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Article

Crowdsourcing in Sustainable Retail—A Theoretical Framework of Success Criteria

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Abstract: Current research about crowdsourcing covers industries like food systems or logistics, leaving out the possible impact of crowdsourcing on sustainable retail. The debate about the sustainable impact of different industries is ongoing, especially discussing the adaption to the Sustainable Development Goals of the United Nations critically. This paper examines the influence of crowdsourcing on the sustainable aspects of retailing by applying a theoretical derivation as well as an empirical observation. After theoretically discussing the linkage between crowdfunding as a crowdsourcing category and sustainable retail utilizing a literature review, a theoretical framework employing the grounded theory approach is constructed. A total of 24 crowdfunding campaigns aiming at the market introduction of new products or services, each worth over 5 million USD funding volume and run on international crowdfunding platforms, have been taken into consideration. The outcome of the analysis is a theoretical framework presenting three different categories, in which successful crowdfunding campaigns impacting sustainable retail excel: sustainable economic behavior, sustainable community management and sustainable market adaptation. The derived model contributes to the theoretical discussion about the impact of crowdfunding and assists practitioners in reflecting about their approach and goal setting prior to and while crowdfunding.



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Keywords: crowdsourcing; crowdfunding; sustainability; retail; grounded theory; sustainable development goals (SDGs)

1. Introduction

According to [Salpini \(2019\)](#), the retail value chain potentially has an impact on the environment, from sourcing and transportation to manufacturing, packaging, distribution and selling. The most impact stems from the natural resources used in the supply chain, the environmental impacts of the product, the energy as well as chemicals used and the waste disposal ([Retail Compliance Center 2018](#); [Oláh et al. 2019](#)). Sustainable products in retail can be found in the food as well as in the non-food sector, while price sensitivities of consumers vary by country ([Aiking and de Boer 2004](#); [Greibitus et al. 2016](#); [Mullender et al. 2020](#)). As [Hawkins \(2006\)](#) and [Kerr \(2007\)](#) point out, the switch of the production of companies to sustainability does not have to come at a cost of profitability.

Additionally, the marketing effect of sustainable actions are not to be underestimated. [Ruff \(2019\)](#) underlines this by highlighting retail brands specialized in producing sustainable products like Grove Collaborative, Thrive Global and The Honest Company. Sustainability of organizations is highly connected to Corporate Social Responsibility (CSR) and Corporate Governance ([Sneirson 2009](#); [Dabija and Băbuț 2019](#); [Crișan-Mitra et al. 2020](#); [Ul Haque et al. 2020](#)). [Pivato et al. \(2007\)](#) highlight the role of consumer trust in connection with sustainability: The hypothesis, supported by empirical data, is that the first result of CSR activities is a rise in trust among stakeholders. In turn, the consumer actions are directly influenced by sustainability. The competition for consumers awareness, aiming at the action of buying the product ([Polk 2018](#)), depends on many factors like assortment, prices, store location, and retail store or channel preferences ([Brynolfsson et al. 2009](#);

Dabija et al. 2018). Consumers, who built up trust with a retail store, retail chain or a retailer, can become important supporters and act as turning points for others, attracting their peers and for enhancing offline and online visits (Wang et al. 2018; Alshaabani et al. 2020). Moreover, brands have become a very effective tool of communication. By these, consumers inform other members of their social group who they are and if they really belong to a specific social group (Majerova et al. 2020). Social networks are currently among the most popular communication tools to attract potential customers (Nadanyiova et al. 2020).

The emergence of digital platform-based business models like crowdfunding have already led to disruptions of multiple industries and the disintermediation between companies, like retailers and consumers (Parker et al. 2016). Enabled by the platform, the consumer can get directly in touch with other consumers as well, exchanging ideas and values. Therefore, the consumer is not a single individuum on the market anymore, but part of the crowd, which is, for example, helping with design solutions of a product (Allen et al. 2018). Danish toy manufacturer LEGO, amongst other companies, is applying this approach (Antorini et al. 2012). The crowd is supporting companies in various tasks on multiple platforms. The mentioned crowd can also put its combined wisdom to use in the retail sector, e.g., by placing multiple orders to get a discount or by efficiently managing returns (Kelley and Tetlock 2013). Platforms, especially crowdfunding platforms, are influenced by national and international regulations (Chervyakov and Rocholl 2019).

Apart from the role of crowdfunding in sustainable food systems (Misso et al. 2017), the joint development of corporate sustainability strategies by the crowd (Jones et al. 2014) and logistic solutions provided by the crowd (Rai et al. 2017; Devari et al. 2017), the current state of research is lacking a discussion about the possible impacts of crowd-driven projects on sustainable retail (Davidson 2020; Russell 2020; Keane et al. 2020; Gray-Hawkins and Lăzăroiu 2020). In this regard, the different categories of crowd-sourced projects must be taken into consideration. On the other hand, the different benefits derived from these projects need to be highlighted and aggregated for a better understanding. Out of this preliminary discussion, the need for a theoretical framework seems obvious.

Therefore, the aim of this paper is to close the identified research gap by answering the research question of how crowdsourcing can influence sustainability of the retail sector. A literature review prepares the ground for a theoretical discussion about the linkage between crowdfunding as a crowdsourcing category and sustainability in retail. For the empirical discussion, we base our investigation on the grounded theory as the best method to provide an answer to the research question at hand (Corbin and Strauss 2014). After observing different relevant cases, a matrix including keywords is formed as an overview. As a result of this matrix, concepts and categories are generated, resulting in a theoretical framework which explains the found phenomena.

The paper is structured as follows: The first part includes the theoretical background, including a discussion of crowdsourcing and its categories, the sustainable development goals as well as a theoretical linkage with retail. A critical outline of the different crowdsourcing categories as well as the state of sustainability according to the sustainable development goals (SDGs) (Griggs et al. 2013; Crişan-Mitra et al. 2016) is included. Thereafter the empirical part focuses on the application of the grounded theory, analyzing the success criteria of crowdfunding campaigns as well as their impact on sustainable retail. After the research results have been highlighted considering the research question, a discussion of scientific and managerial implications follows. Limitations to the methodology are critically discussed in the final section of the paper, embracing a critical reflection as well as further research questions.

