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Academic research on crowdfunders: What's been done and what's to come?¹

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Main message

A systematic review of academic literature on crowdfunders shows that a majority of published work refers to the pre-investment phase of the crowdfunding process, with only very little academic knowledge currently relating to the post-investment phase.

Key points

From a crowdfunder's point of view, the crowdfunding process consists of two phases: pre-investment and post-investment.

Academic knowledge relating to a crowdfunder's the pre-investment phase refers mainly to the funders' motivations to pledge, their due diligence, and their decision to back certain projects but not others.

The very limited knowledge relating to the crowdfunder's post-investment phase points towards the potential for crowdfunders to provide added value to fund-seekers in addition to their financial pledge.

Introduction

¹ J.E.L. classification codes: G23; G24; G29

Nowadays, media is rife with stories about individuals, who raise sometimes moderate, sometimes substantial amounts of capital from large numbers of 'normal' people. This article focuses on 'crowdfunding,' a financial innovation that has the potential to revolutionise the way in which entrepreneurial individuals source capital for their endeavours (Hui *et al.* 2014; Shiller, 2013). Strictly speaking, crowdfunding (CF) is not a recent invention as it has been used throughout history, but the emergence of the internet, and Web 2.0 in particular, only recently exposed the general public to CF and allowed them to easily access this approach to raising capital, be it as providers ('crowdfunders') or recipients ('fund-seekers') of capital.

Simultaneous to this recent shift into the public eye, CF also became interesting to scholarly researchers, with a surge of research efforts being put into exploring this emerging field. However, due to the newness of this topic, CF as an academic field of study is still very developmental, currently consisting of only a small, albeit growing, base of published scholarly research (Macht and Weatherston, 2014). Valanciene and Jegeleviciute (2013) explicitly stated that there are three main actors in CF:

1. the fund-seeking entrepreneurs, who attempt to raise capital for certain projects (for instance, production of artistic work, social projects or business ventures);
2. the crowdfunders, members of the general public, who each invest small amounts of their own money into entrepreneurial projects; and
3. the intermediary, usually an online crowdfunding platform (CFP), which brings together fund-seekers and crowdfunders.

The current CF literature, reflecting the new and exploratory nature of the field, tends to provide insights into CF in general, by exploring aspects relating to any of

these three actors, as opposed to focusing upon generating knowledge on only individual actors on their own. This has created a body of literature, which contains knowledge relating to each of these actors, but without clear delineation or demarcation towards what is known for each of them. In order to move the field towards a more organised and defined structure, this article focuses only on one of these actors: the crowdfunder.

By so doing, the purpose of this article is twofold: first and foremost, we aim to provide an overview of the current academic knowledge, discussed in the scholarly, published CF literature, relating to the crowdfunder. As such, we aim to show '*What's been done in CF literature?*' Secondly, we aim to point out areas, again relating to the crowdfunder, that researchers should consider in future, thus indicating '*What's to come in CF literature?*' By addressing these two aims, this article intends to add value to two specific audiences:

1. the academic community interested in researching the CF field; and
2. any individual interested in contributing to CF, be it as a crowdfunder or a fund-seeker.

To address both of these two audiences, this article specifically does not reflect upon the methodological or theoretical considerations in current CF literature, but instead attempts to presents the main subjects, or themes, which the CF literature discussed to date and which need to be discussed next. As such, researchers can use this article to inform their decision of what to research next, while prospective CF-contributors can see – in one place – what topics have been explored by scholarly, authority research.

In order to achieve these two aims, this article is structured as follows: next, we present a brief overview of CF by summarising its origins and more recent

developments, as well as the typical process of raising capital through CF. The following section describes our approach to systematically reviewing the scholarly literature, as well as our methods of identifying themes from this review.

Subsequently, we present the current academic literature on crowdfunders in a systematic way, while also indicating what should and could be researched next.

Finally, this article concludes by presenting an overview of the value this article adds to its two intended audiences.

An overview of crowdfunding

Origins and further development of crowdfunding

CF is part of the wider concept of 'crowdsourcing,' which Hammon and Hippner (2012) defined as the act of outsourcing tasks originally performed inside an organisation, or assigned externally in the form of a business relationship, to an indefinably large, heterogeneous mass of individuals – the 'crowd.' The development of Web 2.0 is one of the key reasons for the emergence of online crowdsourcing as it enables anyone to create content and to communicate in a decentralised way and to cooperate and interact with a wide network of people in order to carry out certain activities, such as jointly providing feedback to a business (Hammon and Hippner, 2012; Kleemann *et al.*, 2008; Schwienbacher and Larralde, 2012). In the case of crowdsourcing, none of these activities refer to fundraising or financial inputs. However, history is full of examples of individuals using the crowd to fund certain activities, such as the construction of a pedestal for the Statue of Liberty (Harrison, 2013) or some of Mozart's concerts (Kuppuswamy and Bayus, 2013), which suggests that the crowd can be used to raise capital.

Aitamurto (2011) identified the creative and performing arts sector as an initial home for this financial form of crowdsourcing, with Sellaband – founded in 2006 – being referred to as one of the pioneers in this context. Sellaband is an online platform, which allows individuals to financially support the production of an artist's CD (Kappel, 2009); in return, the funders would obtain some rewards, such as a free copy of the CD or a small proportion of the sales revenue (Ordanini *et al.*, 2011; Schvienbacher and Larralde, 2012).

At the same time, as the creative and performing arts were accessing this stream of funding, it was recognised that this crowd-based fundraising model had applicability to other, non-artistic projects and business ventures, which ultimately led to Mollick's (2014, p. 2) definition of CF, upon which this article draws:

“Crowdfunding refers to the efforts by entrepreneurial individuals and groups – cultural, social, and for-profit – to fund their ventures by drawing on relatively small contributions from a relatively large number of individuals using the internet, without standard financial intermediaries.”

