Organisational Barriers and Bridges to Crowd Openness in Equity Crowdfunding

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Organisational barriers and bridges to crowd openness in equity crowdfunding

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ABSTRACT

Entrepreneurs can leverage investor networks generated in the course of equity-based crowdfunding campaigns to obtain extra financial resources. While much is known about how the resources that improve venture success are configured, less attention has been paid to the organisational challenges involved in their utilisation and how to overcome them. These challenges represent an impediment to crowd openness for new ventures. Through an in-depth qualitative study of 60 European equity crowdfunded ventures, we identify the organisational barriers—*resource gap, trust gap* and *information gap*—to crowd openness. We also identify specific bridges—*coordination technology, crowd stratification, mapping investors' expertise and network* and *direct and proactive communication*—that reduce these barriers and facilitate engagement with external actors.

1. Introduction

Equity crowdfunding is a form of venture financing that allows entrepreneurs to appeal directly to the general public via an online platform for help to finance innovative ideas (Mollick, 2014; Belleflamme et al., 2014). In the last 10 years, equity crowdfunding has become an established source of funding (Hornuf and Schwienbacher, 2018) for entrepreneurial firms (Cumming et al., 2016). In Europe, equity crowdfunding has reached a significant level in terms of the total amount invested with more than $200 million worth of transactions being recorded in 2017, although this figure does not include the UK, where the total is approximately €300 million (Ziegler, 2019). Hand in hand with its increasing role in early-stage financing, equity crowdfunding has also gained momentum within the academic community. The seminal articles on this topic have mainly focused on the factors associated with the success of crowdfunding campaigns (see, e.g. Vismara, 2016, 2018; Ahlers et al., 2015; Piva and Rossi-Lamastra, 2018; Lukkarinen et al., 2016; Bapna, 2017; Mochkabadi and Volkmann, 2018; Di Pietro et al., 2020). Only recently have studies started to investigate the aftermath of launching an equity crowdfunding campaign for entrepreneurial firms (for a review, see Vanacker et al., 2019; Ahlstrom et al., 2018). Within this debate, two studies focus on crowd investors' post-campaign contribution. Di Pietro et al. (2018) showed that crowd investors provide entrepreneurs with two main types of input—knowledge (product, strategy and market-related) and network ties with industry players and other relevant stakeholders. Related to this study, Walthoff-Borm et al. (2018) show that through crowdfunding entrepreneurs can access resources other than financial, such as feedback and the direct involvement (i.e. ties) of crowd investors.

The potential benefits of long-lasting relationships between equity crowd investors and entrepreneurs is the main feature distinguishing equity crowdfunding from other crowdfunding models. Investors provide money in exchange for company shares. This makes them company shareholders, and their expertise and vested interest represent a valuable resource for the start-up (Di Pietro et al., 2018). From a resource-based perspective, ownership expansion positively affects firm performance through access to financial and non-financial resources and competences (e.g. Barney, 1991; Barney et al., 2001; Alvarez and Busenitz, 2001). Despite the potential, the openness to new actors and the exploitation of their added value may be overlooked by new ventures due to organisational challenges (Colombo et al., 2014, 2016; Usman et al., 2018; Vanhaverbeke, 2017).

In light of the importance of the openness of new ventures (e.g.

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Chesbrough, 2003; Eftekhari and Bogers, 2015), this research aims to investigate, from an organisational perspective, the challenges faced and coping strategies implemented by entrepreneurs when establishing external connections with crowd investors. Therefore, we have formulated the following research questions: '*What organisational challenges do new ventures face when opening the company to crowd investors?*' and '*How can these challenges to crowd openness be overcome?*'

We base our investigation on 60 European ventures, the owners of which have chosen to use an equity-crowdfunding platform to obtain financial resources. We identify organisational barriers to crowd openness—*resource gap, trust gap* and *information gap*—faced by entrepreneurs and bridges to overcome these barriers. The limited resources available to entrepreneurs for exploiting external sources translates into a lack of engagement with external actors. In addition, online interactions raise trust issues between entrepreneurs and the crowd, potentially undermining their collaboration. Last, lack of information about the crowd's expertise and a misalignment between the expertise of the crowd and the expertise needed by the entrepreneur potentially deter interactions with external actors.

We identify the following four ways of overcoming these barriers: 1) the use of a dedicated coordination technology to avoid information overflow and reduce the problems related to the entrepreneur's limited time and resources; 2) crowd stratification, which reduces trust issues by adopting different degrees of crowd involvement and information sharing based on investors' characteristics; 3) mapping investors' profiles, which helps entrepreneurs collect information on the knowledge available amongst the crowd and assess the benefits of engaging in external sourcing activities, thereby reducing the information gap and; 4) the use of a specific language and proactive communication, which helps entrepreneurs receive appropriate and useful support for the business.

This paper contributes to research at the intersection of the literature on entrepreneurship, open innovation and digital platforms (Bogers et al., 2017; Broekhuizen et al., 2019; Di Pietro et al., 2018) by suggesting some internal organisational components related to the utilisation of external sources (Fey and Birkinshaw, 2005; Laursen and Salter, 2006; West and Bogers, 2014). Specifically, it identifies organisational barriers that prevent new ventures and entrepreneurs from engaging with external actors and suggests related processes that allow entrepreneurs and crowdfunding platforms to alleviate these issues.

2. Theoretical background

Crowdfunding has emerged as a new source of financing and is playing an increasingly important role in financing entrepreneurial firms (Di Pietro, 2020; Block et al., 2018; Bruton et al., 2015), allowing businesses to seek financial resources online from a large crowd of individual investors (Belleflamme et al., 2014; Mollick, 2014). The importance of crowdfunding for small businesses has attracted the attention of scholars, who have extensively investigated entrepreneurial fundraising efforts and the determinants of success of crowdfunding campaigns (see Di Pietro, 2020 for a comprehensive review).

Crowdfunding finance is typically classified as reward-based, donation-based, equity-based or lending-based (Mollick, 2014). With a specific focus on equity crowdfunding—a method of financing whereby funds are provided in exchange for company shares (Mollick, 2014)—research has concentrated on two main aspects. The first avenue of study looks at how crowd investors make decisions and how project characteristics affect the probability of successful fundraising (Di Pietro et al., 2020; Ahlers et al., 2015; Kim and Viswanathan, 2019; Vismara, 2018). Studies have demonstrated the importance of product certification by stakeholders (Ahlers et al., 2015; Bapna, 2017), the participation of expert investors (Kim and Viswanathan, 2019), information about the founding team (Bernstein et al., 2017), early investors' engagement (Vismara, 2018), third-party endorsements (Courtney et al., 2017) and substantive (i.e. hiring a renowned manager) and rhetorical (i.e. press release) signals (Steigenberger and Wilhelm, 2018) to convey information about venture quality to investors and to attract investments. These studies provide a basis that increases understanding of the signalling mechanisms in crowdfunding and their influence on fundraising success.

Nevertheless, securing funds is just the first goal of an entrepreneur aiming to build and grow his/her business. The other avenue of research, which is more recent, examines the post-funding performance and the funding trajectories following initial crowdfunding campaigns (see, e.g. Signori and Vismara, 2018; Walthoff-Borm et al., 2018; Cumming et al., 2019; Bessière et al., 2020). In examining the performance of crowd-backed companies in the UK, Signori and Vismara (2018) find that 18% of crowd-funded firms failed and 35% pursued one or more private equity offers. Walthoff-Borm et al. (2018) investigate the characteristics of firms that choose crowdfunding and find that, overall, these firms consider crowdfunding a 'last resort' due to their limited internal funds, debt capacity and high intangible assets, which prevent them from accessing other financing possibilities. Hornuf et al. (2018) show that German equity crowdfunded firms had a higher chance of obtaining follow-up business angles or venture capitalist funding but also a higher likelihood of failure.

