Determinants of overfunding in reward-based crowdfunding

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Abstract

While research on factors contributing to the success of a reward-based crowdfunding project is abundant, research dedicated to projects that were not only successful, but received significantly more funds than initially targeted—overfunded projects— is still scarce. Following a qualitative case-study approach, this study sought to shed light on this phenomenon through examining expert interviews with supporters and team members of an overfunded crowdfunding project considered a critical case. The results are divided into three phases that differentiate characteristics ascribed to the crowd, the project, and the communication. The main findings highlight the central role of the project founders' reputation and experience, that a positive sentiment among the crowd towards the project must be encouraged and maintained and that the core target group must be correctly identified and attracted. This core target group is crucial for attracting a broader audience, a mechanism that is supported if the project benefits from network effects. A narrative of the project as a vision or 'dream' of the project founders thereby contributes to creating a hype and 'social buzz'. Ultimately, this study contributes to reward-based crowdfunding literature through offering novel insights on project overfunding and illustrating possibilities for new and small ventures how to attract and maintain customers through reward-based crowdfunding.

Keywords Reward-based crowdfunding · Overfunding · Success factors · Framework · Entrepreneurial finance · Business venturing

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1 Introduction

For entrepreneurs, the financing stage of their venture is one of the most critical and decisive for the future of their business idea. Venture capital or bank loans have long been the traditional ways to receive the necessary monetary resources for founders requiring rather large amounts of funding [68]. However, during the last decade reward-based crowdfunding emerged as an alternative for founders [68, 75]. By asking potential customers for financial resources, entrepreneurs can raise the necessary funding for their idea, and in reward-based crowdfunding even without the obligation to repay the funding or lose ownership. Crowdfunding mitigates the difficult endeavor of new ventures to convince professional investors to attract external financing [10]. Since popular reward-based crowdfunding-platforms like Indiegogo and Kickstarter launched, the total volume of transactions through crowdfunding increased continuously. A vast majority of campaigns hereby receive the targeted amount of funding by small amounts [56], however, some crowdfunding initiatives raise funds way beyond their initially targeted goal and receive the double, threefold, or tenfold and beyond amount of the requested funding [e.g., 19, 34].

These overfunded (sometimes overfinanced) crowdfunding projects are largely neglected in extant literature, as a vast majority of studies focus on the general distinction between successful and unsuccessful crowdfunding [20, e.g., 56, 76, 79]. However, especially overfunded projects can receive up to several million dollars and thereby compete with funding amounts usually provided by venture capitalists. The importance to offer explanations for overfunding relates to the long-term survival of crowdfunded new ventures. For entrepreneurs, a crowdfunding campaign is often a first point of contact between the founders and the crowd as potential customers [9], and successful campaigns can provide a signal of quality and market acceptance for additional funding stages, such as venture capital funding, subsequent to crowdfunding [41, 48, 73]. Overfunded projects may thereby indicate that the idea of the crowdfunding project is perceived as an outstanding idea or product by the potential customer base and thus can provide a strong indication that the idea can become highly successful after the crowdfunding campaign. Thus, overfunding serves not only the purpose of signaling a promising project idea to potential future investors, which can benefit future fundings rounds. Overfunding can also enable entrepreneurs to acquire a larger customer base already during the early funding stages, holding the potential to accelerate the adoption of a product idea upon market launch. Therefore, knowledge on which type of crowdfunding projects, which marketing actions, or which product features contribute to the likelihood of receiving more funds than requested can be highly beneficial for project teams when designing and managing a reward-based crowdfunding campaign. A better understanding of project overfunding can be useful to derive crucial advice for entrepreneurs in terms of which actions and characteristics of a project can not only motivate the crowd to provide funds to succeed, but to continue funding upon reaching the initial funding goal. Yet, extant literature does not offer sufficient empirical evidence to explain the emergence of overfunding.

Addressing this gap in literature, this study examines project overfunding and seeks to identify characteristics of overfunded reward-based crowdfunding projects and potential interrelationships among the characteristics. The central research question addressed in this study is as follows: What are the characteristics and determinants of overfunded reward-based crowdfunding projects? Thereby, this study contributes to the understanding which projects might be prone to become overfunded, and which factors beyond the factors contributing to project success play a role for backers' intention to overfund a project. Building on reward-based crowdfunding literature and in particular the few studies concerned with project overfunding, this study offers unique insights into the mechanisms that contributed to the success of 'Star Citizen', one of the highest overfunded projects to date. From a theoretical perspective, the results of this study offer empirical evidence to what extent the factors that explain crowdfunding success can be adapted to the context of project overfunding, and which additional factors motivate a crowd to overfund a project.

2 Literature review

Reward-based crowdfunding can be defined as "an open call, mostly through the internet, for the provision of financial resources either in the form of donations or in exchange for the future product or some form of reward to support initiatives for specific purposes" [10, p.588]. Contrasting to other types of crowdfunding, such as investment- or equity-based, this study is concerned with reward-based crowdfunding, such that backers typically receive non-monetary rewards for providing funding [67]. The central topic within extant research addressing reward-based crowdfunding relates to factors explaining whether a project achieves its set funding goal or not, or in other words successful and unsuccessful projects. Since overfunding constitutes a special case of successful projects, the vast majority of literature related to reward-based crowdfunding success cannot be adequately used to derive implications for overfunding. Only few studies directly address project overfunding empirically, which are summarized in Table 1. The dominating approach to research project overfunding has been to assess whether the central and basic factors that impact project success [e.g., 8, 19, 21, 36, 56, 64, 77] also impact project overfunding [2, 19, 44, 52, 63]. These factors include the availability of pictures and/or videos on the crowdfunding project's website, the number of comments and updates, the level of the funding goal, the size of the project team's network in terms of friends or size of online networks, and whether members of the founding project team themselves have supported other crowdfunding projects in the past. While literature on project overfunding provides a tendency that these factors may not only impact project success, but also the likelihood of overfunding [2, 19, 44, 52], there is also evidence that these factors do not significantly contribute to explain the emergence of overfunding [44, 63]. Hence, extant literature offers ambiguous results. Beyond the aforementioned factors, two further studies relate the perceived attractiveness of a crowdfunding project's idea to the willingness of backers to provide funding beyond the initially set funding goal. Crosetto and Regner [21] find that when projects offer backers to pre-order the envisaged product through a crowdfunding campaign, the

Table 1 Literature on Overfunding in Reward-based Crowdfunding

Factors	Literature	Description	Effect
Pictures, videos, comments, updates, funding goal, friends/network, support of other crowd-funding projects	[2, 19, 44, 52, 63]	• Considered the fundamental factors contributing to project success • Mixed findings showing evidence of both a positive relationship with project over-funding, or no effect at all	• Mixed
Product attractiveness	[21]	• Pre-orders motivate the crowd to provide financial resources independent of whether the project's funding goal has been achieved already	• Positive
	[84]	• Desire to 'make the product happen' offers stronger motivation to provide financial resources than supporting a project to achieve its funding goal, whereby increased funding is believed to contribute to the successful realization and implementation of the project's idea	• Positive

motivation to provide financial resources is rather focused on the attractiveness of the product, than on the willingness to support a project to achieve its funding goal. This finding is closely related to an individual's desire to 'make a product happen' [84]. When individuals from the crowd perceive a strong desire to support a project with the goal to increase the possibility that the project idea will be ultimately successfully implemented and realized, this desire results in a motivation to support a crowdfunding project even beyond its funding goal [84].

Apart from the literature on project overfunding in reward-based crowdfunding, some empirical findings on project success offer opportunities to derive theoretical relationships to project overfunding. A central role for crowdfunding success is ascribed to community-related factors, such as the social media and the personal networks of project founders. Communities offer a way for interaction between the crowd and the project team, can serve to create trust and credibility, or to raise awareness of a project [24, 33, 37, 74] Gerber et al. [28] find that a motivation for backers to pledge is to engage in a community, to connect with others, and to be associated with the project. In a community context, offering rewards which provide social reputation to backers and allow them to demonstrate their support publicly increases the chance to succeed [18]. From the community perspective, overfunded projects can offer a greater incentive to be part of a larger community, as overfunded projects are typically supported by a higher number of supporters [2]. Thus, literature offers an indication that with a growing supporter base, further individuals from the crowd may be motivated to join this supporter base due to the opportunity to connect and be a part of a community.

A further central topic in crowdfunding research is concerned with linguistic attributes and the narrative framing of a project [e.g., 4, 6, 54]. In particular the framing of a project offers promising avenues to connect extant literature on project success with project overfunding. For instance, framing a project description in a way that resonates with the values of the crowd positively relates to the crowd's funding intention [59]. Supporting these findings, Kim et al. [43] state that the narrative of a project idea serves to create trust and credibility, which can support attracting supporters to provide funding. The way a project is framed and communicated hence can motivate the crowd to support a project, and allows to assess, for instance, business viability, which positively contributes to funding intention [35]. These studies are, however, limited in their focus addressing the likelihood of success of crowdfunding projects, factoring out the potential relationship to subsequent overfunding upon project success. One study observing the narrative framing of an overfunded project finds that portraying the idea as a personal dream of the founding team is positively related to overfunding [3]. Yet, for the remaining factors, as outlined above, empirical evidence for a relationship to project overfunding is lacking. The shortcomings of extant literature on overfunding are evident considering that the factors that have been primarily addressed serve to provide the crowd the basic information on crowdfunding projects. Mollick [56], for instance, states that providing updates, pictures, or videos signal a basic preparedness of the project team to the crowd. Thus, it is questionable whether these factors truly discriminate between successful but not overfunded, and overfunded projects. To conclude, studies explicitly dedicated to project overfunding remain scarce and offer ambiguous results.

