Too tied to fail: a multidimensional approach to social capital in crowdfunding campaigns. Evidences from Italian agri-food businesses

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Abstract

Purpose – The authors investigate the contributions of social capital (SC) dimensions (bridging, bonding and linking) in crowdfunding campaigns by comparing the dynamics of agri-food businesses with those of two other sectors – cultural and technological.

Design/methodology/approach – The authors develop linear regressions on a proprietary data set of 5,290 projects launched on the Italian platform "Produzionidalbasso.com", from 2014 to 2020.

Findings – The authors' findings suggest that combining the three social capital dimensions (bridging, bonding and linking) has a more substantial overall effect on the number of backers involved in agri-food projects than in cultural and technological projects. Agri-food entrepreneurs effectively mobilize all resources embedded in the SC dimensions and therefore create the conditions to develop new ties that financially support the project.

Practical implications – Agri-food entrepreneurs may benefit from those results improving their funding strategies. Therefore, agri-food entrepreneurs can explore and exploit the instruments available on the CFD platform – video and rewards associated with the campaign – gaining more benefit from the backers involved compared with other project categories.

Originality/value – The study proposes a broader perspective regarding SC that encompasses the proponent, the company and the campaign with three different types of ties: bonding, bridging and linking. These SC dimensions can differently shape diverse sectors and this eclectic configuration can differentiate the effects of SC in crowdfunding campaigns. This study pinpoints how crowdfunding determinants change, based on project categories.

Keywords Crowdfunding, Agri-food, Social capital, Local entrepreneurship development

Paper type Research paper

1. Introduction

Farming and agriculture represent a crucial asset to be conserved over time as they support the maintenance and development of all societies on the planet (Olesen, 2016; Spiertz, 2009). Agri-food businesses are now facing a significant transformation in order to meet the related challenges of achieving food security and responding to climate change (FAO, 2018). However, the transition to more efficient and sustainable agriculture requires

multi-stakeholder mechanisms able to mobilize capacities, information, technologies and access to financial and production resources (FAO, 2019).

In particular, the mobilization of financial resources remains one of the main constraints for the effective implementation of new, smart agri-food businesses (Filimonova *et al.*, 2019) and for small businesses to exploit innovation and growth (Cox and Nguyen, 2018). Agri-food businesses often face difficulties in receiving funds due to the lack of their own initial financial resources, limited access to external sources of capital and the high investments required for making changes to production systems (Asongu and Nwachukwu, 2018). The Food and Agriculture Organization (FAO) estimates that cumulative gross investment requirements for agriculture in developing countries add up to nearly US$9.2 trillion until 2050 or nearly US$210 billion annually (FAO, 2018). Available resources to support the necessary transformation and the development of agri-food businesses are thus currently insufficient in developing countries, and both higher levels of financing and more innovative approaches will be required.

In this context, innovative financing mechanisms such as crowdfunding (CFD) can play an important role for agri-food entrepreneurs to enhance their funding (FAO, 2015b), guaranteeing their future development, competitiveness and long-term survival (Hinson *et al.*, 2019; Pronti and Pagliarino, 2019; Thies *et al.*, 2019). CFD allows bridging the funding gap of small businesses, directly connecting entrepreneurs to a multitude of non-professional small individuals: "the crowd" (Agrawal *et al.*, 2014). Therefore, CFD combines money and contact together: it improves the connectivity among stakeholders (Cillo *et al.*, 2019; Pronti and Pagliarino, 2019) and strengthens the relationship between producers and consumers (Anshari *et al.*, 2019; Yoo and Choe, 2014). Today, CFD represents an emerging market with high growth volume for the future (Tiberius and Hauptmeijer, 2021) and for agri-food business an opportunity to add value to their produce off the farm.

A flourishing literature on crowdfunding has investigated the determinants that influence campaigns' success, including project-related (Mollick, 2014), platform-related (Cosma *et al.*, 2021; Moysidou and Hausber, 2020) and entrepreneur-related characteristics (Lim and Businetz, 2020; Piva and Rossi-Lamastra, 2018). Concerning the latter, research pinpoints the crucial role of entrepreneur's online "social capital" (SC) in compensating for information asymmetry (Ahlers *et al.*, 2015) and attracting early funders (Butticè *et al.*, 2019; Giudici *et al.*, 2018; Marelli and Ordanini, 2016; Skirnevskiy *et al.*, 2017). SC can be defined as a set of embedded benefits that can be mobilized in a network of more or less institutionalized relationships, and that may vary depending on the type of relationship to which it refers (Nahapiet and Ghosal, 1998; Uzzi, 1999). In the case of CFD, "online SC" is frequently identified as online entrepreneur's friends that support the project at the beginning of the campaign. Only few studies in CFD adopt a multidimensional perspective towards SC (Cai *et al.*, 2021; Madrazo-Lemarroy *et al.*, 2019; Troise *et al.*, 2020; Zheng *et al.*, 2014) enlarging SC perspective to other CFD elements that can permit access to new knowledge, funding and moral support. Indeed, SC literature evidences the presence of bonding, bridging, and linking ties associated with different abilities to mobilize resources (Putnam, 1995; Woolcock, 2001). Bonding SC comprises relationships within a group from a similar background, bridging SC includes relationships between groups of different background, and linking SC describes relationships among groups from different social status or power hierarchy. To the best of our knowledge, these relationships have not been investigated yet in the CFD context. Thus, the picture of SC in CFD remains incomplete.

Moreover, less is known about the impact of bonding, bridging and linking SC in helping agri-food businesses in raising financial resources in comparison with other projects from different sectors. Agri-food businesses present uniqueness characteristics such as high level of SC due to the territorial values in which they are grounded, and their tendency to work in a supply chain made up of a plurality of stakeholders or in cooperatives (Cannas, 2021; Giovannetti *et al.*, 2021; Mazzarol *et al.*, 2011). In the CFD context, online SC may depict new opportunities to collect money, transfer knowledge, get feedback regarding products, and enlarge the customer domain

of agri-food businesses. As evidenced by Giudici *et al.* (2018), current research in CFD determinants "runs the risk of attributing to a smaller and peculiar class of projects the findings of contributions examining a larger and heterogeneous population" (p. 307). Thus, little is known about what differentiates campaigns' determinants from one project category to another. In terms of SC's impact, the comprehensive effect of the three-dimensional SC on the outcome of agri-food crowdfunding campaigns projects is still under-investigated.

The present study aims to fill these knowledge gaps by investigating the role that different dimensions of online SC have in CFD campaigns and their configuration in the agri-food projects compared to technological and cultural ones. In particular, our research question is:

RQ1. How different SC dimensions in CFD campaigns influence the generation of new ties for agri-food entrepreneurs?