2. Theoretical Background

2.1. Crowdsourcing and Crowdfunding

Howe (2006) defined crowdsourcing as a combination of crowd (in terms of mass of people) and outsourcing of business-related processes in a company. The task is fulfilled collaboratively or by individuals. Crowdsourcing is also used as a participative

online activity where an undefined mass of people is following a call to action of a firm to bring in their skills and ideas (Estellés-Arolas and González-Ladrón-de-Guevara 2012). Nakatsu et al. (2014) discussed an approach of a taxonomy of crowdsourcing based on the characteristics of the tasks given to the crowd, identifying seven categories: low commitment contractual hiring (human intelligence tasks), high commitment contractual hiring (online employment platforms), low commitment idea generation (consumer-driven innovation), high commitment idea generation (contests; online problem-solving platforms), low commitment collaboration (real-time idea jams), high commitment collaboration (open source software and hardware development) as well as low commitment problem-solving (geo-located data collection, distributed knowledge gathering). Crowdfunding belongs to the last category, focusing on well-structured, yet interdependent tasks accomplished by virtual communities. Ali-Hassan and Allam (2016) discuss a typology including 12 different key categories of crowdsourcing: Crowdmedia, Fansourcing, Crowdsourcing, Crowdfunding, Ideation, Open Innovation, User Innovation, Scisourcing, Crowd-Relief, and Open Source Software. Crowdsourcing includes tasks from simple to complex and creative as well as a basic to expert skill set of the community members involved (Sanchís-Pedregosa et al. 2020).

Crowdfunding was defined more specifically as an open online call to support a project monetarily (Howe 2008). This external funding of activities might be considered as a provision of financial resources as a donation or in exchange for some future reward, being more successful when run by non-profit organizations in reaching their campaign goal (Belleflamme et al. 2013). This seems in line with contract failure research which highlights that non-profit organizations can more easily acquire money for initiatives of general community interest as they are not focused on profit (Hart and Moore 1988, 1990; Constantinides et al. 2018; Jacobides et al. 2018).

Four different categories of crowdfunding can be distinguished (Massolution 2012; Hossain and Oparaocha 2017): donation-based, reward-based, lending-based, and equity-based crowdfunding campaigns. Donation-based crowdfunding is defined as supporting a campaign for a good cause and with no intent to earn profit (Moritz and Block 2016). Reward-based crowdfunding are campaigns where the supporters will get a future service, product or at least mention in return for their provision of financial means (Kraus et al. 2016). The idea behind lending-based crowdfunding is based on the interest on the loan being paid back to the supporter, although this model is more and more used by financial institutions to attract new customers (Kuti and Madarász 2014; Blohm et al. 2016; Yeh and Chen 2020). The equity-based crowdfunding aims for a long-term relationship between the supporter and the project, giving the supporter the right to influence the company and also benefit from future profits (Dziuba 2012).

2.2. Crowdfunding and Retail

For the retail sector, crowdfunding is used as a pre-sales method, where unknown talent and early adopters meet and agree on a no-penalty contract in case the product or service cannot be delivered (Gutiérrez-Urtiaga and Sáez-Lacave 2018). Crowdfunding can be especially used by startups in every step of their lifecycle to reduce the risk of failure and evaluate the market potential for the product or service (Paschen 2017). This funding method can also help economies in crisis to foster the entrepreneurial mindset of founders (Sánchez García and Estellés-Arolas 2015). Stevenson et al. (2019) discovered that crowdfunding allows for funding of companies active in industries where venture capitalists, who are more interested in tech-oriented companies, would not invest. Therefore, this could lead to a resurgence of entrepreneurship in retail, non-tech and consumer sectors. On the other side, research suggests that besides backing self-efficacy empathy with the project, the owner plays an important role on the intention to support a project (Kuo et al. 2020). As acting sustainably is playing a more important role for customers (Bernyte 2018), also the quantity of crowdfunding initiatives in this field is rising (Maehle et al. 2020). For project owners developing or marketing a product or service for a good cause which has

wide social impact rather than raising funds for internal causes, a crowdfunding campaign can be a useful option (Zeco and Propfe 2014).

2.3. Sustainable Crowdfunding

Crowdfunding campaigns that offer a social aspect are more likely to be successful, as lending-based crowdfunding research shows (Berns et al. 2018). Apostolopoulos et al. (2018) analyzed the impact of entrepreneurs on the fulfillment of the sustainable development goals worldwide and concluded that the impact depends on the industry where the entrepreneur is active. Impact investing and social bonds are becoming more and more popular among investors (Grant 2011). The crowd supporting a campaign has an impact on the economic success of the company (Konhäusner 2020). The gradually emerged model of the sustainability trifecta involves the social aspect besides the economical as well as ecological perspective (Purvis et al. 2018; Dabija and Băbuț 2019). Seventeen Sustainable Development Goals were defined in the 2030 Agenda for Sustainable Development (United Nations 2015), which are also based on these three pillars.

Sustainability related topics have been discussed in diverse fields for years and the term “sustainability” has been highlighted in research since the end of the 1980s (Brundtland et al. 1987). The field of research on sustainability in retail had a time lag of about ten years in comparison to other sustainability-connected research, while it seems to have received more attention in retail management practice (Wiese et al. 2012). Over the years and different sectors, topics and geographical scopes of retail (i.e., large U.K. listed retailers like Kingfisher, Marks and Spencer and Next (Keay and Iqbal 2018)) have been covered by researchers, including sustainability of customer preferences and attitudes (Strähle and Müller 2016; Naidoo and Gasparatos 2018; Dabija and Băbuț 2019), the impact of retail marketing instruments on store choice, store image and/or store patronage in various retail sectors (Dabija and Băbuț 2014, 2019), applying the generational perspective in retail (Dabija et al. 2018, 2019, 2020) but also analyzing stakeholder relationships in retail (Hultman and Elg 2018; Ruiz-Real et al. 2018; Naidoo and Gasparatos 2018).

