a técnicas assimétrica da Análise Comparativa Qualitativa de conjunto difuso (fsQCA), para identificar as interações complexas entre essas condições. A amostra foi obtida por meio da coleta manual de dados pesquisados nas informações obrigatórias que as plataformas ECF precisam divulgar à Comissão de Valores Mobiliários (CVM), combinadas com pesquisas adicionais nessas plataformas. Os resultados evidenciaram a diversidade de caminhos que podem levar a resultados bem-sucedidos (valor arrecadado e percentual de financiamento), mas reforçaram a importância do capital humano, dos sinais de governança e dos investidores profissionais. Além disso, alguns caminhos em que uma alta classificação de sustentabilidade foi uma causa central para o alcance do resultado desejado demonstraram a importância de se comunicar efetivamente a sustentabilidade, uma vez que existem alguns investidores altamente motivados apenas pela sustentabilidade. Ao final, foram feitas nove recomendações para empresas sustentáveis que desejam captar recursos por meio de plataformas ECF: comunicar a sustentabilidade de forma eficaz; construir uma forte equipe de alta gestão; envolver investidores profissionais; considerar fortemente os investidores-líderes; buscar endossos de terceiros; foco na qualidade sobre a quantidade de informações financeiras; entender as motivações dos investidores; definir metas de financiamento realistas; e não ignorar a escalabilidade. A originalidade desta pesquisa consiste em classificar as campanhas de ECF de acordo com os SBMAs hierárquicos, bem como extrair da literatura aspectos que diferenciam a ECF de outras formas de financiamento e utilizar essas informações para avaliar qual conjunto de características leva a resultados bem-sucedidos em campanhas de ECF, tudo pela primeira vez.

Palavras-chave: *equity crowdfunding*; modelos de negócios sustentáveis; arquétipos dos modelos de negócios sustentáveis; finanças alternativas; fsQCA.

TABLE OF CONTENTS

1. Introduction 10

2. Theme Contextualization and Literature Review 13

2.1 Equity Crowdfunding in Brazil and Worldwide 13

2.2 ECF versus Neighboring Funding Forms 15

2.3 ECF and Sustainability 20

2.4 The Scope of ECF Campaigns 23

2.5 Sustainable Business Model Archetypes 24

2.6 Conceptual Theoretical Model 26

3. Methodology 28

3.1 Case Selection and Data Collection 29

3.2 Classification of the SBM Archetypes 33

4. Results 36

4.1 Amount Raised 36

4.2 Funding Percentage 40

4.3 Prominent Cases 44

5. Discussion and Recommendations 48

6. Conclusion 53

7. References 55

8. Appendix 70

Appendix A 70

Appendix B 72

1. Introduction

Sustainable Business Models (SBM) are innovations within companies that propose, create and deliver value to customers, the environment and society from a multi-stakeholder perspective (Lüdeke-Freund *et al*., 2018; Velter *et al*., 2022) either by reducing the negative impact of these activities or by bringing some positive impact (Bocken *et al*., 2014; Schaltegger *et al*., 2016). Recently, the widespread use of new digital tools and technologies has been forcing businesses to reshape their models to SBM (Broccardo *et al*., 2023). However, the risk of failure in innovative business models (Geissdoerfer *et al*., 2018), associated with the fact that SBM hardly provides above-average financial returns (Bento *et al*., 2019; Vismara, 2019; Yacoub *et al*., 2022), creates the need of alternative forms of financing for these projects.

In such a context, equity crowdfunding (ECF) presents itself as an alternative to traditional investment models, as its investors tend not to be motivated only by financial returns, but also by emotional and social factors (Lukkarinen *et al*., 2018), in addition to investor community behavior (Bretschneider & Marco, 2017; Zhang *et al*., 2019), which makes sustainable businesses more prevalent and more likely to achieve funding on these platforms (Bento *et al*., 2019; Calic & Mosakowski, 2016; Liang *et al*., 2023) depending on how they are presented to potential investors (Caputo *et al*., 2022).

Overall, crowdfunding is deemed as an important contributor to reaching the United Nations Sustainable Development Goals (SDG) (Kim *et al*., 2021), especially after the COVID-19 pandemic, which slowed down SDG progress (Sanches *et al*., 2022; Thornton, 2020). Generally, crowdfunding can be considered a "sustainable financial product" as it enables clients to engage and increases the funding source, while being a digital solution (Yip & Bocken, 2018). However, out of the 4 crowdfunding types, ECF is the only one where investors become shareholders, and, therefore, is the only one where they can participate within a for-profit, long-term and stakeholder perspective, that is crucial for SBMs (Boons & Lüdeke-Freund, 2013; Freudenreich *et al*., 2020; Morioka *et al*., 2018), especially when considering the possibility of ECF investors contributing to sustainable value co-creation (Kukurba *et al*., 2021; Zhang *et al*., 2022).

However, despite the crowdfunding's exponential growth, reaching $ 1.67bn in 2022 and expected to reach $5.53bn by 2030 (Research and Markets, 2023), scholars have been outlining that ECF is more an alternative in terms of a "last resort" for startups, compared to traditional finance, than in terms of entrepreneurs' preference (Cumming *et al*., 2018; Hornuf & Schwienbacher, 2017; Signori & Vismara, 2018; Walthoff-borm, 2019). Therefore, there is

a gap in understanding the feasibility of ECF as a practical contributor to SDG (Kim & Hall, 2021; Martínez-Gómez *et al*., 2020), considering some complexities such as its coverage in terms of SBM for startups (Bocken *et al*., 2014), challenges as an alternative source of finance (Reza-Gharehbagh *et al*., 2021; Yacoub *et al*., 2022), and the likelihood of a sustainable campaign reaching a successful funding outcome (Bento *et al*., 2019; Calic & Mosakowski, 2016). Additionally, there is a lack of studies approaching ECF campaigns in developing countries, where both academic studies and regulatory frameworks are scarce (Riswandi *et al*., 2023; Samarah & Alkhatib, 2020; Yasar, 2021). The particularity of this gap becomes even greater when we analyze these campaigns in Brazil, where the business environment itself is challenging, since most entrepreneurs set up informal ventures by necessity (Dana *et al*., 2022; Williams & Youssef, 2014), and business innovation does not necessarily translate into financial performance (Saliba de Oliveira *et al*., 2018). Furthermore, most studies in ECF were conducted in Europe, which does not translate the complexities of a Latin American country, with its unique cultural context and challenges caused by underdevelopment (Kellermanns & Eddleston, 2004).

Hence, the present study aims to answer the following research question: What are the main conditions that can lead sustainable startups to successful outcomes in Brazilian equity crowdfunding campaigns?

To answer the research question, 49 offers from 44 companies self-declared as sustainable, on ECF platforms in Brazil, from the years 2017 to 2022 (which comprise all sustainable startups offerings that could be found) were classified according to the sustainable business model archetypes (SBMAs) to assess SBM coverage of these offerings, and, then, asymmetrical tests were conducted to verify the impact of sustainability and the configurational paths that lead a SBM startup campaign to achieve funding success, considering the most important factors that differentiate ECF from traditional forms of fundraising.

Also, the present study (1) approaches ECF market growth and features in Brazil and worldwide (chapter 2), (2) explores the literature comparing ECF to neighboring forms of financing (chapter 2), (3) analyzes the brief literature that intersects ECF with sustainability to outline the challenges and opportunities that sustainable startups face when selecting ECF to finance their development (chapter 2), (4) classifies through experts sustainable offers according to the SBMAs to verify their scope and diversity (chapter 3), and (5) applies fuzzy set qualitative comparative analysis (fsQCA) tests to understand what leads sustainable campaigns to achieve the expected outcome (chapter 4). Finally, recommendations for

sustainable startups seeking to raise funds through ECF are made, considering pursuit of long-term success (chapter 5).

The originality of the present study consists in, for the first time, (1) classifying ECF campaigns into SBMAs, (2) raising from the literature the main aspects that differentiate ECF from neighboring financing forms, and (3) combining them to assess what leads SBM campaigns to reach funding, which allows some recommendations for sustainable companies in those platforms in terms of what they must account for when launching a campaign. Therefore, this study deepens the understanding of how much ECF can contribute to a more sustainable society, instead of simply taking it for granted, without analyzing the particularities of this form of financing and its scope in terms of SBMs.

2. Theme Contextualization and Literature Review

This section provides an in-depth examination of ECF in both global and Brazilian contexts, exploring its growth, regulatory environment, and a comparative analysis with other forms of crowdfunding and traditional investment models. It also discusses the intersection between ECF and sustainability, sheds light on the scope of ECF campaigns, presents the SBMAs, and ends with the theoretical conceptual model of the research.

2.1 Equity Crowdfunding in Brazil and Worldwide

Globally, alternative finance is dominated by debt models, with equity models accounting for just 4% of the market and reaching $4.4 billion in 2020 globally, of which 35% was ECF (Ziegler *et al*., 2021). The United Kingdom market is a benchmark for ECF, with 549 million pounds invested in 2020, which represented 15.08% of total seed and venture stage investment funded in the country (Ziegler *et al*., 2021). Overall ECF can be deemed as a pretty unconcentrated, little institutionalized (only 7% are institutional investors such as banks, trusts, insurance companies, etc.) and local (only 10% of international inflow) (Ziegler *et al*., 2021).

In Brazil, the ECF market is regulated by the 2022 instruction 88 of the Comissão de Valores Mobiliários (CVM), which replaced the former 2017 instruction 588 (CVM, 2022). According to the calculated data, provided by CVM Annexes 27, there were 56 active platforms in Brazil in 2021, but unlike elsewhere, it is concentrated in the four major players - Eqseed, Kria, Start Me Up and Captable (55% market share in 2021). There was an exponential growth since 2017, from 4 campaigns to 113 campaigns in 2021, reaching BRL 200 million invested, funded by over 20 thousand investors.

In 2022 the ECF market contracted for the first time in Brazil, with the total volume raised falling by 34% and the number of successful offers falling by 26% (Telesintese, 2023). However, this number cannot be analyzed in isolation, in a year when risk investment fell globally. The Venture Capital (VC) market in the world fell by 35% (Startups, 2023) and in Latin America by 51% (Startupi, 2023), due to increases in interest rates in the United States and in Brazil itself.

Also in 2022, the CVM tripled the maximum target amount to 15 million within a year (CVM, 2022), in a similar move to the US Securities and Exchange Commission (SEC) which raised the limit from $ 1.07 million to $ 5 million in 2020 (Republic, 2020). Furthermore, CVM raised restricted individual investors limit from BRL 10 thousand to BRL 20 thousand invested

in each campaign and crowdfunding company's maximum revenue from BRL 10 million to BRL 40 million (CVM, 2022). These moves encourage ECF in the country as it allows more capital to be raised by companies as they grow, and more money from restricted investors, who are the major ones in ECF. Interestingly, in 2022, the number of investors below BRL 20 thousand decreased by only 4% in Brazil versus a decrease by 37% in the number of qualified investors (CVM, 2023).

Graph 1 shows the growth in the total amount raised in all campaigns (secondary axis, on the right) and the number of successful and unsuccessful Brazilian campaigns (main axis, on the left), in each of the years. An offer is canceled whenever it exceeds 180 days without being able to capture at least two-thirds of the value stipulated as a goal. Furthermore, Table 1 presents data from crowdfunding offers that have been successful in Brazil since 2017. In general, entrepreneurs managed to capture a value very close to the target (the lowest total percentage was 87% in 2020), and most investors are restricted (lowest percentage was 74.7% in 2021).

Graph 1

Total Number and Total Volume of Brazilian Campaigns per Year

Source: own authorship based on data from CVM Annexes 27.

Table 1

Equity Crowdfunding in Brazil: Successful Campaigns

Year	Total amount raised	Number of successful campaigns	Average percentage raised (in relation to target)	Average number of days to fundraise	Total number of investors	Percentage of restricted investors
2017	BRL 2,970,000.00	4	100%	26	546	95.8%
2018	BRL 46,505,840.00	46	90%	50	2.509	83.3%
2019	BRL 54,960,689.00	52	92%	107	6,191	87.5%
2020	BRL 84,401.254.58	74	87%	84	8,275	85.8%
2021	BRL 200,422,376.22	113	91%	56	20,095	74.7%
2022	BRL 131,930,039.71	84	89%	82	15,654	79.7%

Source: own authorship based on data from CVM Annexes 27.

2.2 ECF versus Neighboring Funding Forms

There are a total of four types of crowdfunding. In rewards-based crowdfunding, the investor finances the project in exchange for goods or services, to be delivered at a later stage, and resembles vendor financing (Leboeuf & Schwienbacher, 2018). In lending-based crowdfunding, backers expect to receive their capital back plus interest (Berns *et al*., 2020; Leboeuf & Schwienbacher, 2018). If funders provide money without tangible rewards, the process is called donation-based crowdfunding (Garaus *et al*., 2020). The focus of this study, however, is on equity-based crowdfunding, in which the public of unsophisticated investors finances the new venture in exchange for a stake in the company (Belleflamme *et al*., 2014; Troise *et al*., 2022), and has become popular and strategic in terms of alternative finance for entrepreneurs (Ralcheva & Roosenboom, 2020), possibly being even able to challenge traditional forms of investment going forward (Vulkan *et al*., 2016).

ECF became an alternative to business angel (BA) and VC for early-stage companies, relying on thousands of non-professional investors and, thus, reducing geographical and gender biases normally related to the manner in which VCs select companies to invest (Mollick, 2013). On the one hand, these investors seem to walk on opposite sides, as companies that raised

money through ECF were found to attract lower reputable VC on follow-on campaigns compared to those primarily funded by BAs (Butticè *et al*., 2021). Subsequent VC investment that could lead new ventures to success is discouraged by ECF dispersed ownership (Cumming *et al*., 2018; Signori & Vismara, 2018) and, thus, new ventures will prefer VC or BA whenever available (Hornuf & Schwienbacher, 2017; Mochkabadi & Volkmann, 2020).

On the other hand, the wisdom of the crowds could be more suitable to evaluate opportunities in sectors where the crowds are end users, complementing experts' decisions and diminishing "false negatives" (Clauss *et al*., 2018; Mollick & Nanda, 2016), because the decision criteria in ECF are soundly different from the ones in BA and VC (Lukkarinen *et al*., 2016). These differences are mainly related to governance, motivations, proximity, and investors engagement. It is important to emphasize, though, that, although literature mainly discusses the differences of these forms of investments and how they are alternative to each other, they could also be complementary from the company standpoint, because crowdfunding normally backs companies at the initial concept, seed money, or early startup stages, whereas VCs and BAs funds them from early startup to expansion stages (prior to merger, acquisition and IPO) (Rossi, 2014).

Governance is an issue that can affect the success of crowdfunding companies because crowd investors are unsophisticated professional investors, who rely mostly on signaling and information quality (Ahlers *et al*., 2015; Wasiuzzaman, 2021), and companies offering shares via platform often lack boards (Cumming *et al*., 2021a). While emerging regulation in different countries aims to protect ECF investors, it might leave small innovative businesses unable to fulfill prospectus and registration requirements with no financial alternatives, especially where VC and BA financing are scarce (Hornuf & Schwienbacher, 2017).

Agrawal *et al*. (2014) emphasize that the distance between the crowd and early-stage companies harms the due diligence process increasing information asymmetry issues, such as adverse selection, moral hazard, and collective action. To mitigate these governance issues, some offerings include syndicates - i.e., professional investors who have expertise in selecting companies to invest in (Itenberg & Smith, 2017), and will perform due diligence and monitor the startup progress, reducing information asymmetry, in exchange for a performance-based pay rate (Agrawal *et al*., 2016).

However, there are particularities in the way in which syndicates can improve fundraising performance. For instance, Zhang *et al*. (2023) found that syndicates only increase the amount raised when lead investors are specialized human capital (they found no impact from general human capital), and this impact is mediated by lead investor's reputation.

Therefore, human capital signals become one of the main quality signals investors will be paying attention to, especially in regards to a larger board team size that indicates specialization of tasks *(*Ahlers *et al.,* 2015; Coakley *et al.,* 2022; D'Agostino *et al*., 2022), prior entrepreneurial, management or technical experience in the startup area (Barbi & Mattioli, 2019; D'Agostino *et al*., 2022; Piva & Rossi-Lamastra, 2018; Troise *et al*., 2022), and even gender (with teams including at least a woman capturing investors' preference) (Barbi & Mattioli, 2019; Liu *et al*., 2023).

Moving forward, there are other mechanisms to reduce perceived risk of crowd investors, such as early bids from platform members (Meoli & Vismara, 2021) and ECF financing through nominee structure (i.e., the platform managing shares as an unique investor on behalf of the crowd), which was found by Walthoff-Borm *et al*. (2018) to reduce investor's losses, although new ventures financed directly by the crowd applied for more patents when compared the nominee ones. Some studies, however, may put in doubt the extent to which governance may be excessively important to ECF. First, ECF lacks secondary markets for a way out to investors (Lukkarinen & Schwienbacher, 2023). Second, firms listed on ECF platforms were found to be less profitable and more frequently indebted than those not listed, which can typify the investment in such platforms as a "last resort" (Walthoff-born, 2019). Lastly, social capital signals were found to be more appealing to potential investors than intellectual and human capital ones (Liu *et al*., 2021), which leads us to further analyze investment in these platforms through intrinsic and extrinsic motivation lenses (Allison *et al*., 2015; Lukkarinen *et al*., 2018; Wasiuzzaman *et al*., 2021; Zhang *et al*., 2019).

Extrinsic motivations such as rewards, recognition from others, developing one's own image were found to be significant motivations for an investor to commit money in an ECF campaign, as well as intrinsic motivations such as liking the company or their funders (Bretschneider & Marco, 2017). Corroborating empirically with this, Zhang *et al*. (2019) applied the partial least squares (PLS) methodology to data from 226 crowdfunding investors and found that internal and external motivations positively impact investors' stickiness intention (willingness to spend more time, money, and energy on the project they are funding). Qualitatively, Gerber & Hui (2013) also reached the same conclusion after conducting 83 semi-structured interviews and finding that other than collecting rewards (extrinsic motivation), investors also seek to help others, join a community and back causes (intrinsic motivations).