Only a small fraction of the factors that have been assessed for project success have been equally assessed in the context of project overfunding. Moreover, interrelationships between factors that bear potential to explain project overfunding have been largely neglected, as most empirical approaches are limited to a selected set of factors. Against this backdrop, most of the factors addressed in extant literature relate to actions from the project team, such as providing updates. Much less research is available that sheds light on the crowd, resulting in a knowledge gap with respect to individual characteristics of the crowd who supports and overfunds a crowdfunding project, and their subjective motivation to provide financial resources beyond the funding goal. Hence, this study seeks to offer novel insights into the emergence of project overfunding. A special focus is set on developing an understanding on what characterizes the crowd of overfunded projects, and the factors that motivate the crowd to overfund a reward-based crowdfunding project. This further includes the subjective perceptions of the crow towards overfunded projects and how different factors relate to each other.

3 Methodology and data

3.1 Research design

The phenomenon of overfunding constitutes a special case of successful projects and thus factors differentiating successful from unsuccessful projects should not be equally used to make statements on overfunding, since they were not explicitly elaborated to explain overfunded projects. According to Glaser and Strauss [31, p. 37], using findings from a related field of research "tends to hinder the generation of new [concepts], because the major effort is not generation, but data selection." Therefore, there is very limited empirical evidence available on overfunding, and which factors contribute to overfunding, as outlined in the literature review. Moreover, the little evidence available shows that the subjective perception of project attractiveness may play a central role in the context of project overfunding. Therefore, a qualitative case-study approach was chosen, since the research question of interest cannot be adequately explained by existing research [25], and as quantitative research lacks the potential to properly assess characteristics which are not quantitative by nature, such as "the idea itself, the initiators reputation, and notoriety" [38, p. 18]. In this regard, the Grounded Theory approach allows "to let the key issues emerge rather than to force them into preconceived categories" [15], and constitutes an appropriate qualitative, exploratory method to research the yet unexplored characteristics of overfunding. However, existing research on crowdfunding contributed to the purpose of this study as a starting point. Glaser and Strauss [31] state that researching the underlying structure of a study's object provides a foothold for the research, but one should not assume any relevancy to the conducted research. Therefore, no hypotheses or propositions were preconceived based on prior research [15, p. 47]. A downside described by Suddaby [72, p. 635] is that prior knowledge of existing findings has the potential to "force the researcher into testing hypotheses, either overtly or unconsciously, rather than directly observing." A prevention measure is to focus

not "too closely to a single substantive area and, instead, draw from the several substantive areas that are frequently [observed]" [72, p. 635]. Following this logic, the provided literature overview constituted a very broad, theoretical basis for this study. As such, the three main constituents within the crowdfunding environment, the project founders and the project idea, the crowd, and the communication and interaction between them, were the central objects of interest in this study.

3.2 Data collection and examination

3.2.1 Case description

Considered a best-case example, the highest overfunded reward-based crowdfunding project in history to date, the video game Star Citizen, was the central crowdfunding project assessed in this study. The goal of Star Citizen's project team was to create an immersive video game set in space striving to become the best space simulation game in the market. The project launched in October 2012 with an initial goal of $500,000 and received $2.1 million from around 34,000 supporters after a one-month campaign on Kickstarter. The project founders offered a range of rewards during their Kickstarter campaign, such as providing early access to the game once it is in a playable state, offering unique in-game content varying contingent on the amount of money provided, or spending a day with the project founders. However, the founding team of Star Citizen under the leadership of Chris Roberts continued crowdfunding through their own website, receiving more than $440 million as of March 2022 from more than 3.5 million backers[1]. Thereby, Star Citizen's team exploited the crowdfunding mechanism over several years to receive further funding.

Goffin et al. [32] emphasize the importance of carefully choosing cases for appropriate theoretical reasons, which is particularly important for single-case studies. The rationale of assessing Star Citizen as a best-case example is the possibility to view this project from a dynamic perspective, as characteristics before, during and after the crowdfunding campaign on Kickstarter can be assessed. After the campaign on Kickstarter ended in November 2012, Star Citizen continued to offer new rewards that extend the final product, the video game Star Citizen, in case a newly set funding goal is reached. This project is in particular promising for the identification of factors that impact overfunding, since it managed to achieve and exceed the numerous new and steadily increasing funding goals over the course of several years. From a methodological perspective, the method of critical case sampling serves as a basis for the selection of Star Citizen, which according to Patton [61, p. 174] follows the logic that "if it happens there, it will happen anywhere." Thereby, "logical generalizations can often be made from the weight of evidence produced in studying a single, critical case" [61]. Accordingly, also Yin [78, p. 175] argues that extreme and unusual cases, such as Star Citizen in the context of crowdfunding in this study, are suitable for single-case studies.

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[1] https://robertsspaceindustries.com/funding-goals.

3.2.2 Data collection

The data was primarily collected through in-depth interviews conducted via Skype in July and August 2018 with experts having sufficient and extensive knowledge of Star Citizen's crowdfunding campaign. The main criteria to identify relevant interview partners was that they were actively engaged with Star Citizen, meaning that at the time of the interviews they have been aware of the Kickstarter crowdfunding campaign and since actively followed recent news related to the project. Experts in this field were represented by individuals who provided funding themselves, and as such the interview partners were backers of Star Citizen's crowdfunding project with in-depth knowledge about the project. Especially these experts are "people who have *directly* experienced the phenomenon of interest; that is they have 'lived experience' as opposed to secondhand experience" [62, p. 104], and as such were considered high-quality interviewees.

For identifying potential interview partners, gatekeepers have been contacted, and once the first interviewee who supported the project during the early stages was interviewed, the personal network of this interviewee was subsequently used to identify further potential interviewees through snowball sampling. At the beginning of the interviews, the purpose was clearly stated and permission for recording and evaluating the interviews for research purposes has been provided. In total, six expert interviews with backers of Star Citizen were conducted. Five of the six interviewed experts joined in the very early phases of the Kickstarter campaign or shortly after and were therefore considered early backers. One interviewee supported the project three years after the ending of the Kickstarter campaign of Star Citizen, in 2015. All interviewees were still active in following the project from the time of their first pledge to the time of the interviews, and confirmed their strong engagement in the project. Thus, they were able to recall experiences and information on the crowdfunding campaign from its initial launch until the time of the interviews. The questions throughout the interview did not explicitly ask for individual success factors that have been subject to previous research on crowdfunding success, but following the notion of the grounded theory, the interviews primarily aimed at letting the key factors contributing to overfunding emerge through the thoughts and perceptions of the interviewees. The general topics include an introduction on major factors that contributed to the overfunding of the assessed project, followed by more specific topics on the project idea and team, characteristics of the crowd, and the interaction and communication between the project team and the crowd. The interviewees were asked to provide insights why the project became so successful and overfunded according to their opinion. The questionnaire did thus not ask for the specific individual and personal motivation of these backers but asked them to recall experiences on Star Citizen's crowdfunding campaign from a more general perspective, such that the interviewees acted as experts in this subject. Additional insights from the perspective for the project team were provided by a face-to-face interview with two CIG team members in 2018. A partial, smooth verbatim transcription of the data material was applied.

To deepen the insights of the textual data generated through the interviews, additional secondary data was examined that served to triangulate the collected interview

data, consisting of videos about Star Citizen from both a backer's perspective, and interviews with team members of CIG. These videos were chosen from YouTube by searching for 'Star Citizen', and were used to supplement and enrich the primary data. The criteria to include YouTube videos were that they either (a) mention the funding process of Star Citizen in terms of backer motivation to support the project, (b) the interaction between the crowd and the project team, or (c) the perspective of the project team considering their reasons for the project's success. Similar to the conducted interviews, the identified relevant YouTube videos were transcribed and prepared for coding.

Additionally, the pitch videos of six other overfunded projects within the same category on Kickstarter were assessed. Pitch videos usually contain the core arguments why backers should support the projects, concisely illustrate the framing of the project by the project team and highlight how the project team expects to manage the funding period. Thus, it can be expected that the pitch videos contain very strong signals to the crowd as to convince them to support the project. This approach allowed to identify core similarities and differences among the six additional projects and Star Citizen. In order to account for comparability, these projects were all related to the category *video games* and significantly exceeded their initially targeted funding goals. However, in contrast to these projects, Star Citizen continued to utilize the crowdfunding mechanism after the Kickstarter campaign on their personal website. Thereby, Star Citizen allowed to assess the dynamics of crowdfunding not only limited to the Kickstarter campaign, but also how the project team managed to use crowdfunding as a sustainable financing method over several years. This very phenomenon is unique among crowdfunding projects and was not achieved by any other project to this extent. Table 2 provides an overview on all examined projects, indicating their individual degree of overfunding at the end of their Kickstarter campaign.

