

Perspective

Open Innovation in Crowdfunding Context: Diversity, Knowledge, and Networks

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Abstract: Open innovation is an essential phenomenon in the crowdfunding context. This conceptual piece tends to offer an integrative discussion of three important mechanisms upon which stakeholders of a crowdfunding platform conduct open innovation and value co-creation in crowdfunding sites. These mechanisms include: diversity, knowing, and networking. We argued that: 1. diverse demographic attributes facilitate multiple-party value co-creation; 2. knowledge of platform stakeholders improves quality of ideas; 3. networking positively impacts on open innovation performance. With such discussions, a theoretical foundation for future research is built and more research issues are stimulated.

Keywords: open innovation; crowdfunding; knowledge; diversity; networking

1. Introduction

Open innovation generally refers to opening one or a firm's self to external ideas, processes, or technology [1]. In effect, when technology acts in an innovative way that opens the user up to external contributions and entries, it is referred to as open innovation. As the paradigm of open innovation is rapidly growing, scholarly efforts have been committed to searching for meaningful phenomenological contexts to frame and interpret more of the nature of open innovation. Among potential contexts, we argue that crowdfunding is one that could demonstrate open innovation well and one that also benefit from being re-framed by open innovation. Internet technology has transformed the ways how most business was done in the traditional models by introducing innovations [2]. One innovation that most people might not have fully expected from the internet was financial funding of business activities. Today, based on the open innovation concept, people use the internet to raise funds of various quantities in what has become known as crowdfunding [3]. Why is open innovation worth discussing in the context of crowdfunding? Without doing so, there might be insufficient and biased assessments of the innovative activity's propensity and scope, as well as its innovativeness potential. Crowdfunding is inherently a collective economic activity on the internet, which largely demands co-partition of multiple stakeholders in innovative affairs. In such a context, it is almost perfectly reasonable that an open model being more capable in joining diverse assets and efforts from multiple

parties (partners) is more suitable than a close-model of governance, especially when it comes to the issue of innovation. With co-participation, diverse ideas and efforts could play a role of value co-creation inputs for nurturing the core of crowdfunding procedures.

Usually, there are three main actors, who are the project initiator, supporters, and moderating platform [4]. Through the moderating platform, the initiators open themselves up to inputs or contributions from the supporters, who support the idea by contributing to it in various ways. To facilitate our discussions hereafter, we define open innovation in the crowdfunding context (i.e., platform, collaboration, communication, etc.) as the creative ideas and/or behaviors collectively generated and conducted by all stakeholders (i.e., the project initiators, the pledgers, the donators, the platform per se, etc.; all parties who could participate and learn and gain values from open innovation in the crowdfunding activities) that benefit from collaborative innovation or the co-creation of products, projects, and any aspect of multiple-partner collaborations. For example, there may be reverse knowledge sharing from the donators (or other stakeholders) to the project initiators that might further help improve the quality of the proposed products. As a more advanced (complex) example, the donators might learn from other users' /stakeholders' comments shared on the platform and gained new knowledge, which again, affects their feedback to the initiator on the project/product.

As a result, on the surface, crowdfunding may be treated as a way of funding projects by raising small amounts of money from a larger amount of people. From such a viewpoint, a critical resource mobilized in the crowdfunding is money or other monetary payment. From the open innovation perspective, however, crowdfunding could be treated as an intermediary space where customers' thoughts and feedback, other professionals' knowledge, third-party information, etc., could interact with the project initiators' ideas. This can facilitate more innovation opportunities and co-creation [5–9]. Put differently, there are still more critical benefits mobilized in the crowdfunding platform, such as information, knowledge, and human relationships.

To further frame crowdfunding as an open innovation space, here are several aspects of crowdfunding that makes sense. In this conceptual paper, three main arguments about open innovation in the context of crowdfunding will be reviewed. The three areas of argument are diversity, knowledge, and networking. The knowledge refers to intellectual resources possessed by different stakeholders who interact on the crowdfunding platform. For example, donators or investors may have different knowledge bases from the project initiators or pledgers. The networking refers to the wellness of social and/or professional interactions among stakeholders on the platform. For example, a project initiator might have different interactions with different donators, or vice versa, with social or professional purposes. The diversity refers to the heterogeneous composition of demographic attributes that describes stakeholders on the crowdfunding platform. For example, these attributes include age, gender, education, etc.