We base our investigations on 5,290 campaigns listed in 2014–2020 on "Produzionidal basso.com", an Italian reward CFD and social innovation platform. It turns out that agri-food entrepreneurs significantly benefit from all SC dimensions: bonding, bridging and linking SC. Their economic impact on the number of backers involved in the campaign is more relevant than for other sectors such as cultural and technological projects. Agri-food entrepreneurs can also explore and exploit the instruments available in the CFD platform – video and rewards associated with the campaign-gaining more benefit on the backers involved compared with other categories. Looking at the funding, even if agri-food entrepreneurs collect the necessary funds to realize their projects, the amount raised is lower than for tech and cultural projects. This means that the major CFD benefit for agri-food entrepreneurs is the possibility to generate a new form of SC enlarging their stakeholders base with new ties and resources.

Thus, our contributions are threefold with regards to the literature on agri-food business development and CFD determinants. First, CFD offers agri-food businesses different strategic tools and mechanisms for improving their funding and stakeholder inclusiveness. Our study adds to the literature that associate SC with the adoption of new technologies by farmers (Hunecke *et al.*, 2017; Van Rijn *et al.*, 2012), the relevant impact of online SC on the effective use of online financing technologies. Secondly, we contribute to the SC literature in the CFD context by highlighting that SC assumes different configurations in different project sectors, with diverse economic effects on CFD performance. In particular, our findings consolidate the previous literature that considers SC as a multidimensional resource (Fischer and Reuber, 2014; Smith *et al.*, 2017) that, when developed, especially online, overruns not only the funder but also the company and the project, fostering bonding and linking ties with backers. Findings suggest the need to encourage the consolidation of all SC dimensions: bonding SC through online friendship relationships, bridging SC through company-specific partners and linking SC through interactions with stakeholders during the funding process. Finally, since agri-food is an important resource for the planet, we support the idea that modern technologies such as CFD can contribute to local entrepreneurship development (Tang *et al.*, 2020; Theodorakopoulos *et al.*, 2014) and the transition to a smarter agri-food sector. The study enlarges empirical contributions about a sector that, until now, has been largely neglected in CFD studies despite its increasing importance in connection with sustainability issues (Testa *et al.*, 2020; Troise *et al.*, 2021).

The paper is organized as follows. The next section reviews the theoretical framework and states the research hypothesis based on a multidimensional approach to online SC. Data and methods are described in Section 3. Empirical results are then presented in Section 4. Finally, in the last section, we discuss implications for entrepreneurs and lines for future research.

2. Theoretical framework and development of hypotheses

CFD can be used as an effective source of financing for start-ups and small businesses. At the same time, it offers further advantages to entrepreneurs than traditional financing

instruments, such as the benefits supplied by the crowd. In fact, CFD not only represents a faster funding process but can also be used as an effective marketing and advertising tool to disseminate small businesses' offers to a new and potentially wider audience (Cox and Nguyen, 2018). The CFD platforms offer different communication channels and enable connections with leading social media to increase market access and customer relations of small businesses whilst also being a valuable tool for their strategic growth (Morris and James, 2017). For both fundraising and marketing purposes, the success of the campaigns is often related to the SC constructs (Cai et al., 2021; Colombo et al., 2015; Giudici et al., 2018).

SC has a crucial role in entrepreneurship development (Liñán et al., 2011; Stam and Elfring, 2008) and represents a key resource for successful campaigns in all the different CFD models used for funding entrepreneurial projects (Kromidha and Robson, 2016; Troise et al., 2020).

In the literature, SC has been defined in different ways and has been studied through various social science disciplines (Adler and Kwon, 2002; Coleman, 1988). Bourdieu has provided an early exposition of the concept, considering SC as "the aggregate of actual and potential resources which are linked to the possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition—or in other words, to membership in a group" (Bourdieau, 1986, p. 248). SC is associated with the relevance of relationships as resources for social action, an aspect that most authors agree with (Coleman, 1988; Loury, 1987; Nahapiet and Ghoshal, 1998). As Putnam (1995) affirms, however, SC is not a one-dimensional concept, which makes different authors focus their discussions on different SC dimensions. The definition of SC by Nahapiet and Ghosal (1998) pinpoints its structural, relational and cognitive parts with different assets related to them. The structural dimension refers to network ties and configuration within an organization. The relational dimension includes trust norms, obligation, identification and is the one that can influence people's behavior, while the cognitive dimension refers to the system of meaning among parties. This dimension includes shared language, codes and narratives.

Focusing on the structural characteristics of SC, such as network ties and network configuration, both are necessary for the development and the utilization of SC itself. Drawing on Granovetter's (1973) research on ties strength, Putnam (2007) distinguishes between two types of SC bridging and bonding that generate different assets (Adler and Kwon, 2002; Putnam, 2007). Bridging forms of SC comprise a larger number of external connections, which allow information to be collected and disseminated, and contact a broader range of people with different backgrounds (Williams, 2006). Moreover, bridging SC is developed between different groups of stakeholders. It refers to the ties between separated dense networks for collaboration and coordination, characterized by more extensive and looser networks with weaker ties (Klerkx and Proctor, 2013). In contrast, bonding SC is generated by internal relationships based on solidarity and reciprocity that ensure the survival of the group and the achievement of shared goals. Both bonding and bridging forms of SC bring significant effects; they should not be considered as distinct categories of SC but rather as two dimensions of the same phenomenon, which can coexist, and either of which may become dominant within their combination (Fischer and Reuber, 2014; Smith et al., 2017). In fact, under the concept of shared vision in the definition of the bonding mechanism provided by Tsai and Ghosal (1998), some ties that constitute bridging capital can become bonding capital, creating a direct connection between ties.

Furthermore, other studies have introduced a further conceptual and empirical distinction of "bonding", "bridging" and "linking" SC (Onyx and Bullen, 2000). While the distinction between bonding and bridging SC is widely explored in the SC literature (Portes, 2009; Putnam, 2007), linking SC has more recently been added to the multidimensional approach (Szreter and Woolcock, 2004; Woolcock, 2001). To the best of our knowledge, this three-dimensional conceptualization of SC has not been yet investigated in an online SC context such as in the case of CFD. Woolcock (2001) considers linking SC as a subset of bridging SC,

and when it is included, bridging SC becomes an intermediate step between bonding and linking SC. Linking SC is defined as: "norms of respect and networks of trusting relationships between people who are interacting across explicit, formal or institutionalized power or authority gradients in society" (Szreter and Woolcock, 2004, p. 655). A key feature of linking SC is the capacity to leverage resources, ideas and information from formal institutions beyond the community (Woolcock, 2001). The distinction between this last category of ties and those of bridging SC category, that "bridge" equal individuals in terms of their status and power (bridging horizontal networks), is that linking SC connect individuals across explicit different social status or "vertical power differentials" (Szreter and Woolcock, 2004). Differently from bonding and bridging SC, which refer to "horizontal" social networks and relationships, linking SC reflects how communities are "vertically" networked with institutions (Warren *et al.*, 2015). This type of SC is not well developed in CFD literature but it is essential for this study as it allows the unification of the horizontal SC developed for different kinds of networks (entrepreneur and investors), with the vertical structure of the CFD platform that has a supervisory role.