3.3 Analysis

Following a grounded theory based approach, continuous data collection and assessment was applied, which included shaping and altering "the data collection to pursue the most interesting and relevant material" [15, p. 48]. Accordingly, the collected data is illustrated in Table 3, whereby each row represents one step, after which all data from the previous rows was reassessed and re-coded, if necessary.

The first interviews were analyzed line by line, categorizing each logical section and were then ascribed to more general concepts, or first-order themes. The first-order themes were then clustered into groups, or second-order themes. Secondary data was not used to create new coding categories or themes but to supplement and enrich the findings from the conducted interviews. Subsequently, the following interviews served to either further support findings, or to discover reasons for contradicting findings. After each phase of new data assessment, the already assessed data was revaluated and re-coded, and further questions were added to the questionnaire, if necessary. After coding the last transcript, the second-order themes were grouped into the aggregated categories constituting the three major elements, the

Table 2 Kickstarter results of examined overfunded reward-based crowdfunding projects

Project name	Kickstarter Goal (in $)	Received (in $)	Overfunded
Bloodstained: ritual of the night	500,000	5,545,991	+1009%
Iron harvest	450,000	1,295,726	+188%
Project eternity / pillars of eternity	1,100,000	3,986,929	+262%
Shenmue III	2,000,000	6,333,295	+217%
Shroud of the Avatar: Forsaken Virtues	1,000,000	1,919,275	+92%
Tides of Numenera	900,000	4,188,927	+365%
Average of projects above	*991,666*	*3,878,357*	*+291%*
Star Citizen	500,000	2,134,374	+327%

Table 3 Overview of examined data

Primary data	3 interviews with backers of Star Citizen (I1, 1 h:02 m; I2, 1 h:24 m; I3, 1 h:08 m)
Secondary data	1 video about Star Citizen from a backer's perspective (S1, 14 m:48s) 1 interview with a team member of Star Citizen and a backer (S2, 01 m:52s)
Secondary data	1 pitch video of Star Citizen's crowdfunding campaign (S3, 11 m:08s) 1 video with project leader (Chris Roberts) (S4, 02 m:04s) 1 interview with project leader (Chris Roberts) (S5, 09 m:00s)
Primary data	3 interviews with backers of Star Citizen (I4, 30 m:44s; I5, 1 h:31 m; I6, 1 h:06 m)
Primary data	1 interview with two team members of CIG / Star Citizen (I7, 1 h:26 m)
Secondary data	3 videos about Star Citizen from a backer's perspective (S6, 21 m:40s; S7, 15 m:37s; S8, 13 m:47s)
Secondary data	1 interview with project leader (Chris Roberts) (S9, 34 m:38s)
Secondary Data	6 pitch videos of further overfunded crowdfunding projects (S10, 03 m:41s; S11, 06 m:21s; S12, 06 m:45s; S13, 03:05; S14, 07 m:25s; S15, 05 m:20s)

I Interview data, *S* Secondary data

project, the crowd and the communication between them. This process complies with the approach described by Gioia et al. [30]. It is noteworthy that the Grounded Theory "should not be used to test hypotheses about reality but rather to make statements about how actors interpret reality" [72, p. 636], relating to how the crowd perceives and interprets actions and characteristics from the project founders.

4 Results

Figure 1 illustrates the structured data, reflecting the identified key constituents—the project idea and project team, the crowd, and the communication between the project team and the crowd. In the following, the research outcomes are presented by providing a narrative from a dynamic perspective, assigning the major findings to three phases of a crowdfunding project that emerged throughout the analysis—a pre-project phase before the launch on a crowdfunding platform, the active campaign on a crowdfunding platform, and a phase following the end of the campaign. In the appendix (Appendix A), the aggregated categories and second order themes as shown in Fig. 1 are described and supported by quotations from the interviews and assessed videos, as recommend by Barrat et al. [7] for single-case studies. 510 of 707 codings in total resulted from the primary data, constituting around 72%. Thus, the main sources of the results were, in fact, the conducted interviews, whereas the secondary data supplemented the found results from the interviews. The most prevalent topic *project characteristics* accounted for 374 codings in total, whereas *communication characteristics* accounted for 220 codings, and *crowd characteristics* for the remaining 113.
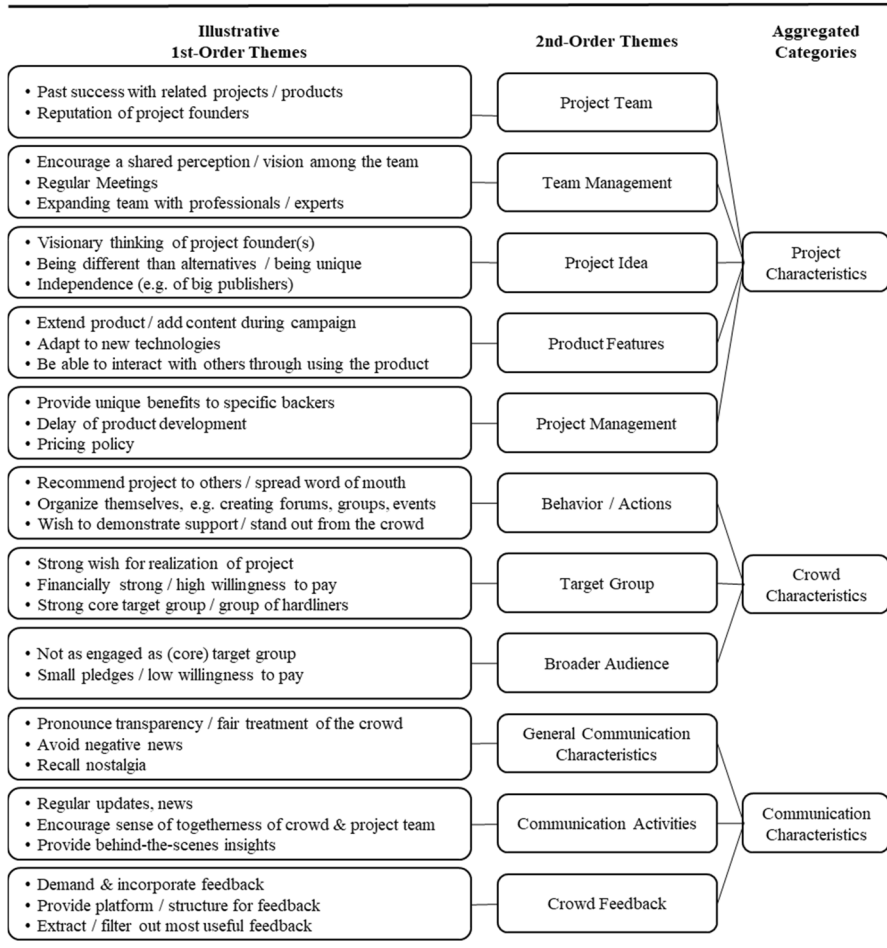
Fig. 1 Data structure

4.1 Pre-Campaign

Before launching a crowdfunding campaign, an optimal starting point is to target a group of people who have both a strong need which is not satisfied by alternatives on the market and a high willingness to pay for a solution. A major finding is that the group of early backers perceived nostalgia when Star Citizen was initially announced, was already familiar with the project founder, and perceived him having a high reputation before the campaign launched. In fact, Cai et al. [13] report that external social capital, which includes the reputation and perceived trust towards project founders, is relatively more important in the early phases of a crowdfunding campaign than internal social capital, such as loyalty, reciprocity among backers, or the specific communication through the project description and updates. The

findings for the case of Star Citizen in this study provide complementary empirical evidence for the findings of Cai et al. [13]. This finding further relates to Mollick's [55] results that explicit past success of the project founder is a crucial aspect for success. For overfunding, this study indicates that past success is not only limited to previous crowdfunding experience, but being successful as a professional in the industry where the project is set-up serves as a signal leading to reputation among the specific target group.

Moreover, the previous experience in the very field the crowdfunding campaign was set-up allowed the project team to provide a certain narrative. The project was described to be a 'dream' of the project team [also see 3, who offer further insights into the narrative of Star Citizen], which resonated with the perception of the core target group perceiving the product a dream that they wished to be realized as well. This finding is also in line with the 'entrepreneur-effect' as described by Chan et al. [14], who emphasize that the individual characteristics of the project founders play a central role for the outcome of a crowdfunding project. The results of this study hereby indicate a reciprocal effect. Relating to the study of Allison et al. [4], who find that framing a project as a personal dream or vision of the founders contributes to success, this study finds that when parts of the *crowd* congruently perceive the project as *their own* vision (or 'dream') as well, their willingness to support is strongly increased and hence supports attracting the core target group, that is crucial in the subsequent crowdfunding phase to provide funding.