Given that CF has existed even before the Internet, it is clear that offline CF is possible. Nevertheless, Mollick's definition clearly focuses upon online CF, as does this article. The development of Web 2.0 is again one of the key reasons for the emergence of online crowdfunding as it allows individuals to raise and invest capital via a virtual intermediary, the crowdfunding platform (CFP). The early success of the pioneering CFP Sellaband led to the establishment of a huge number of other online CFPs (including: Kickstarter, IndieGogo, and Crowdcube) allowing individuals to raise capital for various purposes, including: business ventures (Macht and Weatherston, 2014), journalistic reports and news (Aitamurto, 2011), scientific

research (Wheat *et al.*, 2013), explorations into outer space (Harris and Russo, 2014), school projects (Meer, 2014), musicians and other artists (Agrawal *et al.*, 2011), and medical drug development (Dragojlovic and Lynd, 2014).

The fundraising process

In order to raise capital through CF, an entrepreneur (also called fund-seeker or project creator) registers her project with a CFP, which superficially screens the project before publicising it on the website (Collins and Pierrakis, 2012) in the form of an investment 'pitch,' which typically contains narratives and videos detailing (Frydrych *et al.*, 2014; Mollick, 2014): the entrepreneur and the project, how much capital is to be raised (the so-called target amount), the time by which the money needs to be raised (the fund-raising period), the reason(s) why the capital is required, and the rewards that crowdfunders obtain in return for pledging different amounts to the project.

Crowdfunders (also called investors, sponsors or backers) who are already signed up to the platform can view the investment opportunities and decide whether to invest (or not) in a project, whereby geographical closeness between crowdfunder and fund-seeker plays only a very limited role (Agrawal *et al.*, 2011). Van Wingerden and Ryan (2011) found investments typically range from \$6 to \$50 per crowdfunder, thus suggesting that each individual only pledges a very small amount, theoretically even as little as \$1. This shows that CF allows 'ordinary' members of the general public, who even have a couple of dollars to spare, to become backers of entrepreneurial projects.

For the fund-seeker, these small-scale pledges mean that even projects with modest target amounts – for instance, the average amount sought by projects on

Kickstarter is just over \$8,500 (Kuppuswamy and Bayus, 2013) – may end up with a large amount of individual backers. Some CFPs show the individual amounts pledged while others do not openly present this information (Burtch *et al.*, 2013). After a pledge is made, most CFPs retain the pledge, for instance, in an escrow account, until the moment the fund-seeker has achieved her full fundraising goal; in cases where the goal is not reached, pledges are re-funded – CF on an All-or-Nothing basis (Collins and Pierrakis, 2012; Kappel, 2009). Some CFPs, however, operate a different business model, allowing fund-seekers access to all pledges even if the initially indicated target was not reached (Tomczak and Brem, 2013).

Following successful fund-raising, entrepreneurs have to complete their projects and deliver the promised rewards to their crowdfunders, but Mollick (2014) showed that only a minority of fund-seekers manage to do so on time.

Methodology: systematic review of literature

Literature search

In order to establish *What's been done?* in relation to academic research on crowdfunders, we conducted a systematic search of CF literature, which allowed us to identify scholarly, peer-reviewed work in the field. Given that the term 'CF' is nowadays most widely used, we searched the following academic databases for the terms 'crowdfunding;' 'crowd funding;' and 'crowd-funding:' Business Source Premier, Emerald, ScienceDirect, JSTOR, IngentaConnect, and Swetswise.

Due to the newness of the CF research field, we did not limit our search to any particular dates but – as this article clearly shows – a vast majority of literature was produced since 2012. As previously mentioned, CF overlaps and shares startling similarities with crowdsourcing, as well as with other phenomena, such as: peer-to-

peer lending; microfinance; and pro-social lending. These do, however, differ from CF to an extent that CF can be investigated – and therefore reviewed – separately. Therefore, our literature search related purely to the phenomenon of CF, while excluding literature that identifies itself clearly as referring to one of these similar areas.

In order to identify relevant literature, we carried out a two-stage search process. First, we searched for articles that contained the search term in the main body, as well as in one of the following: abstract; keywords or title. In order to ensure that no relevant CF literature was ignored, we carried out a second search, looking for articles with the search term in the main body only. For instance, Parrino and Romeo's work (2012) specifically discusses the JOBS Act² and repeatedly refers to its implications for CF, but did not mention the term anywhere other than the main body of the text. However, most articles identified in this manner merely referred to CF as an example or area of further research and thus do not add any insight into understanding the state of research in the CF field. Therefore, we reviewed the abstracts of these papers and made a decision regarding their relevance for this article: papers, which focused on CF and thus are able to add to our knowledge of the field, were included in this review, while articles, which did not specifically centre on the topic of CF, were excluded. For instance, Gouillart (2014) mentioned CF as an example of how stakeholders co-create value with companies, while Fung and Au (2014) focused on inequality in groups but mention that the findings may be applicable also to CF – we excluded papers like these from our review.

² JOBS is an acronym for the 'Jumpstart Our Business Startups' Act, signed into law by President Barack Obama in April 2012. It consists of a legislative reform of the securities regulation in the USA, effectively allowing entrepreneurs to raise equity crowdfunding (Parrino and Romeo, 2012).

Further parameters for our literature search refer to the language of the literature (we only included articles published in English), their accessibility by a certain date (we included only those articles, which we could access before the 15th of December 2014), and the nature of the article. In order to achieve a review of only published, peer-reviewed scholarly literature, we excluded practitioner work, such as trade journals or magazines, as well as student theses, conference publications, working papers and forthcoming articles. We did, however, usefully include such literature to inform this article's introduction, which contains an overview of the process and origins of CF, as well as our suggestions for further research, i.e. our indication of 'What's to come?' Finally, we excluded articles referring to individual CF practices, carried out without online CFPs (Belleflamme *et al.*, 2013).

This procedure resulted in 25 published, peer-reviewed articles, which discuss various facets of CF. While these articles undeniably provide useful insights into the field of CF, these early, exploratory pieces of research tend to refer to a selection of different themes, which must be filtered and structured according to the three CF actors in order to make more organised progress in the field.