With all types of structures, SC enables the problem of information asymmetry between investors and entrepreneur to be overcome, and support with different resources the entrepreneurial project. The literature on both agricultural and new venture financing has underlined its importance in different contexts (Shane and Stuart, 2002; Venkataraman, 2019).

2.1 Social capital in agri-food businesses
For agri-food entrepreneurs, SC is one of the most critical resources for implementing a participatory multi-stakeholder mechanism and supporting the adoption of new agricultural technologies (Ahlerup *et al.*, 2009; Bandiera and Rasul, 2006; Van Rijn *et al.*, 2012), contributing to the growth of the sector (Isham, 2002; Narayan and Pritchett, 1999). SC is also a critical asset for agri-food entrepreneurs to support and develop effective decision-making (Cofré-Bravo *et al.*, 2019; Hunecke *et al.*, 2017; Mathijs, 2003). SC has an important place in resource allocation and risk management and, in that sense, can be treated as an economically asset.

In agriculture, SC facilitates cooperation and the development of open networks that are used to explore and access new knowledge and resources. In developed and undeveloped countries, various studies confirm the leveraging role of structural SC dimension for farmers (see, e.g. Bandiera and Rasul, 2006; Landry *et al.*, 2002). In particular, the presence of structural SC is significantly associated with the adoption of agricultural innovations and the implementation of new technologies and practices by farmers, while there is a negative association between the cognitive SC dimension and the adoption of new technology (Hunecke *et al.*, 2017; Van Rijn *et al.*, 2012).

The effect of the structural SC dimension has also been explored in relation to the farmers' willingness to participate in climate change adaptation. Bonding and bridging ties that constitute structural SC could affect farmers' attitudes to climate change adaptation (Nam *et al.*, 2012); facilitate farmer-to-farmer knowledge exchange, increasing farmer access to information on the adaptation (Fankhauser *et al.*, 1999; Saint Ville *et al.*, 2020); and influence their willingness to pay for adaptation costs (Saptutyningsih *et al.*, 2020).

About linking SC, even though it is a relatively new concept, it has been investigated in the agricultural literature as a key dimension for innovation. Studies show that farmers associated with a high level of linking SC are more adaptive to change and to engaging with a wide variety of networks (Arnott *et al.*, 2021; Cofré-Bravo *et al.*, 2019).

2.2 Combinations of bonding, bridging and linking SC for funding agri-food businesses through CFD
During the initial new venture funding process, SC for entrepreneurial projects reduces information asymmetry between the entrepreneur and the potential lender (Shane and Cable,

2002; Shane and Stuart, 2002). Shane and Cable (2002), for example, study the role of SC in the process of financing seed-stage entrepreneurs. Social ties are argued to represent information transfer mechanism that influence investors' decisions. The influence of SC ties on financing decision making is proven to be positive as SC enacts genuine information transfer among stakeholders through social ties (Shane and Cable, 2002). In a similar way, social resources embedded within the network can save on the time and costs necessary to obtain information and improve its quality and relevance. Each contact within the network disseminates and transfers knowledge (Coleman, 1988).

The importance of SC in new venture financing is also confirmed in the online context where entrepreneurs' online connections help to narrow the information asymmetry gap and facilitate fundraising (Butticè *et al.*, 2019; Colombo *et al.*, 2015; Mollick, 2014). For example, in CFD campaigns, supporters living geographically close to the entrepreneur tend to invest more than twice the sum of those who reside farther (Agrawal *et al.*, 2015; Marelli and Ordanini, 2016). We can therefore assume the existence of close social relations or of direct acquaintance between the entrepreneur and his backers (Agrawal *et al.*, 2014) that is reflected in a positive effect of localized SC on the funds raised in the campaign (Giudici *et al.*, 2018).

The specific research connecting SC to CFD outcomes through the support of online social networks mechanisms has been flourishing exploring SC from multiple angles (Cai *et al.*, 2021). A stream of study distinguishes between external SC-online social ties originated outside the platform- and internal SC-online ties established inside the platform. External SC is always measured in relation to the number of external connections that an entrepreneur has in different social networks, e.g. Facebook and Twitter (Balboni *et al.*, 2018; Mollick, 2014). Internal SC is associated with early backer support on the platform (Colombo *et al.*, 2015; Liao *et al.*, 2015) and these backer communities also stay with the entrepreneur in a second financing round, replacing the contributions of "family and friends" (Skirnevskiy *et al.*, 2017). Both internal and external SC influence the likelihood of campaign success. Cai *et al.* (2021) adopt a dynamic view to analyze SC studies in the CFD domain and to distinguish between early-stage SC, the resources at the beginning of campaigns, SC generated during the campaign through interactions among its participants, and SC after the campaign.

However, the investigation of SC dimensions and their configurations in different types of CFD projects and how they can impact campaign outcomes is still incomplete. To the best of our knowledge, the multidimensional approach of SC has been adopted in CFD literature, mainly referring to its structural, cognitive and relational dimensions (Madrazo-Lemarroy *et al.*, 2019; Troise *et al.*, 2020; Zheng *et al.*, 2014). Zheng *et al.* (2014) compare the dimensions of SC in China and the USA, showing that SC dimensions seem to be more influential in China than in the US. Troise *et al.* (2020) expand on Zheng *et al.* (2014) by introducing new elements to measure SC dimensions and show that the cognitive dimension, captured by the video length, has limited and partial effects on the campaign performance.

The structural dimension has been proxied as the number of an entrepreneur's social network ties (Zheng *et al.*, 2014) or the number of projects' comments in different social networks (Madrazo-Lemarroy *et al.*, 2019). The cognitive dimension has been studied exploring the shared language in campaign updates, videos or project descriptions (Madrazo-Lemarroy *et al.*, 2019; Troise *et al.*, 2020) while, for the relational dimension, the proposed variable is trust as the common support of funded entrepreneurs (Kshetri, 2018; Zheng *et al.*, 2014). Considering the cited studies, the SC dimensions and the variables used in CFD do not focus on the types of ties that constitute the structural dimension (bonding, bridging, linking). This fact offers new avenues of research for SC configuration in CFD.