Finding 1 *Addressing a core target group that has a strong unsatisfied need for a certain product and a high willingness to pay positively contributes to raising awareness and attracting a crowd prior to the launch of a reward-based crowdfunding campaign. This relationship is supported if the project founders have previous professional experience and reputation in the field where consumers perceive the unsatisfied need.*

Finding 2 *When announcing a project, a narrative framing the project as a dream or vision of the project team that resonates with the crowd's perception of the project idea contributes to raising awareness and attracting a crowd prior to the launch of a reward-based crowdfunding campaign.*

4.2 Campaign

During a reward-based crowdfunding campaign, backers are motivated to make contributions in order to "make-the-product-happen" [84, p. 91], such that their individual contributions are pivotal to a project's success. In the context of the aforementioned narrative of a project, this leads to a two-fold effect in that the narrative as a dream consequently impacts the desire for the product to be realized, thus both factors combined contribute to the motivation of backers to strongly engage in the project and support it with financial resources. This is especially the case for the core target group, that is the group of people who has a primary interest in the domain of the project.

The focus on attracting that specific target group constitutes a key aspect to accelerate funding. This group refers to the *category-centered community* as elaborated

by Inbar and Barzilay [36], and in line with their results, the interviewees agreed that this group had a major interest in the field of PC-gaming and shared the project in their personal networks with similar interests. The interviewees reported that there was a hype in the beginning and that they perceived strong euphoria among the crowd, which again relates to the visionary narrative of the project team. The core target group thus contributes to create 'social buzz' [74], leading to a positive impact on project success. In fact, the findings related to spreading word-of-mouth complement and extend a recent study by Zheng et al. [81] on the impact of positive and negative word-of-mouth, proposing that the overall effect of negative word-of-mouth is stronger than the beneficial effects of positive word-of-mouth. For the researched case in this study, the project team successfully achieved to avoid negative word-of-mouth almost completely, which can be explained by the perception of a highly positive hype among the crowd, and the successful attraction of the core target group who was convinced of the quality of project idea's quality. Sharing the project on social media platforms and personal networks was further encouraged as Star Citizen was designed to allow interaction of users when playing the game, relating to the notion of network effects, meaning that existing users benefit from newly joining users [42]. The conducted interviews provide evidence that attracting new users was an important consideration for backers to share the project in their personal networks in order to attract a critical mass.

Finding 3 *The core target group contributes to create 'social buzz' by spreading word-of-mouth and creating hype, which is supported by a narrative framing the project as a dream or vision of the project team.*

Finding 4 *Network effects increase the efforts of the core target group to spread word-of-mouth and thereby contribute to create a hype and further stimulate 'social buzz'.*

However, the presented findings do not only indicate that common social media platforms like Facebook or Twitter, which are commonly used to spread information on the project by the project team and by individual crowd members, play a significant role for project success. CIG launched and operated their own social platform on their website and thus were able to observe, steer and control forums and discussions much better and could make strategic use from their own social platform. Contributing to the findings of Datta et al. [22] that the effect of using social media is especially strong when employed strategically, this study finds that the studied project strategically managed their user platforms and evaluated backers' contributions and feedback. For instance, CIG's own website was critical for receiving and responding to crowd feedback. Incorporating feedback was stated to be a strong motivating factor for backers to participate and engage in the project, and the interviewees also indicated a strong wish to be part of a community [e.g., in line with 28]. However, Star Citizen's team went beyond the rather simple narrative that they create the product together with the crowd [e.g., as described in 4]. The team implemented strategically structured processes to filter and receive the

most valuable feedback, and combined this with restricted access to feedback programs by setting a minimum contribution level to gain access to them as incentive for the crowd to provide higher amounts of funding. The data analysis showed that particularly crowd members with very strong engagement were eager to be part of this feedback program and incentivized them to provide additional funding. This can be considered an additional form of non-monetary reward, which does not take the form of a pre-order but a special treatment of a group of backers having a high willingness and personal interest to support the project, coupled with a price discrimination mechanism for this kind of reward. This allowed the project team to receive feedback from backers that are strongly engaged in the project through relatively high financial contributions and incentivized funding intention at the same time.

Finding 5 *Providing structured feedback programs for highly engaged supporters increases the quality of received feedback and motivates these supporters to contribute further ideas to the project. Restricting access to these feedback programs by setting minimum funding amounts contributes to the willingness of the core target group to provide a higher amount of funding.*

4.3 Post-campaign

As the project became overfunded after the initial crowdfunding campaign, the project founders provided stretch goals so backers could continue to provide funding. In Star Citizen's case the stretch goals were partially determined by the crowd itself through the aforementioned feedback programs, serving as a means to identify the needs of the crowd. The crowd suggested goals according to their own needs, thereby further increasing their own wish for the realization of the project [in line with 84]. These results indicate a high importance of maintaining crowd involvement for funding in the long-term, which was further encouraged through active communication, for example demanding and incorporating crowd feedback or providing behind-the-scenes insights. These findings underline that backers want to support products which are closely oriented towards *their* imagination of the final product. Thereby, in line with extant research this study finds that fostering an environment where the crowd feels involved in creating the "things they want to experience" induces satisfaction with the final product [17]. As identified through the interviews, incorporating such feedback may lead to continuous funding by individuals, which means individual backers support the project regularly with new contributions. To utilize this, Star Citizen's team offered special, limited rewards to the crowd which allowed backers to publicly demonstrate their supporting behavior and that they helped to realize the project. Thereby, extending studies on price discrimination in reward-based crowdfunding [e.g., 16, 65] to the context of project overfunding, the project founders used crowdfunding as price-discrimination device by offering different rewards (e.g., access to certain feedback programs, and special limited rewards) appealing to backers with both a high and a low willingness to pay.

Finding 6 *Incorporating crowd feedback maintains active involvement of existing project supporters, increasing the likelihood for continuous funding by individual crowd members.*

Finding 7 *Offering limited rewards or special edition rewards maintains the active involvement of existing supporters, increasing the likelihood for continuous funding by individual crowd members. This effect is strengthened if the rewards allow the supporters to publicly demonstrate their individual support and/or if the rewards originate from crowd feedback.*

Ultimately, the broader audience beyond the core target group can be attracted in several ways. As identified in this study, the broader audience was attracted in the case of Star Citizen by the hype the project generated, such that the project was covered in news articles and general media. Moreover, as the project was steadily extended by new features, partly originating from the feedback provided by the existing supporters, these new features aim to address the needs of the broader audience. This enabled the project team to secure funding in the long-term through financial contributions by both new and existing backers. This result supports Stanko and Henard [70] who point out that backers can be considered innovation adopters who spread the word of mouth and raise awareness of a project. When these backers successfully promote the project within their network, they attract further potential customer, and as such stimulate further funding. The crowdfunding campaign can therefore be seen as a catalyst to successfully pass the initial stages of raising awareness for a new product. In line with Lehner et al. [47], this group of people–the core target group–is not only characterized by high efforts of pledging, but also by providing valuable feedback and the willingness to provide solutions for emerging problems. Thereby, the project team benefits from implementing this feedback into the product in the long term, which ultimately reduces the risk of failing to meet customers' expectations [51].

Finding 8 *The core target group spreading word-of-mouth and creating 'social buzz' and the project team demanding and incorporating feedback and thus implementing new features into the product contribute to attract a broader audience in the long-term.*

However, implementing feedback means additional content and product features, which leads to increased development efforts. Thereby, in line with previous research, one of the most critical aspects for overfunded projects are delays in the product development [26, 56]. This study provides potential reasons and consequences for delays of overfunded projects: the numerous announced features prolonged the development, which ultimately led to a deterrence of both existing and new supporters and a negative crowd perception of the project management. Moreover, regularly adding features during the product development render a consistent and stable project planning near impossible. According to Salomo et al. [66] project risk planning and goal stability both positively contribute to the performance of an innovation. In a crowdfunding setting, their findings link to the presented results considering that continuously changing product features and adding

(stretch-)goals as means to stimulate overfunding may ultimately decrease the performance of the final product.

Finding 9 *Implementing new features leads to increased development time and decreased goal stability of the project, resulting in a negative perception by the crowd and thus negatively impacts acquiring additional funding.*

4.4 Project overfunding in reward-based crowdfunding

Table 4 summarizes the presented findings and illustrates their interrelations, as presented above, along the dynamic perspective of three distinct phases—pre-crowdfunding campaign, the crowdfunding campaign on a given platform, and the phases after the crowdfunding campaign on the platform ended.

It is noteworthy that the project before and during the Kickstarter campaign was strongly characterized by positive aspects. This indicates that overfunding, as a result, was strongly related to a highly positive sentiment among the crowd in the early stages of the campaign, which boosted funding, encouraged sharing the project in the crowd's network, and provided an optimal starting point for continuous crowdfunding in the long-term. The negative aspects were ascribed to the later stages of the project and thereby indicate important potential outcomes of overfunding: a delay in product delivery and the crowd's perception that too many features were added.

5 Discussion

The factors impacting project success in reward-based crowdfunding are central to crowdfunding research. However, overfunded projects that are not only successful but receive significantly more funding above the initially set funding goal have been largely neglected. Therefore, this study sought to provide insights into overfunding of reward-based crowdfunding projects through a qualitative case-study. The findings are structured along three phases, that are prior to the launch of a crowdfunding campaign, the campaign on a dedicated crowdfunding platform (e.g., Kickstarter), and the phase after the campaign ended on the platform. The most important characteristics center around the main constituents in a crowdfunding context, that are the project (including the project idea and the project team), the crowd, and the communication between the project team and the crowd.