Based on the discussions above, the objective of this article is to re-conceptualize the meaning of crowdfunding from a mere opportunity financing platform to a distributed but shared space for open innovation. Also, we have the objective to develop several propositions to explicate our core arguments and thus benefit future studies' empirical examination. By utilizing this perspective writing, our central goal is to explicate the inter-connections among the core constructs discussed. Below, we start to discuss from the three critical, distinctive but inter-related perspectives of open innovation for crowdfunding platform sustainability.

2. Impact of Demographic Diversity on Levels of Co-Creation

Co-creation is a management initiative, commonly incorporated into open innovation by bringing many different parties and entities together to produce a valued outcome that is of mutual importance to all the parties [5]. The concept of co-creation simply outlines the need for building open innovation around different groups of people, who are referred to as external entities. Stanko, Fisher and Bogers [10] argued that in the absence of co-creation, the idea of open innovation and for that matter crowdfunding cannot be possible. The reason for this claim is that in the absence of co-creation, the

whole initiative and idea of the initiator becomes centered only on one person and thus the concept of external contributions is defeated. In any typical crowdfunding scenario, one of the main and most important parties whose contributions make the concept complete is customers (i.e., often the donators). Customers are mostly the target group of users who make use of the idea.

As compared to closed-system innovation, which places more emphasis on creation, open innovation models facilitate more values co-created by collaborating with multiple groups of stakeholders with a higher degree of engagement [11]. These stakeholder groups attract one another because of their heterogeneous motives and needs for innovation [12,13]. In such a vein, it is more likely to witness higher degree of stakeholder participation, openly, when these stakeholder parties are diverse in significant attributes, including demographic diversity. Thus, under the theme of diversity, it is being argued that the success of particular crowdfunding initiatives and crowdfunding as a whole relies on how diverse the customer demographic attributes are. According to Prpić [14], some of the customer demographic attributes that can be associated with a typical crowdfunding initiative are educational background, race, gender, and age. Diversity in customer competence and ability is the first justification for arguing that the more diverse the customer demographic attributes, the higher the level of co-creation for new ideas. Cohen, Almirall and Chesbrough [15] emphasized that based on the concept of open innovation, one of the main expectations from a typical crowdfunding initiative is the need to outsource the idea to be funded. That is, ideas are considered the fundamental unit blocks based on which crowdfunding becomes necessary. Indeed, when there is no idea, there would not be any need to raise funds. Meanwhile, the quality and merit within the idea is what will inform the attitude of customers towards it [2]. Hossain [4] emphasized that once initiators realize that diversity within the customer demographic attributes means differences in the competence and ability of customers, they become conscious of the need to come up with ideas that satisfy the different competences and abilities of the customers. Meanwhile in order to understand and appreciate the different competences and abilities of customers, it is always necessary to resort to co-creation since it opens the initiator up to different external contributors whose competences and abilities mirror those of the target customers.

The level of co-creation for new ideas is therefore increased with a realization of the diversity within customer competence and ability. For example, comparing and contrasting the business crowdfunding ideas of Pono Music with Bitvore, Schroter [16] emphasized that the ideas and eventual products of these two companies had customer targets who needed different levels of competences and abilities to use them. Because Pono Music is only about accessing and listening to music, it does not involve customers with any special or unique competences to use them. On the other hand, Bitvore provides solutions to big data issues, which often involve firms with deeper knowledge about the complex topic of big data. Schroter goes on to posit that the initiators of these products might have relied on co-creation, which involved contributors of different competences and abilities about technology, coming up with these different ideas. In effect, it is only when an initiator appreciates the fact that there are customers with different competences and abilities that they will prioritize the need to raise the levels of co-creation for new ideas to meet the needs of each of these customers.

Diversity in social needs and demands of customers is the second justification for arguing that the more diverse the customer demographic attributes, the higher the level of co-creation for new ideas. Bruton, Khavul, Siegel and Wright [17] posited that the whole idea of crowdfunding is largely dependent on meeting the different social needs and demands of people. Using the example of reward-based crowdfunding, Zheng et al. [18] expressed the view that this type of open innovation succeeds based on the guaranteed assurance of the rewards that crowdfunding backers or contributors will offer the initiator. Xu, Zheng, Xu and Wang [19] found that the most common areas of business that reward-based crowdfunding has been used for include software development, civic projects and invention developments. Because reward-based crowdfunding is non equity-based, the developer may make promises to the funders to make them some of the first users of the products or give them free samples.