Furthermore, recent studies contribute to this debate by investigating the effects of successful equity crowdfunding campaigns on signals given to investors regarding follow-on funding. Looking at the ownership structure of firms seeking equity crowdfunding, Cumming et al. (2019), find that greater separation between ownership and control rights lowers the likelihood of attracting professional investors. Coakley et al. (2018) find that initial campaign characteristics, such as overfunding, the presence of a lead investor and the nominee shareholder structure, are determinants of success for follow-on campaigns. Looking at governance structure, Butticè et al. (2019) find that equity crowdfunding campaigns with a nominee shareholder structure facilitate the attraction of venture capital (VC) financing compared to campaigns that opted for a direct shareholder structure.

The positive association between crowdfunding and follow-on financing has been confirmed in the context of reward-based crowdfunding (see, e.g. Mödl, 2018; Roma et al., 2017; Colombo and Shafi, 2019). Roma et al. (2017) highlight that firms that collected a large amount of funding have increased chances of receiving subsequent VC funding when this information is complemented by the presence of patents or a large network of social ties. Colombo and Shafi (2019) also confirm that the amount of extra financing received during the campaign affects the odds of receiving external equity in the aftermath of the campaign. Using an experimental design, Mödl (2018) highlights that high amounts of reward-based funding collected rapidly by start-ups with a business-to-consumer (B2C) business model have a positive effect on VC managers' investment decisions.

Within this debate, a few studies focus on crowd investors' post-campaign contribution. Di Pietro et al. (2018) show that crowd investors provide entrepreneurs with knowledge (product, strategy and market-related) and network ties with industry players and other relevant stakeholders. Related to this study, Walthoff-Borm et al. (2018) show that entrepreneurs can access resources other than financial, such as feedback and direct involvement (i.e. ties) by crowd investors.

In the context of reward-based crowdfunding, Stanko and Henard (2017) find that backers have an effect on the subsequent market performance of the crowdfunded product by providing non-financial benefits, such as feedback regarding the product or raising product awareness. Butticè and Noonan (2020) further support these findings in the context of board game campaigns on Kickstarter, showing that attracting a large crowd of active backers increases the chances of commercialising the product after the campaign, and in some cases, is associated with improved product quality. Therefore, crowd investors, as traditional investors (such as angel investors, VC or private equity firms), act as a crucial driver of entrepreneurial firm success (e.g. Hellmann and Puri, 2002; Colombo and Grilli, 2010;

Ughetto, 2010; Croce et al., 2018; Sapienza, 1992).

From a resource-based perspective, ownership expansion positively affects firm performance by facilitating firm access to financial and non-financial resources and competences (Barney, 1991; Barney et al., 2001; Alvarez and Busenitz, 2001). Despite the potential benefits interactions with external actors may bring to new ventures (Chesbrough, 2003; Chesbrough and Bogers, 2014; Laursen and Salter, 2006; Bogers et al., 2017), the exploitation of their 'added value' may be overlooked due to the organisational challenges they present. In fact, opening the organisation to external actors requires resources and organisational features that new ventures often do not have (Colombo et al., 2016, 2014; Usman et al., 2018; Vanhaverbeke, 2017).

Studies on established companies that engage in open innovation and the exploitation of external sources have highlighted the importance of an organisation's internal and external features (Broekhuizen et al., 2019; Cassiman and Veugelers, 2006; Kale and Singh, 2007; Rothaermel and Deeds, 2006; Alexy et al., 2012; Radziwon and Bogers, 2019) in realising the benefits of interactions with external sources. A stream of research points to the role played by organisational design in absorbing external knowledge in the firm (Jansen et al., 2005). Foss et al. (2011) suggest the use of new organisational practices, namely vertical and lateral communication, rewarding employees for sharing and acquiring knowledge and high levels of delegation in terms of decision rights make it easier for firms to access the knowledge held by customers. In addition, establishing direct communication channels with external sources via dedicated departments and interdependencies with internal technology investments (Heimeriks et al., 2007; Noseleit and de Faria, 2013; Wuyts and Dutta, 2014) or between ecosystem members (Radziwon and Bogers, 2019) facilitate external knowledge use.

In addition to firm-level capabilities, a firm's engagement with external sources is influenced by the attitudes of its employees and managers (Badir et al., 2019; Bogers et al., 2018; Schierjott et al., 2018; Ahn et al., 2017). The significance of employees' attitudes was first highlighted by studies on knowledge exploration that identified the 'not-invented-here' mindset (Katz and Allen, 1982; Agrawal et al., 2010). This work has been complemented by the literature on open innovation (Chesbrough, 2003), which has put forward the concept of the 'not-sold-here' attitude.

The peculiarities of entrepreneurial ventures prevent generalising the results of organisational openness in established firms (Colombo et al., 2016; Usman et al., 2018; Vanhaverbeke, 2017; Broekhuizen et al., 2019). To survive and build a sustainable competitive advantage, entrepreneurial ventures rely primarily on the skills and knowledge of the founders (Colombo and Grilli, 2005; Shrader and Siegel, 2007; Brush et al., 2001), who often lack managerial competencies. Furthermore, these firms encounter severe difficulties when hiring professional managers due to their financial constraints (Bertoni et al., 2010) and poor legitimacy (Zimmerman and Zeitz, 2002).

In addition, sources of agency costs in entrepreneurial ventures are different from those of their established counterparts. In the case of crowdfunding, ownership expansion may generate horizontal principal–principal costs. Different owners or 'principals' (Young et al., 2008) do not necessarily have common interests. On the contrary, they may diverge in terms of their preferences, goals and perception of risks and returns associated with different corporate strategies (Connelly et al., 2010; Ward and Filatotchev, 2010). In addition, new ventures have simple governance mechanisms, which serves the purpose of attracting resources rather than monitoring managers (Ambos and Birkinshaw, 2010).

Taking an organisational perspective, this study assesses the contradictions and limitations of openness to external actors (crowd investors) in new ventures and identifies coping strategies to overcome these limitations.

3. Research design

3.1. Data sources and sample

We focus our attention on entrepreneurial ventures that raised funds using six equity-crowdfunding platforms in the UK (Crowdcube and Seedrs), the Netherlands (Symbid), Sweden (FoundedByMe), France (Wiseed) and Germany (Seedmatch). The potential benefits of long-lasting relationships between equity crowd investors and entrepreneurs is the main feature distinguishing equity crowdfunding from other crowdfunding models. Investors are company shareholders whose expertise and vested interest make them a valuable source of knowledge for the venture (Di Pietro et al., 2018).

We focus on the European equity crowdfunding market because of the homogeneity of its regulatory framework (European Commission, 2013). The main crowdfunding market in Europe in terms of volume and number of start-ups funded is the UK (Ziegler et al., 2019). We also included the next most active European equity crowdfunding platforms, based on transaction amounts, in the three-year period 2012–2014 (European Commission, 2015). All these platforms comply with an all-or-nothing funding approach, which means the entrepreneur receives funding only if the campaign achieves the target amount (Belleflamme et al., 2014). In contrast, if the capital raised meets the target amount before the end of the campaign, both platforms provide an overfunding option, which grants firms the right to issue further shares to raise additional financing.

We used crowdfunding platform websites to identify and collect data on companies that raised funds between 2012 and 2014. We established sampling criteria, such as being in business for more than two years at the time of the equity crowdfunding investment, having successfully secured fundraising at least six months prior to our data collection. The aim was to focus on early-stage firms that had passed the idea stage and achieved a minimum product/service development threshold that allowed them to exploit the crowd. An initial sample of 250 companies complied with our criteria. We interviewed 60 out of 250 start-ups that were still active after two years using snowball sampling, which represented a 30% success rate, in line with the start-up population in that period (Baeck et al., 2014).