However, some studies point out that in investment crowdfunding, intrinsic reasons may be more appealing than extrinsic ones. For instance, Allison *et al*. (2015) analyzed microcredits made to a total of 36,000 entrepreneurs, in 51 countries, through crowdfunding platforms and

found that narratives that emphasize the company as an opportunity to help others lead to more positive results than narratives that highlight business opportunities. Wasiuzzaman *et al*. (2021) applied the PLS methodology on data from 169 crowdfunding investors and found that the financial motive is quite insignificant to explain the willingness to support ECF campaigns, while most of the intrinsic motives (aesthetic value, emotional value, novelty, and trust) were found to be highly significant.

Lukkarinen *et al*. (2018) emphasize that ECF investors should not be seen as a homogenous group. They analyzed investor motivation and decision criteria in the ECF and were able to group the investor into three types: donation-oriented supporters, return-oriented supporters, and pure investors. They found that the first type is more likely to invest motivated by the opportunity to help or be part of a phenomenon, while pure investors are mostly motivated by extrinsic financial returns, similarly to VCs. Finally, return-oriented supporters resemble BAs in the sense that they are driven by both intrinsic and extrinsic motivations.

Proximity factors are also pointed out to be important to ECF success not only because of the local bias, normally associated with BAs (Hornuf *et al*., 2022), which was also found to be a significant issue also for investment crowdfunding - with increasing distance reducing investment probability or amount (Guenther *et al*., 2018; Kim & Kim, 2017) - but also because crowdfunding regulation and industry characteristics lead it to be a pretty national investment type (Maula & Lukkarinen, 2022; Niemand *et al*., 2018; Zetzsche & Preiner, 2018). In that sense, geography could be another killer app also for the ECF startups, as Battaglia *et al*. (2022) found that new ventures located at local innovation systems are more likely to be successful in ECF campaigns.

However, geography is not the only type of proximity, as personal proximity (when the investor knows the entrepreneurs) and knowledge proximity, (when an investor commits money to a project of his or her expertise) also result in greater investor involvement (Garaus *et al*., 2020), even with evidence that it might represent a behavioral anomaly, leading to more investments in insolvent companies, when compared to investor without proximity biases (Hornuf *et al*., 2022). Nevertheless, such bias could be mitigated or relativized, as Lukkarinen *et al*. (2018) found that familiarity is less important to pure investors compared to return-oriented ones, and significantly less important to the former when compared to donation-oriented investors.

Furthermore, Clauss *et al*. (2018) found that social interaction between the founder team and the crowd increases the probability of campaign success due to increased awareness of shared attributes and perceptions. To that extent, social capital arises as an important

determinant for ECF fundraising success (Liu *et al*., 2023), especially in regard to social network followers (Ahlers *et al*., 2015; Lukkarinen *et al*., 2016; Vismara, 2016), family and friends (Skirnevskiy *et al*., 2017). Moreover, Graziano *et al*. (2023) found that managers' activities on LinkedIn are positively related not only to ECF performance, but to the innovativeness of the founders.

Ironically though, when evaluating investors engagement after the funding, there is a potential blind spot in ECF compared to VC and BA, as startups exploiting inputs from the crowd on subjects such as product, market and strategy are more likely to succeed, but most of them remain passive in that regard (Di Pietro *et al*., 2018). In entrepreneurial finance literature it is widely known that investors provide startups with more than money. VCs usually provide companies with human capital, knowledge and resources to secure their investment (Gorman & Sahlman, 1989; Sapienza, 1992), while BAs normally assist startups with consulting, network and fundraising from other sources (Politis, 2008). In ECF, although the degree of involvement of investors, especially the qualified ones, is related to post funding performance (Signori & Vismara, 2018), most crowdfunding investors engage in low-involvement activities such as word of mouth and purchase recommendations, while only a minority of them dedicate their time to high-involvement activities, such as providing advice and contacts (Garaus *et al*., 2020), possibly because the small amount of money they commit lead to lower engagement incentives due to the smaller risks and returns expected (Agrawal *et al*., 2015).

Table 2

Main Features of ECF and Neighboring Funding Forms

Features	**Rewards-based crowdfunding**	**Equity crowdfunding**	**Business angels**	**Venture Capital**
Typical funder background	Various, many have no investment experience	Various, many have no investment experience	Former entrepreneurs	Finance, industry
Source of funds	Investing own money	Investing own money	Investing own money	Investing others' money
Deal flow	Through web platform	Through web platform	Through social and/or angel networks	Through social networks and proactive outreach

Due diligence	Very limited; conducted by individual	Limited; conducted by individual	Conducted by individual based on their own experience	Conducted by staff in VC firm with potential assistance from outside firms
Geographic proximity of funders	Investments made online: funders often distant from venture	Investments made online: funders often distant from venture	Most investments local	Invest nationally (or internationally with local partners)
Post-funding role of funders	Most remain passive	Most remain passive	Active (hands-on)	Active (strategic)
Return on investment	Financial return not relevant	Financial return important (but not the only reason for investing)	Financial return important (but not the only reason for investing)	Financial return critical
Motivations to invest	Mostly intrinsic	Intrinsic and extrinsic	Intrinsic and extrinsic	Mostly extrinsic
Lifecycle stage of companies	Initial concept and seed money	Seed money and early stage (startup)	Early stage and expansion stage (startup)	Early stage and expansion stage (startup)

Source: adapted from Lukkarinen *et al*. (2018)

2.3 ECF and Sustainability

Crowdfunding in general has been outlined as conducive to social change through "warm glow" effect (Cecere *et al*., 2017; Hörisch & Tenner, 2020; Zhao & Sun, 2020) and to environmentally oriented projects success (Hörisch & Tenner, 2020; Liang *et al*., 2023), such as renewable energy (Nigam *et al*., 2018). Regarding ECF, scholars found a lower gender gap and a more diverse ethnic and geographical background of entrepreneurs seeking financial resources in these platforms compared to other sources (Cicchiello *et al*., 2021; Cicchiello & Kazemikhasragh, 2022; Cumming *et al*., 2021b; Prokop & Wang, 2021).

When it comes to fundraising, previous studies highlighted that sustainability-oriented projects positively influence the chance of a campaign being successful in crowdfunding (Bento *et al*., 2019; Calic & Mosakowski, 2016), which reinforces the importance of studying this funding source, as sustainable projects face some disadvantages when trying to raise capital from traditional professional investors - such as VC and BA with purely economic returns – as

they need to reconcile more complex goals (Hörisch, 2015; Yacoub *et al*., 2022). Understanding the project characteristics that lead to positive outcomes may be crucial. For instance, Corsini & Frey (2023) found that sustainable projects targeted to niche markets tend to overperform those targeted to mass markets in crowdfunding.

Other scholars also focused their research on factors that might lead sustainable campaigns to be successful in crowdfunding. Prędkiewicz & Kalinowska-Beszczyńska (2021) analyzed 41 eco-projects in European rewards-based crowdfunding and found that positive comments and updates increase the chance of a successful outcome, whereas a higher targeted amount negatively impacts the campaign's success. Communication issues were also found to be dissuasive to campaign success in Poland (Motylska-Kuzma, 2018). Caputo *et al*. (2022) carried out a study using fsQCA method on 33 ECF campaigns of Italian sustainable companies and found that (1) social recognition, (2) a high number of board graduates, (3) high positive impact of key activities and (4) good financial indicators are the factors that are most associated with successful campaigns. The authors also pointed out that the configuration that most explains the failure of campaigns shows that the social and environmental impact cannot be separated from financial performance. In lending crowdfunding, for instance, other researchers reached similar conclusions. Berns *et al*. (2020) reported that projects only received higher amounts when prosocial appeal is combined with good financials, whereas Flórez-Parra *et al*. (2020) found that corporate social responsibility enhances collective lending.

Hörisch & Tenner (2020) applied ordinary least squares (OLS) regressions to 318 ECF campaigns in USA and Germany and found that a high number of funders mediates the increased probability of environmentally oriented projects' success. The authors claim that their results agree only partially to Vismara (2019), who, by running a negative binomial regression to 345 ECF campaigns in the United Kingdom, found that sustainability orientation attracts higher number of restricted investors, because Hörisch & Tenner (2020) found no higher chance of successful outcomes in socially oriented projects. Even so, their results could be interestingly related to others that revealed how social capital or community logic influence positively ECF success (Barbi *et al*., 2023; Knauf & Wüstenhagen, 2023; Zhang *et al*., 2019), as some other previous studies results reinforce the community logic of restricted investors (Cumming *et al*., 2019; Vismara, 2018). In other types of crowdfunding, other researchers also found some similar results. Chan *et al*. (2021) found that sustainability orientation relates positively to number of funders and amount raised in rewards crowdfunding, while Moss *et al*. (2018) reported results that show that prosocial projects can reduce funding times in lending crowdfunding.

In that regard, other scholars further explored how sustainability-oriented investors behave in equity crowdfunding and what startups can benefit from them. For instance, Hornuf *et al*. (2021) found that these investors commit more money to campaigns than normal investors, and feel emotionally when a company they financed goes bankrupt, which indicates that they do not care only about financial returns. Liang *et al*. (2023) applied partial least squares (PLS) regressions to responses from 455 crowdfunding backers and found that their sustainability orientation positively influences value co-creation (i.e., value created both by customers and company) when mediated by self-effectiveness and perceived affective reaction. These results are in line with researchers who found that social and emotional motivations (Lukkarinen *et al*., 2016; Wasiuzzaman *et al*., 2021), trust (Alharbey & Van Hemmen, 2021), and even herding behavior (Bretschneider & Marco, 2017) are important determinants for an investor to commit money in crowdfunding campaigns.

To this extent, engaging the crowd can be crucial for sustainable startups' success, as it allows user-producer and user-consumer interaction at an early stage, which leads ECF investors to function as user-legitimizers and user-citizens (Testa *et al*., 2019). For instance, when researching the implications of the ECF in sustainability-oriented innovation in agrifood systems, Troise *et al*. (2021) found that crowd engagement in providing knowledge-based inputs contributes to fostering organizational innovation towards social sustainability. According to Bento *et al*. (2019), ECF investors' funding and post-involvement in companies with sustainable missions can increase their chances of survival, as a 70% higher average survival rate was measured by the authors after one year of operations.

Interestingly, sustainable entrepreneurs are aware that crowd investors can provide them with more than money. Yacoub *et al*. (2022) studied French entrepreneurs and found that, more than due to alternative finance, they also engage in ECF to create early brand image and, in other types of crowdfunding, to test the market and to fund production. Kukurba *et al*. (2021) even propose a model where the crowdfunding sustainable impact should be analyzed in the light of value co-creation and economic value-added theories. Such the importance of the crowd in the post funding phase imposes some challenges that sustainable entrepreneurs must be aware of, since engaging the crowd can be more laborious due to the distance and low involvement (Agrawal *et al*., 2015; Garaus *et al*., 2020). Sustainable companies that raised money through ECF looking to scale their business also need to work on mitigating governance issues, which can serve as a disincentive to other sources of financing (Butticè *et al*., 2021; Cumming *et al*., 2018), although they have in their favor the possibility of continuing to raise funds through the ECF, especially after the increases in funding limits that have occurred worldwide, because

ECF investors are usually more motivated by intrinsic reasons and community logic (Lukkarinen *et al*., 2018; Zhang *et al*., 2019) .

However, research on the intersection of crowdfunding and sustainably is still in its infancy and the very legitimacy of crowdfunding as a tool for sustainable ventures needs to be ensured by studies that explore post-funding phase (Böckel *et al*., 2021), as most studies are concentrated on entrepreneurs, funders, platforms, campaigns and its outcomes (Petruzzelli *et al*., 2019). We found no studies classifying SBMAs to evaluate sustainability coverage of these campaigns, as well as no studies that analyzes, through the SMBA's hierarchy, how higher-impact small and medium-sized enterprises (SMEs) perform on ECF campaigns.

2.4 The Scope of ECF Campaigns

It is not inconsiderable information that ECF campaigns take place on online platforms, a mechanism through which entrepreneurs who would have less access to capital are able to raise money in small amounts from a large group of investors (Cicchiello *et al*., 2021; Mora-Cruz & Palos-Sanchez, 2023). In that sense, the platform itself has considerable importance in selecting and advertising projects (Liu *et al*., 2023), and the ones with a bigger and more diverse network of partners to advise them are associated with higher level of campaigns success (Cosma *et al*., 2021). In the future, platforms are expected to further develop in terms of transparency, with stricter fundraising requirements, and even offering advisory services to entrepreneurs post-campaign, similarly to BAs (Tiberius & Hauptmeijer, 2021).

During the campaigns, founders provide information about the project on these platforms, which include pitch, documents and videos (Courtney *et al*., 2017; Tiberius & Hauptmeijer, 2021). The quality of this information is seen as one of the determining factors for the success of campaigns (Liu *et al*., 2021; Mollick & Nanda, 2016; Wasiuzzaman & Suhili, 2021), as well as communication between financiers and entrepreneurs during campaigns, whether on platforms or social media (Bernardino & Santos, 2020; Chan *et al*., 2021; Valenza *et al*., 2022; N. Wang *et al*., 2018). Worldwide, most campaigns last for 60-90 days and function with “all-or-nothing” models (Cicchiello *et al*., 2021; Meoli & Vismara, 2021; Miglo & Miglo, 2019), while in Brazil a campaign can last for 180 days and be successful if two-thirds of the funding goal is achieved (Cicchiello *et al*., 2021). However, the longer duration of a project tends to be seen as a negative quality sign, which weighs negatively on funding success (Liu *et al*., 2023; Lukkarinen *et al*., 2016; Mollick, 2014).

Another category of important information that investors will pay attention to in the campaign is financial considerations such as valuation, amount of financial data, and likelihood of returns (Hornuf *et al*., 2018; Kleinert & Volkmann, 2019), expressed in the form of expected growth or expected margins, e.g. (Estrin *et al*., 2022; Nitani *et al*., 2019), even when it comes to companies at early stages and when investors that also care about non-financial returns (Caputo *et al*., 2022; Hornuf *et al*., 2021). In Brazil, platforms do not exactly follow a standard when presenting campaign information, but in general they present detailed data about the company, images, videos, financial information, valuation, information about the founding team, legal information that is mandatory, among others. Out of the 4 main ECF platforms, Kria informs that it makes a careful selection of offers (Kria, 2023). SMU says that it invests along in all offers (SMU, 2023), Captable states that it only selects companies that have already passed the Minimum Viable Product (MVP) phase (Captable, 2023), and Eqseed claims that it selects to receive investments only less than 1% of companies that apply (Eqseed, 2023).

2.5 Sustainable Business Model Archetypes

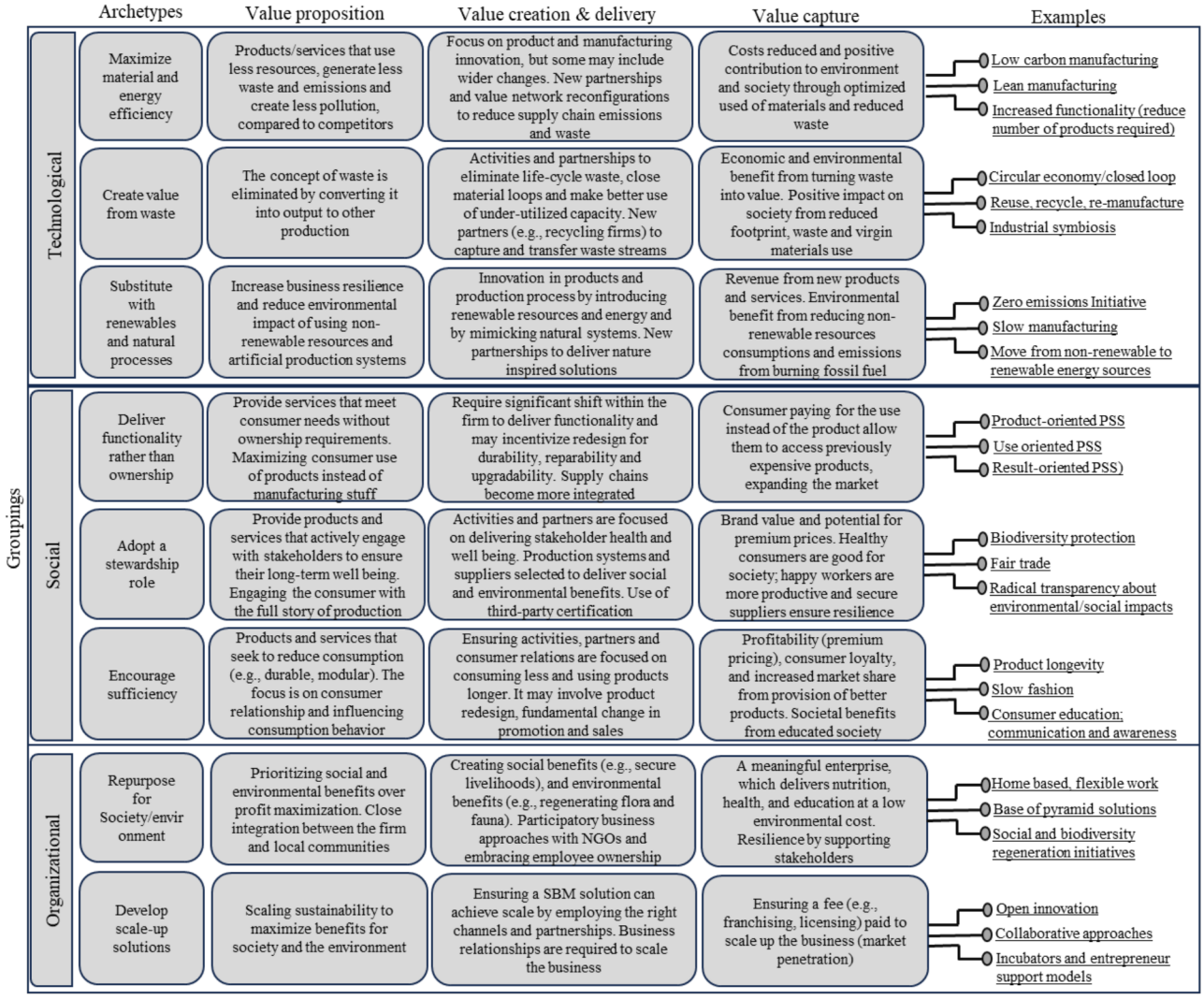
The SBMAs were extracted from literature by Bocken *et al*. (2014) based on the assumption that sustainable transformation should not be limited to product or processes, but rather comprise the whole business model (Lüdeke-Freund *et al*., 2016; Yip & Bocken, 2018). Such business models are grounded in the three value components (value proposition, capture and delivery) (Osterwalder *et al*., 2005; Richardson, 2005), however, they should account for a triple bottom line perspective (Elkington & Rowlands, 1999), and balance the interests of different stakeholders, while collaborating with them to co-create value (Beattie & Smith, 2013; Lowitt, 2013). Ultimately, such business models must either generate positive environmental and societal impact or reduce the negative impact they cause (Bocken *et al*., 2014). Sustainable startups, as the ones subject to classification in the present study, are one of the four types of business model innovation that could deliver sustainable value within the necessary long term and multi-stakeholder perspective (Geissdoerfer *et al*., 2018).