2.3 Development of hypotheses
Although new technologies, such as CF, are broadly reforming the geographical dimension of entrepreneurship (Tang *et al.*, 2020), they unexpectedly play a positive role in developing local

rural entrepreneurship (Theodorakopoulo *et al.*, 2014) by allowing farming small businesses new and direct access to sustainable financing (Filimonova *et al.*, 2019). Accordingly, there is evidence that SC is a strategic resource for agri-food entrepreneurs to allow economic success (Giovannetti *et al.*, 2021; Hinson *et al.*, 2019; Pronti and Pagliarino, 2019). The benefits of SC extend further than agri-food business alone where rural livelihoods can also be improved (Pagliacci *et al.*, 2020). This peculiarity of the agri-food sector around the role of SC is even more important if compared with other sectors. For this reason, we expect that SC's dimensions should shape agri-food CFD campaigns differently from other sectors.

Specifically, farmer's SC is considered strong and resilient (McManus *et al.*, 2012). This evidence is supported by the idea that agri-food businesses are generally rooted in local, regional and traditional contexts (Cannas, 2021; de Kroma, 2017) where farmers are more prone to build up cooperative relationships and thus, generate bridging and bonding SC ties.

Moreover, this local dimension contributes to the generation of high-level of SC also with non-farmers people who consider agri-food business a collective resource that contributes to local quality of life (Sharp and Smith, 2003). Due to the above characteristics, farmers' SC appears to be a strategic resource impacting on the establishment and management of new agri-food ventures (Ostrom, 2000). For this reason, our first hypothesis supports the idea that agri-food projects densify SC dimensions compared to the other three sectors included in our sample.

H1. SC dimensions assume higher relevance for CF campaigns in the agri-food sector than in other sectors.

Within the agri-food sector, we start by retrieving SC using a multidimensional approach, in terms of the various subjects considered – founder, company and project – and at different campaign stages – before and during the campaign. The combination of bonding, linking and bridging ties, developed before and during the campaign, facilitates the attraction of backers and the project financing. Applying the three types of SC ties in the CFD context, bridging ties can represent the weak ties between extra-CFD networks and heterogeneous groups of stakeholders (e.g. entrepreneurs' and ventures' networks); bonding ties correspond to the intra-CFD network that is built upon strong ties between homogeneous groups of stakeholders (e.g. funders and their personal connections). Finally, linking ties allow the use of resources, ideas and information provided in "formal" structures such as the CFD platforms, going beyond the proponent's community and the venture. In CFD, the role of the platform can be seen as an intermediary between the proponent's community, the project and the new backers that support the campaign.

2.3.1 Proponent's social capital. The entrepreneur's SC is a significant endowment in supporting small businesses: bonding and bridging ties facilitate the acquisition of critical resources, such as human and financial capital, by promoting a constant flow of information from different sources and, at the same time, generate further resources inside the company (Adler and Kwon, 2002; Batjargal and Liu, 2004; Blyler and Coff, 2003; Florin *et al.*, 2003).

In the definition of Burt (1997), SC is defined as social networks where friends, colleagues and more general contacts can offer new opportunities to use financial and human capital.

In CFD literature, an entrepreneur's SC is often measured in its online dimension, particularly in the number of online connections in specific social networks where an entrepreneur is embedded (Balboni *et al.*, 2018). Social network sites, such as Twitter and Facebook, are important means to connect entrepreneurs with an initial base of contacts willing to support the campaign. Therefore, entrepreneurs have increased their use of online social networks to deal with other entrepreneurs and activate weak ties (Fischer and Reuber, 2014; Morse *et al.*, 2007). Social networks support entrepreneurs in gathering low-cost digital contacts and managing both bridging and bonding SC (Smith *et al.*, 2017). In particular, the entrepreneur's personal online network is mainly configured as bonding SC because

connections are based on a common interest or have a direct relationship with them (Vitak *et al.*, 2011).

Proponent's SC in CFD is a capital developed before the campaign and it represents an early stage external entrepreneur's resource (Colombo *et al.*, 2015). The greater the entrepreneur's SC, the greater the effect on the number of new backers that support the campaign. Thus, we formulate hypothesis 2 as follows:

H2. The extent of the agri-food entrepreneur's SC is positively associated with the number of backers in the campaign compared with other project categories

2.3.2 Company's social capital. In addition to the agri-food entrepreneur's online SC, it is also possible in CFD campaigns to trace the company's SC in the form of partnerships and alliances. It is important to consider both the entrepreneur's SC, which originates from a personal network of ties, and the company's SC, derived from an organization's network of relations. The latter acquires the nature of a "public good" (available and beneficial to a wide range of stakeholders) and it is frequently interrelated with the founder's social network (Inkpen and Tsang, 2005). In the literature, the company's SC has been defined as the business network composed of ties that enable firms to exchange a variety of information, knowledge and other forms of capital (Florin *et al.*, 2003). Through the creation of information flow, interfirm relationships generate new entrepreneurial opportunities and establish a pattern of obligations and expectations based on norms of reciprocity and equity (Burt, 1997). Extant research has deemed partnership formation to be a strategic decision, as collaboration with certain partners can result in enhanced performance (Mindruta, 2013).

From the SC perspective, partners are bridging ties since they serve as an intermediary between the firm raising capital and the potential investors (Gulati and Higgins, 2003). Such bridging relationships have the capability of overcoming liabilities of smallness and newness, reduce information asymmetry and enhance a company's reputation (Gulati and Higgins, 2003). Previous studies also find evidence that a partner's presence plays a role in CFD campaigns identifying which characteristics might influence supporters' choices (Theokary *et al.*, 2020). Types of partnership arrangements in this space vary from various NGOs that may represent the activator of the social part of the network and other financial subjects such as banks or foundations that represent the activator of the economic aspect of the company's network. In particular, a financial partner increases the project's credibility and may activate other ties that support the campaign financially (Cosma *et al.*, 2021).

In the present study, companies' SC encompasses business partners supporting the project and mentioned at the beginning of the campaign constituting a form of early-stage bridging SC. Business partners can deliver all desirable social and economic assets required by agri-food entrepreneurs generating new ties to support CFD campaigns. Thus, we hypothesize:

H3. The presence of the company's SC is positively associated with the number of backers in the agri-food campaign, compared with other project categories. When a bank is part of the company's SC, the number of backers in the agri-food campaign is fostered compared to other projects categories.