Analysis of literature

To achieve this, we reviewed all 25 articles, identified through the above procedure, with the intention of identifying the main themes, relating to the crowdfunder, emerging from the current CF literature. We did that by relying mostly on the articles' findings, discussion and conclusion sections as that is where original knowledge tends to be expressed. We utilised the articles' introductions, literature reviews and methodology sections to gain contextual information about the topics, rather than to inform our establishment of the current research themes. While

reviewing the articles, we extracted all the information relating to the crowdfunder and combined them in a separate document, where we reviewed the extracted information on its own and aggregated it into smaller but internally homogeneous themes (Shaw, 1999).

Once these themes were emerging from the literature, we compared them against one another in an attempt to establish a logical and ordered structure to present the review. It emerged that the themes could be allocated into two distinct chronological phases, referring to the time before and after the crowdfunder's pledge of money: pre-investment and post-investment. This approach is not unusual in the context of entrepreneurial finance as research exploring other investors, such as business angels and venture capitalists, has also identified such chronological phases (e.g. Fried and Hisrich; 1988; Paul *et al.*, 2007; Tybjee and Bruno, 1984). The investment process of business angel and venture capital investors displays three distinct phases, each of which contains various activities and sub-phases: pre-investment (including identification of investment opportunities and screening), during the investment deal (mostly negotiations and structuring of the deal), and post-investment (which includes all investor involvement and lasts up to the moment of exit).

In the field of CF, this specific chronology has not yet been discussed explicitly, but most published CF literature explains the CF process (often in the context of a specific CFP), which also follows a similar chronological pattern. However, while business angels and venture capitalists spend much of their time negotiating and structuring their investment deal, this is not an option open to most crowdfunders as they have to make pledges according to the pre-specified requirements of the fund-seeker and CFP (e.g. if the CFP requires reward-based CF, there is no point for

crowdfunders to attempt to negotiate a shareholding deal with the fund-seeker). Therefore, based on the literature we reviewed for this article, the second phase 'during the investment deal,' seems inapplicable to the crowdfunder. Consequently, this article only discusses knowledge relevant to crowdfunders before (pre-investment) and after (post-investment) their pledge. Figure 1 summarises these phases in the context of CF while showing the main themes that the literature has so far discussed in relation to the crowdfunder during each of these phases.

Insert Figure 1 about here.

Limitations

The approach we used to identify and analyse our systematic review of the CF literature is, like every other approach, not perfect and therefore, this article displays some limitations, which have to be raised.

First and foremost, we concentrated on the literature on 'CF,' rather than the literature dealing with similar and partially overlapping fields, like peer-to-peer lending, donations, or crowdsourcing. All of these fields could provide interesting and useful insights also to CF but, in order to achieve the specific purposes of this article, we drew the boundaries around CF itself.

Secondly, the review did not consider articles, which have not (yet) been published in peer-reviewed, scholarly outlets. While this means that this article brings together only the high-quality knowledge that peer-review provides, it also means that we ignored much interesting and valuable knowledge. For instance, Agrawal and colleagues' (2011) exploration of the geography of CF is widely cited in peer-

reviewed articles, but due to the fact that it has not been peer-reviewed itself, we did not include it in our review.

A further limitation derives from the fact that we were unable to include every single peer-reviewed article on CF because we chose a specific cut-off date (the 15th of December 2014), did not search all databases, did not consider articles in other languages, and also did not include reviews of legislation or regulation, such as work produced by Heminway (2014) or Wroldsen (2013), much of which can be found in the HeinOnline database.

Finally, as anticipated, this article only explores the research themes relating to the crowdfunder, while ignoring themes relating to the fund-seeker and the CFP. Since all three actors are required for CF (Valanciene and Jegeleviciute, 2013), they are undoubtedly linked and therefore, any article focusing only upon individual actors is by its very nature creating an artificial boundary between these actors. As such, it is important to acknowledge that our decision to focus on only the crowdfunder required us to exclude current knowledge that possesses relevance to the field of CF, but that does not directly refer to the crowdfunder. It is important to explore also the current knowledge in relation to the other two actors and further systematic reviews, which we are currently preparing, are required to bring all three together.

What's been done? Academic research on crowdfunders

Pre-investment

Crowdfunders' motivation to pledge money

Much literature to date has considered the reasons why crowdfunders pledge money to CF in general, as well as why they pledge to specific fund-seekers in particular. The former refers to the funders' motivations to participate in CF in

general, while the latter is closely related to the various factors that make some CF campaigns more successful in fundraising than others.

By exploring the general motivations for becoming a crowdfunder, Gerber and Hui (2013) concluded that people want to obtain a reward, help others (with their money and sometimes also with their skills and time), become part of a community, and/or support a specific cause that may be close to their own hearts. On the other hand, people are wary of becoming crowdfunders because they are concerned that entrepreneurs may not use the funds appropriately. Slightly different motivations derive from Cumming and Johan's (2013) findings based on data from the National CF Association of Canada, which suggests that crowdfunders tend to be motivated mostly by the prospects of supporting entrepreneurialism and of achieving a direct channel to entrepreneurs and small business owners. On the other hand, crowdfunders seem to be least motivated by non-financial rewards and the opportunity to diversify their portfolio. A similar conclusion resulted from Schwienbacher and Larralde's (2012) case study as crowdfunders were less interested in making money from selling their stakes at a later date than they were by the prospects of being involved in an exciting and challenging entrepreneurial 'adventure.'

Some research explored crowdfunder motivations in specific contexts: in the case of CF for scientific research, especially the development of drugs for rare diseases, Wood *et al.* (2013) found charitable giving and a desire to advance treatment options to be the key motivators for crowdfunders. The same logic follows crowdfunders' desire to support non-profit causes, such as those trying to raise funds on Kapital (Ordanini *et al.*, 2011). This is in contrast to crowdfunders in journalistic news projects (on Spot.U.s), who tend to pledge because they are interested in reading

news that can serve as practical guides for daily living (Jian and Usher, 2014). Since pledges on Spot.U.s are not anonymous, crowdfunders are often also motivated by a desire to be part of a community, as well as the opportunity to show off their own investment (Aitamurto, 2011). In other journalistic CF, where all donations are anonymous, Burtch *et al.* (2013) clearly identified altruism – as opposed to personal reputation – as a major reason why people support journalists. Finally, in the context of theatre fundraising, Boeuf *et al.* (2014) found that crowdfunders invest because they want to be seen to be part of an artistic community and because they want to invest in ‘art for art’s sake.’ As such, these crowdfunders consider their investment altruistic but at the same time symbolic, suggesting they are happy to donate money in return for public acknowledgement. According to Ordanini *et al.* (2011), people who consider CF as an investment in a business are motivated by the prospects of financial return, alongside the desire to be amongst the pioneers using the novel investment approach. Implicitly, Belleflamme *et al.* (2014) concurred, suggesting that crowdfunders who invest through profit-sharing CFPs obtain benefits from this ‘investment experience,’ while pre-order reward-based CF provides benefits relating to a ‘consumption experience’ as such crowdfunders essentially pre-purchase a product they consume later.