The archetypes were divided into three categories according to the major innovation types proposed by Boons & Lüdeke-Freund (2013), i.e., technological, social and organizational. Figure 1 presents the 8 archetypes grouped by innovation types and expands them in terms of value components, also providing some examples of each archetype. These archetypes were later hierarchized in six levels by Bocken & Short (2021) when, by analyzing unsustainable business models, they identified that there is a difference in the dimension of

problems that each archetype solves, in view of the SDGs. At the base of the pyramid are models focused on (1) using fewer resources (maximize materials and energy efficiency), followed by (2) net-zero models (substitute with renewables and natural processes), then by (3) circular economy models (create value from waste), and then by (4) sufficiency economy (encourage sufficiency; deliver functionality rather than ownership), followed by (5) net positive for nature and society models (adopt a stewardship role), and finally by (6) flourishing models (repurpose for society/environment). Considering the objectives of the present study, the archetype 'develop scale-up solution' was not used to classify any of the companies, as it could not be later hierarchized, in addition to being an archetype that overlaps with others; that is, any company of another archetype that is scalable could be considered as this archetype

Figure 1

SBMAs Grouping, Value Components and Examples.



Source: adapted from Bocken *et al*. (2014)

2.6 Conceptual Theoretical Model

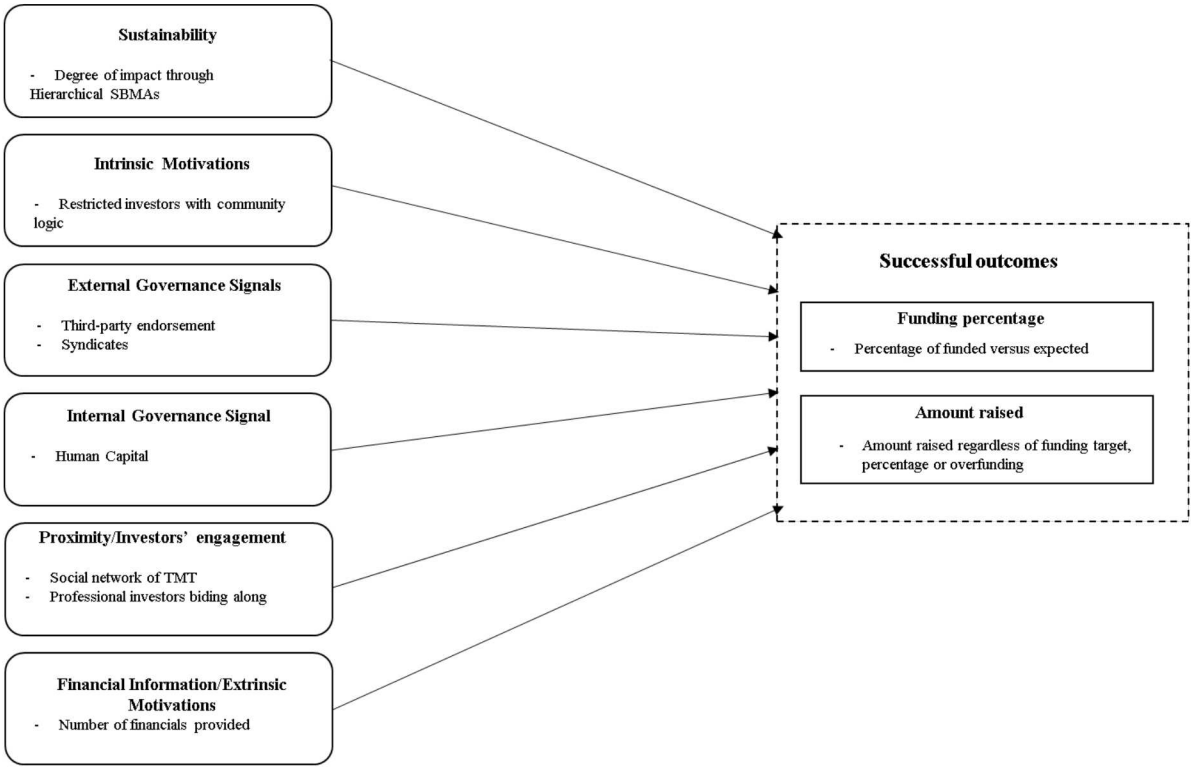
Built on literature, the present study proposes a theoretical model of factors that could impact on ECF's successful outcomes. Regarding the latter, we selected two variables that have been used by other scholars to measure it: funding percentage (Cosma *et al*., 2021; D'Agostino *et al*., 2022; Graziano *et al*., 2023; T. Liu *et al*., 2021; Ralcheva & Roosenboom, 2016; Troise *et al*., 2022; Troise & Tani, 2020; Vismara, 2016), and amount raised (Ahlers *et al*., 2015; Block *et al*., 2018; Cosma *et al*., 2021; D'Agostino *et al*., 2022; Shafi, 2021; Troise *et al*., 2022).

Regarding sustainability, one of the selected factors that could lead to a positive outcome, since a high degree of impact from these businesses is one of the conditions perceived by the crowd (Caputo *et al*., 2022), the present study considers the degree of impact based on hierarchical SBMAs (Bocken & Short, 2021) as one of the conditions, as it leads to a more scientific and less subjective measure of this variable.

Additionally, intrinsic motivations are also proposed as one of the factors impacting positive outcomes, therefore, we consider restricted investors as a proxy for it, as they were found by previous researchers to have community logic (Chan *et al*., 2021; Cumming *et al*., 2019; Vismara, 2018). We also include signals that could mitigate governance issues such as third-party endorsement (Liu *et al*., 2021; Ralcheva & Roosenboom, 2016; Troise *et al*., 2022), and syndicates (Agrawal *et al*., 2016; Zhang *et al*., 2023) as external governance signs that endorse the campaign, while human capital (Barbi & Mattioli, 2019; D'Agostino *et al*., 2022; Piva & Rossi-Lamastra, 2018) is considered an internal governance signal.

Completing the model, proximity and investor engagement were also found to be important matters by other researchers (Garaus *et al*., 2020; Hornuf *et al*., 2022) and, therefore, social network of top management team (TMT) (Ahlers *et al*., 2015; Graziano *et al*., 2023; Lukkarinen *et al*., 2016; Vismara, 2016) and professional investors bidding along (Agostino *et al*., 2022), respectively, are variables that were included as conditions. Finally, empirical studies have evidenced that good financials are conducive to campaign success (Berns *et al*., 2020; Caputo *et al*., 2022), as they can enhance extrinsic motivations of investors (Lukkarinen *et al*., 2018), and thus, number of financials provided (Caputo *et al*., 2022) was also included. Figure 2 illustrates the conceptual theoretical model.

Figure 2
Conceptual Theoretical Model.



Source: own authorship

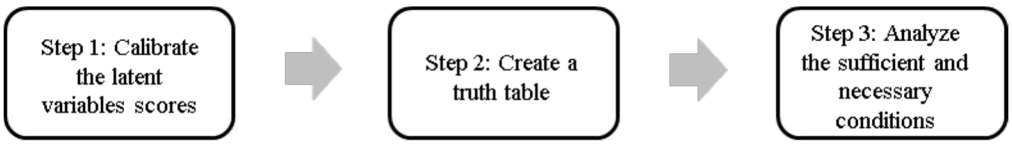
3. Methodology

To examine the configurations of elements that could lead to high levels of funding percentage and amount raised in equity crowdfunding, we used fsQCA. Configurational techniques allow investigators to understand complex combinations necessary to explain the phenomena under study because some conditions will only have an effect when combined with others (Woodside, 2014). The configuration representation of complex and causal relationships between the model's variables allows for more subtle insights (Rasoolimanesh *et al.*, 2021). By combining certain variables, fsQCA can identify sufficient and necessary conditions for obtaining results (Ragin, 2006).

Crowdfunding has been analyzed through fsQCA in previous studies because of the complexity of conditions' relationships that can lead to success within campaigns (Caputo *et al.*, 2022; Tuo *et al.*, 2019; Wang *et al.*, 2022; Xu *et al.*, 2016). Furthermore, it is becoming increasingly popular in entrepreneurship research (Moraes *et al.*, 2023; Nikou *et al.*, 2022). For the present study, the fsQCA proved to be a good choice, as it is a method that allows the analysis of contrary cases, which is expected in management, especially in investment decisions (Ragin & Fiss, 2008) that consider multiple conditions, being analyzed at the same time by different types of investors (Lukkarinen *et al.*, 2018). In addition, this method allows working with small samples (Fiss, 2011), which is the case for sustainable companies raising funds in ECF, a rather non-prevalent but relevant situation. Finally, being a fuzzy technique, it enables a representation of data closer to reality and a better interpretation of results (Mendel, 1995).

Methodological procedures followed the steps presented in Figure 3.

Figure 3
Methodological Procedures.



Source: adapted from Ragin (2009)

Step 1: Calibration of latent variables. The values collected on the platforms were calibrated before being entered into the FSQCA 3.1b software. Standardized scores were

calibrated from 0 (no set membership) to 1 (full set membership), with 0.5 as the crossover point.

Step 2: Create a truth table with combinations of all independent variables. The truth table must be refined by deleting rows with no cases and rows with consistency less than 0.8 to ensure that sufficient and necessary configurations are satisfactory.

Step 3: The third step is calculating the consistency and coverage of each configuration. This allows the identification of the necessary conditions and sufficient configurations to obtain a high level of outcomes.

It is essential to highlight that the four methodological steps were carried out for each outcome. Thus, we have different combinations for funding percentage and amount raised.

3.1 Case Selection and Data Collection

For the selection of cases, CVM annexes 27 were collected, which contain mandatory information that all ECF platforms must report, containing all the offerings they made in the previous year. Offers from 2017 to 2022 were initially included, for a total of 374 successful offers. Some platforms keep the pages of the concluded offers on their websites, while others do not make them available. Thus, in many cases it was necessary to discover which webpage was used, observing the URL patterns on the platform's website. After this process of collecting the campaign webpages, 240 cases remained. Of these, after an analysis of the contents of their campaign pages, 49 offers from 44 companies that declared themselves sustainable (at least one mention of them being sustainable during the campaign) were selected.

In annexes 27 of the CVM, the Platform discloses some information about the offering, such as start date, closing date, target amount of the offering, amount raised, presence of syndicate and number of investors by type (qualified, non-qualified up to BRL 20 thousand and non-qualified above BRL 20 thousand). From this information, it is possible to capture the outcomes, the number of restricted investors, i.e., the non-qualified ones, in addition to the presence of syndicates. Appendix A contains an example of how information is disclosed in an annex 27 report, while Table 3 displays CVM data from the selected 49 campaigns, dividing information by each year. 2017 is the year when ECF started in Brazil, but no campaign from that year could be considered sustainable. From 2018 onwards, the number of sustainable campaigns increased year by year, reaching 18% of total amount raised in Brazilian ECF campaigns in 2022 (it is important to note that this percentage is higher, as it was calculated

dividing total amount of sustainable campaigns with the offer page found by the total amount of the campaigns in the year, found or not).

Table 3

Data from Sustainable ECF Campaigns

Year	Number of different platforms	Total number of offers	Total number of investors	% of non-qualified investors	Total amount raised in campaigns	Average % of target amount raised	% of the total amount raised in ECF in the year	Average time to fundraise (d)	Number of offers with Syndicate
2018	2	4	295	79.7%	BRL 2.65M	94.9%	6%	71	0
2019	3	6	1,102	89.2%	BRL 5.64M	90.2%	10%	116	0
2020	3	6	772	87.5%	BRL 5.71M	83.2%	7%	96	4
2021	8	19	3,132	77.9%	BRL 34.51M	86.3%	17%	55	5
2022	5	14	3,076	82.9%	BRL 23.45M	80.8%	18%	97	5
Total	9	49	8,377	81.4%	BRL 71.96M	88.4%	14%	81	14

Source: own authorship based on data from CVM Annexes 27.

Some other information, however, mostly conditions, was hand-collected, based on the contents disclosed on the campaign pages. There are no standards in the way these pages disclose their information, as it varies from platform to platform, but the choice of variables took into account - in addition to the literature - plausibility, i.e., the possibility of obtaining this information based on the information available on the platforms or annexes 27, even if it is necessary to search for more information on the internet. One example is the social network of TMT, which was collected based on LinkedIn contacts of the TMT members disclosed on the campaign. Another example is human capital, a variable which, in addition to being collected by hand, was composed of two pieces of data, one of which is the size of the TMT and the education level of this TMT. The latter was calculated considering the average of the following values for each of the TMT members: 1 for undergraduate; 2 for specialization or MBA; 3 for master's degrees; 4 for doctorates; and 5 for postdoctoral degrees. Finally, the variable human capital was obtained by multiplying TMT size by the education level.

Regarding sustainability, two experts classified the degree of impact of these companies according to SBMAs, separately. Then, they met to break the tie in the cases where there was disagreement, until, in each case, both were satisfied that the classification was correct.

Table 4 exhibits a summary of the variables by type and group (based on our theoretical model), also detailing how it is measured, as well as how they were obtained. Whenever a variable has been used before, exactly or very close to how it is used in the present study, previous studies are mentioned. It is important to emphasize, though, that even when a variable is original, i.e., used for the first time in such form, it is based on previous literature and/or theoretical model.

Table 4

Variables

Type	Group (based on literature)	Variable	Measurement of variable	Variable type	How it was obtained	Previous Studies
Outcome	Success	Amount Raised	Amount raised regardless of funding target, percentage, or overfunding	Number	CVM data	Ahlers *et al*. (2015); Block *et al*. (2018); Caputo *et al*. (2022); Cosma *et al*. (2021); D'Agostino *et al*. (2022); Shafi (2021)
Outcome	Success	Funding percentage	Percentage of funded versus expected	Percentage	CVM data	Caputo et al. (2022); Cosma et al. (2021); D'Agostino et al. (2022); Graziano et al. (2023); Liu et al. (2021); Ralcheva & Roosenboom (2016); Troise & Tani (2020); Vismara (2016)
Outcome	Success	Funding percentage	Percentage of funded versus expected	Percentage	CVM data	Caputo et al. (2022); Cosma et al. (2021); D'Agostino et al. (2022); Graziano et al. (2023); Liu et al .(2021); Ralcheva & Roosenboom (2016); Troise & Tani (2020); Vismara (2016)
Condition	Sustainability	Degree of impact	Grade for Hierarchical SBMA	Number	experts' evaluation	Original

Condition	Intrinsic Motivations	Restricted investors with community logic	Number of non-qualified investors	Number	CVM data	Original
Condition	Governance Signals - External	Third-party endorsement	Official endorsement from incubators, and/or big companies, and or government grants	Dummy = 1 at least one endorsement; 0 otherwise	Campaign and internet information	Caputo *et al*. (2022); Liu *et al*. (2021); Ralcheva & Roosenboom (2016); Valenza *et al*. (2022)
Condition	Governance Signals – External	Syndicates	Presence of a syndicate during campaign	Dummy = 1 if there is a syndicate; 0 otherwise	CVM data	Original
Condition	Governance Signals – Internal	Human Capital	TMT size X Education level	Number	Campaign information for TMT size; LinkedIn for Education level	TMT size used previously by: Ahlers *et al*. (2015); Cosma *et al*. (2021); D'Agostino *et al*. (2022); De Crescenzo *et al*. (2020); Graziano *et al*. (2023); Liu *et al*. (2021); Meoli & Vismara (2021); Vismara (2016); Education level original
Condition	Proximity	Social network of TMT	Sum of LinkedIn followers of TMT members	Number	LinkedIn	Ahlers *et al*., (2015); Graziano *et al*. (2023); Lukkarinen *et al*. (2016); Vismara (2016)
Condition	Investors engagement	Professional Investors	Professional investors who invested prior to the campaign or who are bidding along	Dummy = 1 if at least one professional investor invested in the campaign; 0 otherwise	Campaign and internet information	Vismara (2019)
Condition	Financial Information/ Extrinsic Motivations	Financials	Number of financials provided	Number	Campaign information	Caputo *et al*. (2022)

Source: own authorship

3.2 Classification of the SBM Archetypes

To assess the degree of impact, all 49 campaigns were classified according to SBMAs. Appendix B contains a breakdown of all campaigns, showing a description of their activities, why they declare themselves sustainable, the archetypes to which they have been classified, as well as the hierarchical group to which they belong. Table 5 summarizes the campaigns across the three groups of archetypes: technological, social, and organizational. It is noted that the group with the highest percentage of campaigns, amount raised, and number of investors is the technological one, followed by the social group. The organizational group contained only one campaign.

Table 5

Campaigns by Archetype Group

Archetype group	Number of campaigns	% of campaigns	Raised from campaigns	% of raised	Number of investors	% of investors
Organizational	1	2.0%	BRL 760,000.00	1.1%	39	0.5%
Social	18	36.7%	BRL 22,826,500.00	31.7%	2,419	28.9%
Technological	30	61.2%	BRL 48,369,079.08	67.2%	5,919	70,7%
Total	**49**		**BRL 71,955,579.08**		**8,377**	

Source: own authorship

Table 6 summarizes the archetypes themselves, in the same order in which they are presented by Bocken *et al*. (2014). It is possible to observe a greater relevance of the first 5 archetypes, and a near absence of the 'encourage sufficiency' and 'repurpose for society/environment' archetypes as both had only one campaign each. However, to measure the degree of impact, the present study classified the archetypes into 6 hierarchical groups, according to Bocken & Short (2021), assigning each of them a score from 1 to 6. It is possible to observe that archetypes classified between 1 and 3, which are the ones from the technological group, account for 61.2% of the campaigns, 67.2% of the amount raised, and 70.7% of the number of investors. Furthermore, apart from the companies with net-positive business models, it is possible to notice a smaller number of campaigns in the higher hierarchies. This can be

attributed to the fact that the archetypes of the technological group are not among those that receive the highest classification, since these business models tend to maintain the current consumption model, but in a more efficient way from the resource's exploitation point of view, instead of providing a complete repositioning of their businesses for the environment and society. Table 7 summarizes the campaigns by archetype hierarchy.