Depending on the social needs that the particular idea may solve, there could be very high demand for the product even before it is invented. A typical example of this is the case of Pebble E-paper watch, which was funded through reward-based crowdfunding. Because of the high demand for this type of smart watch, the initiators were able to raise an amount of \$10,266,845 in only 37 days [16]. The assurance for the crowdfunding backers was that they will become the first people to own a Pebble watch. Indeed, such levels of demand can directly be associated with the diversity in the customer demographic attributes for smart watches. Consequently, when initiators appreciate the fact that there would be unique social needs they will be solving, based on which demand for their products will increase, they increase the levels of co-creation for new ideas to solicit ideas from different people with the various social needs.

Differences in crowdfunding types is the third justification for arguing that the more diverse the customer demographic attributes, the higher the level of co-creation for new ideas. Already, it has been established that when there are diverse customer demographic attributes, this comes with diversity in customer competence, abilities, social needs, and demand for an idea, and subsequently for a product. Meanwhile, as part of the open innovation concept, crowdfunding takes place in many different forms. Depending on the specific thing that the initiator wants to offer customers, there are different types of crowdfunding that may be used. Di Pietro, Prencipe and Majchrzak [20] also emphasized that when different types of crowdfunding are used, they will require different attitudes towards co-creation so as to attract the right people to present new ideas. It is for this reason that the level of co-creation for new ideas would have to be increased if the different types of crowdfunding can be used effectively.

Özdemir, Faris and Srivastava [21] identified the two major types as rewards crowdfunding and equity crowdfunding. In reward crowdfunding, the initiator presents the idea about the product or service to a target group without any debt or equity. As mentioned earlier, the contributors to the fund are rewarded in different ways, including promises to make them the first users of the product or service. In equity crowdfunding however, the contributors, also known as backers, receive a share in the company that is formed. Bogers, Chesbrough and Moedas [22] emphasized that stakeholders who prefer products and services associated with reward crowdfunding may have needs that are different from those using equity crowdfunding. The platforms used for reward crowdfunding are thus different from those used in equity crowdfunding, the need for which is to have a higher level of co-creation, which will bring in the right new ideas associated with the type of crowdfunding being undertaken. Based on the discussions of this section, we raise:

Proposition 1. *The degree of user demographic diversity is positively associated with the level of co-creation for multiple-party open innovation on the crowdfunding platform.*

3. Impact of Knowledge of Platform Stakeholders on Quality of Ideas

In this section, the theme of knowledge and its place in crowdfunding as an open innovation is explored. As part of the theme, it is being argued that the higher the knowledge level on the platform stakeholders, the better the quality of open innovation. That is, all the people on the platform of crowdfunding ought to have a certain level of knowledge, considered to be high enough to improve or affect the quality of open innovation positively. Gierczak et al. [23] described open innovation and for that matter crowdfunding as a community, comprising many different stakeholders who perform different roles. Already, the three main stakeholders on the platform and the roles they play have been outlined. There are a number of factors and reasons that justify the argument of the impact of knowledge on the quality of open innovation in general and crowdfunding in particular. First, Chesbrough [24] Saueremann, Franzoni and Shafi [1] noted that one of the fundamental principles of open innovation is the fact that knowledge is widespread throughout society.

It is based on the above principle that the need to solicit the views and ideas of others from external sources is considered a necessity. In any typical open innovation initiation, the external sources of knowledge serve as the database for building and developing ideas. In effect, the database

which is made up of the knowledge of the external contributors serves as the foundation, based on which the idea and eventual product are built. In a practical construction context, when the foundation is not strong enough or is bent, there are high chances that the whole house that will be put up will also be weak or tilted. Having people with the right levels of knowledge on the platform offers the chance to gather the right forms of information based on which the development of ideas and products will strive [17].

There are a number of real world crowdfunding examples, which exemplify the importance of the knowledge of stakeholders on the platform as the foundation based on which the entire business idea and product are built. The case of Oculus Rift is one of the commonly referenced examples of crowdfunding whose success is directly related to the knowledge of the stakeholders who headed the fund raising process [25]. The Oculus team was one that was made up of entrepreneurs, computer programmers, engineers, and researchers including Palmer Luckey and John Carmack, who came together with high levels of knowledge from different areas of computer gaming. Based on their initial knowledge, they were able to set up an initial idea for the virtual reality concept, based on which 3D discussion forums were developed. Through the discussion forum which was formed as a type of open innovation, several other knowledgeable people came on board, who developed the idea of incorporating virtual reality and gaming into a headset display [25].