The majority of our sample companies are from the UK (73%), followed by France (9%), the Netherlands (5%), Germany (3%), Sweden (5%), Finland (3%) and Belgium (2%). The over representativeness of UK start-ups in our sample reflects the developmental stage of the European crowdfunding market during our data collection (Ziegler et al., 2019). Forty-five companies raised funds through the two UK platforms, 21 through Crowdcube and 24 through Seedrs; 5 companies raised funds through the French platform Wiseed, 5 through the Swedish platform FoundedByMe, 3 through the Dutch platform Symbid and 2 through the German platform Seedmatch. The 60 start-ups belonged to different industries. The most represented industries are food and beverage (13 companies), software (8), e-commerce (4) and social media (4), which together accounted for about 50% of the sample. Sixty-seven percent of the companies have a B2C orientation, 26% have a business-to-business (B2B) orientation and 7% serve both customers and businesses.

The average age of the companies at the time of crowdfunding was 2.5 years old. Furthermore, at the time of crowdfunding, the majority of the companies (78%) were at an early stage of development, having been in business for three years or less. Some companies (19%) had been in business for more than four years, while only two were in their growth phase, having been in business for more than six years. The average amount of funds raised was £224.000 from 158 investors, with a minimum of seven and a maximum of 640 investors. The average percentage of company shares given to investors was 16%.

In terms of entrepreneurs' characteristics, on average, they had been operating in the industry for six years, while they had held a managerial position in their previous employment for about seven and a half years.

Table 1
Sample description.

Sector	% (no. of companies)	Geographical distribution	% (no. of companies)
Food and Beverages	22% (13)	UK	73% (44)
Software	13% (8)	France	9% (5)
E-commerce	7% (4)	The Netherlands	5% (3)
Financial Services	7% (4)	Sweden	5% (3)
Social Media	7% (4)	Germany	3% (2)
Other Industries: Manufacturing, HR, Biotech, Education, Entertainment, Music, Fashion, Gaming, etc.	44% (27)	Finland	3% (2)
		Belgium	2% (1)
Customer orientation	% (no. of companies)	**Crowd-funding campaign**	
B2C	67% (40)	Average amount raised	£224,000
B2B	26% (16)	Maximum amount invested	£1,972,560
B2B and B2C	7% (4)	Minimum amount invested	£12,000
		Average number of investors	158
		Minimum number of investors	7
		Maximum number of investors	640
		Average % equity shares	16.37%

As for company building experience—that is, whether they had founded previous companies—53% were first-time entrepreneurs, 20% had founded one previous company and 27% were more experienced regarding company building, having founded or co-founded two or more companies before the current one. Additionally, the average number of founders is 1.5, with 48% of the companies being founded by a single entrepreneur, 30% by two entrepreneurs and 22% by more than two. The majority of the companies (72%) were founded by a man, 5% were founded by a woman and 23% were founded by a man and a woman. Table 1 presents the sample descriptive statistics.

3.2. Data collection

Data were collected between March 2014 and mid-2015. We integrated data from two sources. Using a qualitative approach (Strauss and Corbin, 1994), we conducted in-depth interviews with start-up founders responsible for fundraising and engagement with investor communities. We conducted 16 face-to-face interviews and 24 telephone (Skype) interviews and administered 20 written questionnaires. The interviews/questionnaires explored the entrepreneurs' overall crowd equity-funding experience with the emphasis on the relationship with the crowd. In particular, we were interested in the entrepreneurs' motivations for establishing relationships with crowd investors and the practices put in place to facilitate these relationships.

We started by using the same interview protocol for all our informants but subsequently tailored some questions in light of the themes that emerged (the interview protocol is provided in the Appendix). The face-to-face and Skype interviews lasted approximately 35 min on average and were recorded and transcribed. We held 11 follow-up interviews to assess changes in approaches and practices regarding crowd openness. We gathered information about the campaigns and companies from the crowdfunding websites; this included amount raised, number of investors, founding date and founders' social profiles. We anonymised informants to protect specific start-up and entrepreneur information.

3.3. Data analysis

We adopted an inductive approach to understand the impediments to new ventures' openness to external sources and the strategies used to overcome them (Strauss and Corbin, 1994). Due to the qualitative nature of our study, we do not aim to make any direct inferences about successful outcomes of crowd openness; rather, we aim to investigate the mechanisms leading to barriers to crowd openness and related processes to facilitate it.

We analysed the interview transcripts and selected the information relevant to our research aim. We open-coded the data to identify our first-order categories (Corbin and Strauss, 2008), which reflected emerging concepts related to limitations to companies' openness to crowd investors and related processes to overcome these limitations. We grouped these into 17 first-order categories, which represented the challenges (eight categories) and the solutions implemented (nine categories). After labelling these first-order categories using the informants' language (Gioia et al., 2013), axial coding was used to cluster the empirically based codes conceptually into second-order categories (Corbin and Strauss, 2008). This involved the authors posing general questions, such as 'What are the causal mechanisms leading to barriers to crowd openness and the related processes implemented to alleviate these barriers?' and 'What was their aim?'

We grouped our eight first-order categories into the following three conceptual categories based on the motivations leading to barriers to crowd openness: *resource gap, trust gap* and *information gap*. For instance, items such as 'lack of time to reply to investors' emails and feedback' or 'lack of human resources to dedicate to such activities' were placed in the *resource gap* category. Entrepreneurs' concerns about 'sharing their ideas and information in a public arena' or finding amongst the crowd 'people who invested only to get insider information about the company and potential competitors' or difficulties in 'assessing investors' genuine interest in the company' were placed in the *trust gap* category. Last, difficulties related to 'not knowing investors' profile' and 'need for specific expertise' or items identifying entrepreneurs' passive attitude to utilising external sources such as 'waiting for crowd investors to get in contact with them' and 'letting crowd investors decide how active they want to be in the business', which further increased the difficulty in assessing the potential benefits that crowds could bring, were placed in the *information gap* category.

Additionally, we grouped our nine first-order categories representing the solutions implemented by some entrepreneurs into four conceptual categories. The category *coordination technology* includes solutions such as the creation of a 'forum for shareholders' or a 'dedicated Facebook page', which were found to be both effective in stimulating collaboration with external parties and efficient, making the interactions with crowd investors more manageable and less time consuming. The category *crowd stratification* includes entrepreneurs' efforts to leverage crowd investors by 'speaking every couple of weeks with a small number of investors who have invested more, to ask for very specific things' or 'organising meet and greet for all shareholders' or establishing social media communication with the 'middle ground of investors'. Adopting different communication approaches with different investors' profiles allows entrepreneurs to identify who can be trusted in the crowd, the investors with a genuine interest in the company and who to share sensitive company information with and involve in the company's activities. The last two categories are *mapping investors' expertise and network*, which includes entrepreneurs' efforts in 'collecting investors' names and building a database of skills', and *direct and proactive communication*, which includes entrepreneurs' efforts to approach the crowd 'with specific questions' or 'for individual things' to receive better outcomes. These solutions allow entrepreneurs to understand the skills and knowledge available amongst their crowd investors.

Illustrated in Table 2 and Table 3, the data analysis process resulted in the creation of a framework that illustrates the organisational

Table 2
Data analysis structure: barriers to crowd openness.