Table 6

Campaigns by Archetype

Archetype	Number of campaigns	% of campaigns	Raised from campaigns	% of raised	Number of investors	% of investors
Maximize material and energy efficiency	10	20.4%	BRL 12,573,200.00	17.5%	2,064	24.6%
Create value from waste	12	24.5%	BRL 17,139,379.08	23.8%	2,088	24.9%
Substitute with renewables and natural processes	8	16.3%	BRL 18,656,500.00	25.9%	1,767	21.1%
Deliver functionality rather than ownership	6	12.2%	BRL 7,860,000.00	10.9%	774	9.2%
Adopt a stewardship role	11	22.4%	BRL 14,466,500.00	20.1%	1,612	19.2%
Encourage sufficiency	1	2.0%	BRL 500,000.00	0.7%	33	0.4%
Repurpose for society/environment	1	2.0%	BRL 760,000.00	1.1%	39	0.5%
Total	**49**		**BRL 71,955,579.08**		**8,377**	

Source: own authorship

Table 7

Campaigns by Archetype Hierarchy

Classification	Hierarchy	Number of campaigns	% of campaigns	Raised from campaigns	% of raised	Number of investors	% of investors
1	Efficiency	10	20.4%	BRL 12,573,200.00	17.5%	2,064	24.6%
2	Net-Zero	8	16.3%	BRL 18,656,500.00	25.9%	1,767	21.1%

3	Circular Economy	12	24.5%	BRL 17,139,379.08	23.8%	2,088	24.9%
4	Sufficiency Economy	7	14.3%	BRL 8,360,000.00	11.6%	807	9.6%
5	Net-positive	11	22.4%	BRL 14,466,500.00	20.1%	1,612	19.2%
6	Flourishing	1	2.0%	BRL 760,000.00	1.1%	39	0.5%
	Total	**49**		**BRL 71,955,579.08**		**8,377**	

Source: own authorship

4. Results

Results are divided into two outcomes, the first one being the amount raised and the second one, the funding percentage. Calibration of crisp values into fuzzy values identified three main qualitative points for the calibration, i.e., threshold for full membership, crossing point, and non-membership (Ragin, 2009). The thresholds were established using the percentile method, according to Xie & Wang (2020). Thus, the threshold for non-membership was set at the original value that covered 5% of the data values; the threshold for crossing points was established at the original value that covered 50% of the data values; and the threshold for full membership was set at the original value that covered 95% of the data values.

4.1 Amount Raised

Table 8 summarizes the information originated from the calibration of the indicators. Indicators range from 0 (minimum) to 1 (maximum), with means and standard deviations provided. The outcome 'amount raised' has a low mean (0.270), indicating that the fundraising is not high in most cases. Low means for 'syndicate' (0.29) and 'social network' (0.22) also reveal that most of the campaigns do not have syndicates or a high number of TMT followers on LinkedIn.

Table 8

Descriptive Analysis and Calibration for Outcome Amount Raised

Indicators	Max	Min	Mean	Standard Deviation	Fuzzy scores		
					0.950	0.500	0.050
Sustainability	1	0	0.420	0.299	0.950	0.400	0.050
intrinsic motivations	1	0	0.310	0.230	0.950	0.240	0.050
Third-party endorsement	1	0	0.570	0.500	0.950	0.500	0.050
Syndicate	1	0	0.290	0.456	0.950	0.500	0.050
Human capital	1	0	0.430	0.228	0.950	0.385	0.050
Social network	1	0	0.220	0.238	0.950	0.114	0.050
Professional investor	1	0	0.490	0.505	0.950	0.500	0.050
Number of financials	1	0	0.430	0.225	0.950	0.313	0.050
Amount raised	1	0	0.270	0.225	0.950	0.190	0.050

Source: own authorship

Moving forward, we present the truth table in Table 9. This table provides data organized to the expected outcome. It was built considering all the possibilities of conditions'

configurations, both for a high and a low level of the 'amount raised' outcome. The consistency of the solutions presented varies, but in general it is very high for cases where there is a high level of the desired outcome.

Table 9

Truth Table for Outcome Amount Raised

SUS	IM	TPE	SYN	HC	SN	PI	NF	number of observations	Outcome	Raw consist.	PRI consist.	SYM consist.
0	1	0	1	1	0	1	0	1	1	0.958	0.879	0.879
1	1	1	0	1	1	1	1	1	1	0.918	0.701	0.701
0	0	1	1	0	0	1	0	1	1	0.899	0.000	0.000
0	0	0	1	1	0	1	0	1	1	0.890	0.257	0.257
0	0	0	0	1	1	1	0	1	1	0.888	0.142	0.142
0	0	0	1	1	0	1	1	1	1	0.852	0.125	0.136
0	0	0	0	0	0	1	0	1	0	0.846	0.555	0.555
1	0	0	1	1	0	0	0	1	0	0.805	0.000	0.000
1	0	0	0	0	0	1	1	1	0	0.803	0.152	0.152
0	0	1	0	1	1	0	1	1	0	0.797	0.000	0.000
0	1	1	0	1	1	0	1	1	0	0.795	0.000	0.000
0	1	0	0	0	0	1	1	1	0	0.782	0.168	0.168
0	1	1	0	1	0	0	0	1	0	0.776	0.000	0.000
0	0	0	0	1	0	1	0	1	0	0.776	0.290	0.290
1	0	1	0	0	1	1	1	1	0	0.763	0.288	0.288
1	0	1	1	1	0	0	1	1	0	0.760	0.000	0.000
0	0	1	0	1	0	1	1	1	0	0.741	0.000	0.000
1	0	1	1	1	1	1	0	1	0	0.737	0.000	0.000
0	1	1	0	0	0	0	1	1	0	0.732	0.000	0.000
1	0	1	0	0	0	1	0	1	0	0.713	0.000	0.000
0	1	0	0	0	0	0	1	1	0	0.708	0.000	0.000
1	0	1	1	0	0	0	0	1	0	0.707	0.000	0.000
0	1	1	0	0	0	1	1	1	0	0.673	0.000	0.000
1	0	1	1	1	0	1	0	1	0	0.670	0.000	0.000
1	0	0	0	0	0	0	0	2	0	0.663	0.000	0.000
1	0	1	0	0	0	1	1	1	0	0.662	0.000	0.000
1	0	0	1	0	0	1	0	1	0	0.659	0.000	0.000
1	0	0	1	0	0	0	0	1	0	0.648	0.000	0.000
0	0	1	0	1	0	0	0	2	0	0.626	0.000	0.000
0	0	0	0	0	0	1	1	2	0	0.610	0.078	0.078
0	0	1	0	0	0	1	0	2	0	0.598	0.000	0.000
1	0	1	0	0	1	0	0	1	0	0.585	0.000	0.000
1	0	1	0	0	0	0	0	2	0	0.583	0.000	0.000
0	0	1	0	0	0	0	0	4	0	0.444	0.000	0.000
0	0	0	0	0	0	0	0	2	0	0.411	0.000	0.000

Note. SUS = sustainability; IM = intrinsic motivations; TPE = third-party endorsement; SYN = syndicate; HC = human capital; SN = social network; PI = professional investor; NF = number of financials

Source: own authorship

Next, the necessary condition analysis (NCA) for high amounts raised was analyzed. Table 10 shows that no indicator presents values greater than 0.90, both in consistency and coverage. Thus, no condition can be considered necessary; however, some variables presented high consistencies, outlining their importance. For example, a low degree of sustainable impact, a high level of human capital, and a low number of financials show high consistency for a high level of amount raised, which indicates that these are important conditions in these respective exact forms.

Table 10

NCA for Outcome Amount Raised (High and Low Levels)

		High-Outcome		**Low-Outcome**	
Condition		**Consistency**	**Coverage**	**Consistency**	**Coverage**
Sustainability	High	0.620879	0.328967	0.502101	0.927705
	Low	0.863553	0.332159	0.636817	0.854174
Intrinsic Motivations	High	0.746337	0.596196	0.293067	0.816386
	Low	0.770146	0.238041	0.855042	0.921596
Third-party endorsement	High	0.534799	0.210148	0.615021	0.842749
	Low	0.599817	0.308816	0.423582	0.760490
Syndicate	High	0.457875	0.341763	0.291492	0.758715
	Low	0.676740	0.215013	0.747111	0.827757
Human capital	High	0.811355	0.445226	0.446954	0.855277
	Low	0.736264	0.276289	0.710084	0.929210
Social network	High	0.504579	0.548805	0.222689	0.844622
	Low	0.857143	0.240246	0.881040	0.861140
Professional investor	High	0.714286	0.324594	0.464811	0.736579
	Low	0.420329	0.183820	0.573792	0.875050
Number of financials	High	0.706960	0.384462	0.485294	0.920319
	Low	0.853480	0.322268	0.675420	0.889350

Source: own authorship

Subsequently, the sufficient conditions were analyzed and synthesized in the main configurational paths. Five main pathways that represent solution coverage of 0.470 show that they account for a considerable portion of the cases with high levels of amount raised. Additionally, the solution consistency of 0.803 indicates a strong relationship between these configurations and the outcomes. Each company can be identified by a number in the first column of Appendix B. This number, which identifies them, follows the chronological order of the 49 campaigns. Table 11 below shows the configurational paths.

Table 11

Configurational Paths for High Levels of Amount Raised

Cond.	Path 1	Path 2	Path 3	Path 4	Path 5
Sustainability	▲	▲	▲	△	◉
Intrinsic motivations		△	△	△	◉
Third-party endorsement	△	△	◉	△	◉
Syndicate	●	●	●	▲	▲
Human capital	◉	◉	△	●	●
Social networks	△	△	△	●	●
Professional investor	◉	◉	◉	●	●
Number of financials	△	△	△	△	◉
Companies	31, 30. 44	48, 30	45	18	22
Raw coverage	0.278	0.225	0.180	0.174	0.206
Unique coverage	0.085	0.032	0.045	0.040	0.071
Consistency	0.907	0.820	0.899	0.888	0.918
Solution coverage 0.470					
Solution consistency 0.803					

Note. ● = core causal condition (present); ▲ = core causal condition (absent); = ◉ contributing causal condition (present); △ = contributing causal condition (absent).
Source: own authorship

The 5 paths are relevant but not very frequent as their raw coverages varied from 0.174 (Path 4) to 0.278 (Path 1). All of them can be considered very reliable as their consistencies varied from 0.82 (Path 2) to 0.918 (Path5). Surprisingly, a high sustainability classification was only considered contributing causal condition on Path 5 (Beeva company), where it is combined with a high number of restricted investors with intrinsic motivations, third-party endorsement, and a high number of financials provided as other contributing causal conditions, and also combined with human capital, social network of TMT, and professional investors as core causal conditions.

The 4 other paths indicate that a high sustainability classification appears as an absent condition, being even a core absent condition for Paths 1 to 3 and a contributing absent condition in Path 4. This might indicate that archetypes with less impact may work better in the ECF when high values for fundraising are sought. Corroborating this, we note that the 4 companies included in paths 1 to 4 (path 1 = 1 Super Opa and 2 Pink Farms campaigns; path 2 = the 2 Super Opa campaigns; path 3 = Grupo Muda; path 4 = Love in Wine) are all from the technological archetype's groups.

Regarding the other conditions, syndicates appear as a core condition in Paths 1, 2, and 3, which underscores the importance of lead investors in ECF. Human capital appears as a contributing condition in Paths 1 and 2 and as a core causal condition in Paths 4 and 5 indicating that a large TMT with high levels of education is crucial for attracting large funds. Finally, professional investors came across as a causal condition for all the five paths (contributing to Paths 1 to 3; core to Paths 4 and 5). These results indicate that when large funds are demanded, even crowd investors will be paying attention to matters that are relevant in other traditional forms of investment, such as those concerning governance signals and investors engagement.

When considering other variables that appear more as absent conditions, intrinsic motivations (absent from paths 2 to 4) seem to corroborate previous studies that show that a high number of restricted investors is not very desirable by professional investors (Butticè *et al*., 2021; Cumming *et al*., 2018; Signori & Vismara, 2018), since, curiously, for high levels of amount raised, more qualified investors are needed in the campaign, which are more similar to professional investors in the way they make investment decisions, i.e., mostly extrinsically motivated. However, the fact that a high number of financials also appeared as an absent condition in paths 1 to 4 is very intriguing, as it is in contradiction with Caputo *et al* (2022) results and could clearly be a condition that highlights extrinsic motivations, unless investors do not believe that a greater availability of financial indicators being marketed in the campaign's pitch is a good predictor startups' future performance.

4.2 Funding Percentage

Table 12 displays the data from the calibration of the variables. The funding percentage mean of 0.53 indicates that most campaigns achieve satisfactory levels of expected funding; however, the standard deviation of 0.218 shows that variation between cases is relatively high. The calibration of the other variables is the same as the previous outcome.

Table 12

Descriptive Analysis and Calibration for Outcome Funding Percentage

Indicators	Max	Min	Mean	Standard Deviation	Fuzzy scores		
					0.950	0.500	0.050
Sustainability	1	0	0.420	0.299	0.950	0.400	0.050
Intrinsic motivations	1	0	0.310	0.230	0.950	0.240	0.050
Third-party endorsement	1	0	0.570	0.500	0.950	0.500	0.050
Syndicate	1	0	0.290	0.456	0.950	0.500	0.050

Human capital	1	0	0.430	0.228	0.950	0.385	0.050
Social network	1	0	0.220	0.238	0.950	0.114	0.050
Professional investor	1	0	0.490	0.505	0.950	0.500	0.050
Number of financials	1	0	0.430	0.225	0.950	0.313	0.050
Funding percentage	1	0	0.530	0.218	0.950	0.667	0.050

Source: own authorship

Next, Table 13 presents the truth table for the outcome 'funding percentage', where it is noticeable that the number of configurations that reach a raw consistency above 0.8 is much higher, which already indicates a greater number of paths.

Table 13

Truth Table for Outcome Funding Percentage

SUS	IM	TPE	SYN	HC	SN	PI	NF	number of observations	Outcome	raw consist.	PRI consist.	SYM consist.
1	0	0	0	0	0	0	0	2	1	1	1	1
0	1	1	0	1	0	0	0	1	1	1	1	1
1	0	1	0	0	1	0	0	1	1	1	1	1
0	0	0	1	1	0	1	0	1	1	1	1	1
0	0	0	0	1	1	1	0	1	1	1	1	1
0	1	0	0	0	0	0	1	1	1	1	1	1
0	1	1	0	0	0	0	1	1	1	1	1	1
0	0	1	0	1	1	0	1	1	1	1	1	1
0	1	1	0	1	1	0	1	1	1	1	1	1
1	0	0	0	0	0	1	1	1	1	1	1	1
0	0	1	0	1	0	1	1	1	1	1	1	1
1	1	1	0	1	1	1	1	1	1	1	1	1
1	0	1	0	0	0	1	0	1	1	0.996	0.987	0.987
0	0	1	0	1	0	0	0	2	1	0.984	0.934	0.934
0	1	1	0	0	0	1	1	1	1	0.965	0.861	0.861
0	0	0	1	1	0	1	1	1	1	0.943		
0	1	0	0	0	0	1	1	1	1	0.935	0.716	0.716
1	0	1	0	0	0	1	1	1	1	0.933	0.743	0.743
0	0	0	0	0	0	1	0	1	1	0.923	0.670	0.670
0	1	0	1	1	0	1	0	2	1	0.914	0.649	0.649
1	0	1	0	0	0	0	0	2	1	0.902	0.572	0.572
0	0	1	0	0	0	1	0	2	1	0.899	0.697	0.697
1	0	1	1	1	0	1	0	1	1	0.899	0.666	0.666
0	0	0	0	1	0	1	0	1	1	0.880	0.472	0.472
1	0	1	1	0	0	0	0	1	0	0.864	0.162	0.25
0	0	1	1	0	0	1	0	1	0	0.849	0	0
1	0	1	0	0	1	1	1	1	0	0.848	0.088	0.088
0	0	0	0	0	0	1	1	2	0	0.828	0.484	0.508
0	0	1	0	0	0	0	0	4	0	0.819	0.455	0.621
0	0	0	0	0	0	0	0	2	0	0.817	0.423	0.486

1	0	0	1	1	0	0	0	1	0	0.787	0	0
1	0	1	1	1	0	0	1	1	0	0.755	0	0
1	0	0	1	0	0	1	0	1	0	0.742	0	0
1	0	1	1	1	1	1	0	1	0	0.714	0	0
1	0	0	1	0	0	0	0	1	0	0.690	0	0

Note. SUS = sustainability; IM = intrinsic motivations; TPE = third-party endorsement; SYN = syndicate; HC = human capital; SN = social network; PI = professional investor; NF = number of financials
Source: own authorship

Then, the NCA for funding percentage was analyzed. Likewise, as in the previous outcome, no condition could be considered necessary. Nevertheless, low levels of sustainable classification once again showed high consistency with high levels of the expected outcome. Table 14 displays the NCA results.

Table 14

NCA for Outcome Funding Percentage (High and Low Levels)

		Outcome – Captation			
		High-Outcome		**Low-Outcome**	
Condition		**Consistency**	**Coverage**	**Consistency**	**Coverage**
Sustainability	High	0.516959	0.672974	0.622463	0.669578
	Low	0.746180	0.705178	0.695986	0.543501
Intrinsic Motivations	High	0.442043	0.867593	0.402797	0.653255
	Low	0.823332	0.625248	0.918358	0.576281
Third party endorsement	High	0.620947	0.599496	0.568336	0.453401
	Low	0.433842	0.548797	0.497970	0.520509
Syndicate	High	0.210958	0.386876	0.470907	0.713602
	Low	0.843832	0.658714	0.595399	0.384056
Human capital	High	0.572866	0.772362	0.599008	0.667337
	Low	0.753261	0.694502	0.795670	0.606186
Social network	High	0.301901	0.806773	0.307172	0.678287
	Low	0.879612	0.605750	0.912495	0.519251
Professional investor	High	0.502050	0.560549	0.542625	0.500624
	Low	0.552739	0.593912	0.523681	0.464958
Number of financials	High	0.576221	0.769921	0.592242	0.653885
	Low	0.740962	0.687414	0.791610	0.606847

Source: own authorship

Subsequently, the analysis of sufficient conditions for high levels of funding percentage led to 10 paths with great consistency (the smallest of which is 0.884 in Path **7**), which can be considered very reliable. Again, the raw coverages were also not high, with a maximum of

0.244 for Path 1. The results show that to achieve high percentages of funding in relation to the goal, regardless of the amount claimed, several paths can lead to this desired outcome. The solution coverage of 0.736 can be considered more encompassing than that of the previous outcome. Table 15 shows the configurational paths for this outcome; companies' numbers follow the same rule as the previous outcome.