Through the open innovation created on the 3D discussion forum, various development stages of the virtual reality idea were created till it was advanced into a kit known as Oculus VR. The concept of open innovation did not end after the kit was developed because more funds were needed to produce the product on commercial basis. The next attempt to use open innovation involved a crowdfunding campaign, which started on 1 August 2012. Within 30 days, the developers raised \$2,437,429 through crowdfunding, which had even more knowledgeable people joining the platform [16]. The success achieved by the developers has been directly related to the quality of the open innovation campaigns launched in the forms of a discussion forum and crowdfunding, both of which were also high-quality because of the depth of knowledge that its stakeholders brought to it.

The second justification for the argument is that crowdfunding and open innovation are both directly related to volunteerism. Bogers et al. [26] stated that in open innovation or crowdfunding, no one really forces someone to be a contributor. People decide to contribute or be on the platform based on their personal motivations related to what the idea seeks to do. In any typical social setting and even within the global context, it is very common to expect that new ideas appear every day, most of which only replicate things that are already in existence. Meanwhile, Xu et al. [19] lamented that when the ideas are repetitive, there are less chances that they will attract or motivate people to voluntarily come on board to it. It is against this backdrop that it is extremely important to have a startup group of stakeholders with high levels of knowledge to come up with highly innovative and different ideas that will be new to the market.

Stanko and Henard [27] emphasized that when the idea is new, different and useful, that is when the whole concept becomes attractive to people and therefore draws a large crowd to itself, thereby making the quality of open innovation guaranteed. Based on this claim, it can be inferred that even though higher knowledge level on the platform stakeholders is needed for ensuring the quality of open innovation, the knowledge level of the initial stakeholders in generating the idea is the most important factor. This is because that knowledge sets the basis to attract more people onboard the open innovation who also bring on their knowledge to enhance the quality on the platform. By inference, if the level of knowledge of the stakeholders on the platform is not high enough, it cannot pave the way for attracting more knowledgeable people who will help improve the quality of the open innovation. Based on the discussions of this section, we raise:

Proposition 2. *Both the volume and structure of stakeholders' knowledge bases would be positively associated with open innovation happening via a crowdfunding platform.*

4. Impact of Networking Quality on Open Innovation Performance

In this last section, the theme of networking will be explored. The theme of networking will be explored with the argument that networking quality positively affects open innovation performance. Based on earlier discussions, it would be appreciated that the whole concept of open innovation in crowdfunding context works as a network of many different people and systems, all of which come together to ensure the success of a fundraising project [14]. In order to ensure specificity in this conceptual paper however, the term networking is limited to the platforms that offer crowdfunding services to prospective business people and initiators. Indeed, Di Pietro, Prencipe and Majchrzak [20] explained that the crowdfunding platforms act as networks, tasked with the responsibility of organizing any offerings allowed on the platform they create. In effect, the platforms are networks themselves and also undertake networking roles by curating and linking up different stakeholders on the platform. It is thus being argued that the extent to which the platform is able to do its networking well affects the open innovation performance that they target. Because the platforms themselves are networks, the quality that they offer can be discussed as the first point of call in ensuring open innovation performance. The number of crowdfunding platforms available on a global scale has been increasing by the years. As of 2012, there were about 450 recognized crowdfunding platforms, which grew to over 2000 in 2016 [15]. Each of these platforms tend to have an area of specialty, which influences the quality of networking it is able to do.