The discussion about crowdfunding in retail is rather young in research. Allon and Babich (2020) point towards the different models of crowdsourcing and crowdfunding and their possible applications in the manufacturing and services sectors. Crowdfunding is used as a pre-sale method in the retail sector (Paschen 2017) but may also be used for price-finding and advertising (Guan et al. 2020). Moreover, pre-order management by crowdfunding can be used for proper production planning (Brown et al. 2017; Sayedi and Baghaie 2017). Petruzzelli et al. (2019) and Bento et al. (2019) highlight the possible impact of crowdfunding on sustainability, excluding explicitly mentioning the retail sector.

3. Research Methodology

To investigate which success criteria campaign owners as well as retail managers have to consider when launching new crowdfunded retail products or services, we analyzed different international crowdsourcing initiatives connected to sustainable retail. The campaigns were observed after they had ended, but for inclusion into the research it was not crucial that the product had already been released to the market or was available at all. As this paper is focusing on the retail sector, consequently, all campaigns covering immaterial products or immaterial services were excluded from the research. Regional campaigns, crowdfunding supported by the government and investments done by venture capitalists and funds were not further investigated.

Our approach is based on the inductive method of grounded theory (Glaser and Strauss 1967). According to Faggiolani (2011), this method involves the construction and discussion of theories based on the collection of data from various sources. Therefore, several steps have to be followed (Bernard and Ryan 2010): (1) The observed cases should be descriptively analyzed and tagged with keywords representing coding—additionally, a total of four additional dimensions (crowd category; benefit for sustainable retail; SDG coverage; term perspective) were introduced to analyze the impact of the campaign on

sustainable factors; (2) the concepts or theories can be derived from this compiled overview before categories or models can be constructed. The result of the method is a theoretical framework which should embrace most of the cases taken into consideration and is object for further research and validation (Corbin and Strauss 2014).

Consequently, a matrix of the subject matters was drafted for a better understanding, including a descriptive analysis of the observed crowdfunding campaigns. Different concepts were derived and various clusters were created from the data surveyed and analyzed, while a theoretical framework could then be modeled, explaining the observed success criteria.

4. Research Results

A total of 24 publicly available campaigns, mostly from the platforms Kickstarter (www.kickstarter.com (accessed on 15 January 2021); Ryoba et al. 2020) and IndieGogo (www.indiegogo.com (accessed on 15 January 2021); Maryani et al. 2020), with a funding volume of more than 5 million USD were taken into consideration. The connection between crowdfunding and retail shall be highlighted and discussed in this manner. The data gathered can be found in the Appendix A.

Step 1 Observation of cases

Besides the total monetary sum raised during the duration of the campaign, a short product description for a better overview of the datasets provided has been added. Each platform on which the campaign was run was noted down. The predominance of Kickstarter for high volume retail crowdfunding campaigns is obvious by observing the cases analyzed: 15 of the 24 campaigns, equaling 62.5%, were run exclusively or also on Kickstarter. The second most used platform for retail-orientated crowdfunding campaigns is IndieGogo, according to the analysis (3 of 24; 12.5%). The top three campaigns in terms of volume were run on independent platforms, which are, for example, owned and operated platforms by the project owners. A possible reason can be seen in trying to avoid the fees charged by the crowdfunding platform (Mitra 2012; Bi et al. 2019). As our research showed that there were also campaigns which were successful, but the actual product never launched afterwards, a field for the actual market launch or release of the product was added to the table (see Appendix A). As for that date, it did not matter if the product had been released to the public or the limited group of supporters of the campaign. As longevity of a product is a characteristic feature for its sustainability (Spengler et al. 2019), a field highlighting if the product is still available on the market was included. In this field, market exit dates or information about a possible upcoming launch were recorded. A set of four dimensions (crowd category; benefit for sustainable retail; SDG coverage; term perspective) were additionally introduced to observe the characteristics of the campaigns impacting the sustainable retail.

The first dimension deals with the crowdfunding category of the respective campaign. Our research shows that most of the product-based campaigns were run as reward-based. This is in accordance with the research done on the reward structure showing that crowd-funded product innovations are often handed out as rewards to backers (Bi et al. 2019; Katona 2019). In the second dimension, the benefit for sustainable retail, which could be captured out of the information gathered, was described briefly. This dimension, together with the later introduced keywords, were used to generate high-level concepts on the reasons why crowdfunding can have an impact on sustainable retail. The third dimensions identified the impact of the specific campaign on one or multiple SDGs. A list of defined SDGs is included in Table 1 (Griggs et al. 2013; Crişan-Mitra et al. 2016). Suitable SDGs were assigned to each campaign observed, leading to a total count of linkages to projects per SDG. A campaign could have at least one reference to a SDG, but research showed that there are also campaigns which impact up to 9 of the 17 SDGs. Moreover, a percentage of the linkages in relation to the total number of linkages defined (73) was calculated. The distribution can be seen in Table 1.

Table 1. Distribution of the campaign goals in respect to the Sustainable Development Goals (SDGs).

SDG	List of SDGs	Count in Projects	Percentage
1	No Poverty	0	N/A
2	Zero Hunger	0	N/A
3	Good Health and Well-Being	3	4%
4	Quality Education	0	N/A
5	Gender Equality	0	N/A
6	Clean Water and Sanitation	2	3%
7	Affordable and Clean Energy	1	1%
8	Decent Work and Economic Growth	15	21%
9	Industry, Innovation, and Infrastructure	21	29%
10	Reduced Inequalities	0	N/A
11	Sustainable Cities and Communities	5	7%
12	Responsible Consumption and Production	12	16%
13	Climate Action	3	4%
14	Life Below Water	2	3%
15	Life on Land	6	8%
16	Peace, Justice and Strong Institutions	1	1%
17	Partnerships	2	3%
	Total linkages count (sum)	73	100%

Source: own creation.