2.3.3 Project's social capital. The interactions between fundraisers and backers during the campaign also create SC around the project, such as backers' psychological ownership of a project, enhancing their commitment (Zheng *et al.*, 2014). The comment section is available in each CFD campaign page and it is an interactive space where entrepreneurs and potential investors may start a conversation or develop questions about the project. Project's comments support the creation of new direct and indirect ties between the proponent and potential investors, generating linking SC around the campaign objective. Thus, new relationships between individual of different social status: entrepreneurs looking for funding

and investors. This also happens when other backers follow a conversation in the platform realm between the entrepreneur and the commentator during the campaign without personally intervene. The platform's role is fundamental in generating linking SC as it unifies different "horizontal" networks of the proponents and of investors in a "vertically" network guided by the campaign's structure. A horizontal network is composed of ties (bonding and bridging) between subject of the same/different group, while vertical network connects individuals in different social strata in a hierarchy where power, social status and wealth are accessed by different groups (Healy and Cote, 2001).

The number of comments about the agri-food project creates the project's own internal SC composed of linking ties between different parties (entrepreneurs and investors) vertically connected by the platform space. Thus, we hypothesize:

H4. Higher project SC is positively associated with the number of backers in the agri-food campaign, when compared with other project categories.

3. Data and research design
The analysis is based on a proprietary database that collects publicly available information on 5,290 reward-based campaigns launched on the "Produzionidalbasso.com" platform from 2014 to 2020 (https://www.produzionidalbasso.com). The decision to address "Produzionidalbasso.com" as the primary source of data resulted from the fact that this platform, established in Milan in 2005, was the first crowdfunding platform in Italy and one of the first in Europe. The platform's mission is to provide services for the creation of new economic communities for initiatives with a positive impact in the social, cultural and environmental fields. It operates as a generalist crowdfunding platform under both the reward and the donation models. Since 2005, the "Produzionidalbasso" platform has given room to the financing of thousands of projects. All these projects together raised a total amount of 13,988,150 euros from 283,117 backers. Generally, CFD platforms operate under four different technics (take-it all; simple donation; recurring donation and all or nothing). The data about campaigns launched on "Produzionidalbasso" between 2014 and 2020 come from take-it-all campaigns, in which the fundraiser collects all contributions coming from the crowd regardless of the eventual previously set target.

The data collected included: the total amount raised, the information about the number of backers, number of Facebook friends at the time of the campaign, number of comments, the presence of a business partner, type of business partner, number of rewards and the presence of a video. This data was freely accessible on the online website of the CFD platform. However, the scale of the information did not allow a manual collection of the records. For this reason, we developed a web-crawling algorithm designed to collect the target data automatically. Web crawling algorithms (WCA) are Internet bots that systematically browse the Internet for the purpose of web indexing and are usually enacted by research engines as they share the same logic (Broder *et al.*, 2000). In the specific case of this study, we developed WCA that recursively visited URLs and, by identifying hyperlinks in the pages, copied and saved the required information as it moved forward. After launching this software, the database was created into a comprehensive excel file in which all dimensions (columns) were associated with each campaign (rows). This final sample comprises 5,454 observations about as many different crowdfunding campaigns on the platform.

4. Variables description and model specification
This section describes the variables under investigation, which are based on the existing literature on crowdfunding and SC, and are adapted to the current study.

4.1 Definition of variables

4.1.1 Dependent variable. Our dependent variable is the logarithm of the total number of backers financing the campaign (Backers), in line with other studies on the topic (Hörisch, 2018; Mollick, 2014; Vismara, 2019). Backers' involvement represents the new connections generated from the CFD campaign and, adopting the SC perspective, the development of bridging ties into bonding ties (Adler and Kwon, 2002; Putnam, 2007). We estimate the number of Backers to represent a bonding form of SC as they, by financially sustain the campaign, show solidarity and reciprocity that can ensure the survival of the project and the achievement of shared goals. In our agri-food sample, the maximum number of backers was 555 and, on average, 25.78 backers invested in each campaign.

Furthermore, we also test our model with the effects on another dependent variable: the amount raised. This second dependent variable was represented by two alternative monetary campaign outputs: the logarithm of the amount raised in the campaign (labeled as "Log_earnings") and the amount invested by each backer (the logarithm of the total amount raised divided by the number of backers in the campaign). The second alternative identifies the intensity of the link. This second dependent variable serves to check for the robustness of our model.

4.1.2 Independent variables. Three variables capture SC dimensions. The extent of the proponent's online SC is measured considering the number of Facebook friends (labeled as FB_friends) (see Colombo *et al.*, 2015). The proponent's number of Facebook friends was collected at the beginning of the campaign. This methodological choice allowed to capture the pure proponent's online SC. Other approaches, such as managing the number of Facebook friends during or after the campaign, could not discriminate the actual proponent's SC due to the natural effect on the number of friends of the campaign itself (Colombo *et al.*, 2015; Mollick, 2014). Furthermore, this choice, besides presenting methodological advantages, ensures uniqueness to the study. We consider Facebook since it is one of the most influential social networks, able to replace the traditional personal Word of Mouth (WoM) (Wallace *et al.*, 2017) and where relationships have the same form as real friendships (Ellison *et al.*, 2007; Hughes *et al.*, 2012). Facebook friends are direct connections with the entrepreneurs such as friends, relatives or other people interested in entrepreneur's activity that voluntary create a connection with him/her. They are considered bonding ties for the closeness relationship between people of similar background and interconnected. The number of Facebook friends might represent the potential community interested in the campaign and in being involved in a project, with a direct effect on campaign performance, providing competencies and skills to the business as external innovation actors (Fietkiewicz *et al.*, 2018; Mollick, 2014). On average, projects in the sample have 5,670 friends on Facebook. Note that a project concerning the protection of animals reports the maximum number of friends (808,637).

The company's SC is proxied by the dummy variable partners involved in the project (labeled as Partner). The presence of partnership with other companies also constitutes a signal of the quality of the project (Ahlers *et al.*, 2015; Mollick, 2014). Company's partners are bridging ties that allow entrepreneur to "get ahead" by providing access to resources not otherwise available, in this sense business partners are bridging ties because they "bridge" between two different organizations. This variable assumes value one when a partnership with other companies is communicated present, and 0 otherwise. In total, 63 (18.86%) campaigns associate a partner with their projects and 271 declare not to be associated with any partners. Therefore, in order to better qualify the type of partner involved in the campaign, we adopt the variable "Partner_bank" that assumes value one when the partner that supports the campaign is a bank and 0 otherwise. In our sample, 30 campaigns (9% of the total) have a bank as a partner.

Finally, the project's SC is captured by the number of comments that potential contributors posted on the campaign page (Madrazo-Lemarroy *et al.*, 2019). Comments

represents linking relationships between entrepreneurs and potential investors, thus relationships among people at different levels of societal power hierarchy. Linking relationships also involve reciprocity (Schneider, 2006). For example, backers expect the effective realization of the project or quality services subsequently their grants. On average, the campaigns in our sample received 6.8 comments, with a maximum of 104.