Thus, the major functionality of networking in the context of crowdfunding platforms could be deemed as a facilitating mechanism for resources mobilization and integration [28–32]. Gierczak et al. [23] found that the experience that individual platforms offer fundraisers has been a major factor in determining how successful the crowdfunding campaigns can be. This claim is validated on the basis that not all platforms have the experience and competence to aid in every type of open innovation or crowdfunding idea. For example, the popular Kickstarter platform, which is a public-benefit corporation in the U.S., focuses fundamentally on creativity and merchandizing [3]. Meanwhile there are others who focus on such applications as food and agriculture, philanthropy, real estate, intellectual property, science, journalism, international development, and legal development. The area of specialty of the platform shows its competence in handling a particular type of crowdfunding. As observed by Stanko, Fisher and Bogers [10], when an initiator uses or selects the wrong platform, they could suffer poor networking issues because the platform may not have the right connections or links needed in championing the proposed ideas or concepts. Meanwhile, Bogers et al. [26] found instances where a developer may use a platform with the right orientation but the platform will still fail to deliver to its expected performance level. Such instances of failure are largely caused by how platforms handle the processes of networking rather than who they network with. This means that even when the platform has the right people to contact, the quality of networking that it does between the various stakeholders on the platform goes a long way to influencing the success and overall performance of the open innovation [21].

The case of Spot.us is a clear example of how poor quality of networking can affect crowdfunding successes even when the right type of platform is used. Spot.us was a crowdfunding platform specifically dedicated for journalists. While dealing with journalists who wanted to fund their online and print publications, Spot.us was accused of going about its networking activities in poor and counterproductive ways [22]. For example, while it was not the practice to extend the role of editorial contributions to donors and other community members on crowdfunding platforms, Spot.us incorporated this practice in their networking. As part of their strategic relations and open innovation principle therefore, they allowed donors and community members to contribute to the stories that journalists were seeking funds to publish. Meanwhile, such areas of profession such as journalism have professional guidelines and ethics which are better understood by professionals who have received the right training on them. Relating this to earlier sections, the community members on the platform that Spot.us allowed to contribute to the stories of the journalists did not have the right knowledge to do so. In effect, the performance of the open innovation that the platform sponsored constantly

failed to meet the needed standards of practice and thus collapsed with time. The lesson that emerges from the activities and approach of Spot.us to networking is that when the performance of the open innovation is poor, it may not only affect the developers and initiators seeking funds from the public. Rather, it could also negatively affect the ratings of the platform.

Also writing on networking, Stanko and Henard [27] expressed the thought that whereas open innovation may be seen as a free market space for creators and prospective funders to interact, there are often laws that guide the activities of crowdfunding. Particularly for platforms that focus on the areas of creativity, there are laws and regulations about intellectual property that they need to be aware of and place them into consideration to perform their roles without any legal issues. Meanwhile, when the right platform with the legal knowhow to network with the right authorities is not used, the performance of open innovation could suffer because it would be plagued with several legal issues. Even though Kickstarter has several success stories, there are specific cases of how it failed to incorporate due process in its legal networking, which resulted in patent disputes. For example, 3D Systems filed a lawsuit against Kickstarter for infringing on one of its 3D printers through the platform it provided for Formlabs [33]. Even though Formlabs had raised as much as \$2.9 million through Kickstarter, a judge granted a six-month stay, bringing the whole open innovation through crowdfunding process to a halt. This is indeed a typical example of how lack of due diligence in the process of networking can affect the performance of open innovation. In the case of 3D Systems, if Kickstarter had made the right contacts with the US patent office, it is likely they would have been made aware of the 3D printer patent with number 5,597,520 [33]. Based on the discussions of this section, we raise:

Proposition 3. *The prosperity of networking among multiple parties (e.g., project initiators, supporters/donators, the platform staffs, etc.) is beneficial for open innovation on crowdfunding platforms.*

5. Conclusions

This perspective paper might serve as a bibliographic source for other researchers involved in the topic of financial innovation. The success of a crowdfunding campaign as a context for open innovation thrives on some critical aspects of operation, which include diversity, knowledge, and networking. We add to the literature by deeply visiting the intersection of the Crowdfunding and the Open Innovation literatures, and by explicating the following points.

From the arguments made in this perspective paper, it can be concluded that crowdfunding cannot be successful if any of these three important pillars is disregarded. Put differently, sustainability in crowdfunding may rely heavily on the soundness of the diversity, knowledge, and networking that constitute the cornerstone of sustainable crowdfunding. Conversely, when a fundraiser places priority on these three pillars, there are high chances that the open innovation performance will be of the expected outcome required. Diversity is therefore a basic requirement for building the right crowd to make crowdfunding possible. Knowledge is also necessary because that is what will inform the extent to which stakeholders on the platform will understand the modalities of the initiation. Clearly, crowdfunding as an open innovation concept is based on volunteerism. Consequently, it requires deeper understanding and appreciation of what the initiator seeks to achieve for a person to be motivated to contribute to it. This understanding can best be achieved when there are knowledgeable people on the platform. Finally, the quality of the networking platform is necessary for the success of a crowdfunding campaign. Different platforms offer different services and innovations. These services and innovations go a very long way to influence the success of the overall idea of generating a large enough crowd.