Our research shows that the majority of the crowdfunding campaigns observed focused on the sustainable goal of industry, innovation and infrastructure (29%), while 21% of the campaigns prioritized decent work and economic growth. Twelve campaigns (16%) also took responsible consumption and production into consideration.

The fourth dimension is regarding the timely aspect, as sustainability is closely connected with the aspect of time (Bansal and DesJardine 2014). For every campaign, the perspective of the product was noted down, considering if it had a rather short-, medium- or long-term approach.

As part of the grounded theory approach, in the next step three keywords which should represent the core aspects of the product and/or the campaign were assigned to every specific observation case by coding the essential elements of the project or campaign (Mayring 2020; Schmedes 2020). The keywords, as research progressed, were rather different, but gave an insight about the essence of the campaign. Furthermore, the information about the sales channel used by the product promoted in the campaign was added to identify the differences between direct sales-to-customer approaches as well as the usage of retail partners (see Table 2).

Table 2. Preferences of sales channels of selected campaigns.

Description	Number of Campaigns	Percentage
Direct Sales	11	46%
Retail Channels	11	46%
Not Applicable	2	8%
Total count (sum)	24	100%

Source: own creation.

The sample includes the same number of campaigns which were targeted towards direct sales as campaigns which were targeted towards sales through retail partners. Two campaigns, the one about the Coolest Cooler, which was never launched, and the one about the renovation of King Chapel, have been marked as not applicable as no sales channel can be assigned.

In the last step of the gathering of data and case observation, every campaign has been described in a short statement to summarize the most important key characteristics of the campaign or the product. This information was used in the next step to generate the basic concepts which could be observed. The gathered data can be found in the Appendix A.

Some special cases could be identified in the sample. The two real estate crowdfunding campaigns (#16 and #24), especially the King Chapel renovation donation-based campaign, were not retail-focused campaigns. Considering these cases, a total of 91.6% of the cases observed were retail focused.

A total of six cases out of the 24 observed could be isolated to have an impact on a bigger number of SDGs than the rest. These cases (#1, #2, #6, #16, #22, #23) are references on the connection of between crowdfunding and sustainable retail. Therefore, these cases will be utilized in the next steps to generate categories. Two of the mentioned cases were not available on the market yet. Observing the split in terms of the crowdfunding category, four of the crowdfunding campaigns were equity-based, while two were reward-based.

For half of the observed 24 cases, a long-term orientation can be attributed, underlining an at least economically sustainable approach to business (Nelson 2020; Miller 2020; Throne and Lăzăroiu 2020). On the other side, five of the campaigns, representing nearly 21%, did not result in any launched product/service, but are still ramping up. These mentioned campaigns include the two top campaigns according to fundraised volume, Elio Motors and Sion. Another five campaigns were on the market but the company behind the product/service went bankrupt or changed the business strategy, meaning that these were not long-term sustainable approaches. Therefore, 14 (58.3%) of the cases were considered as having a sustainable approach due to being launched after the campaign and still being on the market. Due to disintermediation, both approaches (direct sales as well as the usage of sales channels) were taken into consideration for the next steps of the research (Wigand 2020).

Step 2 Concept generation

In the next step of the analysis, the different reasons for crowdfunding in the cases observed were derived from the data gathered, the keywords attributed as well as the short descriptions given. These concepts were then listed and broken down into one-word, high-level concept descriptions as well as an even more general, more abstract secondary concept description. The results can be found in Table 3.

Table 3. Concept generation.

Concept Description	High Level Concept	Secondary Concept
Explore market opportunities	market	power
Keep in touch and engage with fanbase	fan	influence
Be a pioneer in the market	market	power
Spread the word about the product/company	market	reach
Alternative to other financing (bank, investors, etc.)	finance	money
Only produce if there is demand (sort of on-demand production by crowdfunding—you ask the backers if they want it before you produce in retail)	market	costs
Efficient production planning (e.g., in waves)	production	costs
Minimizing risks for market entry with new products	market	sustainability
Gathering external financial support while minimizing securities needed	finance	money
Activate fan base	fan	influence

Source: own creation.

The market-oriented high-level concept is dominant and describes the approaches of project owners to be able to prevail on the market and also minimize risks by using crowdfunding techniques. Therefore, companies are only producing goods or enter the market if the crowdfunding campaign is successful. This is a sustainable approach as the resources for a non-successful entry into the market or distributing the products is avoided.

The most apparent reason for crowdfunding, the gathering of monetary funds, is an alternative to other financing options and to minimize the need for independent resources to expand the business. Consequently, the own resources can be put to better use. The production, on the other side, can be better planned using the data gathered from crowdfunding. This will, as a reverse conclusion, lead to a better, more efficient use of resources on the side of the project owner.

A common characteristic among successful crowdfunding campaigns observed is also reflected in the high-level concept of engaging with fans and the customer base. Crowdfunding is heavily based on the support of the customer base (Belleflamme et al. 2014; Zhang et al. 2017), and crowdfunding campaigns can also be used to engage and activate the consumers already connected with the product or service. It is important for the economic success of the company to accommodate the need of high engagement with the community and close involvement of the customer (Epuran et al. 2015). They are, consequently, reminded of the company/brand/product and are called to support the campaign.

The secondary meta concept keywords (power, reach, money, influence, costs, sustainability) describe the pursued goal in a more abstract way to enable a perspective on a more holistic view of the business approach followed by applying crowdfunding. The underlying question for defining this second level was what objective project owners are aiming for in the end—to lower costs, to increase power, reach, influence, sustainability or to gather money. Although the goals are interdependent, the distinction offers a meta level overview for category development.

Step 3 Category development

In the third step of the analysis, it was proven whether and to what extent the meta concepts were represented in the six highly sustainable cases identified during data gathering. The results can be found in Table 4.

Table 4. Connection of meta concepts with high sustainable cases.

