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Does the digitalization of entrepreneurial finance democratize entrepreneurship?

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Highlights

- reward-based crowdfunding platforms contribute to the democratization of entrepreneurship
- crowdfunding as a technologically-enabled form of entrepreneurial finance expands entrepreneurship to a more diverse pool of entrepreneurs
- crowdfunding as a technologically-enabled form of entrepreneurial finance expands entrepreneurship to a wider variety of projects –from mainstream to novel
- online crowdfunding contributes to the democratization of entrepreneurship by enabling the transition from informal to formal entrepreneurship

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Abstract

This study investigates the role of reward-based crowdfunding platforms in order to gain insight into the democratization of entrepreneurship through digitalization. We argue that this technologically-enabled form of entrepreneurial finance not only expands entrepreneurship to a more diverse pool of entrepreneurs, but that it also finances mainstream as well as more alternative and novel projects. In this study, we propose that the medium to long-term sustainability of crowdfunded projects is a third dimension of the democratization of entrepreneurship. Our empirical work is based on a dataset of 499 publishing projects launched between 2011 and 2016 on the Ulule platform, the leading French reward-based crowdfunding website. Our findings highlight three main conclusions: the ethnicity, gender, geography and age of the entrepreneurs do not influence the online backers' funding decisions; non-mainstream projects are equally likely to receive crowdfunding; and the funding success of a campaign strongly stimulates the economic sustainability and access to a formal form of entrepreneurship. In light of these findings, we conclude that the digitalization of entrepreneurial finance democratizes entrepreneurship.

Key words: digitalization; entrepreneurship; democratization; entrepreneurial finance; crowdfunding; cultural and creative industries

1. INTRODUCTION

Rapid technological advances in the digital area over the past decades have made it easier for a more diverse group of budding entrepreneurs to prototype and build faster (Aldrich, 2014), lower the hurdles to creating businesses (Briel, Davidsson and Recker, 2018) and bypass experts and traditional intermediaries to access a new pool of resources (Mollick and Nanda, 2016).

In particular, digital crowdfunding platforms offer access to larger communities and have emerged as new key players, especially in entrepreneurial finance (Block et al., 2018). With the emergence of the first digital crowdfunding (CF) lending platform Kiva in 2005, which was rapidly followed by Indiegogo in 2007, Kickstarter in 2009, Ulule in 2010 and Seedrs in 2012, it has never been easier for non-financial specialists to support new projects and emerging firms. This can be seen as one of the most obvious signs of the democratizing of entrepreneurial finance because *'the choice of which innovations become commercialized has historically been profoundly undemocratic. Small groups of experts, whether Fellows of the Royal Society or modern venture capitalists, have been responsible for deciding which innovations gain institutional support'* (Mollick and Robb, 2016: 72).

CF platforms, also referred to as 'cybermediaries' (Chandna and Salimath, 2020), have the openly stated ambition to use digital tools to democratize access to funds, and consequently, extend entrepreneurship to entrepreneurs and projects that, until recently, did not have the capacity to get funded. In that respect, CF is not only a financial opportunity for entrepreneurs, but also a way to promote goods that have not been vetted by the traditional intermediaries and experts who have their own selection criteria and biases. Consequently, the question of online CF as a viable alternative to traditional funding emerged early in the academic study of CF (Belleflamme et al, 2014; Harrison, 2013). By promising access to funds that might otherwise have been refused by traditional funders, CF potentially attracts a much wider range of alternative projects than other financing tools (Aldrich, 2014; Mollick, 2014).

The potential to democratize entrepreneurial finance and entrepreneurship through digitalization is key when it comes to addressing the traditional funders of new ventures

documented biases against gender and ethnic minority entrepreneurs and novel projects. Indeed, business angels, venture capitalists, bankers and public funders do not treat all entrepreneurs equally (Blanchflower et al., 2003; Hegde and Tumlinson, 2014). This limited access to vital financial resources for different categories of budding entrepreneurs and projects impacts both social justice and economic performance. Whereas this issue has received increasing amounts of attention from the media and from policy-makers, it has remained largely ignored academically.

This article sees democratization from three distinct and complementary angles. First, we estimate the potential of CF platforms to democratize entrepreneurship by financing entrepreneurs who belong to segments of the population who are under-represented due to their location, age, gender or ethnicity (Cumming et al., 2019, among others). It is democratization thanks to the sociological diversity of entrepreneurs. Then, we analyze the extent to which CF allows the initiation and development of novel projects, not just those that are preferred by experts, as suggested by Mollick and Nanda (2016). It is democratization through diversity of projects' nature. Lastly, our study examines the legacy of projects several years after their CF campaigns (democratization through economic sustainability) as we believe that understanding the impact of CF on the democratization of entrepreneurship requires looking beyond the short-term birth of the project and checking whether it contributed to subsequent entrepreneurial initiatives and activities in the same industry (Galuszka and Brzozowska, 2017).

By allowing the crowd to support and fund projects without the filter of traditional intermediaries, we hypothesize that more niche and diverse projects will emerge and be developed. Our study will complement the few existing studies of this issue that look at equity CF platforms (Cumming et al., 2019; Stevenson et al., 2019) or reward CF (Mollick, 2014). It is to be noted that the majority of them rely on US-based data (where ethnic and inter-community considerations are more documented), and concentrate on sociological factors such as the entrepreneurs' ethnicity, gender and age. Crucially, we identified extensive gaps in the

literature dealing with the links between the democratization of entrepreneurship and the diversity of funded projects. Similarly, the literature on the capacity of CF to help projects' long-term performance remains sparse (Vanacker et al., 2019).

Our research aims to address these gaps through the study of projects uploaded on the French reward CF platform Ulule between January 2011 and the end of August 2016. Our dataset comprises 499 CF campaigns led by 717 cultural entrepreneurs and funded by 33,624 individual financial backers. We selected reward CF in order to study the democratization effect of CF at the earliest stage of the entrepreneurial path i.e., at a time when project owners have either developed some economic and artistic activity without setting up a formal company or just after.

We specifically studied campaigns in the publishing sector that were led either by individuals that we consider informal cultural entrepreneurs, or companies that we consider formal cultural entrepreneurs. Historically, the Cultural and Creative Industries (CCI) have been at the forefront of the online crowdfunding movement and have relied heavily on reward-based models (Rykkja et al., 2020)[1]. CCI are also increasingly regarded as a source of benefits for innovation and entrepreneurship (Petruzelli and Lerro, 2020). According to a GFK report, publishing was the biggest market for physical cultural goods in France in 2016 (Rouault, 2017) and had not yet been as disrupted as the music or film industry during our sample period.

Our study makes several contributions to the study of the impact of technology on entrepreneurship through the lens of CF platforms. First, by using a European data set, we offer an alternative to the overwhelmingly US-based CF literature. Our results show that reward CF equally finances diverse entrepreneurs in terms of ethnicity, gender, age and geography. Extending the concept of democratization of entrepreneurship beyond the project owners to consider the nature of the projects funded, our findings also demonstrate that the online crowd is willing to finance mainstream and non-mainstream projects equally with no discrimination in

[1] A study of European Cultural Crowdfunding (De Voldere and Zeqo, 2017) revealed that between 2013 and 2016 there were 75,000 cultural crowdfunding campaigns that raised a total of 247M€.

terms of the projects' nature. Finally, our study provides fresh insights into the economic sustainability of crowdfunded projects by considering the CF campaigns' achievements, future outputs and economic situation several years after the campaigns. We demonstrate how much the success of a CF campaign stimulates the entrepreneurship journey from informal to formal entrepreneurship (for individual project owners), the economic sustainability (for corporate project owners) and the production of subsequent cultural goods i.e., books (for both). We also show that the quantity of funds gathered does not matter as much as the campaign's success. In CF, the crowd's role appears to be more important than the funding.

The paper is organized as follows. Section 2 reviews previous studies and presents our hypotheses. Section 3 illustrates the research design and our empirical setting. Econometric results are reported in Section 4 and concluding remarks are provided in Section 5.

2. LITERATURE REVIEW AND HYPOTHESES

As demonstrated by Block et al. (2018), the digitalization of entrepreneurial finance and the birth of CF platforms have led to a partial disintermediation between funders and project owners, easing the 'demand meets supply' for funds. In addition to a set of "*homogenous experts*" (Cumming et al., 2019) i.e., experts and intermediates with money to invest (venture capitalists and business angels), borrow (bankers) or grant (public institutions and NGOs), the entrepreneurial finance ecosystem has welcomed a larger and more heterogeneous pool of funders made of private individuals who are traditionally not involved in investments and project funding (Rossi et al., 2019). This new sociology and diversity of funders opens the question of the power of the crowd in potentially democratizing entrepreneurship.

The stance we take in this paper is that the democratization of entrepreneurship through digital CF can be studied from three perspectives. The first one looks at the funding of under-represented categories of entrepreneurs, such as female and non-white entrepreneurs (Bates and Bradford, 2008; Brush et al., 2020). The second perspective considers how the diversity

of projects is stimulated by the financing of novel firms, goods and projects in general. Lastly, democratization also means going beyond the potential campaign's success, and analyzing the impact of the CF on the mid and long-term delivery of the promised rewards and products, creation of new goods and creation of a formal economic activity (Signori and Vismara, 2018; Vanacker et al., 2019).

The willingness of the digital CF platforms to democratize access to funds, and consequently to extend entrepreneurship to entrepreneurs and projects that previously lacked the capacity to be funded is one of the first and main questions in the field. Richard Harrison (2013) in his editorial paper and Belleflamme et al. (2014) in their seminal paper on CF opened the debate. Our research is not the first to examine democratization of entrepreneurship thanks to the digitalization of entrepreneurial finance (Cummings et al, 2019). The literature partially fills the gap on the willingness for CF to fund discriminated populations in terms of gender, race, geography and age in an American context (Catalini et al. 2016; Cumming et al., 2019; Greenberg and Mollick 2017; Gafni et al. 2020; Younkin and Kuppuswamy 2018). However, the question of the true variety of funded projects remains unanswered. Similarly, to the best of our knowledge, middle and long-term sustainability of the reward-based CF projects remains largely unexplored. In this section, we review the literature related to reward-based CF and those three different democratization perspectives.

2.1. Democratization of entrepreneurship in crowdfunding through the diversity of entrepreneurs

A set of publications investigates the democratization of entrepreneurship in CF through sociological diversification. It analyzes the impact of CF in financing certain populations of entrepreneurs, especially considering geography (Gallemore et al., 2019; Sorenson et al. 2016; Kim and Hann, 2019), geography and gender (Mollick and Robb, 2016), and dimensions related to age and ethnicity (Cumming et al., 2019). Those studies concern both reward-based

CF or equity CF settings, even if the backers' motivations differ between CF types (Cholakova and Clarysse, 2015; Cumming et al., 2019).

The main findings highlight that reward CF extends entrepreneurship to female project owners by giving them comparatively more access to funds than when seeking more traditional sources of funds (Greenberg and Mollick, 2017; Marom et al., 2016). However, this is not verified in equity CF (Cumming et al., 2019; Andrieu et al., 2021).