Conceptual categories/Barriers to crowd openness	First-order categories	Representative quotes
Resource gap	Lack of time	'You need time to do that, to interact with them [investors].' 'They [investors] are difficult to manage and I would have preferred to have less investors who invested more.' 'Investors keep emailing me, they are too many and it takes time to manage them. I don't have time to answer to all their questions and feedback.' 'They are a bit of a pain because they ask many questions about how the business is going, reporting, etc. They are more concerned about asking for reporting than providing help. I do not have time for that; if I were a bit more communicative maybe the relationship would be different.' 'You will have lots of people who have different ideas and they have to be managed.' 'You need to find some time to communicate with your investors, and investor relationships and communication with crowdfunding is key.' 'It's hard to get access to those people, it takes time. If you have to waste 5 weeks to find out who they are and what they can bring, I don't have that time.'
	Lack of human resources	'Time consuming to manage and interact with all of them [investors], we do not have enough resources (time and money) to externalize it.' 'Communicate with them [investors] is the main challenge, with are four people in the team and we are trying to run the business forward so a small team and you try to do all of those good things in term of driving the business forward, you need to find some time to communicate with your investors, and investor relationships and communication with crowdfunding is key. With the small team it is challenging to communicate.'
Trust gap	Risk of knowledge leaking	'Putting our idea on the internet was a big concern, but we are not reinventing the wheel, there is a lot of learning to go through to do what we are doing so it is not very easy to turn around the next day and do exactly what we do. But it is a big risk, you need really to produce that product the next day. The food industry is very competitive, although it is not as easy to steal an idea as it would be for intellectual property-based businesses.' 'You have to put your business plan out in a very public arena.' 'We were careful to expose things we were happy to expose, but there is a slight problem that you cannot tell the crowd all the best things about the business… you may be giving clues to your indirect competitors. If you are with an angel or VC you can see if you can trust them and you may choose to say things that you wouldn't say in public. So, there is the risk that you can't achieve your full potential because you can't say things.' 'You cannot hide anywhere. People openly try to steal a business plan.' 'We did get some inquiries about our business plan from people who were potential competitors. So, I think you have to be a little bit carful about that.'
	Difficulties in assessing genuine interest in the company	'Everyone who asked for business plan was not investing at the end, they were not real investors.' 'You may be giving information away, people were simply trying to get information and not invest, and you cannot distinguish between them and genuine investors.' 'I got inquiries from potential competitors.' 'There are people who invested only to have an insider track on the business.' 'You do not know who they are, and you do not know whether they are potentially big investors or somebody who is you competitor.'
Information gap	Lack of knowledge about benefits the crowd can provide	'I did not look to their [investors] profile to see if there were specific people we wanted to contact.' 'I do not know what they can bring because I have not met them [investors]. The point is that if I had the chance to know their capabilities, I will reach out to them.' 'I haven't had the possibility to choose them.' 'We told that if anyone wanted to get involved, they are welcome, but no one contacted us. Because we do not know what they can bring.' 'We do not really know who our investors are. So, until they reach out to me, I do not know, what they can bring.' 'I probably know four people of that group, small investors, but most of them are unknown to me.' 'I would not know the profile of all of them but only of the bigger investors.' 'In crowdfunding you do not know who your investors are. It is time consuming to build relationships with them. You do not even know if something will come out from a relationship with them.'
	Waiting for the crowd to establish relationships	'Crowdfunding investors… they just do not think like that [like professional investors], they have their job they have their own things to take care of and it does not come to them when they see an interesting article or speak to an interesting person or hear about an interesting person they do not proactively think "Oh, I need to introduce them to my portfolio company". It is too small the piece of attention on the company.' 'We were concerned that potentially having nearly 400 investors would end up being more work that having just one VC. We thought maybe they will be calling us, sending emails, asking for updates but it turns out that they are being very quiet, we just update them as often as we can.' 'None of them contacted me for getting involved. So, we let them contact us.'
	General call for help	'In the email I say: Hey guys, thanks for funding us, if you want to help us to grow further please refer any friends who have corporate event service, who have wine club'… from 320 emails from people that have actually invested in your company, you get like three replies, so it's not great; I was expecting to be like massive.' 'We told that if anyone wanted to get involved, they're welcome. We did invite them [investors], but no one took the offer and contacted us. They are still welcome to contact us if they want. They get our newsletter monthly, and the website is there for them to look at any time they want but we haven't created a separate email list for them.'
	Need for 'specific' expertise	'Some of them [investors] they do provide advice that I do not follow up with, sometimes because they have not the required knowledge.' 'I didn't want a small team of people who were financially minded but not industry aware, trying to drive the business, because we are a very specific type of organization, there are a lot of lessons that we have to learn, so we have to do in our way.' 'Many of them [investors] do not have the right competences.' 'We don't need these particular investors to be involved.'

barriers and bridges to crowd openness.

The crowd openness barriers *resource gap* and *trust gap* were each mentioned 10 times by our sample companies, whereas the most common crowd openness barrier was *information gap*, which was mentioned 21 times. Regarding bridges for the crowd openness barriers, *the use of a dedicated coordination technology* was mentioned five times by our sample companies; *crowd stratification* was the most widespread bridge adopted, mentioned 16 times; *mapping investors' expertise and*

Table 3
Data analysis structure: bridges to crowd openness.

Conceptual categories/Bridges to crowd openness	First-order categories	Representative quotes
Coordination technology	Setting up a dedicated news-letter for the crowd	'We do have a newsletter and all investors signed up, so they get updates through there as well.' 'We have a Facebook community for our shareholders and I also email a report every single month.' 'I set up an investor forum on my site where all items of information are posted, and investors can ask questions there. This has been really useful in managing everyone and their expectations.'
	Communication via the crowdfunding platform	'On the Seedrs platform there was a question and answer sheet, so people were posting questions there for me and I was replying there.' 'We manage and communicate with them [investors] through Seedrs, it's a very clean and smooth approach. We don't have to worry about anything complex. They can give me feedback as customers, how can I have problem with too many customers.' 'We communicate daily or when we have updates via the Symbid platform.'
Crowd stratification	Organising event for all shareholders	'We will have a single event for all shareholders to be able to attend.' 'We organized an AVA (General Shareholder Assembly) for the crowdfunding cooperation where a number of investors showed up. Mostly they want to hear how it is going and where the company is going.' 'We also run an investors' tour (in the factory) to meet and greet investors who can come and have a tour to the farm and see where their investment went and meet the team.' 'We organise a regular AGM (Annual General Meeting) and EGM (Extraordinary General Meeting) that everyone can attend to ask their relevant questions. To give our investors un update on where is the business and what it is up to and what are the actions, we are going to take to implement our plan in the next 12–18 months.' 'We do monthly meet and greet in a pub in London, were anybody [investors] who wants to chat can come and meet us face to face. I want to get to a stage where we do it once a year and it's really a big step from email and meet and greet; we put ourself there for scrutinising and discussion and hopefully that would mean that we don't have to do monthly meet and greet in a pub in London. We can scale it; we do it once and we move on, and we just focus on running the business.' 'I met many of them [investors] personally, often they came to our events and I have a chat with them. But not in a formal way, we don't have an investor's event.'
	Organising in-person meetings with relevant shareholders	'I maintain regular communication once a month with all investors. In the case of larger investors, I met with them every 2–3 months; they offered advice with the company, help, some of them got more involved, some less.' 'We know about 20 of them very well and we know what their skills are, their background, so we can go and speak to them directly when we need.' 'We regularly keep our shareholders up to speed with how the business is going and I enjoy my ad-hoc coffee/lunch meetings with bigger shareholders discussing the future of the business and sharing ideas.' 'I meet some of them [investors] in person in the pubs, but most of them no'. 'We send relevant updates via email to all our investors, without giving too much information. We then liaise in person with our bigger investors to provide details and to ask for support.' 'I did keep close contact with 2–3 of them who were large investors and they showed interest in what I am doing.' 'We communicate in person and via phone calls with pure lead investors; they call us and they want to know how things are progressing. With the rest, we communicate updates via the platform.' 'I meet with some of the bigger investors to inform them on progression and to ask for advice.' 'The top investors started with an advisory role; we chose to meet them in person.'
	Attending investors' meetings organised by the crowdfunding platform	'We met some investors at one of the Seedrs events; so, there were a couple of bankers who were interested in getting involved, and they've reached out to ask how they can help, they have expressed interest.' 'I went to a Seedrs event in London. I met a couple of different crowdfunders there. So, it was a mix of email, questions and answers on the platform and face to face.'
Mapping investors' expertise and network	Researching investors' expertise via Social Media	'I added all of them [investors] on LinkedIn and actually actively use their network for introduction.' 'Via email, we ask our investors: "We would like to understand what skills anyone can offer so please come back to us if you have any skills you think may be useful for the business." We have built a database where we have all our investors listed and the skills they can have and that we can tap into if we have a need.' 'We send a newsletter [to our investors] and say please come back on the back of that. But mainly it's just an upfront email; this is not to say that we don't stalk people on LinkedIn, which we inevitably do, and if we find someone with the skills we need then we will engage with them in that way.'
	Creating investors' database to record their expertise	'We are setting our CRM and we are starting to stratify the crowd into friend and family, investors, potential customers, and so on. And we can start to match their LinkedIn profile and correlate how their expertise could be beneficial for us.' 'When we do not know something we first ask our investors; we have the list and if it's something about accounting, we contact our accountant.'
Direct and proactive communication	Ask specific questions	'We have specific needs and we ask specific people for help.' 'We ask specific things, for instance we say: "If you have connections in the education industry who might like to hear about what we do in schools to encourage students to think big and dream bigger about the possibility of their ideas, please do reach out to us (we do competitions, activity days, PHSE programmes, etc.). Additionally, if you work in a corporate environment and are looking for ways to create new business changing ideas, it's definitely worth having a conversation with us!"'
	Proactively asking for investors support in a specific area	'We lean on them [investors] directly; if not, we would come and go to the crowd and say: Does anyone have any skill in this area and can you help us?' 'We reached out to