	#1—Elio Motors	#2—Sion	#6—Flow Hive	#16—Weissenhaus	#22—allplants	#23—THIS
	emobility	emobility	sustainable life	reactivation	vegan meals	meat alternatives
	reward-based	equity-based	reward-based	equity-based	equity-based	equity-based
power	x	x	x			x
reach		x		x	x	x
influence			x	x	x	
money	x	x	x		x	x
costs	x					
sustainability	x	x	x	x	x	x

Source: own creation.

Our research shows that each of the sustainable crowdfunding cases can be linked to at least three or maximum four of the meta concepts. Out of the observed distribution categories, the influence of crowdfunding on sustainability in retail was derived, which is represented in Table 5.

Table 5. Category development.

Concepts	Category
money/costs/sustainability	sustainable economic behavior
influence/reach/sustainability	sustainable community management
power/sustainability	sustainable market adaptation

Source: own creation.

The findings include different criteria that the campaign owners focused on to make the campaigns successful. Three different categories of these criteria could be developed out of the data gathered.

The sustainable economic behavior aspect on sustainable retail was apparent in crowdfunding campaigns which aimed at efficient production planning, as well as the acquisition of monetary funds while having a long-term approach due to minimizing risks entering the market.

Sustainable community management represented another category for crowdfunding campaigns which were having a positive impact on sustainable retail. They featured extensive communication with the customer and fan base, trying to spread the word and engage them in the campaign.

The third category was aiming at sustainable market adaptation, where the company was trying to be a pioneer to the market while minimizing the risks through carefully exploring the real market opportunities and adapting to them, if needed.

Step 4 Development of theoretical framework

The theoretical framework which can be derived out of the research reveals that crowdfunding as a crowdsourcing category can positively influence sustainability in the retail sector, especially if the project owners focus on one or more of the derived criteria categories. Particularly, the two subcategories of equity- and reward-based crowdfunding are influenced by the three observed criteria categories of sustainable economic behavior, sustainable community management and sustainable market adaptation (Peters 2020; Bennett et al. 2020; Coatney and Poliak 2020). By using an equity- or reward-based crowdfunding approach and especially taking the discussed concepts into consideration, project owners can develop sustainable, long-term retail strategies, which can involve the usage of both direct sales and retail channels.

The theoretical framework involves external (market and community) as well as internal (efficient resource allocation and planning) perspectives. The analysis has shown that the success of a campaign is influenced by all three categories.

5. Discussions

In this paper, the relation between crowdfunding as a crowdsourcing category and sustainability in retail has been discussed, while a theoretical framework showing the potential impact of success criteria of equity- and reward-based crowdfunding campaigns on sustainable retail has been developed. The research uncovers key concepts which are directly influencing the longevity of products and services on the market, as well as the economic endurance of companies by making use of crowd intelligence (Yu et al. 2018).

The value of this research becomes obvious when looking at expansion and diversification strategies as well as CSR activities of retailers. Crowdfunding, as an example for a category of crowdsourcing, does have marketing effects besides fundraising benefits (Konhäusner 2020; Metka and Jaklič 2020). If adapted to the specific market requirements

and tailored to marketing concepts like the 4Es (experience, everyplace, exchange, evangelism), crowdfunding campaigns gain traction and lead to higher customer engagement (Epuran et al. 2015; Dabija et al. 2018; Konhäusner et al. 2021). Crowdsourcing can help retail businesses to influence their image towards stakeholders and help maximize their profits. If the activities positively support sustainable business practices of the retailers, the corporate social responsibility image of the firms is enhanced (Bulnes 2011).

Reviewing current scientific research on the topic of crowdfunding and its impact on sustainability, this paper acts complementary to works of Petruzzelli et al. (2019) and Bento et al. (2019), who focus on the impact of crowdfunding for sustainable projects. The research discussed in this paper, on the contrary, focuses on the sustainable impact which crowdfunding can have on the retail sector. Vismara (2019) points towards the sustainable impact of equity-based crowdfunding campaigns, whereas the present research highlights the importance of reward-based crowdfunding for sustainability in the retail sector. Other approaches focus on the opposing direction and highlight the importance of sustainability for the success of campaigns (Calic and Mosakowski 2016). Ramos (2014) highlights the importance of managers to ensure the sustainability of the crowdfunding platforms themselves. Chan et al. (2019) compared the crowding-out effect of campaigns which highlight entrepreneurial achievements in contrast to sustainable projects, finding that the intrinsic motivation of sustainable campaigns is diminishing the crowding-out.

Chang (2020) highlights that crowdfunding might have a negative impact on retail as campaign owners may diminish their own revenue potential through running a crowdfunding campaign. Hildebrand et al. (2017) focused on the analysis of adverse incentives in crowdfunding campaigns for borrowers giving money without securities, leaving out the effects on the retail market after the end of the campaign. In fact, the present research contributes to the work of Chemla and Tinn (2019), who already highlighted the importance of crowdfunding for producers of new products. The sustainable economic behavior, as well as the sustainable market adaptation, are already mentioned in their work, speaking about obtaining a reliable proof early in the production cycle of a new product.

This paper contributes to the closure of the research gap for the impact of crowdfunding on sustainability in retail, which could be observed, although a rising number of bigger firms are also taking advantage of crowdfunding (Chang 2020). It contributes to the discussion with the empirically based development of a theoretical framework and provides another example of how the grounded theory approach can be applied. The research done shows that crowdfunding for products and services, apart from the economic perspective, is tied to the idea of sustainability, given the feedback of the supporters, the close but open communication with the crowd, as well as the included willingness for change and adaptation by the campaign owners (Moritz et al. 2015; Ryoba et al. 2020).

6. Conclusions

In terms of implications on the grounded theory, this study constitutes a further example of a possible application of the approach. As pointed out in the description of the gathering of data, in the first step the observed cases were analyzed in detail. Defining characteristics, internal factors and external factors influence the description of the cases aimed at providing a full picture. The highs and lows of a campaign have been noted to understand the interdependencies as well as the possible spillover effects on retail markets. From this broad picture, several key concepts have been deviated, in parallel explaining—on a high level—the consequences of these concepts and the aim of why they were applied. This two-levelled approach in the deduction of concepts is a variation in performing the second step in the grounded theory. Having scoped the high-level concepts, these were reflected on the key cases by representing sustainability to recognize patterns and to come up with categories explaining the phenomena. The approach results in a theoretical framework deducted from the observed data and from answering the research question. From a theoretical perspective, this approach represents a new application case of the grounded theory.