Studies investigating the democratization of the entrepreneurs by enlarging the scope of founders' age are scant and use only equity CF data. They highlight that senior entrepreneurs are more funded by online investors (Piva and Rossi-Lamastra, 2017, Hornuf et al., 2018). It should be noted that Cumming et al. (2019) find opposite results. To the best of our knowledge, no such studies have been led on reward-based CF.

In terms of entrepreneurs' ethnicity, it could be expected that a more ethnically diverse crowd (in contrast with the traditional ethnically homogeneous resource providers in entrepreneurial finance) would make it less likely that minorities would be denied funding. Recent studies do not converge. Whereas Herzenstein et al. (2008) explain that the crowd is less influenced by races than banks, other authors find a racial bias in CF (Pope and Sydnor, 2011; Younkin and Kuppuswamy, 2018; 2019). The convergence point is that even if the crowd is influenced by racial stereotypes, this new category of funders seems to be *less biased* than traditional backers, and consequently democratizes access to capital to a wider diversity of entrepreneurs. Nonetheless, the crowd in these studies seems to not equally fund ethnically-diversified entrepreneurs.

Democratizing entrepreneurship in terms of geography is an important social issue as it deals with the mitigation of the geographical overconcentration of early-stage funding and the local bias of traditional funders (Cumming and Dai, 2010; Florida and King, 2016). By offering easy access to both founders and funders through online platforms, CF might decrease the impact of networks that are paramount for start-up entrepreneurs in raising funds from venture

capitalists and for any other entrepreneur when approaching public funders and bankers. It would reduce distance-related economic impact for fund seekers and avoid the overconcentration of funded projects in a limited number of large urban areas. Nevertheless, empirical studies mainly find that backers in reward-based CF have a home-bias and prefer to fund geographically close projects (Agrawal et al., 2015; Gallemore et al., 2019), as in lending CF (Burtch et al., 2014). This might not democratize entrepreneurship because there is a greater chance that projects in urban and populated areas will be funded. Some works qualify those results in equity CF (Cumming et al., 2019) and reward-based CF (Mollick and Robb, 2016; Sorenson et al., 2016). Consequently, we hypothesize that reward-based CF does not democratize entrepreneurship in terms of geography.

The above arguments lead to hypotheses 1a to 1d.

H1: Crowdfunding mainly does not democratize entrepreneurship by funding different types of entrepreneurs unequally

H1a. Female project owners are equally as likely to complete a reward-based crowdfunding campaign as male project owners

H1b. Very young or very old project owners are less likely to complete a reward-based crowdfunding campaign than middle aged project-owners

H1c. Non-white project-owners are less likely to complete a reward-based crowdfunding campaign than white project-owners

H1d. Projects that are not located in an urban center are less likely to complete a reward-based crowdfunding campaign than projects located in urban centers

2.2. Democratization through diversity of projects' nature

Literature on this second dimension remains sparse. Only a few papers indirectly contribute to this question, which remains largely unexplored (Schwienbacher, 2019). Mollick and Nanda (2016) in their seminal work on theatre designed an experimental protocol that highlighted the crowd's willingness to finance a marginally broader range of projects, including more artistically daring projects, in comparison with the experts of the National Endowment for the Arts. The crowd seems less intimidated by novel and risky projects. A few studies investigate democratization on online CF platforms through the lens of innovativeness and creativity. Using data from the reward-based CF platform Kickstarter, Chan and Parhankangas (2017) explore the role of innovativeness in the campaign's success. They found that crowdfunders

on reward-based CF platforms are more likely to support incremental rather than radical innovations. In contrast, Davis et al. (2017) highlight that a product's degree of creativity strengthens entrepreneurs' ability to receive funding on Kickstarter. This resonates with the conclusions of Mahmood et al. (2019) and Le Pendeven and Schwienbacher (2021) who both demonstrate that perceived innovativeness and differentiation of the projects are positively associated with funding outcomes in equity CF.

Consequently, we formulate hypotheses 2a to 2c.

> H2: crowdfunding democratizes entrepreneurship by equally funding different types of projects in terms of novelty
>
> > H2a: projects that are considered more novel are equally likely to complete a reward-based crowdfunding campaign as mainstream ones
> > H2b: projects in sub-categories that are in general considered more mainstream or more niche are equally likely to complete a reward-based crowdfunding campaign
> > H2c: projects in sub-categories that are considered more novel are equally likely to complete a reward-based crowdfunding campaign as more mainstream ones in the same category

2.3. Democratization through economic sustainability

Funding is one of the crucial initial stages for developing an entrepreneurial project. Nevertheless, it is not enough to secure the mid and long-term development of nascent projects. By giving access to funders who are at the same time early-consumers (pre-sales) or fans (rewards), reward-based CF gives access to multiple online resources that matter for the long-term development of early entrepreneurs (Mollick and Robb, 2016). As formulated by Galuszka and Brzozowska (2017), democratization in the field of cultural entrepreneurship (music projects in their case) *'would be characterized by a greater number of artists that could earn a living from selling their records [...]'* (2017: 836). Kappel (2009) also commenting on the music industry, suggested that crowdfunding was more sustainable than other revenue streams for artists mainly thanks to the fans' engagement and investment in the success of their artists. This question of democratization by economic sustainability was not extensively investigated during the early days of CF research (Ahlstrom et al., 2018).

Reward-based CF is a way to finance a project with the promise to deliver new products or rewards. Mollick (2014) and Mollick and Kuppuswamy (2014) show that the vast majority of entrepreneurs raising funds on the platforms deliver the expected outcomes, even if some delays are identified. These studies also highlighted that more than 90% of the successfully funded projects and 60% of the unsuccessfully funded projects were still alive from 1 to 4 years after the campaign. In a conceptual paper, Paschen (2017) explains that thanks to an open environment of constant discussions with backers, entrepreneurs improve their products and stimulate the development of future products. We would add that the positive signal that a successful campaign sends the entrepreneurs goes beyond the amount of cash collected. Success might be a sign of the crowd's willingness to like the products.

However, the general topic of CF and subsequent growth has received limited attention (Eldridge et al., 2019). We are not aware of empirical studies that document the organization's performance months and years after a reward-based CF campaign. This is all the more true when considering the entrepreneur's ability to market subsequent products and services and make a decent living out of it. As successful CF campaigns help firms to build communities, learn about market specificities, and improve reputation (Paschen, 2017; Mollick and Robb, 2016), we can hypothesize that owners of funded projects will be able to access a kind of formal entrepreneurship and perform better after their campaign than their unsuccessful peers. We formulate hypotheses 3a to 3d.

H3: crowdfunding democratizes entrepreneurship by helping funded projects perform in the medium and long term

H3a: successfully funded CF projects are more likely to deliver promised products than unsuccessfully ones
H3b: successfully funded CF projects are more likely to deliver subsequent products after the initial promised outcomes than unsuccessful ones
H3c: successfully funded CF projects are more likely to be alive a few years after the campaign than unsuccessful ones
H3d: informal entrepreneurs successfully funded in CF are more likely to become professional than unsuccessful ones

3. RESEARCH DESIGN

3.1. Data collection and sample

In order to test our hypotheses, we use a sample of campaigns on the reward-based French CF platform Ulule[2]. We chose reward CF as an empirical setting in order to study the democratization effect of CF on the youngest projects possible. Entrepreneurial projects raising funds on reward CF platforms start the entrepreneurial path. Some informal entrepreneurs have not yet even created a formal company. The equity or lending based CF finance more mature, less diverse projects (mainly established SMEs on lending CF, mainly startups in equity CF, and just a few social or cultural entrepreneurship for both projects).

We selected 499 projects from January 2011 to August 2016[3] in the publishing category, irrespective of their success in getting funding. Because one of the main objectives of the paper is to investigate the increased diversity of entrepreneurs getting access to funds though CF, we focused our analysis on the publishing sector, which is notorious for its lack of opportunities for groups that face discrimination (Kean, 2015). The publishing industry provides several benefits for investigating our research question. First, publishing was the biggest market for physical cultural goods in our sample period and geography (Rouault, 2017). At that time, it was not as disrupted as the music or film industry, avoiding external economic or technological effects of the CF funding decisions. Second, it grants the opportunity to analyze the subsequent effects of online CF and the trajectories from informal-entrepreneurship to formal and established companies. Third, cultural entrepreneurship in general and publishing in particular is an attractive empirical setting that perfectly illustrates the scissor effect of a growing quantity of creative entrepreneurs and the shortage of traditional funders for risky and alternative projects (Lescure, 2013). Fourth, publishing projects are generally small in scope

[2] Ulule is the leading reward-based CF platform in France in terms of number of funded projects and cash attributed. The platform is generalist, with no sectoral specialization (https://fr.ulule.com/stats/). From its birth in 2010 to December 2020, the platform allowed 34,293 projects to receive 191,5M€ in funding, with an average success rate of 67%. The platform collected more than 3,700,000 unique contributions with an average contribution of 51€.

[3] The database was made available for research by Ulule. The platform was not able to share a dataset until 2020 due to the necessary time required to prepare and share the data and the lack of internal resources for compiling that data.

but offer a subjective artistic component where novelty plays a role like in any other area with an artistic dimension (Mollick and Nanda, 2016). This is necessary for analyzing this specific dimension, whereas some other sectors might be more difficult to be crowd-perceived (especially purely techno-business ones, for which the novelty dimension can naturally be confounded with innovation, which conceptually differs and does not affect the crowd in the same way (Chan and Parhankangas, 2017)). Fifth, publishing is also a sector with different and identifiable post-campaign outputs, especially in the commercial and entrepreneurial dimension. This allows us to track the future success with multiple criteria. The last reason for having selected publishing as an empirical setting was to avoid potential problems of gaps between the time of assessing the perceived novelty of the campaign (December 2020) and the time when the campaign was live (between 2011 and 2016). We felt that, due to the rapid innovation pace in technology, assessing techno-business projects today might have generated a bias in the novelty perception. In other words, a member of a crowd would have the same perception of a book published between 2011 and 2016 and a book published nowadays. In order to control this potential bias, we made a test detailed in Appendix A.

We chose the Ulule platform in order to test our democratization hypotheses in a non-US context, inter alia to compare and contrast with previous studies related to the funding of ethnic minority entrepreneurs in the USA (such as Mollick, 2014 and Mollick and Robb, 2016). With their long experience in pioneering and leading this type of CF in Europe, Ulule is an empirical setting that ensures that the dataset is comprised of a representative set of projects that are looking for funds in reward-based CF. The availability and richness of the data was a key element in our choice as we had access to all projects (successes and failures, in order to avoid selection bias), with all details of the individual backers' funding decisions.