Table 15

Configurational Paths for High Levels of Funding Percentage

Cond.	Path 1	Path 2	Path 3	Path 4	Path 5	Path 6	Path 7	Path 8	Path 9	Path 10
Sustainability	△	●	△	◉	△		△	△	◉	◉
Intrinsic motivations	●	△	△	△		△	△		△	◉
Third party endorsement				◉	●	◉	△	△	◉	◉
Syndicate	△	▲	▲	△	△	△	△	◉	◉	△
Human capital	△	△	△	△	●	△	◉	◉	◉	◉
Social network	△	▲	△		▲	△		△	△	◉
Professional investor		△	●	△	△	◉	◉	◉	◉	◉
Number of financials	◉	△	▲	△	▲	△	△	△	△	◉
Companies	38, 5, 11, 40	7, 13, 24, 25	41, 21, 43	1, 7, 13	2, 3, 6	41, 42, 43	18, 17	31, 30, 44	16	22
Raw coverage	0.244	0.199	0.172	0.166	0.183	0.134	0.108	0.114	0.094	0.091
Unique coverage	0.060	0.048	0.014	0.024	0.052	0.019	0.013	0.026	0.038	0.018
Consistency	0.957	0.928	0.886	0.915	0.986	0.913	0.884	0.916	0.899	1.000
Solution coverage 0.736										
Solution consistency 0.899										

Note. ● = core causal condition (present); ▲ = core causal condition (absent); = ◉ contributing causal condition (present); △ = contributing causal condition (absent).
Source: own authorship

In general, there are paths to high levels of percentage funding involving high sustainability classifications, one of which is very interesting where this variable alone was the only sufficient presence for the desired outcome (Path 2, companies: Bynd, Joycar, Kuke and Organics in Box), which serves as encouragement in showing that some investors may decide to invest in the campaign only considering the degree of positive impact. Other paths already show ‘sustainability’ as a contributing factor associated with other conditions that also appear as contributing. In Path 4 (companies: Allugator, Bynd and Joycar) it is associated with ‘third-party endorsement’; in Path 9 (company Fishtag) it is associated with all internal and external governance variables (third-party endorsement, syndicate, human capital) and engagement (professional investor), something that is in line with the results most associated with the

outcome amount raised. Finally, Path 10 (Beeva company) showed the causal contribution of practically all variables, except only ‘syndicate’

The presence of ‘intrinsic motivations' in Path 1 (companies: Auster, Eirene, Pomartec, Recicla Club) as a core condition is in line with previous studies that show that restricted investors mediate the funding success of sustainable companies in ECF (Hörisch & Tenner, 2020; Vismara, 2019), but, in general, despite this being the path with the highest raw coverage, the importance of this condition, considering all the paths of the two outcomes, proved to be less decisive for success than expected. Even more so when one considers that in Path 1, companies have a lower sustainable rating, and the absence of a high rating in this regard was even a contributing condition, which is in contradiction with studies that reinforced the community logic of restricted investors towards sustainability (Chan *et al*., 2021; Cumming *et al*., 2019; Moss *et al*., 2018; Vismara, 2018). Interestingly also, both fsQCA tests did not reveal many pathways where social networking has been important, which is also in contradiction with some other previous studies (Barbi *et al*., 2023; Knauf & Wüstenhagen, 2023; Zhang *et al*., 2019).

In addition, in general, few variables can be considered very important in this outcome, as the combinations that lead to the high funding percentage are more dispersed, but we note the causal presence of ‘professional investor’ in 6 of the 10 paths and both ‘human capital’ and ‘third-party endorsement’ in 5 of the 10 paths, reinforcing once again the importance of governance and engagement signals. The interesting thing about using an asymmetric technique that encompasses conflicting configurations is to be able to deepen certain conclusions, since the importance of intrinsic factors, network and even the number of financial indicators, at least in the case of Brazilian campaigns, turned out to be less prevalent than the literature indicated.

4.3 Prominent Cases

Among the cases that stood out in both outcomes, we selected seven in which the high sustainability rating was a causal condition. The main similarity of these companies is that they are all in the social group of archetypes. Below, the pitch of each of them during the campaign is summarized, with special emphasis on sustainability; information on the amounts raised and other contributing conditions is also provided. Overall, these companies knew how to explore business models that bring the investor closer to the consumer role, that is, they engage the crowd to also see themselves as citizen users or legitimizers (Testa *et al*., 2019). Furthermore, the effective communication of sustainable impacts in these cases was decisive and they figure

as those cases in line with authors who previously identified a greater chance of success for sustainable companies in the ECF (Bento *et al*., 2019; Calic & Mosakowski, 2016). In addition, these companies reinforced the scalability of their business models.

- Beeva: a company that blends innovation, sustainability, and social impact by producing natural, organic foods while supporting beekeeping and preserving Brazilian biodiversity. Based in a protected environmental reserve in Brazil's semi-arid Caatinga region, Beeva promotes sustainable development, empowers local beekeepers, and creates income opportunities for underserved communities. The company utilizes advanced technology to ensure product quality and traceability, offering honey, propolis, pollen, and natural food supplements. Committed to ESG (Environmental, Social, and Governance) principles, Beeva champions environmental preservation, supports small producers, and delivers pesticide-free, health-conscious products, now available at over 450 retail locations across Brazil. This study categorizes Beeva as a company adopting a stewardship role, with a sustainability rating of 5 out of 6. Beeva raised BRL 4,564,000.00 during its campaign, achieving 91% of its fundraising target. The company appeared in both Path 5 (for amount raised) and Path 10 (for funding percentage), standing out for fulfilling all causal conditions except for ‘syndicates’.
- Bynd: a corporate carpooling platform designed to promote sustainable mobility by connecting employees with similar commutes, helping reduce transportation costs and carbon emissions. The app also fosters networking opportunities, enabling companies to save on parking and travel expenses while improving employee quality of life. With over 93,000 completed carpool rides and 134 tons of CO2 saved, Bynd plays a role in reducing traffic congestion and encouraging shared mobility. By offering a SaaS solution, Bynd drives both environmental sustainability and social impact. This study classifies Bynd with the ‘deliver functionality rather than ownership’ archetype. In its ECF campaign, Bynd raised BRL 1,185,000.00, 99% of its funding goal, appearing in Path 4 for high ‘funding percentage,’ driven by the contribution of third-party endorsements and sustainability factors. The company also appeared in Path 2, where its sustainability efforts alone significantly contributed to the funding success.

- Joycar: a B2B car-sharing platform that allows companies to manage fully automated vehicle fleets, reducing operational costs and eliminating the need for manual vehicle management. The platform streamlines the booking process for employees and ensures regular maintenance, providing a practical and efficient solution for corporate fleet management. Customizable to fit clients' specific needs, Joycar has secured significant contracts, including with Petrobras and Hyundai. With its strong market potential for corporate fleets, Joycar helps businesses reduce expenses while promoting sustainability through more efficient vehicle usage. Classified as an SBM that delivers functionality rather than ownership, Joycar raised BRL 2,235,000.00, or 75% of its campaign target, appearing in both Path 4 and Path 2 for high 'funding percentage.'
- Allugator: a company that also fits the 'deliver functionality rather than ownership' archetype, is a marketplace enabling individuals to rent anything they need while earning money by renting out their own items. The platform encourages access to products that might otherwise be unaffordable to many, particularly in Brazil's middle class, while promoting responsible consumption and collaboration. Allugator's model aligns with the growing trend of the sharing economy, making it highly scalable and contributing to sustainability. With over 9,600 users and a growing customer base, the company fosters economic opportunities and helps reduce wasteful consumption. As the first ECF fundraising campaign in Brazil, for a sustainable startup, following CVM Instruction 588, Allugator raised BRL 360,000.00, 100% of its target, appearing in Path 4 for 'funding percentage.'
- Orgânicos in Box: a digital platform that delivers organic products directly from producers to consumers, offering a subscription service with a wide range of organic baskets at competitive prices. The company supports over 70 local organic farmers, promoting sustainability and a healthier food system while expanding access to organic products. With significant growth in both revenue and customer base, Orgânicos in Box is at the forefront of the growing demand for sustainable food, strengthening the organic supply chain and reducing food waste. The company is committed to social impact by connecting consumers with responsible, local farmers. Classified as an 'adopt a stewardship role' company, Orgânicos in Box raised the full BRL 2,500,000.00 target during its campaign, appearing in Path 2 for 'funding percentage.'

- Fishtag: classified as an ‘adopt a stewardship role’ company, is a pioneering marketplace that directly connects buyers and sellers in the fishing industry, cutting out intermediaries and optimizing the supply chain. By leveraging technology, Fishtag promotes sustainable and responsible consumption, ensuring that only registered professionals who comply with industry regulations can participate. The platform also enables consumers to trace the origins of their purchases, enhancing transparency. Fishtag's high ‘funding percentage’ of 100% (BRL 900,000.00) in its campaign was driven by fulfilling all governance and investor engagement conditions, placing it in Path 9 of the funding model.
- Kuke: a Foodtech company offering a sustainable and convenient solution for fresh home-delivered meals, combining healthy eating with an omnichannel business model. The company provides ingredients in the right quantities to avoid waste, aligning with its commitment to sustainability. With over 1,600 customers and 4,500 meals served annually, Kuke has achieved significant growth, including a 119% increase in average ticket size in 2020. Targeting the rapidly expanding online grocery and healthy food markets in Brazil, Kuke plans to expand its platform and subscription model and strengthen partnerships with supermarkets. Classified as the only company in the study under the "encourage sufficiency" archetype, Kuke raised BRL 500,000.00, fully achieving its funding goal, and was placed in Path 2 for funding percentage.

5. Discussion and Recommendations

In a nutshell, the success of sustainable companies in ECF has been pointed out by previous studies, without considering the level of impact of the SBMs of these startups and the complexity of the investment decisions made by dispersed humans investing in online platforms. When considering high levels of sustainable classification, at least in the case of Brazilian platforms, success could only be confirmed in a few settings, especially for funding percentage and not, significantly, for high levels of amount raised. However, the fact that some companies, especially those that have managed to communicate effectively the sustainability linked to their business models, and that also made the public of investors see themselves as customers or user-legitimizers, have found a path to success almost exclusively through sustainability, serves as an encouraging guide for other high impact startups.

Overall, companies during the campaign usually only declare themselves sustainable, without a clearer criterion of the scope of this sustainability. In this sense, communicating the degree of impact, either through hierarchical archetypes or even through the number of SDGs to which this company is aligned, can be very compelling for investors who care about sustainability. In this regard, popularizing classifications that are understandable to the broader audience, involving entrepreneurs, practitioners and policymakers is crucial so that sustainability is not treated only as a marketing tool in the business world. An example of this is that by analyzing the materials of some ECF campaigns, we found that the sustainability of canned alcoholic beverages, which can maximize the recycling of materials more than glass, is trumpeted in the same way as a company that creates an entire chain for the supply of healthy food products with fair trade and social inclusion in the supply chain (the latter should rather be seen with a considerably greater impact).

It is also important to highlight that, in the four paths of outcome 1 (amount raised) and in the five paths of outcome 2 (funding percentage) in which the absence of high levels of sustainability was a causal condition for the desired outcome, all these companies were also sustainable, although they are, for the most part, linked to archetypes of lower impact, of the technological group. Nonetheless, it is important to know these paths because new companies that maximize the efficiency of materials and energy, create value from waste and use natural processes are also fundamental to achieve a more sustainable society, since even if society manages to make do with less, such companies will still be necessary to mass produce many goods. In this sense, the paths for these companies in the technological group have demonstrated the great importance of human capital with a high level of education, which is already a known

driver in the literature for innovative companies (Bersani & Becchetti, 2013; Stam & Elfring, 2008).

To some extent, we could see that most conditions could be associated with success in some cases, which supports the idea that the complexity of investment decisions could be better captured by an asymmetric technique. While social networks of the TMT and restricted investors did not figure as causes for most pathways of success in this research, there are cases where intrinsic reasons such as proximity and community logic can play a role, and, to this extent, intrinsic motivations were even the main causal condition in one the pathways for funding percentage (Path1, 4 companies).

However, variables that mitigate governance problems linked to information asymmetry, such as third-party endorsement, leading investors (syndicates), and human capital, were highlighted in many outcomes. This, together with the presence of a professional investor, who ends up engaging more with the company in the post-funding phase, suggests that some of the fundamental concerns that BA and VC investors have are also very common in ECF investors, at least in Brazil. In this sense, the concern with governance and investor engagement is crucial, because although the ECF campaign is a time-bound event with determined impacts, the startup usually continues to raise funds later to meet its growth needs, and may resort to VCs or BAs in the future, or even to new rounds of ECF campaigns, as occurred in 6 cases in the sample of 49 campaigns, of this study. By combining the strength of all forms of financing, a sustainable innovative startup can build an arsenal to deal with metered financing based on validated learning, which is common practice in the world of entrepreneurial finance (Bernstein & Hardymon, 2012; Feld, 2012; Ries, 2011).

Thus, we can highlight the importance of this new and growing alternative investment modality, which is the ECF, for new sustainable companies, since, despite being an alternative tool, it can be combined with traditional ones, given that 24 of the 49 campaigns had professional investors who had previously invested or were investing in the campaign along with the crowd. The presence of professional investors was particularly important to achieve high levels of amount raised, and their presence in many campaigns challenges the view that ECF is a last resort (Walthoff-born, 2019). On the contrary, ECF should be seen as a complementary fundraising tool that, if used correctly, with companies that gather the right conditions, can be relevant for new sustainable companies and, consequently, for the SDGs. Therefore, considering such relevance linked to the need for long-term success, and based on

the study results and literature, a list of recommendations is made below for sustainable startups seeking to raise funds in ECF:

- Communicate sustainability effectively: clear communication about the sustainability impact of a company is pivotal in the context of ECF. While many startups self-declare as sustainable, they often fail to clearly articulate the scope and depth of their sustainability initiatives. Effective communication requires specifying measurable impacts, whether in terms of SDGs alignment or hierarchical archetypes. The research indicates that some startups which effectively communicate the degree of their sustainability, especially by framing it in terms of tangible outcomes, are more successful in attracting funding. Engaging investors as user-legitimizers also enhances their sense of involvement and alignment with the company's mission, fostering a stronger emotional connection and a greater willingness to invest. As such, it is critical for startups to avoid using sustainability solely as a marketing tool and instead communicate its true impact in ways that resonate with investors' values.
- Build a strong TMT: A highly educated and experienced TMT enhances innovation and increases credibility during campaigns, which is vital for attracting investors, especially for technological companies, as crowd investors are more likely to trust teams that demonstrate expertise and a deep understanding of the market and sustainability-related risks.
- Engage professional investors: engaging professional investors, particularly those with a track record in sustainability, is a key strategy for success in ECF. The research shows that startups which attract professional investors are more likely to raise higher amounts of capital and gain valuable strategic input. These investors not only provide financial backing but also contribute to shaping the business model and offering critical post-funding guidance. Professional investors bring legitimacy to the crowdfunding campaign and help mitigate concerns about governance and sustainability.
- Strongly consider lead investors: lead investors play a crucial role in the success of many crowdfunding campaigns. Their involvement acts as a signal to other potential investors that the business has been vetted and is worthy of investment, reducing information asymmetry concerns. The present study reveals that syndicates help startups reach their funding targets more effectively. Beyond

funding, lead investors help strengthen the startup's credibility, making it more likely to attract further investment from other sources, including VC or BA in later stages.

- Seek third-party endorsements: independent validation from respected third-party organizations or experts, such as relevant awards, government grants or endorsements from big companies increases investor's confidence and reinforces sustainable commitment. For investors, particularly those new to the sector or less familiar with the company, such endorsements can provide the necessary trust signals to invest with greater confidence.
- Focus on quality over quantity of financials: many financials provided during campaigns can be counterproductive, but relevant financial information aligned with clear sustainability goals can be compelling for investors. In the early stages, financial information of past accomplishments is not what convinces investors, but the potential of the startup. Communication of financials, then, should align with both business performance and sustainability objectives without overwhelming investors with irrelevant data.
- Understand investors' motivation: understanding the different motivations of investors is essential when engaging in a crowdfunding campaign. Not all investors are motivated by the same factors; some prioritize financial returns, while others are driven by social or environmental impact. The research points out that startups must tailor their messaging to these distinct motivations to attract the right investor base. Identifying and aligning the startup's goals with the right type of investor will increase the likelihood of reaching the necessary funding.
- Set realistic funding targets: startups do not raise funds through a single campaign, so set goals based on the company's stage, because investors prefer metered financing to avoid losing much money with untested business models with unrealistic growth expectations. By setting incremental and achievable funding goals, startups can more effectively manage investor expectations and secure the capital necessary to support sustainable growth.
- Do not ignore scalability: considered even a separate archetype by Bocken *et al.* (2014), scaling sustainable businesses tends to be more challenging, as many end up restricting themselves to local or limited markets, however, when seeking

investment, businesses with greater market potential will stand out. This research emphasizes that investors often look for businesses that can expand beyond niche or local markets and achieve a broader and more systemic impact.

6. Conclusion

The aim of this study was to explore the conditions that could lead to successful outcomes for startups adopting SBMs on Brazilian ECF platforms. To this end, conditional factors that could affect the amount raised and funding percentage were gathered from the literature, and 49 campaigns from 44 companies were classified according to their SBMAs and subsequently tested using the asymmetric technique of fsQCA.

Our results contribute to the literature by highlighting the complexity of the decisions made by investors in sustainable startups, while emphasizing the special importance of human capital, governance signals, and professional investors in most cases. In addition, we found that some investors are highly influenced by high-impact stories that engage them as investor-consumers. This finding serves as an incentive for sustainable startups to effectively communicate their degree of impact, thus enhancing the intrinsic and emotional motivations of potential investors.