The research this paper covers supports the work of crowdfunding campaign owners as well as retail managers. For campaign owners, who are aiming to launch a product on the market with a sustainable, long-term perspective, the theoretical framework proposes three different, interdependent areas of action of success criteria: The campaign should aim at efficient economic usage of resources internally, transparent communication with the crowd and potential supporters, as well as flexibility when it comes to making use of market potentials or new trends. Besides minimizing the risk incurred by the market entry by testing the product acceptance in a crowd, the close communication with the crowd as well as the gathering of financial resources help to sustain the product on the retail market in the long run.

Retail managers, searching for products and services to attract new customer segments, can benefit by carefully observing the crowdfunding platforms, trying to figure out opportunities for cooperating with up-and-coming producers, startups and manufacturers. These observations should not only focus on international crowdfunding platforms but can also on regional or national campaigns.

The present study can also be an indicator for policy makers to rethink ways to regulate the financial markets and incentivize sustainable behavior. Crowdfunding has become an alternative financing method besides the usage of banks, but still lacks regulatory backing. On the other side, sustainable crowdfunding campaigns, benefitting retail, customers and, therefore, society, could be supported by appropriate legal frameworks.

The research presented within this paper is limited to successful crowdfunding campaigns on international crowdfunding platforms, which were already finished with a funding volume of over 5 million USD. A closer look at smaller campaigns could reveal other success criteria which were left out in this analysis. The findings of this study therefore focus on the success criteria categories for large-scale campaigns with products and services available worldwide. Local crowdfunding campaigns might have different specifications and objectives. Campaigns covering unlaunched products have been included into the observation, which brings up the question of whether a product or service can already be regarded as sustainable if it is not available on the market yet. The analysis also revealed that these unreleased products and services are mostly dependent on research of new technologies. The customer angle, e.g., customer reception and loyalty, customer expectations, etc., was not included as a factor in the study. In this regard, the paper focuses primarily on the company perspective of the crowdfunding campaign, which leaves room for additional studies about the customer perspective, e.g., the perceived sustainability of the products and services as well as the long-term effects of crowdfunding campaigns on customer binding and loyalty.

Further research should evaluate and adapt the theoretical framework proposed while including regional projects or venture capitalist activities. Other methods besides the grounded theory approach can be used to elaborate the research question at hand and, consequently, validate the theoretical framework developed in this paper. Moreover, smaller products and services aiming at the retail market should also be taken into consideration in follow-up studies. The perspective of how long crowdfunded products and services stay on the market, as well as their influence on the market, would be two additional perspectives which would be worth taking into consideration for future studies. Another question of interest is how crowdfunding could be used to determine a sustainable price for the market entry or in the long run for the product or service offered.

Moreover, future research can focus on the perspectives of consumers and retailers themselves, which were left out of this paper. As the study results show a predominance of U.S.-based platforms and campaigns, the question comes up about which international legal and social frameworks would influence crowdfunding for sustainable retail positively and negatively. It could be that future analysis reveals that specific national regulations hinder or invigorate crowdfunding for sustainable retail. The theoretical framework introduced in this paper should also serve as a reflection angle for campaign owners trying to make use of the sustainable benefits of the fast-changing crowdfunding market.

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Appendix A

Overview of Gathered Data.

ID		Raised in USD	Short Description	Platform	Release of Product	Still on the Market/Available?	Dimension #1	Dimension #2	Dimension #3	Dimension #4
							Crowd Category	Benefit for Sustainable Retail	Coverage of Which SDG(s)?	Term Perspective of Dimensions #2 & #3
1	Elio Motors	102 mio	3-wheel vehicle	independent	not released yet	not released yet	Reward	unclear/virtual (test); product promotion and development financing; production-planning (as funders can select shipment date)	6, 8, 9, 11, 12, 14, 15	medium-term
2	Sion	59 mio	solar electric vehicle	independent (before 2x on seedrs)	not released yet (prototypes end of 2020)	not released yet	Equity	unclear/ virtual (test); brand promotion and company financing	6, 7, 8, 9, 11, 12, 14, 15, 17	medium-term
3	Glowforge	27.9 mio	3D laser printer	independent	2016 (presale)/2018 (full release)	yes, now 3 versions	Reward	market test for new product (DIY)	8, 9, 12	long-term
4	Pebble Time	20.3 mio	smartwatch	KS	May 2015	no, due to insolvency of Pebbly	Reward	product expansion after first Pebble campaign	8, 9, 12	long-term
5	Coolest Cooler	13.2 mio	cooler box	KS	July 2015	no, company closed	Reward	community marketing; no sustainability (due to bad expectation mgmt and disappointed customers)	9	medium-term
6	Flow Hive	13.2 mio	bee hive	IG	July 2015	yes, now 2 versions	Reward	forward integration shows the potential in the market	9, 11, 12, 13, 15—13 & 15 mainly	long-term
7	Frosthaven	12.9 mio	board game	KS	March 2021	not released yet	Reward	crowd-backed sequel product of highly successful board game—marketing approach	8, 9	mid-term
8	Pebble 2	12.8 mio	smartwatch	KS	never (due to insolvency of Pebble)	no	Reward	product expansion as well as additional funding due to financial difficulties	8, 9, 12	long-term
9	Kingdom Death: Monster 1.5	12.4 mio	board game	KS	October 2017	yes	Reward	promote a updated printing of the game and stay independent—marketing approach	8, 9	long-term
10	Travel Tripod by Peak Design	12.1 mio	tripod (travel gear)	KS	January 2020	yes	Reward	find a market for a product innovation (lighter and smaller than comparable products)	8, 9, 12	mid-term
11	BauBax	10.2 mio	travel jacket	KS, IG	August 2018	yes	Reward	product innovation (BauBax 2.0) financed by community	9, 12	mid-term
12	Pebble e-Paper Watch	10 mio	smartwatch	KS	January 2013	no, due to insolvency of Pebbly	Reward	pioneer to market strategy	8, 9, 12	mid-term