To select the publishing projects on the platform, we applied a traditional human selection protocol to the platform's category "Publishing & Newspapers" ("*Edition & Journal*" in French). All 1,494 campaigns' French-language webpages were accessed and read by one of the authors in order to select the publishing-only projects (we deleted all projects for launching

newspapers, ‘calls for donations’ in order to help a library to survive, etc.). 499 campaigns were finally selected. Then, a team of three research assistants analyzed the campaigns’ web pages. We explained to each one of them the study constructs and our needs. The number of projects to analyze per research assistant differs from 120 to 263 depending on their availability at the time of the study. They coded the gender, perceived ethnicity and age of a maximum of four main online visible entrepreneurs. They also categorized the status of the project leader (Author for individuals, or Publisher for the publishing firms) to establish if a project owner is a formal or informal entrepreneur. It split the whole sample into one group of 322 projects (informal-entrepreneur-led projects) and another group of 177 projects (formal-entrepreneur-led projects). The research assistants compiled the post-campaign outcomes and the firms’ performance by using online search tools such as bibliographienationale.bnf.fr or www.edistat.com to check whether the book was published or not. In order to establish the post-CF survival of a company or the creation of a new company, research assistants could access sites such as www.afnil.org/search-editors, www.verif.com and www.societe.com. In case of doubt, the author who was the most knowledgeable in Cultural and Creative Industries checked and if necessary completed the post-campaign outcome research. In order to adjust intercoders’ code and avoid potential differences, a common list of 10 projects was filled by all the research assistants and two of the authors, and the few differences were analyzed, discussed and adjusted.

In order to estimate the subjective crowd’s perception of the projects’ novelty, we asked to the research assistants to assess projects using the Mollick and Nanda (2016) protocol in terms of criteria (details in section 3.2 and in Appendix B) and scale (a 1–5 point Likert scale, with 1 being “strongly disagree” and 5 being “strongly agree”). Because the perceived novelty of a cultural entrepreneurship project is subjective, and only a crowded perception of this dimension would tend to be close to the real crowd’s evaluation, we randomly submitted all projects to a second research assistant’s assessment. Moreover, we generated two more assessments per project by inviting 62 Master’s degree students in management to assess the projects (from

16 to 21 projects randomly assigned per student). We asked them not to access additional web information about the projects in order to limit as much as possible the *ex-post* campaigns assessment effects. Each project was further assessed by two people. In the end, every project was randomly evaluated by at least four different people (two research assistants and two students). We controlled their characteristics (age, gender, experience in leading a project on a CF platform, experience in financially supporting a CF campaign, nationality, and a self-assessment of their knowledge in the publishing area).

In order to control the potential bias of the assessors involved in our crowd's novelty protocol, we asked them and controlled *Previous CF Exp.* (dummy variable, 1 if the assessor has previously funded at least once in reward-based CF, 0 otherwise), their affinity with the Publishing industry (*Affinity Publishing*, self-assessment of their knowledge of the publishing industry on a Likert-scale from 1 to 5), their gender, age, and citizenship (all spoke French for assessing French language web pages, but 14% of the group is Belgian, Swiss, Moroccan, etc.).

Following Cohen's suggestions (1968), we used a squared weighting scheme appropriate for subjective scoring. The kappa statistic that measures the interrater agreement for our crowd members was 0.09. This means slight agreement between crowd members (Landis and Koch, 1977). This demonstrates that assessing publishing projects in terms of alternativity is by definition partially subjective. However, in this case we are reassured to see such a consistent signal to emerge from the crowd's evaluations. The Z-statistic was 6.22. It rejects the potential problem that the crowd members' scores were generated randomly. Also, we use a variety of methods for measuring an assessor's responses to proposed projects, and we find the decisions robust across these approaches.

3.2. Variables

<u>Dependent variables</u>

Our first objective is to research the impact of factors on the funding success. Following the literature in CF, we measure the success of online CF campaigns with *Number of Backers* (number on individual contributors), *Completion ratio* (*Funding Raised/Project Goal*), which allows us to consider finance projects that were over-financed or under-financed, *Success Dummy* (dummy variable, 0 if failure and 1 in case of success), and *Amount Raised* (measures the total amount collected by the project in euros).

The second objective is to evaluate the impact of the CF campaigns success on the mid and long term achievements of entrepreneurial outputs. For all projects, we used *Book Publication* (dummy variable, 1 if the book has been published since the end of the campaign, 0 otherwise) as the direct output of the CF campaign, and *Future Books Publication* if by December 2020 authors and publishers have brought additional books to the market in addition to the one presented during the CF campaign (dummy variable, 1 if at least one more book has been published besides the CF campaign, 0 otherwise).

We also create two specific success measures depending on the entrepreneurs' nature (private individuals as informal-entrepreneurs, and publishers as formal-entrepreneurs). For the category of informal-entrepreneurs, we used www.societe.com to check if they created a firm related to the publishing industry since the CF campaign. This *Creation Firm* variable highlights a formalization towards entrepreneurs for informal entrepreneurs (dummy variable, 1 if the informal entrepreneur created a firm since the CF campaign, 0 otherwise). For the category of formal-entrepreneurs (publishers), we take the measure of the longer-term post-campaign success by checking whether the companies are still operating or were acquired by M&A, or if they went into bankruptcy with the *Still Alive* variable (dummy variable 0 if bankruptcy and 1 if still alive or acquired by M&A). All these variables highlight the projects' performance, post CF campaigns. The privacy laws about personal revenues in France and the non-obligation to publish annual economic balance sheets make it impossible to add entrepreneurial revenue and sales variables.

Explanatory Variables

To estimate the democratization of entrepreneurship by sociological diversification (H1a to H1d), we use *Woman Leader* for gender diversity (dummy variable equals to one if the project leader is a woman, Cumming et al., 2019), *Woman Ratio in Team* when several project owners are presented on the CF campaign web page (discrete values of 0, 1/4, 2/4, 3/4 or 1 with a value equal to 0 if the whole team is purely composed of men and equal to 1 if it is entirely made up of women, Andrieu et al., 2021) and *At least one woman in Team* (dummy equal to 1 if there is at least 1 woman in the team and 0 otherwise). For coding the gender, research assistants checked all the entrepreneurs' profiles (including names and pictures).

For coding the age, we used the information given by the project owner or (when not provided) estimated their age at the time of the campaign. We generated several age measures: *Extreme Age Leader* (dummy variable if at least one of all the team members are 18-23 or +60 years old) , *Ratio Of Extreme Age In Team* (discrete values of 0, 1/4, 2/4, 3/4 or 1 with a value equal to 1 if it is entirely made up of Extreme Age people) and *At Least 1 Extreme Age In Team* (dummy equal to 1 if there is at least 1 Extreme Age in the team and 0 otherwise).

For coding diversity in terms of ethnicity, we used several measures to check whether entrepreneurs were perceived as white (main ethnicity in France) or not. For coding, the research assistants opened the selected project webpages and checked the pictures provided. We are dealing, here, with the perceived identity of the entrepreneurs by funders, irrespective of self-identification (Herzenstein et al., 2008). We use *Ethnic Minority Leader* (dummy variable equal to one if the project owner is not perceived as white), *Ethnic Minority Ratio in the Team* when several project owners exist (discrete values of 0, 1/4, 2/4, 3/4 or 1 with a value equal to 0 if the team composed of white people and equal to 1 if it is entirely made up of non-white project owners) and *At Least One Non-White in the Team* (dummy equals to 1 if there is at least 1 non-white in the team and 0 otherwise). In case of doubt for the coders, one of the authors checked and made the final coding decision.

For coding geographical diversity, we used the variables *Paris/IDF dummy* as a dummy variable equal to 0 if the project is located in the Paris Region (called “Ile-de-France” in French) or 1 if it is not.

In order to assess the novelty of projects launched on Ulule, we use two complementary methodological approaches and suggest several extra variables. The first is to use categories of books to classify projects from very popular types of books (such as Novel, 11.04% of our sample) to more ‘niche’ types of books (such as Theatre, 0.4%). We associated each project with one of the 7 official categories used by the French National Association of Publishing (Syndicat National de l’Edition, 2020).

The second measure of novelty for the projects is the one used by Mollick and Nanda (2016). This is an estimation of the subjective crowd’s perception of the projects’ novelty. Assessors read the campaign web page, watched the video if any, and used a 1–5 point Likert scale, with 1 being “strongly disagree” and 5 being “strongly agree” to the dimension “Novelty” as defined by Mollick and Nanda (2016): *This project displays a high degree of artistic ingenuity. Assuming it was completed as planned, this project would advance the art form. This project is original* (2016:1551). As previously explained, the degree of novelty has been assessed by at least four assessors, and *Novelty Degree* is the average of the four assessments on a 1–5 point Likert scale.

For measuring funding success in CF as an explanatory variable for H3a to H3d hypotheses, we keep using *Number of Backers* (number of individual contributors), *Completion Ratio* (*Funding Raised/Project Goal*), *Success Dummy* (dummy variable, 0 if failure and 1 in case of success), and *Amount Raised* (measures the total euros amount collected by the project).

Control Variables

In order to control so that the dependent variable *Novelty* is not confused by assessors with quality characteristics, we also asked them to assess *Quality* (for capturing the perceived quality of the CF campaign’s communication), *Stakeholders and Reach* (for capturing the project’s quality and potential) and *Feasibility/Realism* (for capturing the perceived feasibility)

following the definitions, method and Likert-scale from 1 to 5 suggested by Mollick and Nanda (2016, details in Appendix B).

We also added control variables that we know to be relevant for campaign success *(Pre-sale Dummy*, *No Publisher, Description Length*). All variables used in this study are defined in Appendix C.

3.3. Descriptive statistics

Our final sample consists of 499 reward-based CF campaigns presented on the French platform Ulule in the Publishing section during the period 2011-2016. As shown in Table 1, the success rate in our sample is about 67% (335 projects out of 499) with an average amount raised of 3122€ and a maximum amount raised of 56,996€ . The average completion ratio is 98% and the maximal ratio of 715%. Figure 1 shows a distribution similar to what is found in Mollick (2014) and Cumming et al. (2020) papers. As we can observe, campaigns that are able to reach at least 50% of financing drastically increase their probability of being fully funded (while 32% of projects collect less than 50% of their goal and 51% of projects collect between 100% and 150%, only 4.4% of project collect between 50% and 100%.) and some campaigns, 6% of our sample, are highly overfinanced (>200%).