(*continued on next page*)

Table 3 (*continued*)

Conceptual categories/Bridges to crowd openness	First-order categories	Representative quotes
		people to ask who can help us to develop part of the product that was very specialist, and it has been very helpful to talk to them, to get some information and to find out how they are able to help.' 'We may say [to our investors]: "We reached this milestone from the last quarter, we want to do this in the next quarter, can anyone help us to find any investors?"'

network was mentioned four times; and *the use of a direct and proactive communication approach* was mentioned five times. Seven of our sample companies reported a lack of interest in establishing relationships with crowd investors.

4. Findings

4.1. Organisational barriers to crowd openness

Several factors, which we classified as *resource gap, trust gap* and *information gap,* help to explain ventures' reservations about engaging with external actors. In each case, we discuss how the entrepreneurs resolved the issue.

The resource gap problem refers to a lack of engagement with external actors on the behalf of crowdfunded companies due to limited resources available to entrepreneurs to exploit external sources. Entrepreneurs are concerned about constraints in terms of time and human resources. Entrepreneurs reported that interacting and building relationships with crowd investors involves the processing of large amounts of information and takes time, which is a limited resource for entrepreneurs (Ocasio, 1997; Laursen and Salter, 2006). One respondent explained:

Investors keep emailing me, there are too many and it takes time to manage them… I do not have time to answer all their questions and feedback. You need time to do that, to interact with them [investors].

In addition, new ventures find it difficult to dedicate human resources purely to interact with the crowd. To quote an interviewee:

There are four of us in the team, and we are trying to take the business forward. As a small team, you try to do all of those good things to grow the business, and you need to find some time to communicate with your investors. Communication with crowdfunding [investors] is key, with a small team it is challenging to communicate.

Most new ventures lack a solid structure to support activities aimed at exploiting external sources, and the entrepreneur and founding team are often responsible for building connections with external parties. Lack of time and human resources are barriers to potentially benefiting from and establishing relationships with external sources.

Lack of trust is another major deterrent to crowd openness. Faced with the impossibility of choosing amongst and controlling who belongs to the crowd, entrepreneurs found it difficult to identify genuine interest in investing in the company versus potential competitors seeking access to sensitive company information. Because crowdfunding reaches a very broad audience through the Internet, it lacks the trust involved in traditional fundraising through private transactions with professional investors. Entrepreneurs were worried about knowledge leaking and were therefore reluctant to reveal sensitive information to the crowd. As one respondent reported:

We were careful to reveal things we were happy to reveal, but there is a slight problem in that you cannot tell the crowd all the best things about the business… when investors ask you questions, you may give clues to your indirect competitors… give information away. If you are with an angel investor or VC, you can see if you can trust them and you may choose to say things that you wouldn't say in public. So, there is the risk that you can't achieve your full potential because you can't say things.

Another interviewee told us:

I send updates to all investors to communicate milestones achieved, not in much detail, though, since many of the investors invested a small amount of money, or they are competitors, or they just want to have insider information about what we are doing. Therefore, is important not to reveal too much detail about what we are doing.

Engagement with external parties was undermined by the online means of financing, which resulted in the entrepreneur being unable to control and source the right 'crowd' prior to the investment.

The difficult thing is you have to put your business plan out in a very public arena; everybody can read your business plan including your competitors and people can comment on your business plan, on your approach or you personally on a publicly accessible website. They can do that hiding behind a username, so they know exactly who you are, but you don't know who they are, and you don't know whether they are potentially big investors or somebody who is your competitor and wants you to fail. You cannot distinguish between them [competitors] and genuine investors.

Beyond these impediments related to a lack of resources and trust of crowd investors, information asymmetries between entrepreneurs and investors created an additional challenge to openness.

From the outset, lack of awareness of the benefits that crowd members could bring to the business prevented the establishment of fruitful relationships between the entrepreneurs and the crowd. As one of our respondents reported:

I am not going to research and like dig into their [investors] specific background to see if there is something they can offer me. It is more you look on LinkedIn, you want an introduction to this person and if it happens to be connected through them by one of your investors, then yes, you do reach out. But you don't go from 97 profiles to see if there is something relevant.

Not knowing the professional profiles of crowd investors led to some scepticism about the potential benefits and skills crowd members could provide, which discouraged entrepreneurs from spending time developing relationships with them. As one interviewee reported:

The point is that if I had the chance to know their capabilities, I would reach out to them. It's about information gap, finding those people to go to. If you have to waste 5 weeks to find out, and ask for introductions to angel investors for instance. It's time consuming to build relationships with them [investors] and you do not even know if something will come out of it.

Indirect and non-proactive communication was also a critical limitation to external engagements. Entrepreneurs expected the crowd to be proactive and initiate a relationship. Many reported that 'None of them [crowd investors] contacted me to get involved. We said that if anyone wanted to get involved, they would be welcome, but no one contacted us' and also that they 'let the crowd decide how active they want to be', claiming that investors may not be interested in establishing a relationship with the company and would not spend sufficient time on their investment. One respondent told us that:

They [investors] have their job, they have their own things to take care of. And it doesn't come to them when they see an interesting article or speak to an interesting person or hear about an interesting person. They don't proactively think: oh, I need to introduce them to my portfolio company. It's too small, the piece of attention on the company.

Furthermore, it emerged that the style of communication mattered. Entrepreneurs often communicate with the crowd in broad terms and do not provide sufficient details about the problems they need to solve. A general call for help, such as 'asking them if they wanted to get involved' or 'asking for help to make the business grow further', led to poor crowd engagement. We found that entrepreneurs who offered feedback and regular company updates did not receive positive responses other than 'keep it up' or 'thumbs up'. One respondent reported that 'We said in the email that if anyone wanted to get involved, they're welcome, but no one took us up on the offer.'

Last, entrepreneurs look to establish relationships with people with specific expertise and understanding of the critical components of the business proposition. Start-ups that are at the embryonic stage of development need mentoring and support in how to run the business and expertise in their specific sector. To quote an interviewee:

There was nobody competent to help me with that [running the business]. I would have loved to have somebody who has started something similar and kind of sat down with me and mentored me a little bit. And because of this fragmentation of the attention that you get when non-professionals invest; that means that you will never have somebody's proper attention to do the real hard-core things.

They compared the crowd to professional investors, such as venture capitalists and business angels, who typically invest in industries in which they have solid expertise and are able to provide business-specific advice (Hellmann and Puri, 2002; Colombo and Grilli, 2010). To quote one of our respondents:

The questions we have been asked were not the kind of question that we expected to be asked by experienced angels or those more involved in a technology community. Even the most sophisticated angel investors are unsophisticated in your field, because at this stage the key thing here is the main expertise, it's about people understanding the specific mechanics of your business proposition.

4.2. Bridges to crowd openness

Drawing on the entrepreneurs' responses, we identified several processes and tools entrepreneurs have used to spur engagement with the crowd. These are *coordination technology, crowd stratification, mapping of investors' expertise and network* and a *direct and proactive communication* approach.