5.1 Theoretical implications

Relating to literature on project overfunding [e.g., 2, 44, 63], the findings of this study do not indicate that the studied crowd was substantially concerned with common success factors like the number of updates, or the availability of pictures. Rather, the findings suggest that more importance was attributed to subjective experiences of a crowdfunding campaign that contribute to the willingness to provide

Table 4 Interrelation of findings during different crowdfunding phases

Stage	Crowd	Project	Interaction and Communication
Pre-crowdfunding campaign	• Interest / activity in the field where the project founder(s) are located (+) • Unsatisfied wish / need (+)	• Past success / experience with related projects / products (+) • Project team correctly identifies the need (+)	• Crowd is already familiar with past projects / products of the project team (+) • Recall nostalgia (if applicable) through announcing the project (+)
Crowdfunding campaign on platform (for example Kickstarter)	• Positive sentiment towards vision of project team and sharing / adapting the vision (+) • Perceive euphoria / hype (+) • Spread word of mouth / recommend project to others (+) • Strong core target group / hardliners (+) • Financially strong / high willingness to pay (+) • Wish to be recognized as early supporter (+)	• Project is a personal vision / dream (+) • Project is unique / differs from alternatives (+) • Product allows interaction of users (+) • Self-determined price-discrimination (+) • Provide unique benefits to backers depending on pledge level, for example discounts, club membership (+)	• Team communicates the project as a vision / dream and encourages crowd to share that vision (+) • Create excitement, for example through previews of interesting features of the final product (+) • Offer limited sales of additional unique product features (+) • Provide incentives / rewards and encourage crowd to spread word of mouth (+) • Directly address core target group (+)

Table 4 (continued)

Stage	Crowd	Project	Interaction and Communication
Post-crowdfunding campaign on platform (for example Kickstarter)	• Willingness to share feedback and ideas (+) • Positive perception of incorporation of feedback (+)	• Provide structures for feedback, implement system to filter out most useful feedback (+)	• Team demands crowd feedback (+) • Crowd communicates most important feedback, for example by community voting on different suggestions (+)
	• Emerging urge to collect (+) • Perception of too many features added; perception of project team setting wrong priorities (-)	• Add content / extend the project (+)	• Regular provision of updates and news, announcements during live-shows, for example events or streams (+)
	• Introduction of new technologies attracts broader audience (+)	• Adapt to new technologies (+)	• Communicate the increasing quality of the final product through new technologies (+)
	• Losing interest due to delays, potentially request refunds (-)	• Delay due to increased expectations and promised stretch goals (-)	• Transparent communication, provide reasons for delays and public product development schedule (+)
	• Worried about issues in the project team due to dismissed employees (-)	• Restructure / expand team according to changing requirements (+ / -)	• Closer to international backers through international expansion (+) • Provide behind-the-scenes insights for transparency (+)
	• -	• Encourage a shared perception of the team's vision among growing project team (+)	• Avoid negative news about internal discrepancies (+)
	• Organize themselves in groups, create community-events (+)	-	• Support crowd behavior, for example by participating / visiting the community-events (+)

(+) positively perceived by the crowd / positive effect on funding
(−) negatively perceived by the crowd / negative effect on funding

funding regardless of whether a project already achieved its funding goal, or in other words, to overfund a project. For instance, projects that aim at satisfying a strong need of the crowd, framing the project as a dream, and perceiving a hype among the crowd related to project were central topics that emerged in this study. As such, this study complements and enhances literature on project overfunding, suggesting that primarily the crowd's subjective perception of the project, including product features and the project team, is fundamental for project overfunding to occur. Table 5 offers an overview of the central contributions to reward-based crowdfunding literature, and outlines discovered relationships among the factors bearing potential to contribute to project overfunding.

In line with prior research, backers who are more involved in a project, compared to backers who provide funding with the primary intention to pre-order a product, are more likely to provide a higher amount of funding [71]. However, this study extends literature on the crowd's funding behavior through the observation that individual backers may not only provide funding once during a crowdfunding campaign, but multiple times. In particular, backers who perceive that their contribution matters for a successful project implementation upon the crowdfunding campaign [84], perceive nostalgia [12, 29, 39], and perceive the project's realization to some extent as a personal 'dream' [3] have been found to be willing to provide financial resources repeatedly over time. This continuous funding behavior was additionally complemented through three aspects. First, the introduction of attractive stretch-goal that promised novel rewards stimulated repeated funding intention. Moreover, the project team offered access to exclusive communication channels to exchange feedback and ideas about the project with backers above a relatively high individual funding threshold. And third, the core target group had sufficient financial resources to spend on the crowdfunding project, adding to literature on crowd characteristics [71]. The funding behavior concerned with repeated funding has not been subject to prior research, as a majority of literature focused on factors that increase the average contribution of backers [64, 71], but not repeated funding behavior over time. Thus, this study offers novel insights into the funding behavior of highly invested backers, and outlines which relationships to other factors can contribute to the intention of repeated funding.

Moreover, this core target group is also more prone to spread word-of-mouth and thus contribute to raise awareness of a project within a broader audience. However, enhancing extant literature on the relationship between word-of-mouth and reward-based crowdfunding [11, 40, 46, 81], the findings of this study indicate that the existence of network effects are central drivers to spread word-of-mouth. In particular as the project was perceived as a personal 'dream' of the core target group, and the value of the project's idea was depended on how many customers use the product, i.e., play the videogame upon release, this joint effect strongly contributed to the readiness to spread word-of-mouth and to a personal interest to attract as many additional backers as possible, from the perspective of existing and early backers of the project. In fact, successfully attracting the core target group, or category-centered community [36], may constitute a valuable signal since their participation in the project may elicit informational value for a broader audience. In particular, if people who are engaged and informed in the domain of the project support it with financial resources, their support can inform a broader audience who lacks the necessary knowledge concerning the quality of a project. Moreover, if the core

Table 5 Overview of contributions to extant reward-based crowdfunding literature and theory

Topic	Literature	Extant Literature and Limitations	Enhancement and Relationships
Crowd			
Word-of-mouth	[11, 40, 46, 81]	• Major focus on the effect of word-of-mouth (WOM) on crowdfunding success • WOM can be stimulated by shares in social networks, the perceived quality of a crowdfunding project • Lack of comprehensive research on the sources that create the motivation to spread WOM	• Motivation to spread WOM is driven by network effects (motivation for early backers to attract as many new backers as possible), and perceived euphoria or a 'hype' especially during the early funding period, which is linked to the perception of a strong desire (or a personal 'dream') to realize the project
Funding behavior	[64, 71]	• Factors addressing the average contribution of backers, but no research on repeated funding behavior to date	• Not only new backers can contribute additional funding, but existing backers can continuously and repeatedly provide funding • Repeated funding is encouraged through stretch goals and/or the introduction of exclusive rewards only to be received above a certain individual funding threshold, that allows to demonstrate one's support within the crowdfunding community

Table 5 (continued)

Topic	Literature	Extant Literature and Limitations	Enhancement and Relationships
Crowd demographics and characteristics	[71]	• Core demographics are subject to prior research, but only limited evidence on how these demographics ultimately relate to the funding intention	• Core target group not only has high willingness to pay, but also sufficient available financial resources • Enables repeated funding and higher total funding amount, complemented through perception of nostalgia, strong euphoria/hype related to the project
Community	[18, 27]	• Wish to be part of a community, show own support within a community	• Willingness to pay increases with community engagement, relationship to reward attractiveness and the ability to demonstrate one's support of a project through showcasing exclusive rewards
Project / project team	[12, 29, 39]	• Acknowledge the relevance of nostalgia, but limited explanations regarding the consequences of creating a nostalgic feeling among the crowd	• Serves to attract core target group, create hype within the early crowd, stimulates spreading word of mouth to broader audience

Table 5 (continued)

Topic		Literature	Extant Literature and Limitations	Enhancement and Relationships
Interaction and communi-cation	Project narrative	[3, 5, 6, 23, 49, 53, 57, 60]	• Linguistic features are central to extant literature (e.g., positive wording, inclusive language, expressing charisma and passion, showing narcissism) • Narrative that resonates with backers' beliefs and values contributes to funding intention and can stimulate enthusiasm among the crowd • Limited research on when such framing is credible and how the narrative relates to other factors	• Complements crowd's perception of nostalgia, and is more trust-worthy if project team is already known/popular among core target group • Beyond contributing to project success, if the realization of a project is credibly framed as a 'dream' or 'vision' of the project founders, and this framing resonates with the crowd's perception of a 'dream' for themselves, the willingness to provide increased funding enables overfunding
	Feedback and feedback programs	[82, 83]	• Possibility to provide feedback to project team contributes to crowd satisfaction and project engagement • Limited research on how to best implement feedback structures that offer high quality feedback to the project team	• Discriminate backers contingent on funding amount, as core target group more likely to provide increased amount of funding and due to their high engagement they can offer high-quality feedback • Offer exclusive contact between project team and backers with high individual funding for feedback; resonates with perceiving the project as a 'dream' and the perception to have an impact on the dream's implementation

Table 5 (continued)

Topic	Literature	Extant Literature and Limitations	Enhancement and Relationships
Reward attractiveness and stretch goals	[1, 45, 50, 69, 71]	• Central driver for funding intention is pre-ordering a product, implying sufficient attractiveness of pre-order as reward option • More attractive rewards tend to positively relate to project success, but mixed findings on quantitative shortage of attractive rewards • Most research on the number of different reward options and pricing strategies, but scarce research on subjective evaluation and importance of rewards and reward attractiveness from the crowd's perspective	• Attractive stretch goal rewards motivate individual backers to engage in repeated funding behavior • (Time-limited) Rewards that allow early backers or backers above a certain funding threshold to demonstrate their support for the project within a relevant community stimulates early funding and provide a higher amount of funding

target group is additionally familiar with the project founder before the launch of the crowdfunding campaign, their support during the campaign signals their trust in the founders' abilities and signal credibility to the broader audience, which can ultimately increase crowdfunding performance [80]. To conclude, attracting the core target group and their support, both in terms of financial contributions and their support to spread word-of-mouth, was fundamental to enable overfunding over time.