4.1.3 Control variables. Previous studies reveal that the use of videos in the project and the number of rewards are associated with campaign success (Mollick, 2014). The variable "Video" is a dummy variable which equals one when the project presents a video to introduce the campaign and 0 otherwise. In our sample, 121 (36.2%) projects proposed a video. The variable "Rewards" is the number of rewards associated with different levels of pledges. Table 1 reports the description of the variables under investigation and some descriptive statistics are given in Table 2.

The distribution of projects in each sector is graphically presented in Figure 1: 310 (6.1%) are agri-food projects, 3,353 (61.5%) are cultural projects, 351 (6.4%) are technological projects and 1,416 (26%) relates to the community.

First, we explore the possibility that agri-food campaigns might present different characteristics compared with projects in other sectors. This refers to exploring the statement in the H1 hypothesis. Based on the homogeneity test of variance (Levene's test), we reject the null hypothesis of the same variance patterns across the groups (Levene statistic = 3.238, p-value = 0.021). Thus, given the very different sample sizes (see Figure 1) and the unequal group variances, we run Anova tests and select as post-hoc tests the Hochberg's GT2 and the Games-Howell. The Anova test rejects the null hypothesis of equality of means (F-statistic = 17.61, p-value = 0.000). In addition, the Welch robust test of equality of means, which is more appropriate in this situation, brings the same conclusion (Welch-statistic = 17.25, p-value = 0.000). In turn, we use the post-hoc tests to identify which groups are different. Both Hochberg's GT2 and the Games-Howell identify three homogenous subsets which are significantly different for an alpha level equal to 0.05. The first well-separated set is formed by technological projects only (326 projects), the second is composed of agri-food projects only (310 projects) and the third merges community and culture projects (for a total of 4,654 projects).

4.2 Model specification

To make conclusions regarding the impact of proponent's (H2), company's (H3) and project's SC (H4) on the number of backers involved in the campaign, we estimate different linear regression models in the framework of the OLS estimation method. The considered general linear model follows the specification:

	Variable	Definition
Dependent variable	Backers	The logarithm of the number of backers at the end of the campaign
SC dimensions		
Proponent's SC	FB_friends	Number of proponent's Facebook friends
Venture's SC	Partner	Dummy equal to 1 if the campaign has an associated partner, 0 otherwise
	Partner_bank	Dummy equal to 1 if the partner is a bank, 0 otherwise
Project's SC	Comments	Number of comments published on the campaign section
Control variables	Video	Dummy equal to 1 if the campaign presents a video, 0 otherwise
	Rewards	Number of rewards offered in the campaign

Table 1.
List and descriptions of variables used in the study

$$Y_i = \beta_1(FB\_friends) + \beta_2(Partner)_i + \beta_3(Comments)_i + \beta_4(Video) + \beta_5(Rewards) + \varepsilon_i. \tag{1}$$

where Y_i is the logarithm of the number of backers involved in each campaign i and ε_i is a random normal error. The baseline model is the specification of Equation (1) including "FB_friends" as the number of proponent's friends on Facebook, "Partner" which is a dummy variable with values equal to 1 if the project is supported by a partner and 0 otherwise, and "Comments" is the number of comments posted in the campaign's page. This baseline model is then integrated, including additional controls for the presence of videos and rewards. Finally, to test the effect of a partner being a bank, we further specify the model, including the dummy variable "Partner_bank", which equals 1 if the project's partner is a bank and 0 otherwise.

5. Empirical results
Table 3 reports the estimated output of the linear regressions: Models 1, 4 and 7 are the baseline specification, Models 2,5 and 8 include control variables, and in Models 3, 6 and 9, we specify the partner being a bank. Standardized estimates and p-values of the t-test for significance (in parentheses) are given in Table 3. All models have been checked for multicollinearity issues and normality of the residuals. Note that we report standardized estimates in order to compare the relative importance of the three dimensions of SC.

Models 2, 5 and 8 show a significant link between the proponent's SC and the number of backers involved but its sign changes among project categories. Indeed, only for agri-food projects, the variable assumes a positive sign, thus an increasing number of FB friends,

	Number of observations	Mean	Standard deviation	Minimum	Maximum
Backers	310	25.78	49.952	0	555
FB_ friends	310	5653.38	47,312	0	808,636
Partner (d)	310	0.19	0.392	–	–
Partner_bank (d)	310	0.09	0.286	–	–
Comments	310	6.87	13.12	0	104
Video (d)	310	0.36	0.481	–	–
Rewards	310	4.20	4.179	0	44

Table 2.
Descriptive statistics for agri-food projects. Here, (d) identifies binary variables
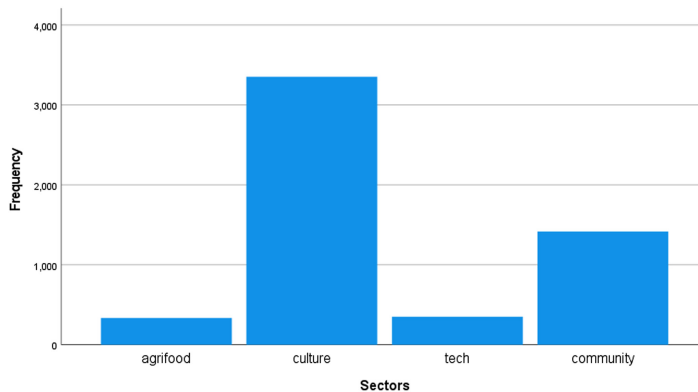

Figure 1.
Distribution of the projects in each sector

	Tech Model 1	Tech Model 2	Tech Model 3	Agri-food Model 4	Agri-food Model 5	Agri-food Model 6	Cultural Model 7	Cultural Model 8	Cultural Model 9
FB_friends	−0.066 (0.151)	−0.153** (0.017)	−0.077* (0.107)	0.116*** (0.005)	0.119*** (0.004)	0.144*** (0.001)	−0.030** (0.020)	−0.044*** (0.001)	−0.019 (0.138)
Partner	0.233*** (0.000)	0.211*** (0.000)	–	0.258*** (0.000)	0.251*** (0.000)	–	0.161*** (0.000)	0.151*** (0.000)	–
Comments	0.620*** (0.000)	0.635*** (0.000)	0.638*** (0.000)	0.576*** (0.000)	0.553*** (0.000)	0.591*** (0.000)	0.491*** (0.000)	0.474*** (0.000)	0.494*** (0.000)
Video	–	0.046 (0.456)	–	–	0.085** (0.045)	–	–	0.079*** (0.000)	–
Rewards	–	0.081 (0.267)	–	–	0.084** (0.043)	–	–	0.026 (0.125)	–
Partner_bank	–	–	0.097** (0.027)	–	–	0.120*** (0.007)	–	–	0.085*** (0.000)
Adjusted R^2	0.428	0.432	0.383	0.475	0.488	0.424	0.273	0.281	0.254
N	326	326	326	310	310	310	4,654	4,654	4,654

Note(s): The dependent variable is the log of number of backers. P-values are in parentheses, with "***", "**", and "*" representing the 1%, 5% and 10% level of statistical significance. The variance inflation factors (VIFs) associated with each model specification all fall well below the acceptable threshold of 10, indicating multicollinearity is not a concern. Particularly, for all models VIF is always around 1 which guarantees well-specified models. The check for normality of the standardized regression residuals is satisfied for all models, using tests for normality and q-q plots

Table 3.
The effect of SC
dimensions on backers'
participation

bonding SC increases the number of backers involved by 12% while, for technological and cultural projects, the number of FB friends has a negative effect on the number of backers involved in the campaign. This result confirms our hypothesis H2, highlighting that the effect of a proponent's SC changes in a project's sector, especially among agri-food projects, positively benefits from this online SC resource compared with technological and cultural projects.