Overall, as the above shows, there is no singular motivating factor applicable to all crowdfunders. This conclusion is in line with Ordanini *et al.*’s (2011) and Mollick’s (2014) assertion that crowdfunder motivations differ according to the type of ‘reward’ that individual CFPs allow their fund-seekers to offer: these authors suggested that crowdfunders pursue CF because they want to donate money to a cause (patronage model), lend money in return for interest payments, obtain non-monetary rewards, or obtain equity or similar securities.

Due diligence and investment decision

In the context of business angels and venture capitalists, the investors tend to spend a long time investigating and evaluating the investee companies and entrepreneurs before making an investment. This investigation is often referred to as due diligence or screening and it typically includes scrutiny of, amongst others, the entrepreneurs' personality, experience and abilities, the venture's business plan including financial statements, marketing and strategic plans, as well as detailed information about what the investment will be used for (Paul *et al.*, 2007). It is unlikely that crowdfunders carry out detailed due diligence as they may be more concerned with the idea behind the project, rather than the specifics detailed in business plans or financial documents (Tomczak and Brem, 2013). Moreover, it is hardly ever feasible for crowdfunders to carry out due diligence as they are faced with information asymmetries, insufficient access to the entrepreneur to carry out any more detailed screening and often are not sophisticated enough to deal with or even want to deal with the amount of information that should/could be investigated (Lehner, 2014; Schwienbacher and Larralde, 2012) – after all, why would individuals want to spend the time and effort sifting through vast amounts of information just because they want to provide a tiny amount of capital to an interesting project?

Since crowdfunders cannot investigate and evaluate projects and the fund-seekers themselves, they have to base their investment decisions on signals sent by the entrepreneurs, mostly via their campaigns on the CFP (Frydrych *et al.*, 2014). This section discusses such quality signals, consideration of which seems to be a less onerous replacement for due diligence. We will also refer to other reasons, not

related to perceived quality, as to why crowdfunders choose to invest in certain projects, but not in others.

Given that the overall motivations of crowdfunders refer to helping others, supporting specific causes, and obtaining specific rewards (as discussed above), it comes as no surprise that crowdfunders choose their investee projects accordingly. Gerber and Hui (2013) concluded that crowdfunders particularly invest in people whom they trust and with whom they have some sort of relationship, even if it is rather distant. This specifically refers to friends, relatives, and other acquaintances investing partially because crowdfunders are aware of the amount of work that the fund-seeker has already invested in the project. Ordanini *et al.* (2011) went further by distinguishing between early and late funders suggesting that the first investors in a CF project tend to be friends and relatives, who invest presumably because they want to support the fund-seeker. Pledges from strangers subsequently follow investment from these 'friend-funders.'

In an attempt to identify how fund-seekers can attract non-friend-funders at an early stage, Colombo *et al.* (2014) suggested that these strangers react positively if they see that the fund-seekers themselves are active crowdfunders in other ventures. Kickstarter, for instance, allows pitches to contain information about other projects, to which the current fund-seeker has pledged. Potential crowdfunders particularly use this information if they have previously received pledges from the current fund-seeker (and thus want to return the favour), consider raising funds themselves (and thus count on reciprocal funding from the current fund-seeker), or simply consider the fund-seeker worthy of investment because she is a 'good' member of the CF community. According to Boeuf *et al.* (2014), this reciprocal social norm is particularly prevalent in CF for theatre projects.

Despite some strangers investing early on, Ordanini *et al.* (2011) concluded that the investment decision of most 'stranger-funders' is affected by the investment decisions of others before them. The effect that such 'social information' has on later crowdfunders has been examined in various scholarly papers, for instance, Colombo *et al.*'s (2014) study of Kickstarter projects and Burtch *et al.*'s (2013) investigation of journalism CF.

Colombo *et al.* (2014) identified that social information (in the form of "how many others have already pledged and how much money has already been committed?") affects prospective crowdfunders' decisions to pledge. Based on the notion of 'observational learning,' these authors suggested that crowdfunders observe early investors and interpret their pledges to and word-of-mouth promotion of the project as signals of quality. They are based either on the assumption that early crowdfunders have carried out due diligence prior to investing (which must have obviously resulted in the conclusion that the project is in fact high quality), or the conjecture that fund-seekers have implemented early crowdfunders' advice and suggestions. This has improved any project that was not previously perceived to be of sufficient high quality. In journalism CF, Burtch *et al.* (2013) also commented that projects which have received many pledges and word-of-mouth promotion already are likely to receive more in future, while projects who suffer from crowdfunder inertia may struggle to achieve their target. Schwienbacher and Larralde (2012) provided yet another alternative suggestion claiming that crowdfunders follow the investment of others because they want to extend their own network of contacts and thus choose projects which clearly have already got large numbers of crowdfunders.

Not only the investment of other crowdfunders can be considered a quality signal. Some CFPs (for example MyMicroInvest and Angel.me in Belgium) allow co-

investment between the crowd and more sophisticated investors such as venture capitalists or banks, which carry out more due diligence and are assumed to make rational 'good' investment decisions. As such, the crowd can consider financial commitments from sophisticated investors as a signal for the project's quality (Belleflamme and Lambert, 2014). These sophisticated investors could be considered as testimonials or good examples of an authoritative source, a quality signal identified in Tirdatov's (2014) analysis of pitch narratives. Parker (2014), on the other hand, did not find any evidence that informed investors increase campaign success.