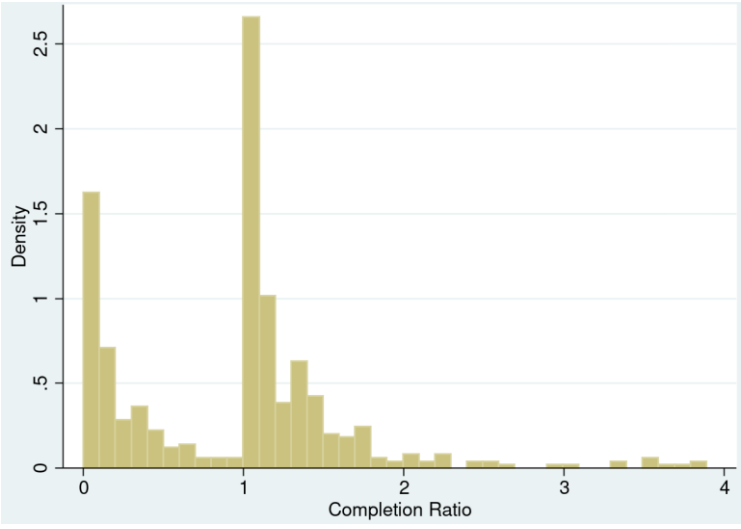

Figure 1: Completion ratio distribution for projects funded up to 400%

These amounts are lower than amounts usually raised in reward-based CF campaigns but this can be considered normal because publishing is less capital intensive than some other successful categories in CF (technology, cinema or video games for instance). By comparison, Mollick (2014) and Cumming et al. (2020) show respectively an average amount raised of $7825 and $6583 on Kickstarter and Indiegogo (US platforms) with all categories included.

Table 1 – Summary Statistics

Our final sample consists of 499 reward-based crowdfunding campaigns presented in the Publishing section of the French platform Ulule during the period 2011-2016.

	N	Mean	ST.Dev.	Min.	Median	Max.
Success Dummy	499	0.671	0.47	0	1	1
Completion Ratio	499	0.98	0.86	0	1.04	7.15
Amount Raised	499	3122	5495	0	1545	56996
Number of Backers	499	67.4	114	0	35	1245
Woman Leader	499	0.527	0.5	0	1	1
Woman Ratio In The Team	499	0.529	0.464	0	0.5	1
At Least One Woman In Team	499	0.603	0.49	0	1	1
Ethnic Minority Leader	499	0.0481	0.214	0	0	1
Ethnic Minority Ratio In The Team	499	0.0563	0.206	0	0	1
At Least One Non-White In The Team	499	0.0842	0.278	0	0	1
Extreme Age Leader	499	0.136	0.343	0	0	1
Ratio Of Extreme Age In Team	499	0.135	0.322	0	0	1
At Least 1 extreme Age In Team	499	0.164	0.371	0	0	1
Novelty Degree	499	3.09	0.7	1.4	3.2	5
Quality	499	3.24	0.761	1	3.25	4.8
Feasibility/Realism	499	3.33	0.771	1.2	3.5	4.8
Stakeholders and Reach	499	2.92	0.743	1.2	3	5
Relevance	499	2.96	0.753	1	3	5
Book Publication	499	0.768	0.423	0	1	1
Still Active (Publisher)	177	0.893	0.31	0	1	1
Future Books Publication (Publisher)	177	0.881	0.324	0	1	1
Creation Firm (Authors)	322	0.24	0.428	0	0	1
Future Books Publication (Authors)	322	0.414	0.493	0	0	1
Goal	499	3212	3914	200	2000	39000
Pre-Sale Dummy	499	0.0762	0.266	0	0	1
No Publisher	499	0.643	0.48	0	1	1
Description Length	499	2864	2500	1	2179	20437
Paris/Idf Dummy	499	0.16	0.367	0	0	1
Year	499	2014	1.25	2011	2014	2016

Contrary to average entrepreneurial initiatives in CF where female led projects usually account for around 30%[4] of the total, most projects in our sample are led by a woman (52.7%) and only 39.7% of projects do not have any women on the team. Unsurprisingly, a vast majority of projects are led by white leaders or teams (92.6%). Even if collecting ethnic data is partially censored in France for non-scientific publications, this can be compared to the 9.9% of immigrants and to the 7.4% of foreigners living in France[5]. People considered to be of an extreme age (under 23 years old or above 65 years old) are involved in 16.4% or projects and

[4] PWC (2017) "Women unbound — Unleashing female entrepreneurial potential" available at https://www.pwc.com/gx/en/diversity-inclusion/assets/women-unbound.pdf

[5] https://www.insee.fr/fr/statistiques/3633212

constitute 13.6% of initiative leaders in our sample. From a geographical point of view, 16% of projects are located in the “Paris/Ile de France” region, which is the most populated French region, with 19% of the French population[6].

The projects presented on the platform show an average novelty grade of 3.09 on a 1-5 scale.

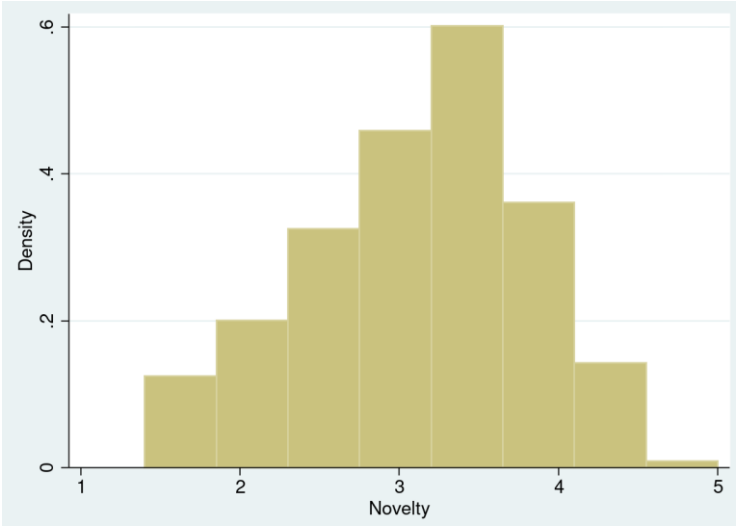

Figure 2. Novelty grade distribution

The distribution of novelty grades is slightly left skewed (see Figure 2) and there are 65 projects that show a high level of novelty (above or equal to 4) and 49 projects that show a low level of novelty (under or equal to 2). Most of the projects (277 projects, representing 55% of our sample) show an average level of novelty (between 2.5 and 3.5).

If the funding success rate is “only” 67%, about 77% of projects were successful entrepreneurial initiatives and led to the publication of a book. After the CF experience considered in this study, the future was quite different for projects led by non-professional authors or for projects backed by officially registered publishers. About 90% of book publishers are still active in 2020 (more than 4 years after the campaigns) and 88.4% published new books after the campaigns. On the other hand, 41.4% of non-professional authors published

[6] https://www.insee.fr/fr/statistiques/4270719

another book after the campaign and 24% created a firm, thus indicating the sustainability of their entrepreneurial initiative.

4. RESULTS

4.1 Univariate analysis

The first results that can be derived from a correlation matrix between our variables of interest shows the pertinence of our hypotheses (see Table 2). Indeed, as we can see, none of our sociological variables (gender, perceived ethnicity of the entrepreneurs, ages or geographic location) offer a significant correlation with the success of the CF campaigns or with their completion ratio (amount raised/funding goal). Moreover, all correlations of these variables with campaign outcomes are very low (<5%). These first results are in line with hypotheses H1a but disagree with H1b, c and d.

Table 2 – Correlation Matrix

This table shows correlation between all the variables used in this study. A star * indicates a 1% significance level.

	1)	2)	3)	4)	5)	6)	7)	8)	9)	10)	11)	12)	13)	14)
1) Success Dummy	1													
2) Completion Ratio	0.3332*	1												
3) Amount Raised	0.6623*	0.5229*	1											
4) Number of Backers	0.3318*	0.8019*	0.5634*	1										
5) Woman Leader	-0.039	0.0672	-0.0099	-0.0017	1									
6) Woman Ratio In The Team	-0.0219	0.1229*	0.0109	0.0553	0.9228*	1								
7) At Least One Woman In Team	0.0255	0.1426*	0.0381	0.0993	0.8562*	0.9268*	1							
8) Ethnic Minority Leader	0.0177	0.0114	-0.0322	-0.0381	-0.0497	-0.0765	-0.0666	1						
9) Ethnic Minority Ratio In The Team	0.0255	-0.015	-0.0283	-0.0535	-0.0579	-0.0788	-0.0586	0.9062*	1					
10) At Least One Non-White In The Team	0.0277	-0.0242	-0.026	-0.0536	-0.0453	-0.0594	-0.0049	0.7415*	0.9026*	1				
11) Extreme Age Leader	-0.0454	-0.0209	-0.055	-0.0482	0.0604	0.0443	0.0475	-0.0347	-0.0543	-0.0363	1			
12) Ratio Of Extreme Age In Team	-0.0418	-0.0161	-0.0457	-0.0343	0.0902	0.0604	0.0682	-0.0554	-0.0587	-0.0354	0.9482*	1		
13) At Least 1 Extreme Age In Team	-0.0351	-0.0107	-0.0449	-0.0235	0.0951	0.0674	0.1054	-0.0491	-0.0447	-0.0176	0.8957*	0.9456*	1	
14) Novelty Degree	0.3827*	0.3191*	0.3362*	0.3513*	0.0154	-0.0107	0.0385	0.0561	0.0434	0.0327	0.0122	0.0323	0.0677	1
15) Quality	0.5394*	0.4255*	0.5007*	0.4243*	0.0029	0.0189	0.074	-0.0076	0.0102	0.0276	-0.0223	-0.0167	0.0069	0.6429*
16) Feasibility/Realism	0.7598*	0.4168*	0.6588*	0.4191*	-0.0393	-0.0166	0.0312	-0.0237	-0.0033	0.0118	-0.0264	-0.0216	-0.0014	0.5053*
17) Stakeholders and Reach	0.6711*	0.4455*	0.6170*	0.4471*	-0.0705	-0.0456	0.0078	-0.0127	0.0136	0.0257	-0.0388	-0.0263	-0.0246	0.4511*
18) Relevance	0.5826*	0.3865*	0.5005*	0.4054*	-0.0323	-0.0246	0.0489	0.0239	0.0259	0.0446	-0.033	-0.0194	0.0105	0.6538*
19) Book Publication	0.4028*	0.1716*	0.2462*	0.1689*	0.0013	0.0458	0.0482	0.0572	0.0583	0.0472	-0.058	-0.0423	-0.0376	0.1838*
20) Still Active (Publisher)	0.0662	0.0195	0.0679	0.0618	0.117	0.1151	0.1189	-0.0124	-0.0196	-0.0645	-0.0497	-0.016	-0.0409	0.0882
21) Future Books Publication (Publisher)	0.1967*	0.1149	0.1883	0.1665	0.0796	0.09	0.0512	-0.0884	-0.0232	-0.05	-0.0325	-0.0248	-0.0209	0.1655
22) Creation Firm (Authors)	0.2644*	0.1341	0.1492*	0.08	-0.0009	0.0138	0.0761	-0.0616	-0.0474	0.0345	-0.0749	-0.0609	-0.071	0.0849
23) Future Books Publication (Authors)	0.2806*	0.0512	0.1341	0.0209	0.0482	0.0567	0.0964	0.0689	0.0682	0.0975	0.0163	0.0296	0.022	-0.0009
24) Goal	0.0369	0.6074*	-0.0076	0.4088*	0.0829	0.1126	0.1228*	0.0135	-0.0228	-0.0246	0.0743	0.0749	0.0824	0.2806*
25) Pre-Sale Dummy	-0.0243	-0.044	-0.0516	-0.0199	0.0298	0.0199	0.0167	-0.0292	-0.0051	-0.0054	-0.026	-0.0185	-0.0254	0.0024
26) No Publisher	-0.0757	-0.1276*	-0.0506	-0.113	-0.0183	-0.0117	-0.0567	0.011	-0.0098	-0.0455	-0.0578	-0.0696	-0.1101	-0.2045*
27) Description Length	0.0766	0.2101*	0.1437*	0.2364*	0.0763	0.0961	0.0975	-0.0526	-0.0622	-0.0647	0.0158	0.0332	0.0787	0.2183*
28) Paris/Idf Dummy	0.0267	0.0789	0.0011	0.1116	-0.0237	-0.0374	-0.0029	0.0549	0.0685	0.0839	0.0971	0.1057	0.0863	0.1374*