ID	Keywords maximum 3	Direct Sales or Retail Channel Usage	Text Description	Used References (accessed on 6 January 2021)
1	mobility; uncertainty; electric	direct sales	Three-wheel city car, which is heavily supported, but has not launched yet	https://www.elimotors.com/
2	mobility; equity; solar	direct sales	Autarc-acting, solar car letting supporters participate in success—crowdfunding #3 started because of failure to sign investors	https://www.seedrs.com/sono-motors https://sonomotors.com/de/profit-sharing/ https://sonomotors.com/de/press/press-releases/sono-motors-launches-community-funding-campaign-with-target-of-50-million-euros/ https://www.bloomberg.com/news/articles/2020-01-19/german-solar-car-startup-sono-says-it-s-met-crowdfunding-goal https://www.heise.de/newsticker/meldung/E-Auto-mit-Solarmodulen-Sion-Sono-Motors-verlaengert-Crowdfunding-Kampagne-4627504.html https://www.heise.de/newsticker/meldung/E-Auto-mit-Solarmodulen-Sono-Motors-erreicht-Crowdfunding-Ziel-4641675.html
3	pretail; laser cutter; surprise	direct sales	Laser cutter with a 100,000 USD crowdfunding goal exceeds expectations of the 14-person team in this self-run campaign	https://glowforge.com/m/press-releases https://www.heise.de/make/meldung/Lasercutter-von-Glowforge-jetzt-erhaeltlich-4086752.html https://www.slant.co/options/23188/alternatives/-glowforge-pro-plus-alternatives https://www.geekwire.com/2020/glowforge-makes-push-bring-3d-laser-printer-students-hires-head-educational-sales/
4	growth; brand awareness; success	retail channels	Successful product expansion and hype building; long-term aspect after insolvency: Pebble assets were sold to FitBit	https://www.theregister.com/2016/12/08/the_vulture_capitalists_killed_pebble/?page=1 https://www.kickstarter.com/projects/597507018/pebble-time-awesome-smartwatch-no-compromises?ref=most_funded
5	high expectations; disaster; disappointment	not applicable	After one of the biggest crowdfunding campaigns not all backers received a product and the company closed more than 5 years after the campaign (July 2014–December 2019)	https://www.geeky-gadgets.com/coolest-cooler-bankrupt-10-12-2019/ http://www.bizjournals.com/portland/blog/2014/07/its-a-cooler-its-a-blender-its-a-party-in-a-box.html
6	highly successful; newcomer; perfect timing	direct sales	Having started with a small fan base, the Flow Hive team accomplished the biggest success in the history of IndieGogo	https://venturebeat.com/2015/03/09/indiegogos-new-crowdfunding-record-5-3m-and-counting-for-a-smart-beekeeping-system/ https://makinghoney.info/flow-hive-best-indiegogo-campaigns/ https://www.indiegogo.com/projects/flow-hive-honey-on-tap-directly-from-your-beehive#/ http://www.abc.net.au/news/2016-09-12/australian-story-flow-hive-family-talks-about-life-now/7828436 https://artofthekickstart.com/flow-hive-a-case-study-in-bee2c-marketing-on-indiegogo/
7	sequel; highest funded board game; discount and marketing	retail channels	After three years of hints, the announcement of the campaign for the board game was welcomed by the fans—shown by having reached the campaign goal within a few hours	https://www.kickstarter.com/projects/frosthaven/frosthaven https://www.gamesradar.com/frosthaven-board-game-funded-in-just-a-few-hours/ https://boardgamegeek.com/boardgame/295770/frosthaven
8	failed attempt to rescue; innovation; disappointment	retail channels	Successor of Pebble, never sold, backers were reimbursed;	https://www.kickstarter.com/projects/getpebble/pebble-2-time-2-and-core-an-entirely-new-3g-ultra https://www.forbes.com/sites/quora/2016/12/16/why-did-pebble-fail/
9	founded 2012; cooperative board game; marketing	retail channels	Huge fan base supports the updated printing and the developer of their game	https://shop.kingdomdeath.com/products/kingdom-death-monster-1-5 https://www.kickstarter.com/projects/poots/kingdom-death-monster-15
10	new product; horizontal diversification; innovation	retail channels	Preorder for an innovative tripod for camera usage, supported heavily by community	https://www.peakdesign.com/pages/travel-tripod https://www.kickstarter.com/projects/peak-design/travel-tripod-by-peak-design
11	marketing; new product; crowd activation	retail channels	New travel jacket release celebrated as a crowd marketing event leads to the best backed fashion campaign on Kickstarter	https://www.kickstarter.com/projects/baubax/the-worlds-best-travel-jacket-with-25-features-bau https://www.baubax.com/
12	pioneer; hype; smartwatch	retail channels	One of the first smartwatches to hit the market and to cater the hype	http://www.kickstarter.com/projects/597507018/pebble-e-paper-watch-for-iphone-and-android https://www.wired.com/2016/12/the-inside-story-behind-pebbles-demise/