Start-ups suffer time and resource constraints, while feedback during the business-building process can affect costs. Engaging with potential customers early on in the product development process can help in assessing demand for the product and achieving a better product–market fit. However, large amounts of information can be a distraction, while receiving feedback can result in cycles that in turn result in a loss of focus. Establishing too many external communication channels can adversely affect performance (Ocasio, 1997). Therefore, entrepreneurs may reject potential external collaboration and choose a lower level of engagement in crowd activities.

The use of *coordination technology* facilitated interaction with crowd investors, as also highlighted by previous studies (Giustiniano et al., 2019). Some start-ups have created Facebook communities to share news and spur engagement and dialogue amongst community members to benefit from diversity and creativity. Note that the members of the crowd are not in competition; rather, they have a common interest in the company. Some start-ups have established investors' forums on their company website where information is posted and questions are posed, making it easier to manage the community and investors' expectations. These crowd openness facilitators have several benefits. They allow entrepreneurs to build solid relationships with the crowd and give them more time to dedicate to other activities. Furthermore, they allow community members to interact with one another. Individuals from different backgrounds and with different expertise are linked, which enables joint problem solving and the proposal of new ideas (Radziwon and Bogers, 2019; Foss et al., 2011).

Lack of trust is an impediment to external knowledge utilisation. Revealing company information related to products, growth strategy, partnerships, fundraising, etc. to large numbers of unknown people can be problematic. If information is not shared, the potential involvement of the crowd will be small; however, start-ups need to protect their ideas and innovations from incumbents and competitors. This is supported by the findings of Drechsler and Natter (2012). Trust is a major concern arising from a lack of information about the crowd, and it can lead to entrepreneurs avoiding external engagement due to the risk of knowledge leaks. To overcome this paradox, successful entrepreneurs engage with their investors as soon as they express an interest in investing in the company, that is, during the crowdfunding campaign. They organise face-to-face meetings to allow the entrepreneur to assess the investors' interest in the company. As one of our informants reported:

We chose to meet our investors in real life, especially those who are in London, because we needed to know our investors. 90% of the time, after the first meeting, we became acquaintances and we started to exchange advice between us.

Following this initial trust-building process, entrepreneurs created sub-groups of investors to whom they would disclose sensitive company information, while only sharing general company updates and major milestones with the community as a whole. Others held regular general meetings that were open to all investors, who were able to express opinions and propose solutions. *Crowd stratification*, based on involvement and interest in the company, emerged as an important factor in overcoming lack of trust and managing the crowd more efficiently. To quote one interviewee:

We have three categories of investors: we have a Facebook community for all our shareholders, so we do a fair volume of regular communication, but there are people we never hear from, they never click like or come to an event. There is a middle ground of investors who are aware, so they might click like on a Facebook page, reply to an email occasionally, they may share what we do to their friends, they may drop a line to say: I spoke to somebody who is doing something you may benefit from; but it is very gentle, sometimes they come to events, but it is very passive. Then, we have a small number of investors who have invested more, we speak to them every couple of weeks, we would have meetings with them.

Another entrepreneur organised investor meetings according to the different classes of shares:

For the A shareholders, we organise probably a couple of events per year to meet them personally. And obviously it is up to them whether to attend these events or not. We will probably have a single event for all shareholders to be able to attend. And otherwise we are looking at email contact on a quarterly basis.

Additionally, *crowd stratification* facilitates interactions with crowd investors, therefore allowing entrepreneurs to better understand the relevant knowledge and connections the crowd might provide and reducing the information gap generated by the need for specific expertise and lack of knowledge about benefits the crowd can provide.

One of the problems start-ups face is the crowd's perceived lack of specific expertise to allow useful suggestions about how to further develop the business. In contrast to appeals to the crowd for solutions to a problem, which targets a specific community of people with particular

Table 4
Barriers and bridges to crowd openness: influence of company and founder characteristics.

	Barriers to crowd openness			Bridges to crowd openness			
	Resource gap	Trust gap	Information gap	Coordination technology	Crowd stratification	Mapping investors' expertise and network	Direct and proactive communication
B2B companies	20%	10%	24%	20%	25%	0%	80%
B2C companies	80%	90%	76%	80%	75%	100%	20%
Company age (average years)	3.2	3	3.3	2.8	3	2.6	3.2
No. of founders (average)	1.4	1.1	1.6	1.8	1.5	1.3	1.6
First-time entrepreneurs	50%	50%	67%	40%	69%	67%	80%
Industry experience (average years)	3.9	5.5	5.5	5.8	5.2	3	4.4
Managerial experience (average years)	7	10	6.6	5.2	5.9	8.3	7.2

skills and expertise, crowd investors are not selected ex-ante. In addition, relationships with crowd investors are initiated over the Internet, which makes it more difficult for entrepreneurs to judge how to benefit from these external sources. Entrepreneurs reported lack of specific competencies as a disincentive to establishing external relationships. However, they often did not investigate investors' profiles or meet them to identify the type of expertise they could bring to the company. An external facilitator, such as *mapping investors' expertise and network,* would allow a more accurate assessment of the potential benefits of engaging in external sourcing activities. To reduce the information gap, entrepreneurs engaged in various activities, such as researching investors' profiles and keeping records of their areas of expertise and connections. Several entrepreneurs had created investor databases that included the investors' public profiles on social media, such as LinkedIn, or had approached investors directly via email. As two respondents reported:

> *Via email, we say [to our investors]: we would like to understand what skills anyone can offer so please get back to us if you have any skills you think may be useful for the business, and people come back and say: I have got some legal knowledge, I can help in finance, I can do this, etc.*

> *We just started collecting their names and from the last couple of years we have built a sort of database. We are starting to stratify the crowd in friend and family, investors, potential customers, and so on and so forth. And we can start to match their LinkedIn profile and correlate how their expertise could be beneficial for us, we can connect to our product and understand which travel insights they have that we don't know.*

Moreover, mapping the investors' profile was useful for entrepreneurs to assess the genuineness of the crowd's interest in the company, thus reducing the trust gap.

Stimulating interaction and involvement within a specific area of the business may require a direct communication approach. Entrepreneurs frequently use non-specific language when communicating to the crowd, which does not provide sufficient detail about the problems they need to solve and therefore does not result in an appropriate response. Those entrepreneurs who posed detailed questions on specific aspects of their business, such as feedback on a new product feature, technology support, connections, and PR advice, received appropriate and useful support that helped advance their business. To quote some interviewees:

> *We have asked for individual things, contacts to get selling to hotels, for example, or information on how to do a proper profit and loss, you know very specific things.*

> *It is better to ask them specific questions; we faced a strange phase where we didn't want much from their network because we needed to have the basics ready. And now that the company is growing, we want introductions.*

A facilitator in the form of a *direct and proactive communication* approach to engaging with the crowd for problem solving would help the entrepreneur to assess more accurately whether the crowd possessed the relevant knowledge.

4.3. Barriers and bridges to crowd openness: influence of company and founder characteristics

Although the nature of our study does not allow us to imply any causal relationships, our descriptive approach provides insights into the types of organisational barriers (resource gap, trust gap and information gap) and bridges to crowd openness and the characteristics of the companies and founders (Badir et al., 2019; Bogers et al., 2018; Eftekhari and Bogers, 2015). In terms of company characteristics, we consider customer orientation (B2B or B2C), company age and the number of founders. Regarding the characteristics of the founders, we consider the level of entrepreneurial experience (first time versus serial entrepreneur), industry experience (years of work experience within the particular industry) and managerial experience (number of years working in a managerial capacity). Table 4 shows these relationships.

First, Table 4 illustrates that B2C-orientated companies reported more barriers to crowd openness, while B2B-orientated companies seemed to experience fewer barriers. Second, there are no relevant differences in the type of barriers to crowd openness across company age and number of founders. However, we noticed a slight tendency amongst first-time entrepreneurs to report *information gap* as the main barrier to crowd openness. In addition, entrepreneurs with relevant industry and managerial expertise identify issues related to a lack of trust and information asymmetries as barriers to crowd openness more often.