	15)	16)	17)	18)	19)	20)	21)	22)	23)	24)	25)	26)	27)	28)
15) Quality	1													
16) Feasibility/Realism	0.6429*	1												
17) Stakeholders and Reach	0.5053*	0.4511*	1											
18) Relevance	0.6538*	0.5826*	0.5005*	1										
19) Book Publication	0.1838*	0.1716*	0.2462*	0.1689*	1									
20) Still Active (Publisher)	0.0882	0.0195	0.0679	0.0618	0.117	1								
21) Future Books Publication (Publisher)	0.1655	0.1149	0.1883	0.1665	0.0796	0.09	1							
22) Creation Firm (Authors)	0.0849	0.1341	0.1492*	0.08	-0.0009	0.0138	0.0761	1						
23) Future Books Publication (Authors)	-0.0009	0.0512	0.1341	0.0209	0.0482	0.0567	0.0964	0.0689	1					
24) Goal	0.2806*	0.6074*	-0.0076	0.4088*	0.0829	0.1126	0.1228*	0.0135	-0.0228	1				
25) Pre-Sale Dummy	0.0024	-0.044	-0.0516	-0.0199	0.0298	0.0199	0.0167	-0.0292	-0.0051	-0.0054	1			
26) No Publisher	-0.2045*	-0.1276*	-0.0506	-0.113	-0.0183	-0.0117	-0.0567	0.011	-0.0098	-0.0455	-0.0578	1		
27) Description Length	0.2183*	0.2101*	0.1437*	0.2364*	0.0763	0.0961	0.0975	-0.0526	-0.0622	-0.0647	0.0158	0.0332	1	
28) Paris/Idf Dummy	0.1374*	0.0789	0.0011	0.1116	-0.0237	-0.0374	-0.0029	0.0549	0.0685	0.0839	0.0971	0.1057	0.0863	1

	15)	16)	17)	18)	19)	20)	21)	22)	23)	24)	25)	26)	27)
15) Quality	1												
16) Feasibility/Realism	0.7372*	1											
17) Stakeholders And Reach	0.6638*	0.7860*	1										
18) Relevance	0.7751*	0.7556*	0.7361*	1									
19) Book Publication	0.3145*	0.4314*	0.3818*	0.3191*	1								
20) Still Active (Publisher)	0.108	0.1678	0.055	0.1034	0.1156	1							
Future Books Publication													
21) (Publisher)	0.2487*	0.2756*	0.2081*	0.1883	0.4936*	0.4372*	1						
22) Creation Firm (Authors)	0.2066*	0.2461*	0.2163*	0.2211*	0.1472*	.	.	1					
Future Books Publication													
23) (Authors)	0.1717*	0.2384*	0.1946*	0.1570*	0.3056*	.	.	0.4457*	1				
24) Goal	0.2581*	0.1669*	0.2260*	0.2356*	0.0498	-0.0332	0.0375	0.0282	-0.0566	1			
25) Pre-Sale Dummy	-0.0126	0.0279	-0.0215	0.0122	-0.003	0.0358	0.0485	-0.0414	0.0839	0.0462	1		
26) No Publisher	-0.1934*	-0.1571*	-0.0908	-0.2013*	-0.2216*	.	.	.	.	-0.088	-0.1805*	1	
27) Description Length	0.2559*	0.1595*	0.1669*	0.2047*	0.0202	-0.1715	-0.022	0.0058	-0.026	0.2231*	-0.0507	-0.1116	1
28) Paris/Idf Dummy	0.1134	0.0236	0.0649	0.1256*	-0.0311	-0.0559	-0.0387	0.0698	-0.0094	0.1191*	-0.0843	0.0061	0.0811

Our *Novelty* variable shows a high positive and significant correlation with both success (0.54) and with the completion ratio (0.5). It might indicate that the less mainstream projects would be more likely to be financed than mainstream ones. This can look counter intuitive and not in line with our hypotheses H2a. However, we also observe a high positive and significant correlation between *Novelty* and *Quality* (0.64) but also with *Feasibility/Realism* (0.5). This can also indicate that entrepreneurs who perceive that their projects are more innovative and thus less mainstream or riskier will put more effort into marketing their projects. We cannot conclude if the *Novelty* will impact success by itself or through the effort provided by entrepreneurs.

This effect is also observable at the category level (see Table 3). All categories show a success ratio between 56% and 76%, with an average of 67% (we can reasonably disqualify comics from this first analysis because of the very low number of projects). All categories are on average in the +-¼ St.Dev. compared to the average success rate. Here again, we cannot conclude that more or less mainstream categories are more or less successful. CF equally finances projects in terms of types.

Table 3 – Success by Categories

This table shows success and failure frequencies by categories.

		[Other]	Arts	Children	Comics	Documentary	Leisure & Guides	Literature	Total
Failure	Freq.	0	25	27	0	15	17	80	164
	%	0	23.36	28.42	0	26.32	35.42	43.72	32.87
Success	Freq.	1	82	68	8	42	31	103	335
	%	100	76.64	71.58	100	73.68	64.58	56.28	67.13
Total	Freq.	1	107	95	8	57	48	183	499
	%	100	100	100	100	100	100	100	100

A third result that can be derived from the correlation matrix is the impact of the success of the CF campaign on the future of the entrepreneurial initiative. We see, as expected by hypothesis H3a, a positive and significant correlation between campaign success and the book publication. On a longer time horizon, we see that campaign success will not impact the

survival of initiatives already backed by a publisher during the campaign, contrary to what was expected in H3b and H3c (low insignificant correlation between success and our variables "*Still Active*" and "*Future Book Publication (Publisher)*"). Nevertheless, we see that this is quite different for non-professional authors for which campaign success is positively and significantly linked to a future firm creation or edition of a next book, in line with hypotheses H3b and H3d. We note that for these hypotheses, the impact of the campaign success is different for formal and informal entrepreneurs.

4.2 Democratization through the sociological diversity of entrepreneurs

We subsequently performed a multivariate analysis in order to confirm these first results. Table 4 Panel A shows probit regressions on the success dummy of our variable of interest assessing social diversity. For each type of social characteristics (gender, ethnicity and age) we test the lead position, the ratio of diversification in the entrepreneurial teams and the presence of diversification in the team.

Table 4 - Democratization through the diversity of entrepreneurs

Table 4 – Panel A – Success. This table shows impact of owner characteristics (gender, ethnicity, extreme age) on campaign success (dummy variable). Significance levels are based on two-tailed tests (p-value): * p < 0.1, ** p < 0.05, and *** p < 0.01.

	(1) success	(2) success	(3) success	(4) success	(5) success	(6) success	(7) success	(8) success	(9) success
Woman Leader	-0.101								
	(0.123)								
Woman Ratio In The Team		-0.048							
		(0.136)							
At Least One Woman In Team			0.062						
			(0.125)						
Ethnic Minority Leader				0.109					
				(0.291)					
Ethnic Minority Ratio In The Team					0.128				
					(0.305)				
At Least One Non-White In The Team						0.094			
						(0.229)			
Extreme Age Leader							-0.255		
							(0.177)		
Ratio Of Extreme Age In Team								-0.275	
								(0.194)	
At Least 1 Extreme Age In Team									-0.233
									(0.168)
LnGoal	-0.087	-0.088	-0.095	-0.09	-0.089	-0.09	-0.079	-0.081	-0.08
	(0.071)	(0.072)	(0.072)	(0.071)	(0.071)	(0.071)	(0.071)	(0.071)	(0.071)
Pre-Sale Dummy	-0.115	-0.12	-0.123	-0.118	-0.12	-0.12	-0.125	-0.123	-0.127
	(0.235)	(0.235)	(0.235)	(0.235)	(0.235)	(0.235)	(0.234)	(0.234)	(0.234)
No Publisher	-0.194	-0.195	-0.197	-0.197	-0.196	-0.194	-0.207	-0.21	-0.216
	(0.133)	(0.133)	(0.133)	(0.133)	(0.133)	(0.133)	(0.133)	(0.133)	(0.133)
Description Length	0	0	0	0	0	0	0	0	0
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Paris/Idf Dummy	0.041	0.041	0.043	0.039	0.037	0.036	0.071	0.074	0.067
	(0.170)	(0.170)	(0.170)	(0.170)	(0.170)	(0.170)	(0.171)	(0.171)	(0.171)
Constant	0.428	0.396	0.378	0.366	0.357	0.361	0.32	0.332	0.327
	(0.615)	(0.613)	(0.614)	(0.615)	(0.617)	(0.618)	(0.614)	(0.614)	(0.614)
Category FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	499	499	499	499	499	499	499	499	499
R-squared									
Pseudo R-squared	0.043	0.042	0.042	0.042	0.042	0.042	0.045	0.045	0.045
Mean VIF=1.05									

We did not find significance of impact on success for any of our 9 diversity assessment coefficients on success. All our models are controlled for variables that are known to impact CF success (goal, publisher backed initiatives, quantity of soft information provided (through *Description Length*)) and controlled for year and category fixed effects. Variances are also computed to be robust (sandwich estimators). In perfect line with hypotheses H1a, women-leadership, woman ratio and the presence of women shows no significant impact on success. As was the case for women, “extreme age” leaders, presence or ratio in teams makes no significant difference to the campaign’s outcome, which goes against hypothesis H1b. We made some additional tests using “*average age*” (not presented in the paper but available in the additional material) that did not demonstrate any significance. Similarly, not having non-white leadership, ratio or presence in teams will significantly impact the success of the CF campaign. This disagrees with hypothesis H1c. Moreover we observe that, contrary to many findings, the location of the entrepreneurial initiative in the Paris/Ile de France region has no significant impact on success. As shown in Table 4 panel B, results are exactly the same if we consider the impact on completion ratios with OLS regressions. Similarly, we find no impact of women, non-white, or extreme-age participation in the total amount raised during the campaign (see Table 4 Panel C).

Table 4 – Panel B – Completion Ratio

This table shows impact of owner characteristics (sex, ethnicity, extreme age) on campaign funding ratio (amount raised/goal). Significance levels are based on two-tailed tests (p-value): * p < 0.1, ** p < 0.05, and *** p < 0.01.