ID		Raised in USD	Short Description	Platform	Release of Product	Still on the Market/Available?	Dimension #1	Dimension #2	Dimension #3	Dimension #4
							Crowd Category	Benefit for Sustainable Retail	Coverage of which SDG(s)?	Term Perspective of Dimensions #2 & #3
13	Wyrnwood Gaming Table	8.8 mio	gaming table	KS	February 2021	not yet released	Reward	new product launch, but reward is shipment date (not better accessories, etc.)—production planning	8, 9, 12	long-term
14	Exploding Kittens	8.7 mio	board game	KS	July 2015	yes	Reward	marketing for a card game; community engagement	9	long-term
15	Ouya	8.6 mio	video game console	KS	March 2013	yes, but not from original manufacturer	Reward	provide an alternative to established console generations; nowadays move to open source; alternative financing	8, 9, 17	long-term
16	Weissenhaus (1st campaign)	8.1 mio	real estate	Companisto	July 2014	yes	Equity	support the double-secured renovation of a wellness get-away location—marketing-focus for reference project in real estate	3, 8, 9, 11, 15	long-term
17	Snapmaker 2.0	7.9 mio	3D printer	KS	December 2019	yes	Reward	marketing for product sequel with improved functionalities; direct selling to fan base	9, 12	mid-term (because of product life cycle)
18	The Way of Kings	6.8 mio	books	KS	November 2020	yes, but limited edition	Reward	fan activation for anniversary edition	8	short-term
19	Pono Music	6.2 mio	digital music player	KS	October 2014	no, service cancelled in 2017	Reward	funding of the market entry of a new product—marketing about product awareness	8, 9	mid-term (Pono player was cancelled in April 2017, but the streaming shut down in July 2016)
20	Lucyd	6.1 mio	AR eyewear	Ethereum	January 2021	no, not yet launched	Reward/Equity	minimizing risk for market entry with new product based on blockchain technology—market test	8, 9	mid-term (glass life cycle rather short-term, blockchain approach long-term)
21	Fidget Cube	6 mio	desk toy	KS	December 2016	yes	Reward	crowdfunding campaign as an alternative retail and marketing channel and to minimize risks of failure of product innovation	9	short-term
22	allplants	5.8 mio	vegan meal delivery	Seedrs	launched 2016	yes	Equity	funding of market penetration and expansion	3, 8, 9, 12, 12, 15	long-term
23	THIS	5.8 mio	vegan meat	Seedrs	2017	yes	Equity	product innovation, enlargen manufacturing and marketing reach	3, 8, 9, 12, 13, 15	long-term
24	Restore King Chapel Now	5 mio	real estate	IG	May 2015	yes	Donation	community engagement for long-term restauration	9, 11, 16	long-term

ID	Keywords maximum 3	Direct Sales or Retail Channel Usage	Text Description	Used References (accessed on 8 January 2021)
13	gaming table; customizable; production planning	direct sales	highly customizable, high quality gaming table manufactured for fans picking a delivery date (limited availability per slot)	https://www.kickstarter.com/projects/wyrmwood/modular-gaming-table https://wyrmwoodgaming.com/modulargamingtable/
14	card game; hype and viral trend; marketing	retail channels	grotesque, funny, controversial card game goes viral and attracts over 200,000 backers (supported e.g., by the Fidget Cube campaign via message to their community by the Fidget Cube campaign owners)	https://www.kickstarter.com/projects/elanlee/exploding-kittens https://explodingkittens.com/
15	android-based console; (indie) alternative; missed expectations	retail channels	android-based console launched as promised, was sold to companies like Razer, then shut down because the expectations were not met, now Ouya is kept alive by the community	https://www.s-config.com/ouya-support-in-the-year-2020/ https://www.kickstarter.com/projects/ouya-a-new-kind-of-video-game-console
16	wellness getaway; double-secured; real estate marketing	direct sales (but also agency bookings possible)	owner of the real estate/property offered a “safe investment” due to having the supporters investments secured twice, proposed to develop a luxury high-class get-away location and used the campaign also for marketing purposes	http://www.companisto.com/de/investment/weissenhaus https://www.weissenhaus.de/ https://crowdcircus.com/crowdinvesting-projekte/companisto/weissenhaus
17	huge fan base; maker movement; highly anticipated	direct sales	3-in-1 device for 3D printing, laser engraving and CNC carving was funded in 1 min and is the most funded technology campaign on Kickstarter to date	https://eu.snapmaker.com/de/products/snapmaker-2-0-modular-3-in-1-3d-printers https://makezine.com/2020/11/09/snapmaker-2-0-a-hands-on-review/ https://www.kickstarter.com/projects/snapmaker/snapmaker-20-modular-3-in-1-3d-printers
18	fantasy novel; fan base; limited anniversary edition	direct sales	ten years after the release of the book, a leatherbound edition with a lot of merchandise is offered in a crowdfunding campaign	https://www.kickstarter.com/projects/dragonsteel/the-way-of-kings-10th-anniversary-leatherbound-edition
19	music player; celebrity support; potential disruption	direct sales	Neill Young anchored the release of the Pono hardware music player as well as a new streaming service for a better audio/music experience	http://www.noise11.com/news/r-i-p-pono-neil-young-kills-off-his-digital-player-20170423 https://www.kickstarter.com/projects/1003614822/ponomusic-where-your-soul-rediscovers-music
20	augmented reality glasses; blockchain; rename	direct sales	Ethereum-based crowdfunding campaign, prolonged on StartEngine, for blockchain-based AR apps sells mainly AR glasses online—no coin activity in the recent past	https://www.startengine.com/innoeye https://www.lucyd.co/ https://www.coingecko.com/en/coins/lucyd
21	community hype; used for following campaigns/products; desk toy	retail channels	multifunctional fidget spinner toy for the working desk for stress reduction	https://www.dailymail.co.uk/sciencetech/article-3780244/Do-fidget-desk-Bizarre-toy-switches-buttons-clickers-claims-able-help-focus-work.html https://www.kickstarter.com/projects/antsylabs/fidget-cube-a-vinyl-desk-toy
22	vegan meals; food delivery; sustainability	direct sales	impact investing in a British vegan meal delivery service, which should also attract non-vegans	https://www.seedrs.com/allplants https://allplants.com/
23	vegan; meat alternatives for retail sale; sustainable	retail channels	inventing meat alternatives for retail sale using an aggressive, comedian marketing approach	https://www.seedrs.com/this https://this.co/
24	church; restauration; community movement	not applicable	community campaign to raise funds for restauration of a historic church	https://www.indiegogo.com/projects/restore-king-chapel-now-every-day-dollar-counts#/

Source: own creation.

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