5.2 Practical implications

For entrepreneurs considering reward-based crowdfunding as a means to receive funding for their ideas, this study allows to derive important practical recommendations. First, it has been shown that raising awareness of a crowdfunding campaign should start well in advance to the launch of the campaign on a dedicated crowdfunding platform. The time prior to the funding period should be used to attract attention from backers that may have a primary interest in the project domain, such as videogames or consumer technologies. Considering this core target group, project teams must be aware of the characteristics of this group of potential backers with respect to not only the eventual willingness to pay, but also the ability to provide financial resources in the first place, and their specific needs. This knowledge about the potential crowd can support planning processes when designing a crowdfunding campaign. For instance, having knowledge concerning the needs of the crowd can support project teams to offer rewards that are sufficiently attractive. As shown in this study, the attractiveness of rewards not only helped to attract the core target group in the first place, but also encouraged parts of the crowd to engage in repeated funding behavior. As such, a precise understanding of the crowd's needs can be fundamental to acquire funding, and stimulates funding intention that is independent of whether a project already achieved its funding goal or not—a precursor to subsequent overfunding. Hence, it is a worthwhile endeavor for project teams to maintain and strengthen the relationship to the core target group over time.

In fact, the project team and the core target group can form a mutual relationship with benefits for both sides. The core target group can support the project team in spreading word of mouth. This is particularly important for projects when the attraction of additional backers not only helps to achieve the funding goal and realize the project, but if the value of project idea depends on the number of customers, i.e., if the project's idea benefits from network effects. This may, for instance, be the case if the product quality or amount of content can be increased through achieving stretch goals, which requires more backers to provide financial resources, or in case of videogames that a sufficient amount of people play the game after a successful crowdfunding campaign. In the context of spreading word-of-mouth, the findings of this study invigorate the central role of the narrative of crowdfunding projects. In line with previous recommendations from extant literature, showing passion towards one's own project and framing the project as a personal dream or vision can help to attract funding. However, it requires that the framing and passion is credible, and should resonate with the perception of the addressed crowd. If the narrative resonates with the crowd's perception of the project, existing backers are deemed more likely to additionally contribute to spreading word-of-mouth and thus raise additional awareness of the project within a broader audience.

5.3 Limitations and future research

This study is subject to some limitations. First, the collected data is limited to over-funded projects, such that a benchmark to successful but not overfunded projects is not possible and the amount of conducted interviews is comparably low. These two issues limit a broader generalization of the findings and do not allow to draw specific comparisons between successful and overfunded crowdfunding projects. Nonetheless, the findings of this study allowed to build on extant literature and offered novel insights into factors that can contribute to overfunding, including relationships that have been neglected in prior research. Future research is encouraged to disentangle the factors that primarily contribute to project success, and which factors additionally contribute to project overfunding. It may be assumed that that the characteristics between overfunded and successful projects do not differ significantly, and many characteristics can likely be found for both. However, the actual practical implementation of the characteristics, such as the specific framing or narrative of a project, and the individual perception of the crowd concerning the characteristics may differ. Thus, future research is encouraged to focus on the differences among the identified characteristics for overfunded projects, successful projects which reached their goal by small amounts, and unsuccessful projects against the backdrop of differences in the crowd's perception towards the same characteristics. Experimental studies on the funding intention of backers to projects with varying degrees of funding levels, while keeping the characteristics of interest constant, could deliver valuable insights into changes in the subjective perception of the importance of individual factors.

Related to the limitation of only overfunded projects being the central subject of this study, the focus has been on one specific category, namely projects with digital products, in particular videogames. This category is most likely untouched by some disadvantages other projects might face. Digital products, in general, have lower constraints on product quantity, since additional pre-orders do not require to increase production efforts and digital copies of the product can be provided with low or no additional costs. Moreover, videogames can be rather easily extended by providing new digital content, as there are no physical limits. Continuously adding new features for a physical product, however, is limited by nature. Future studies are encouraged to more precisely specify the differences between the different categories of crowdfunding, for example physical products, and the found characteristics for videogames in this study. In this context, this study focused on an overfunded crowdfunding campaign that majorly successfully managed the additional funding above the funding goal. However, there might be examples of overfunded projects that faced severe problems because of this very instance – the amount of funding above the funding goal. Investigating failures of crowdfunding projects although they have been overfunded constitutes a promising field for research, adding to the knowledge and insights that emerged from this study. In particular, this limitation and suggestion for future research could be linked to the previous concern outlining the differentiation of physical and digital products.

A further limitation concerns the degree of overfunding subject to the observed crowdfunding projects. The primarily investigated project and the six additional projects were highly overfunded, with funding ranging from 92% to 1,009% above the funding goal. However, there is no uniform definition of 'overfunding' in crowdfunding literature, as

technically any project exceeding its funding goal, even by small amounts, is overfunded [63]. Although this study allowed to create a comprehensive overview of various factors potentially related to overfunding, it does not allow to generalize findings to projects with lower degrees of overfunding. Hence, how the identified factors are applied in projects that were successful and overfunded, but not extremely overfunded, can be a promising avenue for further research. Therefore, it is necessary to provide a clear definition of overfunding, considering both the total amount of funding and the degree of overfunding.

6 Conclusion

Literature on reward-based crowdfunding is primarily concerned with factors that determine the success of crowdfunding projects. However, some projects are not only successful, but raise funding way beyond the funding goal, and thus become overfunded. Empirical evidence on factors explaining the emergence of overfunding is scarce. Therefore, this study sought to identify factors and characteristics of overfunded project that help to explain the emergence of project overfunding in reward-based crowdfunding. Ultimately, the findings suggest that overfunding is to a large extent related to strong positive perceptions and sentiments of the crowd towards the project, emphasizing the role of subjective factors shaping the intention to fund and eventually overfund a reward-based crowdfunding project. Contrasting to the little empirical evidence available on project overfunding, the crowd in the assessed project was not concerned with frequently observed factors in literature such as the number of updates or availability and number of videos to showcase the envisaged product. Instead, an emergent perception of nostalgia within the crowd upon the project announcement, in conjunction with a strong desire to realize the project idea contributed to attract a group of backers that was willing to provide a large amount of financial resources over time. The project idea precisely targeted an unsatisfied need within the target group, and succeeded in attracting supporters already prior to the official launch of the crowdfunding campaign, which subsequently boosted funding throughout the funding period. These circumstances were strongly supported through the popularity of the project founder, who was already known to the core target group prior to the crowdfunding campaign, which facilitated raising awareness of the project. Moreover, while extant literature already pointed out that spreading word-of-mouth is critical to crowdfunding success, this study showed that the intention to spread word-of-mouth was strongly stimulated by the perceived euphoria, and the fact that the product value was dependent on the total number of supporters of the project, providing an incentive for existing backers to attract new backers themselves.

In conclusion, it may be difficult to pinpoint single factors that contribute to project overfunding. It showed to be the interrelationships among various factors and circumstances that pave the way for projects to acquire financial resources above the initially set funding goal. Extant literature already offers several indications which factors may not only contribute to project success, but also incentivize the crowd to overfund a project. Yet, it requires further research to disentangle the effects of specific factors and their interrelationships on the crowd's motivation to support a

project in order to be successful, and on the motivation to support a project regardless of whether it is already successful or not. This study offers novel insights into factors that can contribute to project overfunding, and which project characteristics are likely to stimulate the willingness to overfund among potential backers. Thereby, the results offer a starting point for subsequent studies to build on, and to research the yet largely neglected phenomenon of project overfunding in reward-based crowdfunding.