If we look at the bridges to crowd openness, Table 4 shows that the use of coordination technology, crowd stratification and mapping investors' expertise and network were mostly adopted by B2C-orientated companies, while we noticed a preference for the use of a direct and proactive communicative approach to crowd investors amongst B2B-orientated companies. In addition, there are no relevant differences in the type of bridges to crowd openness across company age and number of founders. However, we noticed a tendency amongst first-time entrepreneurs to use bridges to crowd openness (across all), but this was used infrequently by serial entrepreneurs. We also noticed that entrepreneurs with less industry expertise reported the importance of mapping investors' expertise and network and the use of a direct and proactive communicative approach as tools to facilitate crowd engagement.

5. Discussion

Barriers to crowd openness in crowdfunded companies may arise due to: (i) lack of resources to dedicate to external knowledge exploitation; (ii) lack of trust in the context of sharing company-sensitive information and; (iii) problems related to obtaining accurate information about investors' expertise and the need for specific competences. Entrepreneurs can adopt several strategies to utilise external sources.

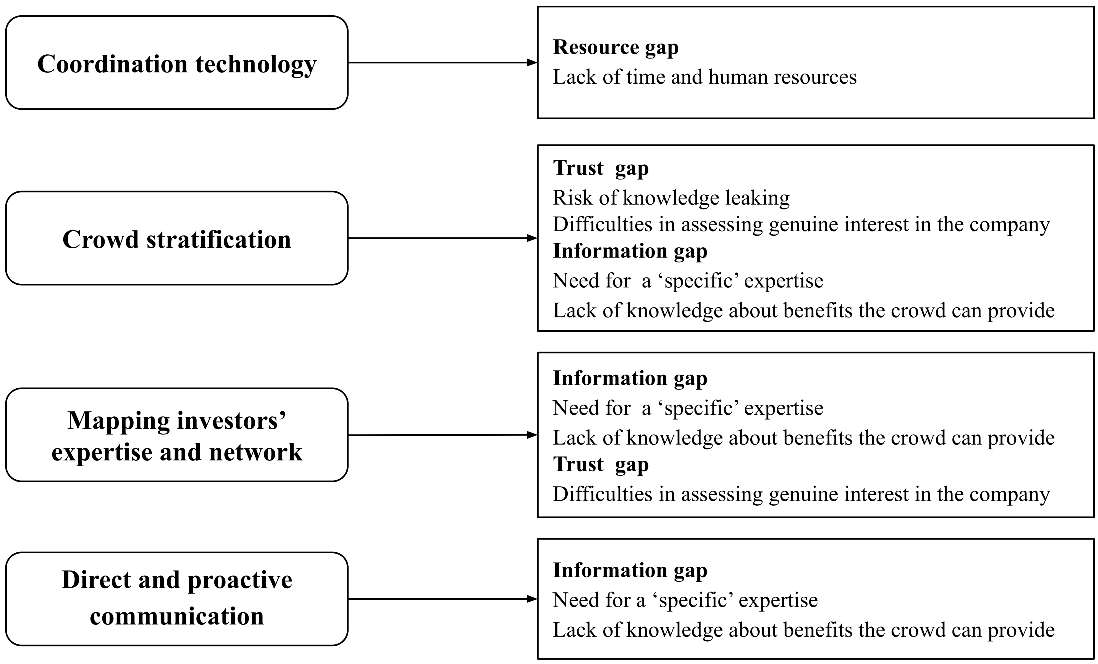

Fig. 1. Organisational bridges to crowd openness barriers.

We linked these strategies to the challenges they helped to overcome, as illustrated in Fig. 1 (descriptive statistics are provided in the Appendix).

Start-ups, which are newly created companies, are focused on developing the company using minimal resources. Entrepreneurs need to focus their limited time and attention on those business areas that are critical for refining the product or service and creating the dynamic required for success. The squeeze on entrepreneurs' time and resources is the main impediment to utilising external knowledge. Our research has shown that many entrepreneurs are unable to allocate time to investigating investors' backgrounds to understand whether and how their expertise may support development or to establishing and nurturing a relationship with a heterogeneous crowd of individuals. In addition, the involvement of a large pool of actors in a company's activities is likely to generate a large number of very different ideas (Blohm et al., 2013) from different owners who do not necessarily have common interests. In fact, their preferences, goals and perception of risks and returns associated with different corporate strategies may well diverge. This requires the entrepreneur to spend time identifying the potentially most valuable ideas that are worth implementing (Poetz and Schreier, 2012). We suggest the resource gap, which is related to the early stages of firm development, represents a barrier to crowd openness.

Lack of trust in the crowd is a barrier to utilising external knowledge. Scholars have found that with openness, challenges to protect valuable information (Ringel, 2019; West and Gallagher, 2006) or to secure fast decision making arise (Hautz et al., 2017). Entrepreneurs are reluctant to share sensitive information with an unknown crowd, which leads to superficial interactions with investors. Note also that the disadvantages related to openness are amplified by use of the Internet for external interactions. The entrepreneur does not know ex-ante the investor's identity and is unable to assess the genuineness of the investor's interest in the company. These aspects, coupled with the large number of investors, makes it difficult for the entrepreneur to properly assess the crowd's knowledge potential and, from the outset, deter the use of external knowledge. Moreover, start-ups often operate in non-traditional businesses, which means they have to create a new market or exploit new niches in existing markets. This may require specific skills. Evidence suggests that entrepreneurs were looking for specific competences needed for 'the hard-core business activities'. We suggest that trust and information gaps between entrepreneurs and investors represent an impediment to the utilisation of external sources.

Nevertheless, we identified a number of strategies adopted by entrepreneurs to overcome the problems related to crowd openness. Specific coordination technologies can be employed to avoid information overflow and reduce the problems related to entrepreneurs' limited time and resources to manage and foster communication with the crowd (Giustiniano et al., 2019). A (virtual or physical) space allows knowledge sharing; groups can be established on social media platforms, and investor forums and other types of meetings can facilitate interaction and the discussion of business ideas. Collecting all the information in one place rather than trying to manage several communication channels allows entrepreneurs to engage more easily with the community, which fosters interaction amongst and with the crowd, as also highlighted by previous studies (Radziwon and Bogers, 2019; Foss et al., 2011; Heimeriks et al., 2007). The innovation literature argues that the combination of weak ties and diverse knowledge and backgrounds helps generate innovative solutions (Gielnik et al., 2012; Sammarra and Biggiero, 2008). Reconsidering the use of crowdsourcing and external knowledge not only to enable bilateral communication between entrepreneurs and individual investors but also between investors, could lead to more intense knowledge flows, mutual learning and innovation (Chua et al., 2015; Malhotra and Majchrzak, 2014).

Crowd stratification, intended as a different approach to crowd openness based on the characteristics of crowd investors, was a useful method for bridging the trust gap between entrepreneurs and the crowd by reducing the risk of knowledge leaking and the difficulty in assessing the genuineness of the crowd's interest in the company (Drechsler and Natter, 2012). Stratification of the crowd investors allowed the identification of information sources that could be shared with the whole community or with 'middle ground' investors or with a small number of investors with a genuine interest in the company with whom the entrepreneur shared sensitive information about firm strategy. Additionally, crowd stratification facilitates the identification of the crowd's knowledge and expertise, thus allowing entrepreneurs to more easily understand what the crowd could bring to the company, thereby reducing information asymmetries between entrepreneurs and the crowd.

Mapping investors' profiles, that is, researching investors' profiles and keeping records of their areas of expertise and connections, facilitated more accurate assessment of the benefits of engaging in external sourcing activities, thereby reducing the information gap. Several entrepreneurs had created investor databases that included the investors' public profiles on social media, such as LinkedIn, or had approached investors directly via email. Additionally, mapping the profile was useful when assessing the genuineness of the crowd's interest in the company, thus reducing the trust gap.

Direct and proactive communication with the crowd provided entrepreneurs with information on the knowledge available amongst crowd investors, which was recorded in an internal investors' profile database. Furthermore, entrepreneurs reported that the presence of a clear objective and precisely defined capabilities and expertise requirements facilitated the sourcing of knowledge from the crowd (Malhotra et al., 2017).