Dragojlovic and Lynd (2014) further suggested celebrity endorsement as an alternative source of authority, but concluded that, at least in the context of CF for medical drug development, many campaigns are successful even without celebrity testimonials. As Lehner (2014) pointed out, though, not all celebrity endorsements are viewed favourably: fund-seekers who received support from Donald Trump experienced negative crowdfunder reactions (including some crowdfunders who withdrew their pledges) out of concern that the involvement of such an individual would result in power-inequality.

The CFP is another source of testimonials that can endorse projects by adding them to 'most picked' or 'most popular' lists, which Lehner (2014) found to positively affect crowdfunders' desire to pledge. The platform itself can be considered a quality signal. According to Cumming and Johan (2013), crowdfunders prefer to invest through well regulated CFPs that might carry out their own pre-screening (a form of due diligence), as these CFPs are perceived to attract more high quality fund-seekers, thus reducing the investment risk for the crowdfunders. Also in the context of CF for rare disease research, Dragojlovic and Lynd (2014) suggested that

crowdfunders prefer to invest in projects that are listed on high-profile CFPs, which attract much footfall and allow open-ended funding goals as well as the bundling of investments with more traditional fundraising approaches, like cancer races.

In addition to the quality signalled by other crowdfunders and authoritative recommendations, crowdfunders can rely on their interpretation of other signals that are visible on the CFP pitch. These include the campaign video, as well as the pitch narrative, and the overall content of the campaign. While Mollick (2014) and Weigmann (2013) suggested that the existence of a video on the campaign page can be considered a signal for high quality, Frydrych *et al.* (2014) contested this by stating that a video is a basic minimum, rather than a distinguishing feature of a pitch. Pitch narratives are powerful tools to convey quality, credibility, preparedness, professionalism and legitimacy. For instance, providing details about the entrepreneurial team and project (financial terms, rewards and proposed use of the funds), avoiding spelling errors, stressing values that crowdfunders might share (for instance, in the case of non-profit projects), and carefully selecting forceful and emotional language can spur the reputation of a project (Frydrych *et al.*, 2014; Lehner, 2014; Mollick, 2014; Tirdatov, 2014; Zheng *et al.*, 2014). Ultimately, Schwienbacher and Larralde (2012) concluded that people invest if they have faith in the proposal and its fund-seeker, which also supports Lehner's (2014) conjecture that entrepreneurs' reputations (previous success in business or prior successful CF campaigns) affect the crowd's investment decision.

Post-investment

For the crowdfunder this phase begins when funds have been pledged to the fund seeker. It does not have to coincide with the end of the fundraising campaign as

many pledges are made well before the end of the fundraising period (Colombo *et al.*, 2014). However, not every pledge will actually reach the fund-seeker. For example, the All-or-Nothing model of CF requires the fund-seeker to raise the entire target amount in order to access any pledges. Nevertheless, from the crowdfunders' perspective, the pledge does constitute the boundary between pre- and post-investment. The current CF literature is rather scarce when it comes to crowdfunders' post-investment phase. Only one theme has emerged from the articles. It regards the notion of value added beyond the financial pledge. This section focuses on the value added proposition with only a brief comment on some of the other post-investment topics.

Value added

While much of the current CF literature mentions the added value that crowdfunders can provide to the entrepreneurs they back, there is currently only one single published article that specifically focuses upon this important theme (Macht, 2014). We follow Macht's (2014) lead and use the term 'value added' as business angel researchers commonly use it when discussing the value that an investor provides *in addition to* their financial investment (Politis, 2008). This is directly applicable to CF as also the crowdfunders provide an added value beyond their financial pledge.

In the case of business angels, much of this added value is derived from 'active involvement,' whereby investors actively participate in certain aspects of the business, for instance, through mentoring or becoming a member of the management team (e.g. Politis, 2008). In addition, 'passive involvement' can also add value, for instance, if the investor's reputation rubs off on the investee or the

pure fact that an investor monitors the business results in added discipline (Macht and Robinson, 2009).

In the case of CF, both active and passive involvement is possible. As Cumming and Johan (2013) suggested, some crowdfunders are in fact business angels and therefore, it is plausible that such crowdfunders have the necessary skills and time to become involved in highly active angel-type activities, for instance, as members of the actual management team. This, however, is likely to be relevant for only a very small proportion of typical crowdfunders while the vast majority are members of the general public, who often have neither skills, nor time, nor intention to offer any added value. Two specific examples of how non-sophisticated crowdfunders can provide added value were discussed by Schwenbacher and Larralde (2012) and van Staveren (2013), respectively. The former showed that investors in a crowdfunded website business provided their feedback as customers and some even provided their own web design skills to develop the website. The latter, on the other hand, was a crowdfunded farm, which saw its crowdfunders volunteer their time as farmhands.

Although value added has proven to be a fruitful and important area of research in the business angel field, it has not yet received much attention in the CF literature as the latter currently only mentions two forms of active value added from crowdfunders: crowdfunders promote the fund-seeker, both during and after the campaign, and crowdfunders participate in the further development of the project or business through other crowdsourcing activities (Lehner, 2014).

The former is mentioned widely in the literature, in relation to the fact that a vast majority of crowdfunders have networks of contacts and social media access and, as such, they can act as ambassadors to raise awareness of the project by sharing information about the project with their own network of contacts (Lehner, 2014). This

can be used as part of the fund-seeker's marketing strategy (word-of-mouth and social media marketing) (Belleflamme *et al.*, 2014; Gerber and Hui, 2013; Ordanini *et al.*, 2011), it may result in a wide-reaching 'buzz' or 'hype' around the idea (Lehner, 2013; Macht and Weatherston, 2014), and can therefore be used to rally up additional financial support for the fundraising campaign, all of which adds value to the fund-seeker beyond the initial crowdfunders' investments (Macht, 2014).

Value added through crowdfunders' participation in the development of the project is also mentioned in the current literature as fund-seekers are able to utilise their backers' opinions and skills for specific aspects of their projects. For instance, crowdfunders can provide feedback and enable fund-seekers to combine CF with crowdsourcing (Lehner, 2013). Another example, from journalism CF, shows that crowdfunders become co-creators of the projects they fund because they submit their comments and own knowledge about the project topics (Aitamurto, 2011).