In this regard, the study provides an original contribution to understanding how ECF can contribute to sustainability through startups seeking alternative financing. However, these startups must also address factors that concern professional investors, both during the ECF round and in later stages of development. Furthermore, our results challenge the view that ECF is a last resort for financing. Instead, we conclude that ECF is a valuable tool that can be used alongside traditional forms of financing, either in a specific stage of the new venture's lifecycle, or altogether in an ECF campaign. Finally, providing a practical contribution, this study ends with 9 recommendations for sustainable companies aiming to fundraise through ECF: communicate sustainability effectively; build a strong top management team; engage professional investors; strongly consider lead investors; seek third-party endorsements; focus on quality over quantity of financials; understand investors' motivations; set realistic funding targets; and do not ignore scalability.

However, no study happens without limitations. Among the main ones of the present study, we can mention the low number of cases belonging to the same country, which may limit the generalization of the conclusions; the impossibility of confirming the findings with a symmetrical technique due to the sample size; the interpretative nature of the study, where the conclusions are often based on the analytical experience of the author; and the fact that the conditions used in the present study have been extensively surveyed in the literature, since

knowledge on this topic is not yet consolidated and standardized, which may lead to potential blind spots.

As a suggestion for future research, we highlight:

- Research with sustainable companies in ECF, in several countries at the same time, to confirm whether the conditions that lead to investment decisions can be generalized.
- Research with sustainable companies in ECF using a symmetric technique to generate more deterministic conclusions and support the qualitative evidence of this study.
- Research with investors of sustainable companies in ECF to investigate, in addition to their motivations, the concerns they have when investing in campaigns, comparing them with the conditions listed in this study.
- Research exploring the same conditions that lead to SBM startup success with other types of financing, to further investigate their similarities and differences, and, therefore, improve the vision of what is essential for such companies.
- Research investigating the funding success of post-ECF campaign companies when raising new money from professional investors to investigate the impact of dispersed ownership on future capitalization rounds.
- Research in the field of sustainability seeking to further validate the hierarchical SBMAs or that propose other metrics to classify SBM in terms of the degree of impact, until an all-encompassing and comprehensive metric is put into practice by researchers and practitioners.

7. References

Agrawal, A., Catalini, C., & Goldfarb, A. (2014). Some simple economics of crowdfunding. *Innovation Policy and the Economy*, *14*(1), 63–97. https://doi.org/10.1086/674021

Agrawal, A., Catalini, C., & Goldfarb, A. (2015). Crowdfunding: Geography, Social Networks, and the Timing of Investment Decisions. *Journal of Economics and Management Strategy*, *24*(2), 253–274. https://doi.org/10.1111/jems.12093

Agrawal, A., Catalini, C., & Goldfarb, A. (2016). Are syndicates the killer app of equity crowdfunding? *California Management Review*, *58*(2), 111–124. https://doi.org/10.1525/cmr.2016.58.2.111

Ahlers, G. K. C., Cumming, D., Günther, C., & Schweizer, D. (2015). Signaling in Equity Crowdfunding. *Entrepreneurship: Theory and Practice*, *39*(4), 955–980. https://doi.org/10.1111/etap.12157

Alharbey, M., & Van Hemmen, S. (2021). Investor Intention in Equity Crowdfunding. Does Trust Matter? *Journal of Risk and Financial Management*, *14*(2), 53. https://doi.org/10.3390/jrfm14020053

Allison, T. H., Davis, B. C., Short, J. C., & Webb, J. W. (2015). Crowdfunding in a prosocial microlending environment: Examining the role of intrinsic versus extrinsic cues. *Entrepreneurship: Theory and Practice*, *39*(1), 53–73. https://doi.org/10.1111/etap.12108

Barbi, M., Febo, V., & Giudici, G. (2023). Community-level social capital and investment decisions in equity crowdfunding. In *Small Business Economics*. Springer US. https://doi.org/10.1007/s11187-022-00724-4

Barbi, M., & Mattioli, S. (2019). Human capital, investor trust, and equity crowdfunding. *Research in International Business and Finance*, *49*(February), 1–12. https://doi.org/10.1016/j.ribaf.2019.02.005

Battaglia, F., Regoli, A., & Agnese, P. (2022). Do local innovation systems promote successful equity crowdfunding campaigns? Evidence from Italy. *Finance Research Letters*, *48*(January), 102932. https://doi.org/10.1016/j.frl.2022.102932

Beattie, V., & Smith, S. J. (2013). Value creation and business models: Refocusing the intellectual capital debate. *British Accounting Review*, *45*(4), 243–254. https://doi.org/10.1016/j.bar.2013.06.001

Belleflamme, P., Lambert, T., & Schwienbacher, A. (2014). Crowdfunding: Tapping the right crowd. *Journal of Business Venturing*, *29*(5), 585–609.

https://doi.org/10.1016/j.jbusvent.2013.07.003

Bento, N., Gianfrate, G., & Thoni, M. H. (2019). Crowdfunding for sustainability ventures. *Journal of Cleaner Production*, *237*, 117751. https://doi.org/10.1016/j.jclepro.2019.117751

Bernardino, S., & Santos, J. F. (2020). Crowdfunding: An Exploratory Study on Knowledge, Benefits and Barriers Perceived by Young Potential Entrepreneurs. *Journal of Risk and Financial Management*, *13*(4), 81. https://doi.org/10.3390/jrfm13040081

Berns, J. P., Figueroa-Armijos, M., da Motta Veiga, S. P., & Dunne, T. C. (2020). Dynamics of Lending-Based Prosocial Crowdfunding: Using a Social Responsibility Lens. *Journal of Business Ethics*, *161*(1), 169–185. https://doi.org/10.1007/s10551-018-3932-0

Bernstein, S., Lerner, J., & Hardymon, F. (2012). Staged Financing and the Role of Venture Capitalists. *Harvard Business School*.

Bersani, S., & Becchetti, L. (2013). Entrepreneurial human capital and firm innovation. *Small Business Economics*, *40*(3), 647–662.

Block, J., Hornuf, L., & Moritz, A. (2018). *Which updates during an equity crowdfunding campaign increase crowd participation ?* 3–27. https://doi.org/10.1007/s11187-017-9876-4

Böckel, A., Hörisch, J., & Tenner, I. (2021). A systematic literature review of crowdfunding and sustainability: highlighting what really matters. *Management Review Quarterly*, *71*(2), 433–453. https://doi.org/10.1007/s11301-020-00189-3

Bocken, N. M.P., Short, S. W., Rana, P., & Evans, S. (2014). A literature and practice review to develop sustainable business model archetypes. *Journal of Cleaner Production*, *65*, 42–56. https://doi.org/10.1016/j.jclepro.2013.11.039

Bocken, Nancy M.P., & Short, S. W. (2021). Unsustainable business models – Recognising and resolving institutionalised social and environmental harm. *Journal of Cleaner Production*, *312*(April), 127828. https://doi.org/10.1016/j.jclepro.2021.127828

Boons, F., & Lüdeke-Freund, F. (2013). Business models for sustainable innovation: State-of-the-art and steps towards a research agenda. *Journal of Cleaner Production*, *45*, 9–19. https://doi.org/10.1016/j.jclepro.2012.07.007

Bretschneider, U., & Marco, J. (2017). Not just an ego-trip: Exploring backers' motivation for funding in incentive-based crowdfunding. *Journal of Strategic Information Systems*.

Broccardo, L., Zicari, A., Jabeen, F., & Bhatti, Z. A. (2023). How digitalization supports a sustainable business model: A literature review. *Technological Forecasting and Social Change*, *187*(April 2022). https://doi.org/10.1016/j.techfore.2022.122146

Butticè, V., Di Pietro, F., & Tenca, F. (2021). They do not look alike: what kind of private investors do equity crowdfunded firms attract? *Journal of Technology Transfer*, *0123456789*. https://doi.org/10.1007/s10961-021-09895-w

Calic, G., & Mosakowski, E. (2016). Kicking Off Social Entrepreneurship: How A Sustainability Orientation Influences Crowdfunding Success. *Journal of Management Studies*, *53*(5), 738–767. https://doi.org/10.1111/joms.12201

Captable. (2023). *Construa um portfólio de grandes startups*. https://captable.com.br/

Caputo, A., Schiocchet, E., & Troise, C. (2022). Sustainable business models as successful drivers in equity crowdfunding. *Business Strategy and the Environment*, *April*, 1–14. https://doi.org/10.1002/bse.3102

Cecere, G., Guel, F. Le, & Rochelandet, F. (2017). Crowdfunding and social influence : an empirical investigation. *Applied Economics*, *49*(57), 5802–5813. https://doi.org/10.1080/00036846.2017.1343450

Chan, H. F., Moy, N., Schaffner, M., & Torgler, B. (2021). The effects of money saliency and sustainability orientation on reward based crowdfunding success. *Journal of Business Research*, *125*(November 2018), 443–455. https://doi.org/10.1016/j.jbusres.2019.07.037

Cicchiello, A. F. F., & Kazemikhasragh, A. (2022). Tackling gender bias in equity crowdfunding: an exploratory study of investment behaviour of Latin American investors. *European Business Review*, *34*(3), 370–395. https://doi.org/10.1108/EBR-08-2021-0187

Cicchiello, A. F., Kazemikhasragh, A., & Monferra, S. (2021). In women, we trust! Exploring the sea change in investors' perceptions in equity crowdfunding. *Gender in Management*, *36*(8), 930–951. https://doi.org/10.1108/GM-10-2020-0309

Clauss, T., Breitenecker, R. J., Kraus, S., Brem, A., & Richter, C. (2018). Directing the wisdom of the crowd: the importance of social interaction among founders and the crowd during crowdfunding campaigns. *Economics of Innovation and New Technology*, *27*(8), 731–751. https://doi.org/10.1080/10438599.2018.1396660

Coakley, J., Lazos, A., & Liñares-Zegarra, J. M. (2022). Equity Crowdfunding Founder Teams: Campaign Success and Venture Failure. *British Journal of Management*, *33*(1), 286–305. https://doi.org/10.1111/1467-8551.12494

Corsini, F., & Frey, M. (2023). Crowdfunding sustainable products with the product search matrix: niche markets vs. mass markets. *Electronic Commerce Research*.

Cosma, S., Grasso, A. G., Pattarin, F., & Pedrazzoli, A. (2021). Platforms' partner networks: the missing link in crowdfunding performance. *European Journal of Innovation*

Management, *25*(6), 122–151. https://doi.org/10.1108/EJIM-06-2020-0230

Courtney, C., Dutta, S., & Li, Y. (2017). Resolving Information Asymmetry: Signaling, Endorsement, and Crowdfunding Success. *Entrepreneurship: Theory and Practice*, *41*(2), 265–290. https://doi.org/10.1111/etap.12267

Cumming, DJ; Vanacker, T; Zahra, S. (2021). Equity crowdfunding and governance : Toward an integrative model and research agenda. *Academy of Management Perspectives*, *35*(1), 1–62.

Cumming, D., Johan, S., & Zhang, Y. (2018). PUBLIC POLICY TOWARDS ENTREPRENEURIAL FINANCE: SPILLOVERS AND THE SCALE-UP GAP. *SSRN Working Paper*.

Cumming, D., Meoli, M., & Vismara, S. (2019). Investors' choices between cash and voting rights: Evidence from dual-class equity crowdfunding. *Research Policy*, *48*(8). https://doi.org/10.1016/j.respol.2019.01.014

Cumming, D., Meoli, M., & Vismara, S. (2021). Does equity crowdfunding democratize entrepreneurial finance? *Small Business Economics*, *56*(2), 533–552. https://doi.org/10.1007/s11187-019-00188-z

CVM. (2022). *CVM promove alteração nas regras do crowdfunding de investimento*. https://www.gov.br/cvm/pt-br/assuntos/noticias/cvm-promove-alteracao-nas-regras-do-crowdfunding-de-investimento

D'Agostino, L. M., Ilbeigi, A., & Torrisi, S. (2022). The role of human capital in Italian equity crowdfunding campaigns. *International Journal of Entrepreneurship and Innovation*. https://doi.org/10.1177/14657503221094444

Dana, L.-P., Keen, C., & Ramadani, V. (2022). *Entrepreneurship in South America, Context, Diversity, Constraints, Opportunities and Prospects*. https://app.dimensions.ai/details/publication/pub.1148870348%0Ahttps://link.springer.com/content/pdf/bfm:978-3-030-97060-4/1?pdf=chapter toc

De Crescenzo, V., Ribeiro-Soriano, D. E., & Covin, J. G. (2020). Exploring the viability of equity crowdfunding as a fundraising instrument: A configurational analysis of contingency factors that lead to crowdfunding success and failure. *Journal of Business Research*, *115*(September 2019), 348–356. https://doi.org/10.1016/j.jbusres.2019.09.051

Di Pietro, F., Prencipe, A., & Majchrzak, A. (2018). Crowd equity investors: An underutilized asset for open innovation in startups. *California Management Review*, *60*(2), 43–70. https://doi.org/10.1177/0008125617738260

Elkington, J., & Rowlands, I. H. (1999). *Cannibals with forks: The triple bottom line of 21st*

century business (25(4)). Alternatives Journal.

Eqseed. (2023). *Investir em startups e empresas privadas*. https://eqseed.com/

Estrin, S., Khavul, S., & Wright, M. (2022). Soft and hard information in equity crowdfunding: network effects in the digitalization of entrepreneurial finance. *Small Business Economics*, *58*(4), 1761–1781. https://doi.org/10.1007/s11187-021-00473-w

Feld, B., & M. (2012). *Venture Deals: Be Smarter Than Your Lawyer and Venture Capitalist*. Wiley.

Fiss, P. C. (2011). Building Better Causal Theories: A Fuzzy Set Approach to Typologies in Organization Research. *Academy of Management Journal*, *54*(2), 393–420.

Flórez-Parra, J. M., Martín, G. R., & Serrano, C. R. (2020). Corporate social responsibility and crowdfunding: The experience of the colectual platform in empowering economic and sustainable projects. *Sustainability (Switzerland)*, *12*(13). https://doi.org/10.3390/su12135251

Freudenreich, B., Lüdeke-Freund, F., & Schaltegger, S. (2020). A Stakeholder Theory Perspective on Business Models: Value Creation for Sustainability. *Journal of Business Ethics*, *166*(1), 3–18. https://doi.org/10.1007/s10551-019-04112-z

Garaus, C., Izdebski, N., & Lettl, C. (2020). What Do Crowd Equity Investors Do? Exploring Postinvestment Activities in Equity Crowd Funding. *IEEE Transactions on Engineering Management*, 1–12. https://doi.org/10.1109/TEM.2020.3041073

Geissdoerfer, M., Vladimirova, D., & Evans, S. (2018). Sustainable business model innovation: A review. *Journal of Cleaner Production*, *198*, 401–416. https://doi.org/10.1016/j.jclepro.2018.06.240

Gerber, E. M., & Hui, J. (2013). Crowdfunding: Motivations and deterrents for participation. *ACM Transactions on Computer-Human Interaction*, *20*(6). https://doi.org/10.1145/2530540

Gorman, M., & Sahlman, W. A. (1989). What do venture capitalists do? *Journal of Business Venturing*, *4*(4), 231–248. https://doi.org/10.1016/0883-9026(89)90014-1

Graziano, E. A., Fattobene, L., Giovando, G., & Pellicelli, A. (2023). Contacts on LinkedIn: equity crowdfunding platforms' networks and creators' innovation performance. *European Journal of Innovation Management*. https://doi.org/10.1108/EJIM-03-2022-0125

Guenther, C., Johan, S., & Schweizer, D. (2018). *Is the crowd sensitive to distance ? — how investment decisions differ by investor type*. 289–305. https://doi.org/10.1007/s11187-016-9834-6

Hörisch, J. (2015). Crowdfunding for environmental ventures: An empirical analysis of the influence of environmental orientation on the success of crowdfunding initiatives. *Journal of Cleaner Production*, *107*, 636–645. https://doi.org/10.1016/j.jclepro.2015.05.046

Hörisch, J., & Tenner, I. (2020). How environmental and social orientations influence the funding success of investment-based crowdfunding: The mediating role of the number of funders and the average funding amount. *Technological Forecasting and Social Change*, *161*(April 2019), 120311. https://doi.org/10.1016/j.techfore.2020.120311

Hornuf, L., Schmitt, M., & Stenzhorn, E. (2018). Equity crowdfunding in Germany and the United Kingdom: Follow-up funding and firm failure. *Corporate Governance: An International Review*, *26*(5), 331–354. https://doi.org/10.1111/corg.12260

Hornuf, L., Schmitt, M., & Stenzhorn, E. (2022). The local bias in equity crowdfunding: Behavioral anomaly or rational preference? *Journal of Economics and Management Strategy*, *October 2020*. https://doi.org/10.1111/jems.12475

Hornuf, L., & Schwienbacher, A. (2017). *Should securities regulation promote equity crowdfunding ? April*, 579–593. https://doi.org/10.1007/s11187-017-9839-9

Hornuf, L., Stenzhorn, E., & Vintis, T. (2021). Are sustainability-oriented investors different? Evidence from equity crowdfunding. *Journal of Technology Transfer*, *0123456789*. https://doi.org/10.1007/s10961-021-09896-9

Itenberg, O., & Smith, E. E. (2017). Syndicated Equity Crowdfunding: The Trade-Off between Deal Access and Conflicts of Interest. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2933822

Kellermanns, F. W., & Eddleston, K. A. (2004). Corporate Entrepreneurship in Latin America: The Importance of National Culture. *Journal of Business Research*, *17*(12), 1500–1509.