Overall, our research illustrates how entrepreneurs can overcome organisational barriers to crowd openness arising from resource, trust and information gaps and engage with external actors.

6. Conclusion

In the last decade, equity crowdfunding has become an established source of open fundraising, which allows a pool of people to invest in company equity (Hornuf and Schwienbacher, 2018). An open approach to an international and heterogeneous crowd of investors represents an opportunity for entrepreneurs to access resources other than financial, such as feedback from and the direct involvement of crowd investors (Di Pietro et al., 2018; Walthoff-Borm et al., 2018; Stanko and Henard, 2017; Butticè and Noonan, 2020). Despite the potential, openness to new actors and the exploitation of their added value is often overlooked by entrepreneurs, as it may involve organisational challenges (Colombo et al., 2016, 2014; Usman et al., 2018; Vanhaverbeke, 2017).

This article has identified the types of organisational barriers to crowd openness faced by new ventures when using an equity-funding platform. Entrepreneurs are sceptical of crowd openness due to a lack of resources, a lack of trust in crowd investors and a lack of information about the crowd's skills and knowledge. Some of these barriers to crowd openness in the context of crowdfunding reflect the challenges of digital platform openness (see Broekhuizen et al., 2019). For instance, platforms face difficulties when attempting to configure openness in such a way that the 'right' set of suppliers are matched with the 'right' set of customers (Broekhuizen et al., 2019). This mismatch between the expertise possessed by the crowd and that needed by entrepreneurs also emerged during our empirical research.

An open approach is also critical if entrepreneurs want to forge links with relevant stakeholders, expand networks and gain recognition from incumbents (Barney et al., 2001; Alvarez and Busenitz, 2001; Zimmerman and Zeitz, 2002). Therefore, our article also highlights solutions to these challenges in the form of coordination technology, crowd stratification, mapping of investors' expertise and network and direct and proactive communication that are suited to spur engagement with external sources. We suggest that specific combinations of these coping strategies are useful to new ventures to facilitate interactions with external sources. Our evidence supports the importance of organisational design and practices in influencing relationships with external actors (Colombo et al., 2014; Foss et al., 2011).

This study contributes to the existing literature on crowdfunding, which highlights the non-financial benefits of crowd investors (Di Pietro et al., 2018; Walthoff-Borm et al., 2018; Stanko and Henard, 2017; Butticè and Noonan, 2020) by identifying the contradictions and limitations, from an organisational perspective, that crowdfunded companies face when deciding on their openness strategy, as well as strategies entrepreneurs can implement to mitigate the limitations.

Our study also contributes to the open innovation literature (e.g. Chesbrough, 2003; Chesbrough and Bogers, 2014), which highlights the importance of crowdfunding platforms for fostering the development of new ideas (Brem et al., 2019; Schenk et al., 2019) and the importance of crowd investors as an external source from which entrepreneurs can benefit (Di Pietro et al., 2018; Chesbrough, 2003) by suggesting internal organisational components related to the utilisation of external sources (Fey and Birkinshaw, 2005; Laursen and Salter, 2006; West and Bogers, 2014). As such, our study also establishes some linkages across different domains of the literature on crowdfunding, open innovation and digital platforms (e.g. Bogers et al., 2017; Broekhuizen et al., 2019; Di Pietro et al., 2018).

We contribute to practice by providing insights into the barriers that hamper the process of utilising external sources for start-ups and by suggesting the following guidelines for organising: (i) the use of a dedicated coordination technology, which allows entrepreneurs to more efficiently manage the time and resources devoted to external relationships; (ii) the stratification of crowd investors, which helps to build trust relationships with selected investors and to overcome the 'paradox of disclosure' related to the potential leaking of knowledge and (iii) mapping investors' profiles and adopting a direct communication approach with investors, which helps entrepreneurs to determine how the crowd's expertise and investors' abilities can contribute to company development.

Entrepreneurs can apply the lessons learnt to develop more effective ways to handle the problems and exploit the opportunities associated with using external resources, reduce suspicion related to using the Internet and promote trust in communities and other external parties with whom the organisation engages.

This study provides guidance for crowdfunding platform managers on the design of their platform to help start-ups exploit the full benefits of crowdfunding beyond the provision of finance. Crowdfunding platform managers can help build trust between a company and investors by conducting background checks on investors and providing dedicated (virtual) space on the platform where investors can interact with each other and the entrepreneur. Crowdfunding platform managers can also stress the importance of investors disclosing their identity and expertise to facilitate fruitful collaboration with the business. Our results imply that design support is needed to allow entrepreneurs to exploit the full benefits of crowd investors and reduce the problems identified.

Our study has some limitations that allow us to suggest some future avenues of research. First, we focused on equity crowdfunded companies, but future research could explore new ventures' organisational challenges to openness in other empirical settings. This would help to validate our findings and extend our knowledge about the organisational challenges related to openness to the utilisation of external resources in an entrepreneurial context. Second, it would be interesting to investigate both the development and the dynamics of the phenomenon. Using a longitudinal study, it would be useful to explore how challenges to crowd openness have evolved with the development and maturity of the crowdfunding phenomenon, for instance, whether entrepreneurs or platforms have found innovative ways to more efficiently engage with crowd investors or whether the crowd has become more sophisticated and able to provide the 'specific' skills needed by entrepreneurs. Last, our qualitative approach does not allow us to make causal inferences about successful outcomes of the bridges to crowd openness. Therefore, future research should adopt a quantitative research approach to build on our study and measure the outcomes—in terms of effective engagement of investor communities—of the different processes that entrepreneurs implement to overcome barriers to crowd openness.

Authors statement

Francesca Di Pietro: Conceptualization - Data Curation - Formal analysis - Writing - Original Draft - Writing - Review & Editing – Visualization; **Marcel L.A.M. Bogers:** Conceptualization - Supervision -

Review & Editing – Visualization - Resources; **Andrea Prencipe**: Conceptualization - Supervision - Review & Editing – Visualization - Resources.

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Appendix

Interview Protocol

1 Background of the firm and crowdfunding campaign
  1.1 When did you found your firm?
  1.2 Why did you decide to use equity crowdfunding to finance your firm?
  1.3 How much did you raise through crowdfunding? From how many investors?
  1.4 Who are your crowdfunding investors? Are they from your personal network?
2 Utilisation of external sources
  2.1 Are your crowd investors involved in the firm's activities?
  2.2 Why did you decide not to involve them?
  2.3 How did you identify their competences and skills that can be helpful to your business?
  2.4 How did you ask for their support? Can you provide some examples?
  2.5 How do you manage the communication and relationship with all your investors? Can you provide some examples?
  2.6 How often do you communicate with your investors?
  2.7 How do you update them about the progress of your business?
  2.8 Do they have a proactive approach? Do they follow up after your update?
3 Benefits and challenges of crowd investor involvement
  3.1 How did investors' involvement influence your firm's development?
  3.2 Which aspects of the business have benefitted most from investor involvement?
  3.3 What challenges did you face in managing the relationship with them?

Descriptive statistics: organisational bridges to crowd openness barriers

Coordination technology was mentioned twice as bridge to crowd openness' barrier lack of time and human resources.

Crowd stratification was mentioned four times as bridge to crowd openness' barriers risk of knowledge leaking and difficulties in assessing genuine interest in the company.

Crowd stratification was mentioned three times as bridge to crowd openness' barriers need for specific expertise and lack of knowledge about benefits the crowd can provide.

Mapping investors' expertise and network was mentioned twice as bridge to crowd openness' barriers need for specific expertise and lack of knowledge about benefits the crowd can provide.

Mapping investors' expertise and network was mentioned once as bridge to crowd openness' barrier difficulties in assessing genuine interest in the company.

Direct and proactive communication was mentioned three times as bridge to crowd openness' barriers need for specific expertise and lack of knowledge about benefits the crowd can provide.

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