With regards to passive involvement, much research discusses the fact that crowdfunders add value simply through their expression of interest, which is clearly visible by the fact that they are investing in the project (e.g. Colombo *et al.*, 2014). Such approval or validation allows fund-seekers to test out the marketability of their idea, establish the extent to which it appeals to the broad market, and show the legitimacy and quality of the idea to potential future investors such as venture capitalists or grant-providing bodies (Aitamurto, 2011; Dragojlovic and Lynd, 2014; Gerber and Hui, 2013; Lehner, 2013). Macht (2014) further showed that crowdfunders can add value also by increasing their initial financial pledge in order to achieve the target amount or even by pledging to multiple, consecutive fundraising campaigns created by the same fund-seeker.

Other post-investment considerations

As previously mentioned, the post-investment literature is still very scarce, so that this section merely presents a brief overview of some of the topics that the current CF literature touches upon. Gerber and Hui (2013) suggested that some CF-entrepreneur relationships develop into long-term interactions, well beyond the fundraising period. Also Boeuf *et al.* (2014) hinted at a possible long-term relationship, suggesting that some fund-seekers attempt to seek financing from their crowdfunders for multiple projects. These may lead to follow-on-finance fatigue, meaning that crowdfunders lose interest in repeatedly backing the same entrepreneur. Macht (2014) not only contested this notion of follow-on fatigue, but also more explicitly referred to a long-term entrepreneur-crowdfunder relationship. She argued that crowdfunders' willingness to provide added value can be increased by fund-seekers' attempts at building a lasting, committed and trustworthy relationship with their backers through the use of relationship marketing techniques.

In the context of journalism CF, Burtch *et al.* (2013) considered the 'consumption' of the crowdfunded piece of news: they found a correlation between the length of a fundraising campaign and the amount of people consuming (that is, reading) the resulting article. The main reason for this was found to be the fact that potential readers were exposed to and aware of the forthcoming article for a long time before the article became available.

What's to come? Future research on crowdfunders

Based on the above thematic review of current literature on crowdfunders, which contained only published, peer-reviewed articles, this section identifies gaps in our current knowledge, which are either being addressed as we write (for instance, in the

form of working and conference papers, as well as student theses and forthcoming publications) or should be addressed by future research. We point out areas that are likely to be published soon as well as areas that researchers should consider in the near future – these are indications of *What's to come?*

As the above review of crowdfunder literature shows, a majority of published work refers to the pre-investment phase of the CF process. However, even to this date, there is limited knowledge relating to who a typical crowdfunder actually is (Bruton *et al.*, 2014). Van Wingerden and Ryan's (2011) thesis made some progress in that respect by identifying that 52% of crowdfunders are under the age of 35 while just over 56% have provided crowdfunding only once or twice over the preceding three months. Agrawal *et al.* (2011) further added that crowdfunders and fund-seekers are on average 3000 miles apart and Lehner (2014) even considered that established companies can be crowdfunders, obtaining an equity share in new businesses that they can eventually influence and utilise for their own benefits. While a few other pieces of information exist, which start to paint a picture of the typical crowdfunder, we agree with Lehner's (2013) call for further research into the types of crowdfunders: scholars should attempt to establish typologies, which in turn would focus future research efforts on only certain types of crowdfunders. A similar approach has been taken by business angel researchers, who distinguished between serial angels and one-off angels (Van Osnabrugge, 1998).

In order to develop more knowledge about crowdfunders, it is particularly important to focus future research efforts on the post-investment period as current published research has neglected this period. It appears that some progress into this direction is being made. For instance, Di Pietro (no date) asks "Are crowdfunders

active investors?” More research into the post-investment period, and especially the potential for crowdfunders to add value, is required in future.

Macht (2014) recently explored the use of relationship marketing in the context of crowdfunder value added. She suggested that the CF discipline should consider sociological and psychological concepts like trust, commitment, affection, respect, and intuition (to mention only a few) as part of a crowdfunder’s decision to pledge and to provide added value.

Belleflamme and Lambert (2014) suggested that some CFPs allow business angels, to invest alongside members of the general public, while Lehner (2014) suggested that other investors consider successful CF as a real-life market test for the viability of the business. Hornuf and Schwienbacher (2014) also queried whether CF will complement or substitute other forms of finance. Any such exploration of CF in relation to other financiers is currently in its infancy and the following questions are only some of many that future researchers should address: what motivates business angels to invest via CFPs? What are the dynamics of co-investment between Business Angels and crowdfunders? What do business angels and venture capitalists think about CF/crowdfunded ventures? Will CF complement or substitute other forms of entrepreneurial finance? Will subsequent business angel/venture capital investment enable crowdfunders to exit their investments? How will crowdfunders’ investments be protected if subsequent sophisticated investors join the business?

Conclusion: academic research on crowdfunders – what’s been done and what’s to come?

The purpose of this article was twofold: to provide an overview of the current academic knowledge, discussed in the scholarly, published CF literature, relating to the crowdfunder (*What's been done in CF literature?*) and to point out areas, again relating to the crowdfunder, that researchers should consider in future (*What's to come in CF literature?*). By addressing these two purposes, this article aimed to add value to the academic community, as well as to prospective and actual CF participants (crowdfunders and/or fund-seekers):

1. **Academic community.** Scholars interested in researching CF can use this article as a roadmap of knowledge relating to the crowdfunder. By providing a systematic and chronologically structured overview of the current literature on crowdfunders, this article can be used as a basis for further CF research, allowing scholars to draw upon our suggestions of what should be explored next, while also utilising the chronological structure to deepen our understanding of various phases within the CF process.
2. **CF participants.** Individuals, who plan to or are already participating at CF (be it as a crowdfunder or a fund-seeker), can use this article to deepen their understanding of the typical fundraising process from a crowdfunder's viewpoint. Crowdfunders can base their investment decisions on the scholarly knowledge already created, while fund-seekers can utilise this knowledge to maximise their campaign outcomes. Scholarly knowledge of the factors that crowdfunders consider when pledging can be used by fund-seekers to increase the potential success of their fundraising campaigns.