Kim, H., & Kim, J. (2017). Geographic proximity between lender and borrower: How does it affect crowdfunding? *Review of Accounting and Finance*, *16*(4), 462–477. https://doi.org/10.1108/RAF-02-2016-0017

Kim, M. J., & Hall, C. M. (2021). Do value-attitude-behavior and personality affect sustainability crowdfunding initiatives? *Journal of Environmental Management*, *280*(December 2020), 111827. https://doi.org/10.1016/j.jenvman.2020.111827

Kim, M. J., Hall, C. M., & Han, H. (2021). Behavioral influences on crowdfunding SDG initiatives: The importance of personality and subjective well-being. *Sustainability (Switzerland)*, *13*(7), 1–21. https://doi.org/10.3390/su13073796

Kleinert, S., & Volkmann, C. (2019). Equity crowdfunding and the role of investor discussion boards. *Venture Capital*, *21*(4), 327–352. https://doi.org/10.1080/13691066.2019.1569853

Knauf, J., & Wüstenhagen, R. (2023). Crowdsourcing social acceptance: Why, when and how project developers offer citizens to co-invest in wind power. *Energy Policy*, *173*(December 2022), 113340. https://doi.org/10.1016/j.enpol.2022.113340

Kria. (2023). *A sua plataforma para investimento em startups*. https://www.kria.vc/investir/

Kukurba, M., Waszkiewicz, A. E., Salwin, M., & Kraslawski, A. (2021). Co-created values in crowdfunding for sustainable development of enterprises. *Sustainability (Switzerland)*, *13*(16). https://doi.org/10.3390/su13168767

Leboeuf, G., & Schwienbacher, A. (2018). Crowdfunding as a new financing tool. *The Economics of Crowdfunding: Startups, Portals and Investor Behavior*, 11–28. https://doi.org/10.1007/978-3-319-66119-3_2

Liang, X., Hu, X., Li, E. Y., & Meng, H. (2023). Untangling the influence of perceived sustainability orientation on value-co-creation behavior in crowdfunding process: investigating a mediation model. *Internet Research*. https://doi.org/10.1108/INTR-12-2021-0921

Liu, T., Gong, X., Liu, Z., & Ma, C. (2021). Direct and Configurational Paths of Capital Signals to Technology Crowdfunding Fundraising. *IEEE Transactions on Engineering Management*, 1–16. https://doi.org/10.1109/TEM.2021.3068524

Liu, Z., Ben, S., & Zhang, R. (2023). Factors Affecting Crowdfunding Success. *Journal of Computer Information Systems*, *63*(2), 241–256. https://doi.org/10.1080/08874417.2022.2052379

Lowitt, E. (2013). *The Collaboration Economy: How to Meet Business, Social, and Environmental Needs and Gain Competitive Advantage*. Wiley.

Lüdeke-Freund, F., Carroux, S., Joyce, A., Massa, L., & Breuer, H. (2018). The sustainable business model pattern taxonomy—45 patterns to support sustainability-oriented business model innovation. *Sustainable Production and Consumption*, *15*, 145–162. https://doi.org/10.1016/j.spc.2018.06.004

Lüdeke-Freund, F., Massa, L., Bocken, N., Brent, A., & Musanga, J. (2016). Business models for shared value. In *Journal of Autoimmunity* (Vol. 8, Issue 6). https://nbs.net/wp-content/uploads/2022/01/NBS-SA_Main_Report-161128.pdf

Lukkarinen, A., & Schwienbacher, A. (2023). Secondary market listings in equity crowdfunding: The missing link? *Research Policy*, *52*(1), 104648.

https://doi.org/10.1016/j.respol.2022.104648

Lukkarinen, A., Teich, J. E., Wallenius, H., & Wallenius, J. (2016). Success drivers of online equity crowdfunding campaigns. *Decision Support Systems*, *87*, 26–38. https://doi.org/10.1016/j.dss.2016.04.006

Lukkarinen, A., Wallenius, J., & Seppälä, T. (2018). Investor Motivations and Decision Criteria in Equity Crowdfunding. *SSRN Electronic Journal*, *11*. https://doi.org/10.2139/ssrn.3263434

Martínez-Gómez, C., Jiménez-Jiménez, F., & Alba-Fernández, M. V. (2020). Determinants of overfunding in equity crowdfunding: An empirical study in the UK and Spain. *Sustainability (Switzerland)*, *12*(23), 1–31. https://doi.org/10.3390/su122310054

Maula, M. V. J., & Lukkarinen, A. (2022). Attention across borders: Investor attention as a driver of cross-border equity crowdfunding investments. *Strategic Entrepreneurship Journal*, *August 2020*, 1–36. https://doi.org/10.1002/sej.1424

Mendel, J. M. (1995). No Title. *Proceedings of the IEEE*, *83*(3), 345–377.

Meoli, M., & Vismara, S. (2021). Information manipulation in equity crowdfunding markets. *Journal of Corporate Finance*, *67*(December 2020), 101866. https://doi.org/10.1016/j.jcorpfin.2020.101866

Messeni Petruzzelli, A., Natalicchio, A., Panniello, U., & Roma, P. (2019). Understanding the crowdfunding phenomenon and its implications for sustainability. *Technological Forecasting and Social Change*, *141*(October 2017), 138–148. https://doi.org/10.1016/j.techfore.2018.10.002

Miglo, A., & Miglo, V. (2019). Market imperfections and crowdfunding. *Small Business Economics*, *53*(1), 51–79. https://doi.org/10.1007/s11187-018-0037-1

Mochkabadi, K., & Volkmann, C. K. (2020). Equity crowdfunding: a systematic review of the literature. *Small Business Economics*, *54*(1), 75–118. https://doi.org/10.1007/s11187-018-0081-x

Mollick, E. (2014). The dynamics of crowdfunding: An exploratory study. *Journal of Business Venturing*, *29*(1), 1–16. https://doi.org/10.1016/j.jbusvent.2013.06.005

Mollick, E., & Nanda, R. (2016). Wisdom or madness? Comparing crowds with expert evaluation in funding the arts. *Management Science*, *62*(6), 1533–1553. https://doi.org/10.1287/mnsc.2015.2207

Mollick, E. R. (2013). Swept Away by the Crowd? Crowdfunding, Venture Capital, and the Selection of Entrepreneurs. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2239204

Mora-Cruz, A., & Palos-Sanchez, P. R. (2023). Crowdfunding platforms: a systematic literature review and a bibliometric analysis. In *International Entrepreneurship and Management Journal* (Vol. 19, Issue 3). Springer US. https://doi.org/10.1007/s11365-023-00856-3

Moraes, G. H. S. M. de, Fischer, B., Salles-Filho, S., Meissner, D., & Dabic, M. (2023). More than one way to get there: a configurational view on performance drivers in knowledge-intensive entrepreneurship. *Journal of Knowledge Management*, *27*(11), 205–230. https://doi.org/10.1108/JKM-03-2023-0267

Morioka, S. N., Bolis, I., & Carvalho, M. M. de. (2018). From an ideal dream towards reality analysis: Proposing Sustainable Value Exchange Matrix (SVEM) from systematic literature review on sustainable business models and face validation. *Journal of Cleaner Production*, *178*, 76–88. https://doi.org/10.1016/j.jclepro.2017.12.078

Moss, T. W., Renko, M., Block, E., & Meyskens, M. (2018). Funding the story of hybrid ventures: Crowdfunder lending preferences and linguistic hybridity. *Journal of Business Venturing*, *33*(5), 643–659. https://doi.org/10.1016/j.jbusvent.2017.12.004

Motylska-Kuzma, A. (2018). Crowdfunding and sustainable development. *Sustainability (Switzerland)*, *10*(12). https://doi.org/10.3390/su10124650

Niemand, T., Angerer, M., Thies, F., Kraus, S., & Hebenstreit, R. (2018). Equity crowdfunding across borders: a conjoint experiment. *International Journal of Entrepreneurial Behaviour and Research*, *24*(4), 911–932. https://doi.org/10.1108/IJEBR-07-2017-0256

Nigam, N., Mbarek, S., & Benetti, C. (2018). Crowdfunding to finance eco-innovation: case studies from leading renewable energy platforms. *Journal of Innovation Economics & Management*, *n° 26*(2), 195–219. https://doi.org/10.3917/jie.pr1.0033

Nikou, S., Mezei, J., Liguori, E. W., & El Tarabishy, A. (2022). FsQCA in entrepreneurship research: Opportunities and best practices. *Journal of Small Business Management*, *62*(3), 1531–1548. https://doi.org/10.1080/00472778.2022.2147190

Nitani, M., Riding, A., & He, B. (2019). On equity crowdfunding: investor rationality and success factors. *Venture Capital*, *21*(2–3), 243–272. https://doi.org/10.1080/13691066.2018.1468542

Osterwalder, A., Pigneur, Y., & Tucci, C. L. (2005). Clarifying Business Models: Origins, Present, and Future of the Concept. *Communications of the Association for Information Systems*, *16*(July). https://doi.org/10.17705/1cais.01601

Piva, E., & Rossi-Lamastra, C. (2018). Human capital signals and entrepreneurs' success in

equity crowdfunding. *Small Business Economics*, *51*(3), 667–686. https://doi.org/10.1007/s11187-017-9950-y

Politis, D. (2008). Business angels and value added: What do we know and where do we go? *Venture Capital*, *10*(2), 127–147. https://doi.org/10.1080/13691060801946147

Prędkiewicz, K., & Kalinowska-Beszczyńska, O. (2021). Financing eco-projects: analysis of factors influencing the success of crowdfunding campaigns. *International Journal of Entrepreneurial Behaviour and Research*, *27*(2), 547–566. https://doi.org/10.1108/IJEBR-05-2020-0339

Prokop, J., & Wang, D. (2021). Is there a gender gap in equity-based crowdfunding? *Small Business Economics*, *October*. https://doi.org/10.1007/s11187-021-00574-6

Ragin, C. C., & Fiss, P. C. (2008). Net Effects versus Configurational Analyses: An Empirical Demonstration. *Social Science Research*, *37*(2), 271–288.

Ragin, C. C. (2006). Set Relations in Social Research : Evaluating Their Consistency and Coverage. *Political Analysis*, *14*(3), 291–310. https://doi.org/10.1093/pan/mpj019

Ragin, C. C. (2009). *Redesigning Social Inquiry: Fuzzy Sets and Beyond*. University of Chicago Press.

Ralcheva, A., & Roosenboom, P. (2016). On the Road to Success in Equity Crowdfunding. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2727742

Ralcheva, A., & Roosenboom, P. (2020). Forecasting success in equity crowdfunding. *Small Business Economics*, *55*(1), 39–56. https://doi.org/10.1007/s11187-019-00144-x

Rasoolimanesh, S. M., Ringle, C. M., Sarstedt, M., & Olya, H. (2021). The combined use of symmetric and asymmetric approaches: partial least squares-structural equation modeling and fuzzy-set qualitative comparative analysis. *International Journal of Contemporary Hospitality Management*, *33*(5), 1571–1592. https://doi.org/10.1108/IJCHM-10-2020-1164

Republic. (2020). *Huge news: SEC to raise Regulation Crowdfunding limit to $5M*. https://republic.com/blog/investor-education/huge-news-sec-raises-regulation-crowdfunding-limit-from-1-07mm-to-5mm

Research and Markets. (2023). *Crowdfunding Market Size, Share & Trends Analysis Report By Type (Equity-based, Debt-based) By Application (Food & Beverage, Technology, Media, Healthcare, Real Estate), By Region, And Segment Forecasts, 2022 - 2030*. https://www.researchandmarkets.com/reports/5702219/crowdfunding-market-size-share-and-trends

Reza-Gharehbagh, R., Asian, S., Hafezalkotob, A., & Wei, C. (2021). Reframing supply chain

finance in an era of reglobalization: On the value of multi-sided crowdfunding platforms. *Transportation Research Part E: Logistics and Transportation Review*, *149*(April), 102298. https://doi.org/10.1016/j.tre.2021.102298

Richardson, J. E. (2005). The Business Model: An Integrative Framework for Strategy Execution. *SSRN Electronic Journal*, 1–27. https://doi.org/10.2139/ssrn.932998

Ries, E. (2011). *The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses*. Crown Business.

Riswandi, B. A., Alfaqiih, A., & Wicaksono, L. S. (2023). Design of Equity Crowdfunding in the Digital Age. *Laws*, *12*(1), 8. https://doi.org/10.3390/laws12010008

Rossi, M. (2014). The New Ways to Raise Capital: An Exploratory Study of Crowdfunding. *International Journal of Financial Research*, *5*(2), 8–18. https://doi.org/10.5430/ijfr.v5n2p8

Saliba de Oliveira, J. A., Cruz Basso, L. F., Kimura, H., & Sobreiro, V. A. (2018). Innovation and financial performance of companies doing business in Brazil. *International Journal of Innovation Studies*, *2*(4), 153–164. https://doi.org/10.1016/j.ijis.2019.03.001

Samarah, W. E. A. R., & Alkhatib, S. F. S. (2020). Crowdfunding operations: Outreach factors in developing economies. *Journal of Public Affairs*, *20*(1). https://doi.org/10.1002/pa.1988

Sanches, F. E. F., Campos, M. L., Gaio, L. E., & Belli, M. M. (2022). Proposal for sustainability action archetypes for higher education institutions. *International Journal of Sustainability in Higher Education*, *23*(4), 915–939. https://doi.org/10.1108/IJSHE-01-2021-0026

Sapienza, H. J. (1992). When do venture capitalists add value? *Journal of Business Venturing*, *7*(1), 9–27. https://doi.org/10.1016/0883-9026(92)90032-M

Schaltegger, S., Lüdeke-Freund, F., & Hansen, E. G. (2016). Business Models for Sustainability: A Co-Evolutionary Analysis of Sustainable Entrepreneurship, Innovation, and Transformation. *Organization and Environment*, *29*(3), 264–289. https://doi.org/10.1177/1086026616633272

Shafi, K. (2021). Investors' evaluation criteria in equity crowdfunding. *Small Business Economics*, *56*(1), 3–37. https://doi.org/10.1007/s11187-019-00227-9

Signori, A., & Vismara, S. (2018). Does success bring success? The post-offering lives of equity-crowdfunded firms. *Journal of Corporate Finance*, *50*, 575–591. https://doi.org/10.1016/j.jcorpfin.2017.10.018

Skirnevskiy, V., Bendig, D., & Brettel, M. (2017). The Influence of Internal Social Capital on

Serial Creators' Success in Crowdfunding. *Entrepreneurship: Theory and Practice*, *41*(2), 209–236. https://doi.org/10.1111/etap.12272

SMU. (2023). *DIVERSIFICANDO INVESTIMENTOS*. https://smu.com.vc/sobre

Stam, W., & Elfring, T. (2008). (2008). Entrepreneurial orientation and new venture performance: The moderating role of intra- and extra-industry social capital. *Academy of Management Journal*, *51*(1), 97–111.

Startupi. (2023). *Investimento de VC cai 51% na América Latina em 2022, mas startups continuam crescendo, afirma pesquisa da McKinsey*. https://startupi.com.br/investimento-de-venture-capital-cai/

Startups. (2023). *Investimento global em venture capital cai 35% em 2022*. https://startups.com.br/noticias/investimento-global-em-venture-capital-cai-35-em-2022/

Telesintese. (2023). *Crowdfunding: volume captado cai 30% em 2022, mostra CVM*. https://www.telesintese.com.br/crowdfunding-volume-captado-cai-30-em-2022-mostra-cvm/

Testa, S., Nielsen, K. R., Bogers, M., & Cincotti, S. (2019). The role of crowdfunding in moving towards a sustainable society. *Technological Forecasting and Social Change*, *141*(December 2018), 66–73. https://doi.org/10.1016/j.techfore.2018.12.011

Thornton, J. (2020). Covid-19 pandemic has derailed progress on sustainable development goals, says WHO. *BMJ (Clinical Research Ed.)*, *369*(May), m1969. https://doi.org/10.1136/bmj.m1969

Tiberius, V., & Hauptmeijer, R. (2021). Equity crowdfunding: Forecasting market development, platform evolution, and regulation. *Journal of Small Business Management*, *59*(2), 337–369. https://doi.org/10.1080/00472778.2020.1849714

Troise, C., Matricano, D., Sorrentino, M., & Candelo, E. (2022). Investigating investment decisions in equity crowdfunding: The role of projects' intellectual capital. *European Management Journal*, *40*(3), 406–418. https://doi.org/10.1016/j.emj.2021.07.006

Troise, C., & Tani, M. (2020). Exploring entrepreneurial characteristics, motivations and behaviours in equity crowdfunding: some evidence from Italy. *Management Decision*, *59*(5), 995–1024. https://doi.org/10.1108/MD-10-2019-1431

Troise, C., Tani, M., Dinsmore, J., & Schiuma, G. (2021). Understanding the implications of equity crowdfunding on sustainability-oriented innovation and changes in agri-food systems: Insights into an open innovation approach. *Technological Forecasting and Social Change*, *171*(June), 120959. https://doi.org/10.1016/j.techfore.2021.120959

Tuo, G., Feng, Y., & Sarpong, S. (2019). A configurational model of reward-based

crowdfunding project characteristics and operational approaches to delivery performance. *Decision Support Systems*, *120*(August 2018), 60–71. https://doi.org/10.1016/j.dss.2019.03.013

Valenza, G., Balzano, M., Tani, M., & Caputo, A. (2022). The role of equity crowdfunding campaigns in shaping firm innovativeness: evidence from Italy. *European Journal of Innovation Management*, *26*(7), 86–109. https://doi.org/10.1108/EJIM-04-2022-0212

Velter, M. G. E., Bitzer, V., & Bocken, N. M. P. (2022). *A Boundary Tool for Multi-stakeholder Sustainable Business Model Innovation*. 401–431.

Vismara, S. (2016). Equity retention and social network theory in equity crowdfunding. *Small Business Economics*, *46*(4), 579–590. https://doi.org/10.1007/s11187-016-9710-4

Vismara, S. (2018). Information cascades among investors in equity crowdfunding. *Entrepreneurship: Theory and Practice*, *42*(3), 467–497. https://doi.org/10.1111/etap.12261

Vismara, S. (2019). Sustainability in equity crowdfunding. *Technological Forecasting and Social Change*, *141*(July 2018), 98–106. https://doi.org/10.1016/j.techfore.2018.07.014

Vulkan, N., Åstebro, T., & Sierra, M. F. (2016). Equity crowdfunding: A new phenomena. *Journal of Business Venturing Insights*, *5*, 37–49. https://doi.org/10.1016/j.jbvi.2016.02.001

Walthoff-borm, X. (2019). Equity crowdfunding : First resort or last resort ? *Journal of Business Venturing*.