Appendix A: Description and exemplary quotations of 2nd -order themes

Aggregated category	2nd -order theme	Description and exemplary quotations
Project characteristics	Project team	The central project founder of Star Citizen, Chris Roberts, already had a vast experience in the field of video games. Generally, a strong focus on the project leader was observed during the conducted interviews with backers, as often the name of Chris Roberts was used to refer to the project, instead of the project or company name. The majority of interviewees strongly related their knowledge of Chris Roberts to their intention to support the project. The prior success of the project leader led to an overall positive sentiment towards his reputation and led to perceived trust towards the project founders. One participant stated that for him *"Chris Roberts is actually the Elon Musk of the gaming industry"* (I1[2]). Moreover, all additional overfunded projects also mentioned the previous successes of the respective project leaders and emphasized their experience in the field of video games, underlining the importance of past founder experience.
	Team management	The project team was restructured according to changing requirements, whereby people either had to leave the project team if they could not fulfill the requirements anymore, or experienced people joined the project during the product development. The interviewed team members of CIG stated that they additionally expanded the project through external cooperations and assessed whether a cooperation provided a reasonable value. However, two interviewees stated major concerns that the project team and structure expanded too fast. Concerning internal team issues, the interviewed employees of CIG stated that encouraging a shared perception or vision among the team was crucial for the success of the project. A shared vision was fostered by regular internal meetings, which ultimately increased internal accountability, as every team member knew what others were doing and when deadlines were set. This internal pressure was stated to be a positive aspect for keeping up with the planned development. Even daily meetings were held, when required, and Chris Roberts emphasized the importance of face-to-face meetings.
	Project Idea	A key characteristic of the project idea was framing the idea as a vision or dream of the project founders, which was well perceived by the interviewed backers and mentioned to be a crucial reason for the project's success. Also, all six additional overfunded projects communicated a vision or dream of the project founder, for example by stating that this project is what they *"had always dreamed about"* (S10), and that the crowd is needed to *"bring [the] vision to life"* (S13). Two of these six projects emphasized the uniqueness of their idea compared to similar projects and pointed out differences. Three interviewees clearly indicated that they were attracted or even fascinated by the idea of Star Citizen itself. Five interviewees explicitly stated that the project at least presented completely new, innovative approaches, or that *"there was nothing like this before"* (I1). This perception was strengthened by two major aspects: first, five interviewees stated that there were either no or not satisfying alternatives available. Second, the project idea hit a market segment which was *"ignored for years"* (I5) and there was a huge gap of products in that segment. Lastly, two of the six additionally assessed projects and Star Citizen's leader Chris Roberts pronounced their independence of big publishers which were said to enforce limitations to the overall project idea for cost reasons. Crowdfunding enabled the project team to *"[cut] out the politics and noise of the big publisher"* (S1), which was explicitly positively perceived by three interviewees.

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[2] I1 refers to the ID of interview 1 as indicated in Table 2. For facilitating readability, Table 2 is not explicitly referred to from hereon, but all references in the results refer to Table 2, unless indicated otherwise.

Aggregated category	2nd-order theme	Description and exemplary quotations
	Product features	The continuous expansion of Star Citizen, that is content or features that were added over time, was a highly discussed topic during the interviews and was mentioned by each interviewee, accompanied by strong emotional reactions. One interviewee even mentioned that he backed the project *"with the prospect, to get more later (…) which would be much more extensive"* (I4). This expectation relates to a stated reciprocity of the continuous project funding and the backers who expected to receive more and more content in return for their pledges. Thereby, customization options (such as choosing unique in-game content to customize the playable character through visuals or customizing the spaceships) were highlighted to be important, as two interviewees mentioned their wish to have both customization options of specific features and customized experiences, which means that each backer can go through an individual experience by using the product. Having a customized experience and extending the project through additional content was also mentioned by two of the six additional examined overfunded projects. For Star Citizen's project team, this was stated to be a large focus during the product development. Although the project expansion was generally appreciated in the beginning, most interviewees perceived that ultimately too many features were announced and stated concerns about the project team's ability to implement these features, which in fact led to recurring delays in product development. Two interviewees stated a saturation of content at some point, so that any further expansion was irrelevant to them, and mentioned a lack of understanding why more content was added before already announced content was finished. The general sentiment was rather skeptical, and the main concern was that new content hampered the focus on the main goal of finishing the core product.
		Another aspect was the benefit existing supporters received through new supporters. The product enabled interaction among the crowd through using the product, as for example *"the ability of all the players to […] communicate and work together"* (S9) and four interviewees pronounced the high importance of that feature. Thereby, the interviewees stated that the product should make it easy for new backers to join, even in later stages, and backers who joined early should not have fundamental advantages in terms of interaction.
		The general marketing strategy was described to have changed *"from the chaos-theory to a professional marketing-construct"* (I1). In this context, crowdfunding allowed backers to gain insights into the very early stages of product development and to follow each step of the project team, what created early *"public pressure"* (S9). As the product development evolved, the marketing strategy shifted from the focus on this early pressure to a more professional, structured strategy, for example using third-party software to assess the reaction of users to posts on Twitter, which provided insights which marketing strategy attracts the most interaction, clicks, or likes.
		Apart from that, the importance of unique benefits provided to specific backers was highlighted by the interviewees, like granting perks to early backers, which they only received when providing funds until a specific point in time. To ensure regular funding in the long-term, the project team introduced a subscriber-system: backers could subscribe to the project for a fixed amount of money per month, and in return regularly received exclusive rewards. However, these rewards did not lead to any difference when using the final product compared to non-subscribers but were merely characterized by a unique design. In this context, Star Citizen applied self-selected price discrimination, as backers could choose which amount to pledge in return for different rewards. This not only included unique-design rewards, but also access to closed groups. As described in the interviews, there is a membership-club that backers can join when they *"pledge more than $1000 for this game"* and was referred to as *"elite-group"* (I1) that is *"willing to spend more cash for future sales"* (I1).
		Regarding the pricing policy, the sheer amount of rewards was stated to be confusing, and two interviewees said that the whole pricing policy was difficult to understand and ultimately deterred new backers from supporting the project. Three participants explicitly mentioned that they perceived their initial pledges as *"a calculated risk"* (I4), which however *"became incredibly small"* (I4) over time. A measure to counter the perception of a risky investment was to secure external funding beyond Kickstarter, as Chris Roberts had *"already arranged private funding"* (S6) before officially launching the crowdfunding campaign, which was however dismissed after the huge success of the Kickstarter campaign. Nonetheless, four participants had a rather negative opinion on the applied pricing policy, especially towards very high-priced rewards. Moreover, currency fluctuations were not reflected in the prices, so supporters from different countries had to pay more for the same content than others. Thereby, pricing policy was a facet of the general community treatment, which was described with rather negative experiences by the interviewees. A major issue regarding the community treatment was that many supporters perceived that the project team was not keeping promises, for example by first announcing time-limited paid content but removing the time limitation later.

Aggregated category	2nd-order theme	Description and exemplary quotations
Crowd characteristics	Behavior/actions	The interviews indicated that backers wish to publicly demonstrate their support, to stand out from the crowd and to be recognized as an early supporter who *"made something possible"* (I2). Three interviewees mentioned an emerging urge to collect, which means they wanted to own and complete a collection of rewards. Apart from the desire to stand out from the crowd, an important characterization of the crowd was backers recommending the project to others and shared their vision of the final product by word of mouth. Recommendations from the crowd itself were even perceived as more important than official information from the project team. A key reason why the community promoted the game through word of mouth was a perception of euphoria. Especially the *"beginning of this crowdfunding campaign was very (…) very strongly characterized by euphoria"* (I1) and early backers *"participated in a hype"* (I3). This was further increased by the huge success of the crowdfunding campaign, as the success itself triggered new fascination among the supporters. This fascination was not only present in the beginning but was stated to increase the amount of total funding in the long-term and achievements of new financial milestones continuously triggered new fascination. Lastly, the crowd autonomously organized themselves in different sub-communities. Backers were creating 'clans' to play together, they created Wikis, own forums, or organized events like conventions dedicated to Star Citizen. This self-organization was partially driven by a desire to be part of a community. However, this did not apply to the whole community but a specific group who was fascinated the most about the project. Their organization of events or Wikis was also open to people who would not create anything by themselves, but who still participated in these events. Thus, the behavior of a few supporters affected the behavior of a larger part of community by increasing the availability of information about the project.
	Target group	The core target group was mentioned to include those people who primarily backed the project in the beginning. They already had a major personal interest in the field PC-gaming, as four of the five participants who pledged early mentioned. Four participants supported this finding by stating that there was a very strong group of *"hardliners"* (I3), and these backers are the ones who *"also buy those 15,000 Euro packages"* (I5), the highest-priced rewards. The project benefitted greatly from these 'hardliners', who not only always supported the decisions the project team made, but also provided a large amount of financial resources. Beyond that, not only the project team perceived the project as their vision, also parts of the community perceived the project as their own vision. One interviewee described that *"a majority of the first (…) people who entered in the first two years […] definitely share this vision"* (I1). This in turn affected the project leader, as one interviewee described that *"he got actually […] boosted from the community dream"* (I2). Ultimately, the overall perception of the strong core target group resulted in a strong wish for the realization of the project and constituted a strong motivating factor to pledge: *"My personal reason why I spent more money was first of all: I wanted really more and more (…) for the project to become reality. So, that was my first intention"* (I2). The core target group was characterized as rather financially strong with a high willingness to pay. This partially resulted from the underlying demographics, as the target group was described to be *"mid-thirties"* (I1) having a job and the necessary resources. Combining the strong wish for the realization of the project and the ability and high willingness to pay, the core target group provided an early high initial pledge, mostly followed by additional pledges over time, even up to *"a five-digit amount"* (I1).
	Broader audience	The broader audience apart from the core target group was mostly described as not as engaged in the project as the core target group, did not spend as much money and supported the project in later stages. However, new supporters were described as adding a *"wind of change"* (I4) and to have a *"down-to-earth attitude […] and (…) keep the hype running"* (I4). Therefore, the existing supporters benefitted from new supporters additionally in terms of being able to interact with new people, and moreover the project benefitted from a continuous stream of new supporters pledging money. Although they did not pledge to the extent the core target group did, the amounts added up and provided a regular source of income for the project.