	(1) Completion Ratio	(2) Completion Ratio	(3) Completion Ratio	(4) Completion Ratio	(5) Completion Ratio	(6) Completion Ratio	(7) Completion Ratio	(8) Completion Ratio	(9) Completion Ratio
Woman Leader	-0.002								
	(0.077)								
Woman Ratio In The Team		0.049							
		(0.076)							
At Least One Woman In Team			0.088						
			(0.070)						
Ethnic Minority Leader				-0.12					
				(0.108)					
Ethnic Minority Ratio In The Team					-0.133				
					(0.120)				
At Least One Non-White In The Team						-0.093			
						(0.094)			
Extreme Age Leader							-0.160*		
							(0.089)		
Ratio Of Extreme Age In Team								-0.16	
								(0.100)	
At Least 1 Extreme Age In Team									-0.161*
									(0.092)
LnGoal	-0.148**	-0.151***	-0.155***	-0.148**	-0.149**	-0.149**	-0.143**	-0.144**	-0.143**
	(0.058)	(0.058)	(0.057)	(0.058)	(0.058)	(0.058)	(0.059)	(0.058)	(0.059)
Pre-Sale Dummy	-0.135	-0.137	-0.137	-0.138	-0.136	-0.137	-0.136	-0.134	-0.137
	(0.139)	(0.139)	(0.139)	(0.138)	(0.138)	(0.138)	(0.137)	(0.137)	(0.137)
No Publisher	-0.093	-0.094	-0.092	-0.093	-0.095	-0.097	-0.099	-0.101	-0.106
	(0.093)	(0.093)	(0.092)	(0.093)	(0.093)	(0.093)	(0.093)	(0.093)	(0.093)
Description Length	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Paris/Idf Dummy	-0.017	-0.014	-0.014	-0.013	-0.011	-0.01	-0.002	-0.001	-0.003
	(0.094)	(0.094)	(0.094)	(0.094)	(0.094)	(0.094)	(0.094)	(0.094)	(0.094)
Constant	1.724***	1.698***	1.691***	1.738***	1.753***	1.752***	1.820***	1.831***	1.808***
	(0.586)	(0.595)	(0.594)	(0.590)	(0.592)	(0.593)	(0.577)	(0.575)	(0.575)
Category FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	499	499	499	499	499	499	499	499	499
R-squared	0.083	0.084	0.085	0.084	0.084	0.084	0.087	0.086	0.087

Table 4 – Panel C - Amount Raised

	(1) Ln(Amount Raised)	(2) Ln(Amount Raised)	(3) Ln(Amount Raised)	(4) Ln(Amount Raised)	(5) Ln(Amount Raised)	(6) Ln(Amount Raised)	(7) Ln(Amount Raised)	(8) Ln(Amount Raised)	(9) Ln(Amount Raised)
Woman Leader	-0.031								
	(0.122)								
Woman Ratio In The Team		0.013							
		(0.135)							
At Least One Woman In Team			0.105						
			(0.122)						
Ethnic Minority Leader				-0.164					
				(0.291)					
Ethnic Minority Ratio In The Team					-0.142				
					(0.301)				
At Least One Non-White In The Team						-0.039			
						(0.208)			
Extreme Age Leader							-0.239		
							(0.173)		
Ratio Of Extreme Age In Team								-0.258	
								(0.184)	
At Least 1 Extreme Age In Team									-0.242
									(0.161)
LnGoal	0.767***	0.765***	0.758***	0.765***	0.764***	0.765***	0.772***	0.770***	0.772***
	(0.069)	(0.069)	(0.069)	(0.069)	(0.069)	(0.069)	(0.069)	(0.069)	(0.069)
Pre-Sale Dummy	-0.134	-0.137	-0.14	-0.14	-0.138	-0.137	-0.137	-0.134	-0.138
	(0.241)	(0.242)	(0.244)	(0.243)	(0.243)	(0.242)	(0.240)	(0.240)	(0.240)
No Publisher	-0.203	-0.202	-0.199	-0.201	-0.203	-0.204	-0.21	-0.213*	-0.221*
	(0.130)	(0.130)	(0.130)	(0.130)	(0.130)	(0.131)	(0.129)	(0.129)	(0.129)
Description Length	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Paris/Idf Dummy	0.049	0.051	0.054	0.056	0.057	0.053	0.073	0.076	0.071
	(0.160)	(0.160)	(0.160)	(0.159)	(0.158)	(0.159)	(0.160)	(0.159)	(0.159)
Constant	1.042	1.014	0.989	1.041	1.054	1.033	1.169	1.199	1.155
	(0.768)	(0.762)	(0.756)	(0.743)	(0.744)	(0.748)	(0.751)	(0.753)	(0.748)
Category FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	499	499	499	499	499	499	499	499	499
R-squared	0.361	0.361	0.362	0.362	0.362	0.361	0.364	0.364	0.364

These results can however be moderated if we take a look at the number of backers. Indeed, as shown in Table 4 Panel D, although woman participation (as leader or as team member) still has no impact, we see that non-white and extreme-aged entrepreneurs both have a negative impact on the number of contributors (from -20 to -37 contributors when the average number of contributors for a successful campaign is about 94).

In order to control for potential “Family and Friends (FF) Money” that could more drastically impact the success of small campaigns (as stated in Mollick, 2014), we decided to replicate these analyses by cutting our sample in two bins based on median goal value (2000€). Because our results are similar in both subsamples (low goals and high goals) we can exclude that FF Money has an impact on our results. (these additional tests are not presented in the paper but are available in the additional material)

Table 4 – Panel D – Contributors

	(1) Contributors	(2) Contributors	(3) Contributors	(4) Contributors	(5) Contributors	(6) Contributors	(7) Contributors	(8) Contributors	(9) Contributors
Woman Leader	-9.807								
	(9.454)								
Woman Ratio In The Team		1.52							
		(8.742)							
At Least One Woman In Team			7.923						
			(8.678)						
Ethnic Minority Leader				-20.834*					
				(11.254)					
Ethnic Minority Ratio In The Team					-25.707**				
					(11.680)				
At Least One Non-White In The Team						-21.948**			
						(9.807)			
Extreme Age Leader							-36.444***		
							(9.217)		
Ratio Of Extreme Age In Team								-34.697***	
								(10.473)	
At Least 1 Extreme Age In Team									-31.437***
									(10.223)
LnGoal	46.430***	45.976***	45.478***	46.037***	45.806***	45.776***	47.212***	46.890***	47.041***
	(6.945)	(6.864)	(6.788)	(6.920)	(6.902)	(6.893)	(6.971)	(6.955)	(6.981)
Pre-Sale Dummy	7.377	6.684	6.567	6.183	6.453	6.278	6.431	6.816	6.278
	(14.667)	(14.702)	(14.675)	(14.645)	(14.655)	(14.650)	(14.318)	(14.495)	(14.769)
No Publisher	-12.89	-12.937	-12.742	-12.843	-13.121	-13.684	-14.258	-14.445	-15.363
	(9.620)	(9.684)	(9.559)	(9.612)	(9.592)	(9.581)	(9.527)	(9.523)	(9.519)
Description Length	0.007**	0.006**	0.006**	0.006**	0.006**	0.006**	0.006**	0.006**	0.007**
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Paris/Idf Dummy	14.127	14.584	14.683	15.169	15.566	15.975	17.82	17.748	17.052
	(17.903)	(17.839)	(17.974)	(18.105)	(18.180)	(18.241)	(18.175)	(18.266)	(18.149)
Constant	-245.682***	-254.066***	-256.182***	-250.627***	-247.379***	-246.306***	-231.101***	-229.865***	-236.584***
	(73.815)	(75.091)	(75.001)	(73.973)	(73.699)	(73.533)	(70.507)	(70.268)	(70.846)
Category FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	499	499	499	499	499	499	499	499	499
R-squared	0.23	0.228	0.229	0.23	0.23	0.231	0.239	0.237	0.238

4.3 Democratization through diversity of projects' nature

We then performed a similar multivariate analysis to assess if the *Novelty* of a project will impact its success. Indeed, if CF allows de-mainstreamization, we should not see any impact of project *novelty* on campaign success or funding ratio. As expected, following our findings here above relative to the correlation matrix, we find a positive and significant impact of *novelty* on both the success and the completion ratio (see Table 5 Panel A, models 1 and 5).

Nevertheless, as also observed, *Novelty* is highly correlated to *Quality* and to *Feasibility/Realism*, which can indicate more efforts from creative entrepreneurs before launching the funding campaign. As shown in models 2 to 4 and in models 6 to 8, the coefficient of *Quality* takes all significance when added to the regressions and *Feasibility/Realism* will capture all the explanation power from *Quality* and *Novelty*. We can thus conclude that it is not the *Novelty* in itself that explains the success of the CF campaign but the quality of the campaign, plus the realism and the feasibility of the project. In our sample, projects that are considered more novel are equally as likely as mainstream ones to complete a reward-based CF campaign (H2a).

If we then consider that some categories of projects are more or less mainstream, we can test the propensity of some categories to show more successful outcomes (either as a success/failure or as the capacity to raise a large amount compared to the funding goal - i.e., the completion ratio). As shown in table 5 Panel B, no specific category will show a highly significant impact on the campaign success or on the funding ratio, which is in line with our hypothesis H2b.

Table 5 – Democratization through the diversity of projects

Table 5 – Panel A – Novelty. This table shows impact of project novelty on campaign outcome (success for models 1 to 4 and completion ratio for models 5 to 8). Significance levels are based on two-tailed tests (p-value): * p < 0.1, ** p < 0.05, and *** p < 0.01.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Success	Success	Success	Success	Completion Ratio	Completion Ratio	Completion Ratio	Completion Ratio
Novelty Degree	0.818***	0.22	0.04	0.087	0.476***	0.111*	0.049	0.067
	(0.118)	(0.140)	(0.174)	(0.187)	(0.064)	(0.064)	(0.052)	(0.052)
Quality		1.300***	-0.104	-0.266		0.620***	0.122	0.081
		(0.155)	(0.233)	(0.265)		(0.069)	(0.082)	(0.091)
Feasibility/Realism			3.079***	2.559***			0.661***	0.458***
			(0.303)	(0.312)			(0.063)	(0.066)
Stakeholders And Reach				1.171***				0.372***
				(0.246)				(0.079)
Relevance				0.006				-0.081
				(0.284)				(0.085)
Woman Leader	-0.096	-0.165	-0.011	0.059	0.004	-0.022	0.031	0.057
	(0.129)	(0.138)	(0.182)	(0.193)	(0.073)	(0.066)	(0.060)	(0.058)
Ethnic Minority Leader	0.004	0.155	0.366	0.316	-0.210**	-0.154*	-0.082	-0.079
	(0.295)	(0.328)	(0.437)	(0.447)	(0.087)	(0.085)	(0.088)	(0.086)
Extreme Age Leader	-0.209	-0.052	-0.547**	-0.419	-0.127	-0.065	-0.08	-0.071
	(0.181)	(0.199)	(0.270)	(0.298)	(0.084)	(0.074)	(0.061)	(0.060)
LnGoal	-0.169**	-0.264***	-0.255*	-0.394***	-0.195***	-0.223***	-0.176***	-0.206***
	(0.076)	(0.084)	(0.137)	(0.151)	(0.056)	(0.051)	(0.044)	(0.046)
Pre-Sale Dummy	-0.177	-0.163	-0.549	-0.551*	-0.166	-0.145	-0.195*	-0.175*
	(0.240)	(0.276)	(0.335)	(0.332)	(0.123)	(0.123)	(0.105)	(0.098)
No Publisher	-0.051	0.022	-0.004	-0.025	0.002	0.049	0.056	0.026
	(0.142)	(0.147)	(0.210)	(0.230)	(0.087)	(0.080)	(0.071)	(0.071)
Description Length	0	0	0	0	0.000**	0	0	0
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Paris/Idf Dummy	-0.05	-0.098	0.16	0.182	-0.061	-0.084	-0.012	-0.013
	(0.180)	(0.198)	(0.254)	(0.274)	(0.089)	(0.079)	(0.068)	(0.067)
Constant	-0.968	-1.746**	-6.743***	-6.429***	0.67	0.25	-0.711	-0.224
	(0.655)	(0.684)	(1.186)	(1.240)	(0.570)	(0.531)	(0.499)	(0.508)
Category FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	499	499	499	499	499	499	499	499
R-squared					0.191	0.34	0.49	0.522
Pseudo R-squared	0.14	0.299	0.648	0.686				
Mean VIF = 1.9								

Table 5 – Panel B – Categories.