This article has presented a picture of the present state of academic literature on crowdfunders – the article has addressed the questions: *What's been done and what's to come in crowdfunder literature?* However, it only considered one of the

three main actors in CF and presented knowledge within an artificial boundary. In order to overcome this limitation, it is important to extend the academic research on fund-seekers and CFPs.

References

- Agrawal A, Catalini C, Goldfarb A. 2011. The geography of crowdfunding. *NBER Working Paper 16820*. Available at: <http://www.nber.org/papers/w16820>. (Accessed: 05 July 2012).
- Aitamurto T. 2011. The impact of crowdfunding on journalism: case study of Spot.Us, a platform for community-funded reporting. *Journalism practice* 2011; 5: 429-445. DOI: 10.1080/17512786.2010.551018.
- Belleflamme P, Lambert T. 2014. Crowdfunding: some empirical findings and microeconomic underpinnings. *Revue Bancaire et Financiere* 2014; 4: 288-296.
- Belleflamme P, Lambert T, Schwienbacher A. 2013. Individual crowdfunding practices. *Venture Capital* 2013; 15: 313-333. DOI: 10.1080/13691066.2013.785151.
- Belleflamme P, Lambert T, Schwienbacher A. 2014. Crowdfunding: Tapping the right crowd, *Journal of Business Venturing* 2013; 29: 585–609. DOI: 10.1016/j.jbusvent.2013.07.003.
- Boeuf B, Darveau J, Legoux R. 2014. Financing Creativity: Crowdfunding as a New Approach for Theatre Projects. *International Journal of Arts Management* 2014; 16: 33-48.
- Bruton G, Khavul S, Siegel D, Wright M. 2014. New Financial Alternatives in Seeding Entrepreneurship: Microfinance, Crowdfunding, and Peer-to-Peer Innovations. *Entrepreneurship: Theory & Practice* 2014. DOI: 10.1111/etap.12143

- Burtch G, Ghose A, Wattal S. 2013. An empirical examination of the antecedents and consequences of contribution patterns in crowd-funded markets. *Information Systems Research* 2013; 24: 499-519.
- Collins L, Pierrakis Y. 2012. *The venture crowd: crowdfunding equity investment into business*. NESTA: London. Available at: <http://www.nesta.org.uk/library/documents/TheVentureCrowd.pdf> (Accessed: 28 September 2012).
- Colombo MG, Franzoni C, Rossi-Lamastra C. 2014. Internal Social Capital and the Attraction of Early Contributions in Crowdfunding. *Entrepreneurship: Theory & Practice* 2014. DOI: 10.1111/etap.12118.
- Cumming D, Johan S. 2013. Demand-driven securities regulation: evidence from crowdfunding. *Venture Capital* 2013; 15: 361-379. DOI: 10.1080/13691066.2013.847635.
- Di Pietro F. No date. Are crowdfunders active investors? The role of crowdfunders activism in shaping new ventures performance. Available at: <http://www.dii.univpm.it/sites/www.dii.univpm.it/files/dii/allegati/DiPietro.pdf> (Accessed: 8 September 2014).
- Dragojlovic N, Lynd LD. 2014. Crowdfunding drug development: the state of play in oncology and rare diseases. *Drug discovery today* 2014; 19: 1775–1780. DOI: 10.1016/j.drudis.2014.06.019.
- Fried VH, Hisrich RD. 1988. Venture Capital Research: Past, Present and Future. *Entrepreneurship: Theory & Practice* 1988; 13: 15-28.
- Frydrych D, Bock AJ, Kinder T, Koeck B. 2014. Exploring entrepreneurial legitimacy in reward-based crowdfunding. *Venture Capital* 2014; 16: 247-269. DOI: 10.1080/13691066.2014.916512.

- Fung JM, Au WT. 2014. Effect of inequality on cooperation: Heterogeneity and hegemony in public goods dilemma. *Organizational Behavior and Human Decision Processes* 2014; 123: 9-22. DOI: 10.1016/j.obhdp.2013.10.010.
- Gerber EM, Hui J. 2013. Crowdfunding: Motivations and deterrents for participation. *ACM Transactions on Computer-Human Interaction (TOCHI)* 2013; 20: 34:1-34:32. DOI: 10.1145/2530540.
- Gouillart FJ. 2014. The race to implement co-creation of value with stakeholders: five approaches to competitive advantage. *Strategy & Leadership Journal* 2014; 42: 2-8. DOI: 10.1108/SL-09-2013-0071.
- Hammon L, Hippner H. 2012. Crowdsourcing. *Business and Information Systems Engineering* 2012; 4: 163-166.
- Harris HE, Russo P. 2014. The influence of social movements on space astronomy policy. *Space Policy* 2014; DOI: 10.1016/j.spacepol.2014.08.009.
- Harrison RT. 2013. Crowdfunding and the revitalisation of the early stage risk capital market: catalyst or chimera? *Venture Capital* 2014; 15: 283-28. DOI: 10.1080/13691066.2013.852331.
- Heminway JM. 2014. Investor and market protection in the crowdfunding era: Disclosing to and for the “crowd”. *Vermont Law Review* 2014; 38: 827-848.
- Hornuf L, Schwienbacher A. 2014 forthcoming. Crowdfunding–Angel Investing for the Masses? *Handbook of Research on Venture Capital*. Volume 3.
- Hui JS, Greenberg MD, Gerber EM. 2014. Understanding the Role of Community in Crowdfunding Work. *Proceedings of the 17th ACM conference on Computer supported cooperative work & social computing*: 62-74. DOI: 10.1145/2531602.2531715.