Aggregated category	2nd-order theme	Description and exemplary quotations
Communication characteristics	General communication	Generally, the project team communicated that the project was oriented towards consumer needs, and that they tried to realize what they *"believe the community [wanted]"* (I7). Thereby, a fair treatment of the crowd was pronounced, that they *"treat [the people] with the respect [they] deserve"* (S3), which was generally positively perceived, as three interviewees indicated. Moreover, the interviewed team members emphasized a transparent communication and that their communication to the crowd *"is primarily what [they] communicate internally"* (I7). This led to a rather contradictory finding: the project team strongly perceived their communication as transparent and open, however, four interviewees stated that especially negative news was not communicated, only when *"the rumor mill in the community blew up, so that they were forced"* (I1) to communicate, but *"they had a large veil around many points"* (I3). A central issue mentioned in the interviews was perceived nostalgia among the crowd. The interviewed team members stated that Star Citizen would be an improved version of the games some supporters have played during their youth, and that this project will bring that experience back. These people were directly addressed by mentioning Chris Roberts' previous games, and one interviewee pointed out that *"this generation […], which he spoke to actively, they were the first […], initially pledging people"* (I1). All interviewed early backers said they used to play similar games, and that this experience greatly contributed to their intention to support the project. But not only the nostalgia driven communication excited the crowd, the project team also actively tried to create excitement and to *"keep [the game] engaging to be able to hit all facets of people"* (I7). The excitement was for example created by providing *"teasers concerning parts of the development"* (I1), demonstrating future content which the crowd was looking forward to. Alternatively, Star Citizen also engaged famous actors as voice actors for in-game characters, which in turn contributed to both additional promotion by media and excitement among the crowd. Thereby, it was stated that *"the own website [was] enormously important"* (I1), and other social media platforms like Twitter and Facebook were perceived less important. Accordingly, Star Citizen organized and set-up their website in a way that was perceived as more attractive than other platforms and turned out to be a crucial aspect of the whole project.
	Communication activities	A recurring topic was providing updates on the project and according to the interviewed project team, any kind of update, *"even if it is not the information that [the crowd] is after, but that shows progress, will help keep them engaged"* (I7). A structured approach to provide updates was the introduction of a roadmap, a tool to communicate the current development status to the community and to inform about upcoming content. In addition, a major communication activity was the organization of regular events, including live-streams or live-shows. Star Citizen's project team organized live-streams which were broadcasted regularly and used to communicate upcoming sales, new content, the latest progress, and provided insights into the product development process. The project team answered community questions live during the streams, which was stated to be positively perceived and appreciated by the crowd. The project team also participated in main events of the gaming industry, for example GamesCom, and started their own annual event called CitizenCon. These events were used for big announcements and used as a tool to present milestones of the development. Ultimately, these events generally led to public attention, increased funding and provided an opportunity to boost the crowdfunding on a regular basis. Furthermore, the project team encouraged a sense of togetherness between them and the crowd, as one interviewee described that Chris Roberts was *"encouraging people […] to become part of something what has never been before"* (I2). The project team told the community to be part of the project and organized events where the community could decide on future content. For example, during live-shows the community could vote live on future content and thereby determined *"the next [feature] that goes into production"* (I7). The importance of being involved in the project was explicitly mentioned, since *"to have a direct connection to the developer to some extent"* (I3) and that *"the community has a codetermination […] is the fascination"* (I1). This perceived involvement led to a general positive sentiment in the community. An additional approach to increase the community involvement was to actively support streamers or *"classical influencers"* (I1), that is people streaming the game on YouTube or Twitch. The crowd was further encouraged to spread the word of mouth by directly asking supporters to tell their friends about the project and by implementing a referrer-program, where backers who successfully invited new backers by using a referrer-link to join the project received a reward.

Aggregated category	2nd -order theme	Description and exemplary quotations
	Crowd feedback	Crowd feedback was one of the most discussed topics with the interviewees. In line with that, also four projects from the additional six overfunded campaigns explicitly mentioned that they would take feedback into account and asked the crowd to share their ideas, as one project team stated that they *"conducted a survey with over 15,000 participants and listened to [the] community"* (S10) before launching the Kickstarter campaign. Two of these four projects as well as the project which did not actively ask for feedback at least pronounced that they create the project *for* the supporters and *their* needs. For Star Citizen's case, the interviewees not only considered demanding and incorporating feedback by the project team as crucial to react to needs of the crowd, but especially perceived that the team reacted to feedback to an outstanding extent and even stretch-goals were determined by the crowd itself. Thereby, the crowd acted as a problem-solving unit as some people suggested improvements or even solutions to potentially arising problems during the product development. However, due to a high amount of suggestions the most useful feedback had to be filtered out. The interviewed team members stated that they rather listened to *"a low-level tuning side"* (I7), or things which *"could have influence"* (I7) and provided platforms to submit and evaluate that feedback. They set-up a forum for backers who spent a certain, relatively high amount of money, since those people *"rather have the interest, that useful things get into the game and that [...] acceptable suggestions are made"* (I5). CIG also sent prototypes to backers that exceeded a certain funding threshold for testing, which means providing access to an unreleased build of the game. Moreover, the project team stimulated the imagination of the community by asking for creations related to the game, like 3D-models, drawings, or wallpapers. Creations were encouraged by potentially integrating them into the final product. The project team provided official platforms for creations and organized contests where the winners received prizes for the best creations.

Appendix B: Secondary data sources

Data label	Title	Uploaded	Last accessed	Link
S1	Enough is Enough - Fixing the Pledge System and the New Player Experience - #nobullshit Star Citizen	02.04.2018	10.06.2020	https://www.youtube.com/watch?v=N2lVPabFMlY
S2	Interview to Ulf Kuerschner by Peter (ponch) during Citizen-Con 2017.	30.10.2017	10.06.2020	https://www.youtube.com/watch?v=GMsM2T58enI
S3	Star Citizen - Chris Roberts Pitch Video	11.10.2012	10.06.2020	https://www.youtube.com/watch?v=VhsgiliheP0
S4	Star Citizen adds Kickstarter!	18.10.2012	10.06.2020	https://www.youtube.com/watch?v=-zN5q7sBKmc

Data label	Title	Uploaded	Last accessed	Link
S5	Star Citizen Interview - Crowdfunding, Pay 2 Win and Goals in the game	29.01.2014	10.06.2020	https://www.youtube.com/watch?v=1pD2_Pbvde4
S6	Star Citizen – Kickstarter Odyssey (Part 1)	07.03.2018	10.06.2020	https://www.youtube.com/watch?v=Kz8qcV5nJYY
S7	Star Citizen – Things Head South (Part 2)	26.03.2018	10.06.2020	https://www.youtube.com/watch?v=1yQ56xIypKA
S8	Star Citizen – No End in Sight (Part 3)	01.04.2018	10.06.2020	https://www.youtube.com/watch?v=yR1DFoz6ZuY
S9	Star Citizen: Ausführliches Interview mit Chris Roberts (engl.)	05.08.2016	10.06.2020	https://www.youtube.com/watch?v=nvule1cD_zk
S10	Iron Harvest - Kickstarter Trailer	13.03.2018	10.06.2020	https://www.youtube.com/watch?v=cqdR7ZhRd7c
S11	Project Eternity - Kickstarter Trailer	September, 2012	10.06.2020	https://www.kickstarter.com/projects/obsidian/project-eternity
S12	Torment: Tides of Numerena - Kickstarter Trailer	March, 2013	10.06.2020	https://www.kickstarter.com/projects/inxile/torment-tides-of-numenera
S13	Bloodstained: Ritual of the Night - Kickstarter Trailer	May, 2015	10.06.2020	https://www.kickstarter.com/projects/iga/bloodstained-ritual-of-the-night
S14	Shenmue III - Kickstarter Trailer	June, 2015	10.06.2020	https://www.kickstarter.com/projects/ysnet/shenmue-3
S15	Shroud of the Avatar: Forsaken Virtues - Kickstarter Trailer	March, 2013	10.06.2020	https://www.kickstarter.com/projects/portalarium/shroud-of-the-avatar-forsaken-virtues-0

Data availability The datasets generated during and/or analyzed during the current study are not publicly available due to privacy of the interviewed individuals but are available from the corresponding author on reasonable request. Data sources that are not related to conducted interviews are indicated in Appendix B.

Declarations

Conflict of interest The corresponding author states that there is no conflict of interest.

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