This table shows impact of project's category on campaign outcome (success for model 1 and completion ratio for model 2). Significance levels are based on two-tailed tests (p-value): * p < 0.1, ** p < 0.05, and *** p < 0.01.

	(1)	(2)
	Success	Completion Ratio
Novelty Degree	0.087	0.067
	(0.187)	(0.052)
Quality	-0.266	0.081
	(0.265)	(0.091)
Feasibility/Realism	2.559***	0.458***
	(0.312)	(0.066)
Stakeholders And Reach	1.171***	0.372***
	(0.246)	(0.079)
Relevance	0.006	-0.081
	(0.284)	(0.085)
Woman Leader	0.059	0.057
	(0.193)	(0.058)
Ethnic Minority Leader	0.316	-0.079
	(0.447)	(0.086)
Extreme Age Leader	-0.419	-0.071
	(0.298)	(0.060)
LnGoal	-0.394***	-0.206***
	(0.151)	(0.046)
Pre-Sale Dummy	-0.551*	-0.175*
	(0.332)	(0.098)
No Publisher	-0.025	0.026
	(0.230)	(0.071)
Description Length	0	0
	(0.000)	(0.000)
Paris/Idf Dummy	0.182	-0.013
	(0.274)	(0.067)
Arts	0.129	-0.111
	(0.338)	(0.108)
Children	-0.371	-0.230*
	(0.306)	(0.134)
Comics	N/A	-0.024
		(0.303)
Documentary	0.677*	-0.1
	(0.374)	(0.146)
Leisure & Guides	0.579*	-0.091
	(0.351)	(0.153)
Literature	N/A	-0.105
		(0.166)
Constant	-6.429***	-0.224
	(1.240)	(0.508)
Year F.E.	Yes	Yes
Observations	499	499
R-squared		0.522
Pseudo R-squared	0.686	

4.4 Democratization through economic sustainability

Finally we tested our hypotheses H3a,b,c&d by looking at the impact of the success of the CF campaign on various indicators of sustainability (Table 6) namely the publication of the book financed during the campaign (variable “book publication”), the continuation of the publisher after the campaign (variable “still active”), the creation of a formal firm by non-professional authors (variable “creation firm”), and the publication of future releases (variables “future book publication”) for both publishers and authors.

Quite surprisingly, as shown in model 1, the success of the CF campaign has no significant impact on book publication. This contradicts our hypothesis H3a. We can advance a reasonable explanation for this observation: most books are already partly written at the time of the campaign’s kick off. Thus, even if the campaign does not reach its goal, authors might turn to alternative solutions to bring their work to the world. Self-publishing through an ebook or a physical copy using print on demand technology might be considered. In order to further investigate this result, it might be necessary to gather information about the book advancement at the campaign start and the various formats offered afterwards).

Table 6 – Impact of crowdfunding on projects after the campaign

This table shows impact of project characteristics and campaign outcome on book release, following releases and the survival of entrepreneurial initiatives. Significance levels are based on two-tailed tests (p-value): * p < 0.1, ** p < 0.05, and *** p < 0.01.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Book Publication	Still Active	Future Books Publication (Publisher)	Creation Firm	Future Books Publication (Authors)	Book Publication	Still Active	Future Books Publication (Publisher)	Creation Firm	Future Books Publication (Authors)
Success Dummy	0.369	-0.931*	-0.972*	0.873***	0.870***	0.399*	-0.959*	-1.767***	0.869***	0.878***
	(0.233)	(0.497)	(0.527)	(0.290)	(0.257)	(0.235)	(0.496)	(0.650)	(0.290)	(0.260)
Amount Raised						0	-0.000*	0	0	0
						(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Nbr of Backers						0.001	0.009*	0.015**	-0.001	0
						(0.001)	(0.005)	(0.007)	(0.001)	(0.001)
Novelty Degree	-0.191	0.056	0.167	-0.252	-0.346**	-0.199	-0.106	0.004	-0.235	-0.350**
	(0.156)	(0.298)	(0.300)	(0.174)	(0.170)	(0.157)	(0.294)	(0.304)	(0.172)	(0.171)
Quality	0.043	0.229	0.731*	0.174	0.407**	0.058	0.296	0.747*	0.183	0.409**
	(0.179)	(0.282)	(0.377)	(0.203)	(0.196)	(0.180)	(0.295)	(0.412)	(0.203)	(0.196)
Feasibility/Realism	0.635***	0.991***	0.856*	0.144	0.119	0.651***	0.952**	0.62	0.159	0.128
	(0.207)	(0.374)	(0.448)	(0.247)	(0.220)	(0.208)	(0.377)	(0.476)	(0.252)	(0.221)
Stakeholders And Reach	0.305*	-0.284	0.314	-0.199	-0.088	0.330*	-0.313	0.112	-0.176	-0.077
	(0.175)	(0.364)	(0.423)	(0.203)	(0.203)	(0.178)	(0.362)	(0.431)	(0.206)	(0.206)
Relevance	-0.122	0.228	-0.2	0.119	-0.131	-0.141	0.261	0.155	0.122	-0.132
	(0.192)	(0.373)	(0.441)	(0.214)	(0.209)	(0.193)	(0.390)	(0.506)	(0.214)	(0.209)
Woman Leader	0.156	0.622**	0.229	0.058	0.225	0.158	0.745**	0.304	0.046	0.225
	(0.152)	(0.298)	(0.313)	(0.176)	(0.164)	(0.153)	(0.321)	(0.329)	(0.177)	(0.165)
Ethnic Minority Leader	0.598	-0.537	-0.704	-0.613	0.525	0.611	-0.348	-0.705	-0.667	0.522
	(0.397)	(0.592)	(0.610)	(0.454)	(0.375)	(0.397)	(0.592)	(0.596)	(0.451)	(0.375)
Extreme Age Leader	-0.350*	-0.271	-0.091	-0.25	0.37	-0.365*	-0.187	0.172	-0.277	0.363
	(0.212)	(0.389)	(0.469)	(0.304)	(0.241)	(0.213)	(0.388)	(0.472)	(0.304)	(0.242)
LnGoal	0.118	-0.263	-0.481**	0.267***	0.08	0.166	-0.285	-1.113***	0.278**	0.102
	(0.098)	(0.193)	(0.194)	(0.101)	(0.096)	(0.108)	(0.212)	(0.344)	(0.127)	(0.115)
Pre-Sale Dummy	-0.439	-0.213	-0.108	-0.227	0.467	-0.451	-0.399	-0.023	-0.228	0.459
	(0.280)	(0.406)	(0.537)	(0.529)	(0.403)	(0.280)	(0.437)	(0.610)	(0.541)	(0.406)
No Publisher	-0.964***					-0.971***				
	(0.190)					(0.191)				
Description Length	0	-0.000**	0	0	0	0	-0.000***	-0.000**	0	0
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Paris/Idf Dummy	-0.139	-0.207	-0.265	0.255	-0.096	-0.141	-0.196	-0.282	0.282	-0.09
	(0.202)	(0.362)	(0.393)	(0.230)	(0.219)	(0.202)	(0.394)	(0.458)	(0.231)	(0.221)
Constant	-1.24	0.268	1.246	-3.754***	-1.483	-1.615*	0.849	6.518**	-4.005***	-1.654
	(0.842)	(1.161)	(1.343)	(1.029)	(0.954)	(0.926)	(1.374)	(2.605)	(1.178)	(1.054)
Category FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	490	158	143	322	322	490	158	143	321	321
Pseudo R-squared	0.273	0.221	0.245	0.162	0.213	0.275	0.257	0.333	0.166	0.213

As for campaigns backed by registered publishers (model 2 and 3), we see negative impact but with very low significance of success on the economic sustainability of the firm and on future book publication. These results are inconclusive.

Lastly, we had a look at the impact of campaign outcome on the sustainability of the entrepreneurial initiative for non-professional authors. As demonstrated in model 4 and 5, the impact of campaign success is of high importance both on future firm creation and following book publishing, validating our hypotheses H3b and H3d. A very interesting additional result is that although success is important for the sustainability of the initiative, book publication, firm creation and future book releases are unrelated to the amount raised during the campaign or the number of backers (models 6 to 10).

It should be noted that we checked all our variables for collinearity problems. Per-model results are displayed at the end of each table and an analysis on all independent variables shows an average VIF of 2.12. We also stressed our geographic proxy (i.e., Paris/IDF) by adding the 10 biggest French cities (Paris, Marseille, Lyon, Bordeaux, Nantes, Nice, Lille, Toulouse, Montpellier and Strasbourg). The geographic location doesn't show any significant impact on previous results, on campaign outcome or on initiative sustainability. All these tables are available in the additional material.

5. DISCUSSION AND CONCLUSION

This paper analyzes the role of the digitalization of entrepreneurial finance through CF on the democratization of entrepreneurship. With a sample of campaigns led on the French CF platform Ulule, the study explores the likelihood of CF to equally fund entrepreneurs with diverse profiles but also projects of various nature, and to offer a stepping stone to a more formal kind of entrepreneurship through the funding success on the mid and long-term performance and economic sustainability. The results show that CF democratizes

entrepreneurship in all three dimensions. Our findings provide several contributions, on the theoretical, practical and policy sides.