- Jian L, Usher N. 2014. Crowd-Funded Journalism. *Journal of Computer-Mediated Communication* 2014; 19: 155-170. DOI: 10.1111/jcc4.12051.
- Kappel T. 2009. Ex ante crowdfunding and the recording industry: A model for the U.S. *Loyola of Los Angeles Entertainment Law Review* 2009; 29: 375–385.
- Kleemann F, Voss GG, Rieder K. 2008. Un(der)paid Innovators: The Commercial Utilization of Consumer Work through Crowdsourcing. *Science, Technology & Innovation Studies* 2008; 4: 5–26.
- Kuppuswamy V, Bayus BL. 2013. Crowdfunding creative ideas: The dynamics of project backers in Kickstarter. *SSRN Electronic Journal* 2013. Available at: http://funginstitute.berkeley.edu/sites/default/files/V.Kuppuswamy_Crowdfunding%20-%20UCBerkeley.pdf (Accessed: 30 May 2014).
- Lehner OM. 2013. Crowdfunding social ventures: a model and research agenda. *Venture Capital* 2013; 15: 289-311. DOI: 10.1080/13691066.2013.782624.
- Lehner OM. 2014. The formation and interplay of social capital in crowdfunded social ventures. *Entrepreneurship & Regional Development* 2014; 26: 478-499. DOI: 10.1080/08985626.2014.922623.
- Macht SA. 2014. Reaping Value-Added Benefits from Crowdfunders: What Can We Learn from Relationship Marketing? *Strategic Change* 2014; 23: 439–460. DOI: 10.1002/jsc.1988.
- Macht SA, Robinson J. 2009. Do business angels benefit their investee companies? *International Journal of Entrepreneurial Behaviour & Research* 2009; 15: 187–208. DOI: 10.1108/13552550910944575.
- Macht SA, Weatherston J. 2014. The Benefits of Online Crowdfunding for Fund-Seeking Business Ventures. *Strategic Change* 2014; 23: 1-14. DOI: 10.1002/jsc.1955.

- Meer J. 2014. Effects of the price of charitable giving: Evidence from an online crowdfunding platform. *Journal of Economic Behavior & Organization* 2014; 103: 113-124. DOI: 10.1016/j.jebo.2014.04.010.
- Mollick E. 2014. The dynamics of crowdfunding: An exploratory study. *Journal of Business Venturing* 2014; 29: 1-16. DOI: 10.1016/j.jbusvent.2013.06.005.
- Ordanini A, Miceli L, Pizzetti M, Parasuraman A. 2011. Crowd-funding: transforming customers into investors through innovative service platforms. *Journal of Service Management* 2011; 22: 443-470. DOI: 10.1108/09564231111155079.
- Parker SC. 2014. Crowdfunding, cascades and informed investors. *Economics Letters* 2014; 125: 432-435. DOI: 10.1016/j.econlet.2014.10.001.
- Parrino RJ, Romeo PJ. 2012. JOBS Act eases securities-law regulation of smaller companies. *Journal of Investment Compliance* 2012; 13: 27-35. DOI: 10.1108/15285811211266083.
- Paul S, Whittam G, Wyper J. 2007. Towards a Model of the Business Angel Investment Process. *Venture Capital* 2007; 9: 107-125. DOI: 10.1080/13691060601185425.
- Politis D. 2008. Business angels and value added: what do we know and where do we go? *Venture Capital* 2008; 10: 127-147. DOI: 10.1080/13691060801946147.
- Schwienbacher A, Larralde B. 2012. Crowdfunding of small entrepreneurial ventures. In Cummings D (ed.), *The Oxford Handbook of Entrepreneurial Finance*. Oxford University Press: Oxford; pp. 369–391.
- Shaw E. 1999. A guide to the qualitative research process: evidence from a small firm study. *Qualitative Market Research: An International Journal* 1999. 2: 59-70.
- Shiller RJ. 2013. Capitalism and Financial Innovation. *Financial Analysts Journal* 2013; 69: 21-25. DOI: 10.2469/faj.v69.n1.4.

- Tirdatov I. 2014. Web-Based Crowd Funding: Rhetoric of Success. *Technical Communication* 2014; 61: 3-24.
- Tomczak A, Brem A. 2013. A conceptualized investment model of crowdfunding. *Venture Capital* 2013; 15: 335-359. DOI: 10.1080/13691066.2013.847614.
- Tyebjee TT, Bruno AV. 1984. A Model of Venture Capitalist Investment Activity. *Management Science* 1984; 30: 1051-1066. DOI: 10.1287/mnsc.30.9.1051.
- Valanciene L, Jegeleviciute S. 2013. Valuation of crowdfunding: benefits and drawbacks. *Economics and Management* 2013; 18: 39-48. DOI: 10.5755/j01.em.18.1.3713.
- Van Osnabrugge M. 1998. Do Serial and Non-Serial Investors Behave Differently?: An Empirical and Theoretical Analysis. *Entrepreneurship: Theory & Practice* 1998; 22: 23-42.
- van Staveren I. 2013. Caring Finance Practices. *Journal of Economic Issues* 2013; XLVII: 419-425. DOI: 10.2753/JEI0021-3624470215.
- Van Wingerden R, Ryan J. 2011. Fighting for Funds: An Exploratory Study into the Field of Crowdfunding. Available at: <http://lup.lub.lu.se/luur/download?func=downloadFile&recordId=1982630&fileOid=2436193> (Accessed: 26 July 2012).
- Weigmann K. 2013. Tapping the crowds for research funding. *EMBO reports* 2013; 14: 1043-1046. DOI: 10.1038/embor.2013.180.
- Wheat RE, Wang Y, Byrnes JE, Ranganathan J. 2013. Raising money for scientific research through crowdfunding. *Trends in ecology & evolution* 2013; 28: 71-72. DOI: 10.1016/j.tree.2012.11.001.

- Wood J, Sames L, Moore A, Ekins S. 2013. Multifaceted roles of ultra-rare and rare disease patients/parents in drug discovery. *Drug discovery today* 2013; 18: 1043-1051. DOI: 10.1016/j.drudis.2013.08.006.
- Wroldsen JS. 2013. The Crowdfund Act's Strange Bedfellows: Democracy and Start-Up Company Investing. *Kansas Law Review* 2013; 62: 357-401.
- Zheng H, Li D, Wu J, Xu Y. 2014. The role of multidimensional social capital in crowdfunding: A comparative study in China and US. *Information & Management* 2014; 51: 488-496. DOI: 10.1016/j.im.2014.03.003.

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