As regards hypothesis H3, the presence of a company's partner is significant and positive in all project categories. Looking at the economic effect, the presence of a partner in an agri-food project increases the number of backers by 25% (Model 5), by 21% for a tech company (Model 2) and by 15% for cultural projects (Model 8). The presence of a bank as a partner assumes the same sign and effect in all project categories, with a higher benefit for agri-food and tech projects than for cultural projects. This result confirms our H3, showing higher benefits for agri-food entrepreneurs compared to other sectors, deriving from the exploitation of a company's SC and bridging SC.

The effect of comments posted (hypothesis H4), that is, the effect of the project's linking SC dimension developed during the campaign, follows previous results evidencing a positive and significant effect, especially for tech (63% – Model 2), agri-food (55% – Model 5) and cultural (47% – Model 8) projects.

Regarding control variables, the presence of a video and the number of rewards in agri-food projects increases the number of backers by 8%. In cultural projects, videos also significantly affect backers' decisions, while no significant impact emerges in tech campaigns.

Agri-food projects are those for whom the majority of SC dimensions and tools available in a CFD campaign have significant and positive effects on the number of backers involved, with a higher economic effect than for tech and cultural projects.

5.1 Robustness check

To verify the robustness of our results, we conduct the analysis considering two alternative monetary campaign outputs: the logarithm of the amount raised in the campaign (labeled as Log_earnings); and the amount invested by each backer, identified as the intensity of the link (the logarithm of the total amount raised divided by the number of backers in the campaign). Results are reported in Table 4.

	Log_earnings Model 10	Log_earnings Model 11	Log_intensity of the link Model 12	Log_intensity of the link Model 13
FB_friends	0.017 (0.154)	0.013 (0.289)	0.007 (0.624)	0.002 (0.874)
Partner	0.220*** (0.000)	0.207*** (0.000)	0.191*** (0.000)	0.177*** (0.000)
Comments	0.409*** (0.000)	0.386*** (0.000)	0.096*** (0.000)	0.073*** (0.000)
Sector_agrifood	−0.021* (0.089)	−0.100*** (0.000)	0.023* (0.092)	−0.056*** (0.001)
Sector_tech	−0.060*** (0.000)	−0.059*** (0.000)	0.014 (0.312)	0.015 (0.249)
Video	–	0.113*** (0.000)	–	0.120*** (0.000)
Rewards	–	0.055*** (0.000)	–	0.049*** (0.005)
Adjusted R^2	0.236	0.251	0.049	0.065
N	5,454	5,454	5,454	5,454

Table 4.
The effect of social capital dimensions on the amount raised

Note(s): The dependent variables are reported in the first line. P-values are in parentheses with "***", "**" and "*" representing the 1%, 5% and 10% level of statistical significance. The variance inflation factors (VIFs) associated with each model specification all fall well below the acceptable threshold of 10, indicating multicollinearity is not a concern. Particularly, for all models VIF is always around 1 which guarantees well-specified models. The check for normality of the standardized regression residuals is satisfied for all models, using tests for normality and q-q plots

First, considering the campaign sector, agri-food projects collect a lower amount (10% – Model 11) and have a lower link intensity (5% – Model 13) compared with cultural projects. As evidenced by Cox and Nguyen (2018), creative projects dominate reward-based crowdfunding in terms of the funded amount. This means that even if agri-food entrepreneurs reach the funding necessary to develop their projects through CFD, the relevant resource that they can collect from the crowd is a new bonding SC composed of ties that have endorsed the campaign. This is confirmed by the fact that, for the other project categories, the number of backers is lower compared with agri-food projects and, for this reason, the average amount invested by each backer is high.

In Models 10–13, the company's (Partner) and project's (Comments) SC have a positive and significant effect on both the amount raised and intensity of the link. At the same time, the entrepreneur's SC (FB_friends) does not affect both the economic outputs investigated. Comparing these results with the previous elaborations, only the agri-food entrepreneur's SC was significant and positive for the number of backers involved (Models 4–6). This means that this level of SC composed of Facebook friends is a strategic resource for attracting and activating new ties that support the campaign, even if with a lower amount when compared with the other categories.

6. Discussion
The agri-food sector is crucial for humanity (Spiertz, 2009). It represents an asset for the development of both entrepreneurship and stakeholder relationships within local and regional contexts. This research aimed to study how different SC dimensions (linking, bonding and bridging) influence the generation of new ties in agri-food CFD campaigns, comparing them with cultural and technological projects.

Our results show that SC dimensions assume different configurations on the basis of project categories and generate different effects in CFD campaigns. More specifically, as shown in Figure 2, linking SC that develops during the campaign, through the use of comments, strongly influences the number of backers involved in all sectors, while other SC dimensions that are available before the campaign – and mostly composed of bridging ties (a company's partner) and bonding ties (a proponent's Facebook friends) – have a relevant and positive effect, especially for agri-food entrepreneurs.