Hence, the three pillars of diversity, knowledge and networking are so important that even when two different crowdfunding initiators are using them, the one that applies them more effectively will be most likely to succeed. Through diversity of the customer demographic attributes, it is possible to get different groups of people who embrace the idea, as well as those who feel that the idea addresses their

unique social needs or concerns. In effect, the more diverse the customer demographics, the higher the chances of having an expanded crowd from which the initiator will seek funds.

Last but not least, the sustainability of crowdfunding platform may benefit from the interactive effects among these three factors. Such interactivity influences the knowledge, networking and diversity factors, which could “add fuels” to one another’s development, strengthen open innovation, and thus could lead to sustainable development of a crowdfunding platform. For example, diversity may increase the likelihood of new knowledge creation [34,35], while knowledge is a common ground that may attract diverse partners to come together [36]. Diversity may be an attractive reason for people to join online networking, while networking helped provide access to differentiated resources and information possessed by diverse people. Moreover, knowledge and social capitals are proven to be interrelated [37]. When one of the three factors become another’s “tinder”, they offer energies for sustainable development of a crowdfunding website with open innovation. As a result, crowdfunding platform sustainability can be achieved by the facilitation of the three pillars contributing to continuous open innovation. As opposed to a close-system platform, which might lack of sustainable supports, engagement, and co-creation from stakeholders, an open-system of innovation for platform sustainability is more promising due to its engagement of collaborative resources, efforts, and entrepreneurship [38–40], especially in a context of orchestrating with diversity, knowledge, and networking as we have argued here. In sum, open innovation on crowdfunding platforms can lead to the sustainability of a business system [41,42]. With the constant inputs of intellectual (knowledge effect) and relational (networking effect) resources provided by a diverse set of partners as human capital (diversity effect), the platform ecosystem can keep renewing to respond to a change and dynamic environment that is composed by stakeholders, and thus achieve sustainable running of a crowdfunding platform. Note that the economic performance and the goal of sustainability in open innovation world could possibly be achieved simultaneously [41]. In such a view, what is more important is to explain the concurrent development of these two seemingly conflicting measures of success, as has been partially achieved in this article.

Overall, this perspective paper not only discusses the potential of crowdfunding to stimulate open innovation, but it also sheds light on the possibility that through such stimulated open innovation, sustainable crowdfunding can be achieved.

Suggestions for future studies follow. First, more can be explored of different incentive mechanisms to engage in open innovation under different crowdfunding models (e.g., reward- or investment-based). For instance, for some reward-based crowdfunding platforms [43], instilling open innovation via accepting stakeholders’ ideas about a developing product could make the “token of appreciation” in exchange for donations improved before the donators receive them. On the contrary, the incentive for engaging open innovation under an investment-based crowdfunding model might be that the potential investors would gain more control and more in-depth participation during the entrepreneurial project is developed, but not after everything has been set up. Second, even a comparison of close- versus open-innovation models in the crowdfunding context is valuable. Third, a more dynamic element of the crowdfunding models could be demonstrated with open innovation that is characterized with differentiated inputs (diversity), continuous learning (knowledge), and dynamic integration of resources (networking). Fourth, it is beneficial to broaden the scope of this research if future works could develop crowdfunding-specific open innovation measurement [44], discussion of collaboration mechanisms for crowdfunding’s sustainable innovation [45], and the relationship between multi-stakeholder trust and open innovation [46]. Fifth, the major focus and level of analysis of this paper is on platform-centered (i.e., a whole-ecology system) business models. Thus, less discussion occurred focusing on a single firm being promoted on a platform. But it is good for further studies to pay attention to individual firm performance [47,48]. We also raise the importance of *not just* watching individual performance; rather, since our discussion is platform-centered, future studies are encouraged to (theoretically and empirically) look into the structure of performance of a collection of firms that are promoted independently but simultaneously on a platform. Last but not least, future

researchers could focus on the methodological design issues of the conceptual issues and arguments we offered here, since it is always challenging to design a study methodologically for one topic that integrates two or more areas of research (here, open innovation and crowdfunding).

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