Walthoff-Borm, X., Vanacker, T., & Collewaert, V. (2018). Equity crowdfunding, shareholder structures, and firm performance. *Corporate Governance: An International Review*, *26*(5), 314–330. https://doi.org/10.1111/corg.12259

Wang, L., You, W., Zhou, Y., & Meng, F. (2022). How Does Green Supply Chain Management Promote the Success of Crowdfunding Projects? Empirical Research Based on the QCA Method. *Sustainability (Switzerland)*, *14*(19). https://doi.org/10.3390/su141912312

Wang, N., Li, Q., Liang, H., Ye, T., & Ge, S. (2018). Understanding the importance of interaction between creators and backers in crowdfunding success. *Electronic Commerce Research and Applications*, *27*, 106–117. https://doi.org/10.1016/j.elerap.2017.12.004

Wasiuzzaman, S. (2021). Regulations, perceived information quality and perceived risk of equity crowdfunding: A study of Malaysian investors. *Strategic Change*, *30*(4), 353–366. https://doi.org/10.1002/jsc.2429

Wasiuzzaman, S., Lee, C. L., Boon, O. H., & Chelvam, H. P. (2021). Examination of the

motivations for equity-based crowdfunding in an emerging market. *Journal of Theoretical and Applied Electronic Commerce Research*, *16*(2), 63–79. https://doi.org/10.4067/S0718-18762021000200105

Wasiuzzaman, S., & Suhili, N. F. (2021). Examination of the success drivers of equity crowdfunding campaigns in Malaysia. *Journal of Entrepreneurship in Emerging Economies*. https://doi.org/10.1108/JEEE-04-2021-0134

Williams, C. C., & Youssef, Y. (2014). Is Informal Sector Entrepreneurship Necessity- or Opportunity-driven? Some Lessons from Urban Brazil. *Business and Management Research*, *3*(1). https://doi.org/10.5430/bmr.v3n1p41

Woodside, A. G. (2014). Embrace erform model: Complexity theory, contrarian case analysis, and multiple realities. *Journal of Business Research*, *67*(12), 2495–2503. https://doi.org/10.1016/j.jbusres.2014.07.006

Xie, X., & Wang, H. (2020). How can open innovation ecosystem modes push product innovation forward? An fsQCA analysis. *Journal of Business Research*, *108*(June 2019), 29–41. https://doi.org/10.1016/j.jbusres.2019.10.011

Xu, B., Zheng, H., Xu, Y., & Wang, T. (2016). Configurational paths to sponsor satisfaction in crowdfunding. *Journal of Business Research*, *69*(2), 915–927. https://doi.org/10.1016/j.jbusres.2015.06.040

Yacoub, G., Mitra, P., Ratinho, T., & Fatalot, F. (2022). Sustainable entrepreneurs: what drives them to engage in different crowdfunding types? *International Journal of Entrepreneurial Behaviour and Research*, *28*(4), 980–1000. https://doi.org/10.1108/IJEBR-05-2021-0321

Yasar, B. (2021). The new investment landscape: Equity crowdfunding. *Central Bank Review*, *21*(1), 1–16. https://doi.org/10.1016/j.cbrev.2021.01.001

Yip, A. W. H., & Bocken, N. M. P. (2018). Sustainable business model archetypes for the banking industry. *Journal of Cleaner Production*, *174*, 150–169. https://doi.org/10.1016/j.jclepro.2017.10.190

Zetzsche, D., & Preiner, C. (2018). Cross-Border Crowdfunding: Towards a Single Crowdlending and Crowdinvesting Market for Europe. *European Business Organization Law Review*, *19*(2), 217–251. https://doi.org/10.1007/s40804-018-0110-x

Zhang, S., Meng, Q., & Xie, J. (2022). Closed-loop supply chain value co-creation considering equity crowdfunding. *Expert Systems with Applications*, *199*(January), 117003. https://doi.org/10.1016/j.eswa.2022.117003

Zhang, W., Xu, Y., & Zheng, H. (2019). The antecedents and consequences of crowdfunding

investors' citizenship behaviors: An empirical study of motivations and stickiness. *Online Information Review*, *43*(4), 584–599. https://doi.org/10.1108/OIR-09-2017-0271

Zhang, Y., Scholes, L., Fu, K., Hughes, M., & Tang, F. (2023). Equity crowdfunding syndicates and fundraising performance: the effect of human capital and lead investor reputation. *Journal of Small Business and Enterprise Development*. https://doi.org/10.1108/JSBED-06-2022-0282

Zhao, L., & Sun, Z. (2020). Pure donation or hybrid donation crowdfunding: Which model is more conducive to prosocial campaign success? *Baltic Journal of Management*, *15*(2), 237–260. https://doi.org/10.1108/BJM-02-2019-0076

Ziegler, T., Shneor, R., & Wenzlaff, K. (2021). The 2nd Benchmarking Finance Market Global Alternative Report. *Cambridge Centre for Alternative Finance*, *June*, 1–196.

8. Appendix

Appendix A

Exhibit from a Piece of an Annex 27 - Beginning of the Report, and Example of one Unsuccessful and another Successful Offer.

Anexo 27-II

RELATÓRIO ANUAL – PLATAFORMAS ELETRÔNICAS DE INVESTIMENTO PARTICIPATIVO

IDENTIFICAÇÃO DA PLATAFORMA Nome: CapTable CNPJ: 30.545.237/0001-19 Página na rede mundial de computadores: captable.com.br
RELATÓRIO ANUAL Ano de referência: 2021 No de ofertas encerradas cujo valor alvo mínimo de captação foi atingido: 29 No de ofertas encerradas cujo valor alvo mínimo de captação não foi atingido: 1 No de ofertas em andamento: 2 (2022) No de sócios: 2 No de funcionários: 27 Patrimônio líquido (R$): R$ 614.630,12
INFORMAÇÕES SOBRE AS OFERTAS ENCERRADAS CUJO VALOR ALVO DE CAPTAÇÃO MÍNIMO NÃO FOI ATINGIDO [2] Sociedade empresária de pequeno porte: CNPJ: 23.492.206/0001-81 Tipo societário: LTDA Tipo de veículo de investimento do sindicado de investimento participativo (se houver): não há / CNPJ: não há Investidor líder do sindicato (se houver): não há / CPF: não há Página da sociedade na rede mundial de computadores, se houver: http://mamaecompleta.com.br/ Data de início da oferta: 06/10/2021 Data de encerramento da oferta: 06/12/2021 Quantidade de valores mobiliários objeto da oferta: 2000 Espécie: Nota Conversível Classe: única Preço unitário: R$ 1.000 Valor alvo máximo da oferta: R$ 2.000.000,00

INFORMAÇÕES SOBRE AS OFERTAS ENCERRADAS CUJO VALOR ALVO MÍNIMO DE CAPTAÇÃO FOI ATINGIDO [3]

Sociedade empresária de pequeno porte: KODDEX SOLUCOES DIGITAIS LTDA
CNPJ: 24.854.551/0001-80
Tipo societário: LTDA
Página da sociedade na rede mundial de computadores, se houver: https://www.4.events
Data de início da oferta: 11/01/2021
Data de encerramento da oferta: 03/03/2021
Quantidade de valores mobiliários objeto da oferta: 1250

Espécie: Nota conversível
Classe: Única
Preço unitário: 800
Valor alvo máximo da oferta: R$ 1.000.000,00
Valor total captado: R$ 735.200,00

Tipo de veículo de investimento do sindicado de investimento participativo (se houver): não há / CNPJ: não há
Investidor líder do sindicato (se houver): não há / CPF: não há
Dados finais de colocação, indicando o número e o percentual de investidores participantes da oferta conforme as seguintes categorias:

a) qualificados; 54
b) não qualificados até R$ 10.000,00 (art. 4o, caput); 200
c) não qualificados acima de R$ 10.000, 00 (art. 4o, III); 4

Sociedade empresária de pequeno porte: GAV - GERENCIADOR DE VEICULOS LTDA
CNPJ: 27.239.910/0001-88
Tipo societário: LTDA
Página da sociedade na rede mundial de computadores, se houver: https://www.gavclub.com.br
Data de início da oferta: 02/03/2021
Data de encerramento da oferta: 08/03/2021
Quantidade de valores mobiliários objeto da oferta: 750

Espécie: Nota conversível
Classe: Única
Preço unitário: 1.000

Appendix B

Description of Activities and Classification of the Archetypes of all 49 Campaigns

#	Year	Platform	Company	Description of activities	Why does it declare itself sustainable?	Group	Archetype	Hierarchy	Classification
1	2018	Eqseed	Allugator	Product rental marketplace	Offers products for temporary use by rent, reducing unnecessary consumption	Social	Deliver functionality rather than ownership	Sufficiency Economy	4
2	2018	Eqseed	GreenAnt	Intelligent energy management system to reduce energy costs by up to 20%	Reduces energy consumption of large consumers	Techno logical	Maximize material and energy efficiency	Efficiency	1
3	2018	Eqseed	Prosumir #2	Develops and sells innovative solutions that turn wasted energy into opportunities	Developed a pressure-reducing turbine that transforms wasted energy in the form of heat into electrical energy	Techno logical	Create value from waste	Circular Economy	3
4	2018	SMU	Radix	Planting of commercial forests of hardwood-producing species.	Reduces the need for deforestation of natural forests	Techno logical	Maximize material and energy efficiency	Efficiency	1
5	2019	CapTable	Eirene	Smart crop spraying	Sprays only where it is needed, reducing waste	Techno logical	Maximize material and energy efficiency	Efficiency	1
6	2019	CapTable	Trashin	360° waste management	Connects all waste to its correct destination and generates a positive impact, through reverse logistics and circular economy combined with management, marketing and technology	Techno logical	Create value from waste	Circular Economy	3
7	2019	Eqseed	Bynd	Management of corporate rides for employees to share the ride route	Reduction of fuel consumption and CO2 emissions	Social	Deliver functionality rather than ownership	Sufficiency Economy	4
8	2019	Eqseed	Prosumir #3	Develops and sells innovative solutions that turn wasted energy into opportunities	Developed a pressure-reducing turbine that transforms wasted energy in the form of heat into electrical energy	Techno logical	Create value from waste	Circular Economy	3
9	2019	SMU	Babuxca	Line of products based on cachaça, honey and fruits made with 100% natural ingredients.	It makes compensatory recycling of all bottles sold, in addition to the small deliveries being made by bicycle	Techno logical	Substitute with renewables and natural processes	Net-Zero	2
10	2019	SMU	Polo Pecém	Real estate development project of an area of great potential into	Innovative Smart Chain City with social and sustainable impact	Techno logical	Maximize material and energy efficiency	Efficiency	1

				a Smart Chain City					
11	2020	CapTable	Pomartec	SaaS platform for precision fruit growing, with several functionalities	Reduces losses and increases productivity of orchards	Techno logical	Maximize material and energy efficiency	Efficiency	1
12	2020	SMU	Origem	Electric motorcycles for rental	All design decisions were made to maximize the bike's lifespan in the field, reducing downtime and maintenance costs	Social	Deliver functionality rather than ownership	Sufficiency Economy	4
13	2020	Eqseed	Joycar	B2B carsharing platform	Reduces the need for vehicles, costs and eliminates manual management of each car	Social	Deliver functionality rather than ownership	Sufficiency Economy	4
14	2020	SMU	100Foods	Healthy 100% natural sauces and seasonings	It disrupts the food market, developing products around us in a healthier, smarter and more sustainable way, without the use of ingredients of animal origin	Social	Adopt a stewardship role	Net positive	5
15	2020	SMU	Trade Food	Natural Beverages	Recipes without preservatives or any other additives in their formulation, zero sodium, zero calories	Social	Adopt a stewardship role	Net positive	5
16	2020	SMU	Fishtag	Fishing Marketplace	Encourages conscious consumption, accepting only the registration of registered professionals who follow the rules of the market	Social	Adopt a stewardship role	Net positive	5
17	2021	BRAAIM	Vitamina Terrestre	Organic fertilizers	Technology that allowed the stabilization of manure so that it does not release gases	Techno logical	Create value from waste	Circular Economy	3
18	2021	CapTable	Love in Wine	Offers premium canned wines	Aluminum cans are more recycled than glass in Brazil and use less energy to chill	Techno logical	Substitute with renewables and natural processes	Net-Zero	2
19	2021	CapTable	Trashin #2	360° waste management	It connects all waste to its correct destination and generates a positive impact, through reverse logistics and circular economy combined with management, marketing and technology	Techno logical	Create value from waste	Circular Economy	3
20	2021	CapTable	Gourmetzinho	Healthy ready-to-eat meals for infant feeding	To help parents eat healthier for their children and enable greater interaction and more quality time between the family.	Social	Adopt a stewardship role	Net positive	5

21	2021	CapTable	Zletric	Recharging electric and hybrid vehicles	It provides energy through a network that covers commercial and residential spaces, solving the main recharging pains in condominiums and routine places for drivers	Techno logical	Substitute with renewables and natural processes	Net-Zero	2
22	2021	CapTable	Beeva	FoodTec in the health and wellness segment	It uses technology, information and innovation as allies for the valorization and diversification of beekeeping-based products, delivering health to the final consumer	Social	Adopt a stewardship role	Net positive	5
23	2021	CLEARBOOK	Fazu	Vertical urban farms	Vegetables without pesticides, 100% fresh and harvested in spaces that were previously gray and unproductive.	Techno logical	Substitute with renewables and natural processes	Net-Zero	2
24	2021	Eqseed	Kuke	FoodTec that offers a differentiated solution for fresh food at home	Delivers fresh food in the right quantity and with the recipe, reducing cost and waste	Social	Encourage sufficiency	Sufficiency economy	4
25	2021	Eqseed	Orgânicos in Box	Delivery of organic products that connects producers to consumers	Reduces losses and increases gains for small producers, with planting planning	Social	Adopt a stewardship role	Net positive	5
26	2021	Eqseed	Popai	Manufactures 100% natural and vegan snacks	Provides healthy and affordable products, with reverse logistics in their packaging	Techno logical	Maximize material and energy efficiency	Efficiency	1
27	2021	KRIA	Suprevida	HealthNet that is building the first self-care ecosystem in the country.	It enables home self-care by breaking geographical barriers and generating convenience for people with chronic or temporary needs, who do not need a hospital or home-care structure	Social	Adopt a stewardship role	Net positive	5
28	2021	KRIA	Vela Bikes	Manufactures, sells and rents electric bicycles	Uses technology and sustainability for cleaner urban mobility with less traffic	Techno logical	Substitute with renewables and natural processes	Net-Zero	2
29	2021	Platta	Insecta	Manufactures vegan shoes	Shoes made from recyclable and animal-free products	Techno logical	Create value from waste	Circular Economy	3
30	2021	SMU	Super Opa	Marketplace that sells food, health and wellness products	Sells products close to expiration, direct from distributors, with lower prices, reducing waste	Techno logical	Create value from waste	Circular Economy	3
31	2021	SMU	Pink Farms	Vertical urban farms	It claims to have productivity per area 100 times higher than in the field, without using pesticides and reducing water use by up to 95%.	Techno logical	Substitute with renewables and natural processes	Net-Zero	2

32	2021	SMU	Abrace Uma Causa	Develops corporate social engagement campaigns with large companies	It unites, through technology, sustainable companies, people increasingly concerned with social issues and the power of action of credible NGOs	Organizational	Repurpose for society/environment	Flourishing	6
33	2021	SMU	E-moving	First monthly subscription startup for electric bicycles in Brazil	Reduces traffic time and reduces CO2 emissions by 129kg/month, when compared to vehicles	Social	Deliver functionality rather than ownership	Sufficiency Economy	4
34	2021	SMU	Solar21	Solar Energy Subscription	Offers clean energy at home, without having to buy the solar system and without worrying about installation and maintenance costs	Social	Deliver functionality rather than ownership	Sufficiency Economy	4
35	2021	Wishe	Feel Cosméticos	Cosmetics for women's sexual well-being	Develops natural, vegan and healthy products	Social	Adopt a stewardship role	Net positive	5
36	2022	Captable	Love in Wine #2	Offers premium canned wines	Aluminum cans are more recycled than glass in Brazil and use less energy to chill	Technological	Maximize material and energy efficiency	Efficiency	1
37	2022	Captable	Food to Save	ESG that turns food waste into opportunity	Allows you to buy, from partner establishments, Surprise Bags of products that would otherwise be discarded, with up to 70% discount	Technological	Create value from waste	Circular Economy	3
38	2022	Captable	Auster	Aggrotech specialized in intelligent recommendation of nitrogen fertilizers	It reduces fertilizer waste, increases farmers' profitability and reduces the environmental impact of farming.	Technological	Maximize material and energy efficiency	Efficiency	1
39	2022	Captable	Veggi	Largest vegan delivery platform in Brazil	By reducing the consumption of food of animal origin, Veggi has already contributed to the savings of 85 million liters of water, 617 km² of land, 360 tons of CO_2 and 180 tons of grains.	Social	Adopt a stewardship role	Net positive	5
40	2022	Captable	Recicla Club	Brazil's first subscription-based waste management startup	Business with a socio-environmental impact that facilitates waste management, reducing costs for companies	Technological	Create value from waste	Circular Economy	3
41	2022	EqSeed	Brota	Smart Urban Agriculture	Autonomous vegetable garden, which allows you to plant whatever you want, wherever you want, effortlessly.	Technological	Substitute with renewables and natural processes	Net-Zero	2
42	2022	KRIA	The Question Mark	Plant-based foods developed in high-productivity nano factories	Social and environmental impact by focusing 100% of operations on plant-based options, produced efficiently and without the impacts resulting	Social	Adopt a stewardship role	Net positive	5

					from the use of animal milk				
43	2022	KRIA	Raks	Intelligent management of crop irrigation	Reduces excess water wasted in agriculture by indicating to the rural producer when and how much to irrigate	Techno logical	Maximize material and energy efficiency	Efficiency	1
44	2022	SMU	Pink Farms #2	Vertical urban farms	It claims to have productivity per area 100 times higher than in the field, without using pesticides and reducing water use by up to 95%.	Techno logical	Substitute with renewables and natural processes	Net-Zero	2
45	2022	SMU	Grupo Muda	Pioneer company in Brazil in Reverse Logistics and Circular Economy	Selective collection in condominiums with cost savings and income for recycling cooperatives	Techno logical	Create value from waste	Circular Economy	3
46	2022	SMU	Agroflux	Innovative and disruptive technological solutions aimed at the agricultural spraying market.	Application in correct doses, less harmful to the environment and improving productivity.	Techno logical	Maximize material and energy efficiency	Efficiency	1
47	2022	SMU	Clube Orgânico	Platform/brand that connects organic food producers and consumers, generating value throughout the chain	It works in partnership with an extensive network of certified organic farmers, with fair trade and planned purchases.	Social	Adopt a stewardship role	Net positive	5
48	2022	SMU	Super Opa #2	Marketplace that sells food, health and wellness products	Sells products close to expiration, direct from distributors, with lower prices, reducing waste	Techno logical	Create value from waste	Circular Economy	3
49	2022	Vegan Business	Sloul	Vegan and sustainable footwear brand	Conscious footwear production, made with discarded, recycled materials or natural fibers	Techno logical	Create value from waste	Circular Economy	3

Source: own authorship