Our results make several contributions to the literature. First, although previous studies highlight a positive relationship between an entrepreneur's online SC and campaign outcomes (e.g. Mollick, 2014; Vismara, 2016), our findings reveal that the effect of an
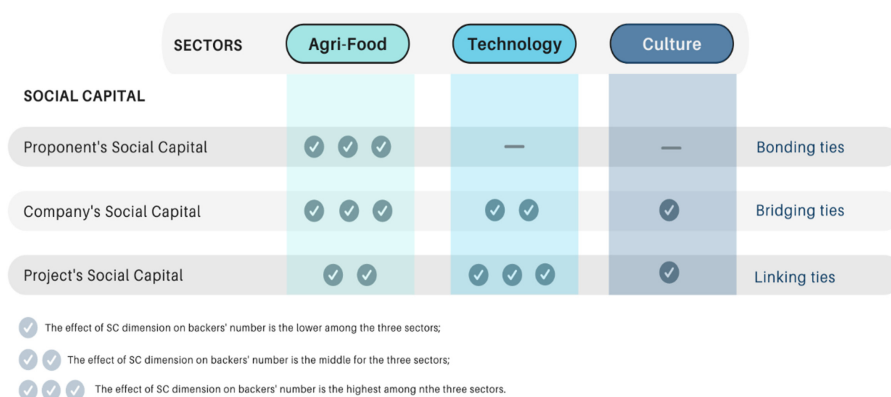

Figure 2.
The SC influences on
the number of backers
in CFD campaigns

entrepreneur's online SC on a campaign's backers is related to the project sector. Agri-food entrepreneurs have a positive and higher benefit than technological and cultural projects that do not configure the same patterns of SC dimensions. This result improves understanding of the role of SC within the CFD context (Cai *et al.*, 2021) and the role of SC for agri-food business financing. Regarding the latter point, agri-food businesses present specific characteristics that can benefit them in a CFD campaign. Considering the literature that explores the adoption of innovation among farmers and how different types of SC matter (Hunecke *et al.*, 2017; Van Rijn *et al.*, 2012), we show that agri-food entrepreneurs effectively mobilize all online SC dimensions. This creates the conditions to develop new bonding ties that financially support the project. The effective activation of linking and bridging SC, and more closed networks based on bonding SC with online family and friends, can allow the development of a multi-stakeholder base. This may encourage the farmer in exploring ideas and mobilizing other public and private resources to support the development of innovative practices in their business (Chowdhury and Hambly Odame, 2013). Moreover, this result confirms that for agri-food business the use of social media provides entrepreneurial opportunities to gather co-operation and influence in what is currently a disjointed and unconnected industry (Morris and James, 2017).

Second, previous studies robustly show the positive role of SC on funding activities in CFD campaigns (e.g. Butticè *et al.*, 2019; Lagazio and Querci, 2018; Polzin *et al.*, 2018). This supports the notion that online SC, generated within and outside the platform, is positively associated with most indicators of crowdfunding performance. Our results integrate this previous literature by highlighting that SC dimensions can affect diverse sectors differently and that this eclectic configuration can differentiate the SC effect on CFD projects within different sectors. This result confirms that in the study of CFD, funding determinants present different dynamics and, thus, it is not possible to generalize results to a heterogeneous population of projects (Giudici *et al.*, 2018).

Furthermore, addressing the literature employing a multidimensional perspective of SC (Cai *et al.*, 2021; Troise *et al.*, 2020), we consider a new emerging SC dimension – linking SC – expressed in the number of a campaign's comments. Linking SC is not fully developed yet in conceptualization and measurement, especially in the online context. Thus, our work considers a campaign's comments as a new conceptualization of linking SC that allows vertical connections between actors. This new perspective overcomes previous studies that mainly consider SC as a single dimension for a single subject.

Finally, our results further explain the relationship between the intangible, and globalized, nature of online SC and the local development of agriculture businesses suggesting some practical implications.

The transition to more efficient and sustainable agriculture and food systems requires multi-stakeholder mechanisms able to mobilize capacities, information, technologies and access to financial and production resources (FAO, 2018). As SC represents a critical asset to support effective farming entrepreneurship and decision making (Cofré-Bravo *et al.*, 2019; Hunecke *et al.*, 2017; Mathijs, 2003), especially in Italy where sustainable local development is crucial (Persia *et al.*, 2020), this paper advocates that new technologies, such as CFD, can help agri-food entrepreneurs to bridge their financing gap, and to support the creation and the maintenance of SC (Cillo *et al.*, 2019). In doing so, the paper contributes to the existing vibrant studies on the role of local entrepreneurship development (Theodorakopoulo *et al.*, 2014) within an increasingly globalized world (Tang *et al.*, 2020) by, in fact, supporting the idea that modern technologies such as CFD can, unrepentantly, serve regional development. Indeed, our results show that the CFD technology can bridge investors with local farm entrepreneurs that necessarily remain rooted in the spatial dimension of the region in which they are located (Meccheri and Pelloni, 2006). Access to new online funding and crowdsourcing means such as CFD can foster small business strategic growth by combining local networks with new,

online, potential networks. The interaction of the different networks can enlarge small businesses' relations and increase their opportunities and resources to access new markets and customers. Furthermore, our new configuration of SC might positively affect the sustainable development of the agri-food sector that is crucially important in all modern economies, especially in Italy (Fait *et al.*, 2019; Troise *et al.*, 2021).

In particular, Italy is the is the most important European agricultural country for added value (European Commission, 2021), however the structure of this economic sector in Italy does not reflect its scale. The traditional regional and local structure of the Italian agri-food sector (ISTAT, 2017) underlines the importance to investigate SC in this country. Indeed, SC has been studied as of great importance in regional contexts such as the ones in which Italian farmers operate (de Kroma, 2017; Giovannetti *et al.*, 2021). The peculiarity of Italy in this sense is of extraordinary relevance for understanding the impacts of SC in agri-food businesses establishment and financing. Furthermore, studies on the role of Italian farmers' SC have been providing evidence in several perspectives. Ruiu *et al.* (2017), for example, underline the ability of Italian farmers' SC to increase resilient governance to adapt to contextual changes without compromising the stability of the system. Our paper contributes to Italian farmers' SC by extending the existing literature (Troise *et al.*, 2020) with new insights on how Italian farmers could take advantage of SC in order to finance their new ventures. Italian farmers might draw inspiration from the comparison of SC dimensions' effects on crowdfunding success compared to other sectors.

There are several limitations in the study that have to be mentioned. First, the study focuses on a single platform in a single country. Even if CFD in Italy has already been investigated in several previous studies (Piva and Rossi-Lamastra, 2018; Troise *et al.*, 2020, 2021), future work may enlarge the database to include other platforms and other countries. The specific choice to investigate one single country, although motivated by interesting peculiarities of the agri-food sector in Italy, evidences only part of the CFD's potential in agri-food projects, as the challenges in this sector are increasingly global, rather than regional (FAO, 2018). Secondly, in this study, we measure an entrepreneur's SC by focusing on a single social network and we did not take into account the level of interactions within that network. Future research should deepen the analysis of an entrepreneur's SC, combining both qualitative and quantitative methodology to qualify the type of ties that constitute online SC, and to explore how the management of specific online ties may increase the participation in the CFD campaign. From an empirical perspective, it would also be interesting to extend the analysis to consider how online SC can be maintained over time within companies and what its effect on the company's future performance might be. Online SC can dissolve very quickly and, for this reason, the achievement of long-term effects needs active management of online ties in order to turn bridging into bonding capital.

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