5.1Theoretical contributions

Firstly, in contrast with the existing literature, this research demonstrates that CF democratizes entrepreneurship by diversifying the sociology of funded entrepreneurs. So far, the literature has discussed the crowd's willingness to fund diverse entrepreneurs mainly in terms of gender (Mollick and Robb, 2016), ethnicity (Cumming et al., 2019), geography (Gallemore et al., 2019; Sorenson et al. 2016; Kim and Hann, 2019) and age (Cumming et al., 2019). However, these research works do not study reward-based CF much (Cumming et al., 2019) and when they do, they concentrate on the US context. Moreover, they do not always converge in their findings.

Our paper shows that on reward platforms, the backers equally finance projects' owners in terms of age. This is a new piece of knowledge that contradicts our hypothesis but completes previous empirical works on UK equity data (Cumming et al., 2019). This result differs from the usual practices in entrepreneurial finance where traditional funders discriminate against extreme-age project owners (Franke et al., 2008). This is particularly crucial regarding the early stage of the entrepreneurial projects on reward CF. By avoiding selection bias at such a preliminary stage, CF stimulates entrepreneurship and its democratization.

In terms of gender, we demonstrate that being a female or a male entrepreneur has no influence on the capacity to achieve success in a CF campaign. The crowd is on average gender-neutral, even if some studies show homophily behaviors from male and female funders (Greenberg and Mollick, 2017). This confirms some of the results of the literature (Marom et al., 2016; Greenberg and Mollick, 2017). Unfortunately, Ulule's data includes neither the backers' gender nor their name so we cannot analyze if this apparent gender neutrality is due to a real lack of gender-impact on the funding decisions or if the effects of both male and female homophily cancel each other out.

In terms of geography, our results do not confirm the existing literature (Agrawal et al., 2015; Gallemore et al., 2019). These non-converging results could be generated by several factors we cannot explore due to the lack of backers' location data in the Ulule database. It might be possible that the geographical and territorial difference between the USA and France matters in the potential home-bias of the funders.

The last finding about the likelihood of the CF to more democratically finance a wide range of entrepreneurs concerns ethnicity. Literature suggests that the crowd is not willing to equally finance, all things equal, minority-owned projects, even in reward-based CF (Pope and Sydnor, 2011; Younkin and Kuppuswamy, 2018; 2019). Our empirical tests demonstrate quite the opposite: the crowd does not discriminate in terms of ethnicity. Such different findings probably originate from the different settings we use. Previous studies have overwhelmingly used an American dataset whereas our study is set in a French context. Considering the profoundly different cultures of ethnical diversity in those countries (American multiculturalism in the USA vs. the French republican model of integration), we can hypothesize that these differences come from the communitarian practices and homophily biases which seem to be more common in the USA. This might be a promising research avenue to follow in the future.

In summary, this study shows that the digitalization of part of the entrepreneurship journey via the development of the reward-based CF clearly democratizes entrepreneurship by giving the same chances to different types of entrepreneurs to be funded. Any project owner can submit a project online with the strong belief that it will be assessed and financed based on their project's characteristics and the campaign's communication, and not on their personal characteristics.

Second, considering the lack of empirical studies on the impact of the projects' novelty perception of the crowd on the likelihood to be funded, we contribute to knowledge by providing clear insights: CF is likely to equally finance mainstream and non-mainstream projects. Indeed, our two measures of project diversity - *Novelty* perceived by the crowd, and the official category of the projects in the publishing sector - together with sets of empirical tests demonstrate that

the online backers do not discriminate between projects based on their nature. Backers indiscriminately finance alternative projects, projects in more confidential categories and more mainstream projects. Indeed, our empirical tests and controls demonstrate that the funding choices are massively explained by the crowd's perception of the project's feasibility, its potential and the campaign's quality, not on the perceived novelty. This result suggests that very creative and alternative projects do not put potential backers off if the quality is high and the communication strategy is well-developed. Digitalization certainly helps niche projects to reach out to and attract more potential specialized consumers (prosumers), fans, connoisseurs and funders wherever they are located. This might be one of the main advantages of the digitalization of this form of entrepreneurial finance. The web gives access to an unlimited community of potentially interested people.

These results complete the sparse literature related to the diversity of projects and their likelihood to be funded by the crowd (Mollick and Nanda, 2016) or innovation. Whereas Chan and Parhankangas (2017) and David et al. (2017) demonstrate opposite but significant results that the crowd is influenced by the perception of innovation, our empirical analysis shows that the perception of novelty (i.e., originality) does not explain and influences the funding decisions. The explanation might be that innovation - especially in a reward-based CF context - might be associated with risk (Chan and Parhankangas, 2017). Novelty has more to do with offering an increased variety of project types (something welcome in a creative context) and not with the risk for the project not to deliver the promised outcomes or to simply fail.

The limited literature on the impact of reward-based CF on the future of the (non)funded projects has not investigated the causality relation between funding and future outcomes and economic development. The third part of our results shows that a successful CF campaign has a significant impact on the future development of a project and the project leader's entrepreneurial journey. This could represent an important aspect of the democratization of cultural entrepreneurship as characterized by Galuszka and Brzozowska (2017) i.e., a greater number of artists and creatives develop a full-time activity thanks to the selling of their works.

Our empirical work shows different types of results. The first one concerns the formal entrepreneurs (the publishers, in our sample). We highlight that a publisher-led crowdfunded project is much more likely to still be active several years after the campaign (December 2020) than non-funded projects, while those campaigns on average are small (3674€) and do not have a strong impact on the survival rate over such a long period. It seems clear that these successfully funded projects are probably wisely picked by the crowd, but also subsequently helped. We also identify the same phenomenon with a positive causality for future published works.

The second type of results are about private individual project owners. The results are even more positive: informal entrepreneurs who receive funds via CF campaigns pass a major milestone, and tend to a more formal kind of entrepreneurship. Indeed, being successfully funded by CF strongly impacts the likelihood for an informal entrepreneur to formally create a firm. The support and encouragement they receive probably stimulates informal entrepreneurs to found a company and dedicate more time to making this activity professional. The positive signal received from the crowd encourages them to pursue the entrepreneurial journey. Our additional tests (see Table 6) specifically show that it is not the quantity of received funds that influences the likelihood of creating a firm, but rather the campaign's success. We can say that these informal entrepreneurs, by completing the funding, receive a market's confirmation of the relevance of their offering. By highlighting this, our paper contributes to the understanding of the digitalization of entrepreneurial finance on entrepreneurship: by asking the crowd to fund and pre-buy a cultural good, informal entrepreneurs ask the market for commercial validation. And when they receive a positive signal by completing the campaign, they may start a more formal entrepreneurial process to create a firm. By demonstrating that only the success or failure in funding but not the quantity of cash affects this mid or long term output, we also highlight that in crowdfunding the 'crowd effect' goes beyond the 'funding effect.' Receiving a signal of interest from the crowd might prove more important than funding. The best effect of CF might be the (positive) externalities of crowdfunding. In doing so, we contribute to the

nascent literature on the future of crowdfunded projects (Vanacker et al., 2019) by highlighting the role of a successful CF campaign in building an entrepreneurial journey.

The capacity for online CF to help projects to emerge and be developed is probably linked with the digitalization characteristics. As explained by Paschen (2017), online crowdfunded projects receive a lot of feedback, comments, they build helpful communities of fans, trendsetters, early-buyers and promoters. This helps the project leader understand the market trends, to build formal and informal networks (Lamine et al, 2015) and to reach economic sustainability.

Our tests also demonstrate that being successfully funded by CF does not affect the likelihood of delivering the expected outcome (a book as a cultural good in our sample). If this might seem counterintuitive, it makes sense when considering the particularities of reward-based CF: projects' owners pre-sell products and/or only look for small quantities of external funds in order to finalize their project. It means that many non-crowdfunded projects will still find a publishing outlet (52.4% of the failed projects in our sample still managed to be published).

This finding suggests that projects being funded through reward-based CF are capable of developing their activity not only of the short-term promises (delivery of the expected product) but also afterwards, in the mid and long term.

5.2 Policy and Practical implications

Our findings provide important take-aways for entrepreneurs, platforms and policy-makers. Entrepreneurs who run the risk of being discriminated against because of their age, ethnicity, gender or geographical location might find it encouraging to know that reward-based CF is a neutral financing tool, and that they should not be discriminated against on CF platforms. Similarly, projects' owners with non-mainstream projects can trust reward-based CF as a serious funding alternative to traditional entrepreneurial finance solutions. More broadly, entrepreneurs who might still hesitate to collect funds on CF platforms are provided with evidence as to the extent to which a successful CF campaign can stimulate economic sustainability and mid-term performance.

Our findings support the CF platforms' claim of being more "democratic" funding channels. They give access to funds to a large scope of projects' owners, and by promoting this reality they presumably attract even more projects and backers. Our results demonstrate that it makes sense for them to attract 'alternative' projects and not just mainstream ones.

The last part of the practical implications of our work concerns policy-makers. Indeed, entrepreneurship is on the one hand considered increasingly strategic for economic development, but on the other hand it is still regarded as quite elitist and difficult to fund. So giving easier access to funds in order to democratize entrepreneurship is key to policy makers' economic and social agendas. Our study provides them with a better understanding and perspective on CF as a promising tool for democratizing entrepreneurship over time. Our findings also bring new perspectives to cultural policy-makers whose understanding of democratization usually concerns audiences. Here, using the example of publishing, we suggest that CF is a promising avenue for the democratization of cultural production. Online crowdfunding and its potential role in leading artists and creatives to more formal and sustainable forms of entrepreneurship will also receive increased attention from policy makers clearly wishing to develop start-ups in the CCI.

5.3 Limitations and future research directions

Our study is limited to the context of reward-based CF, on a non-sectoral specialized platform in a French context. We can safely assume that backers on specifically arts-dedicated platforms have more expertise, educated taste, knowledge of the different genres and sub-categories and are more inclined to support novel and niche projects. As our analysis is mainly concerned with cultural entrepreneurs, the generalization of our findings to very different projects in other fields, such as social or technological entrepreneurship might be questioned. Replication studies in other sectors and countries are certainly needed.

Ulule's limited data on their backers' characteristics prohibits the analysis of the profiles' impact on the decisions to fund more diverse entrepreneurs and projects. This limits our capacity to understand why the crowd is willing to be more open to diverse entrepreneurs. We are unable

to know if the crowd is more tolerant than experts, or if the funding decisions are due to a more diverse sociology of the crowd with similarity effects such as homophily or co-ethnicity effects, for example. We invite scholars with different and richer databases to complete our results with such empirical tests.

One remaining question deals with the consistency of our results over time. Indeed, the period stretching from the beginnings of CF to now has seen developments in the usage and perception of CF. The profile of the cultural, social, commercial and technological entrepreneurs who look for funds on online platforms might have evolved. As a consequence, the democratization power of CF for entrepreneurship might also have changed over the last decade. Our data and research method do not allow for the study of this time effect. Further studies are certainly needed to fill this gap and assess how the maturity of the CF sector probably influences the democratization of entrepreneurship.

Our paper and methodology do not study one dimension of the democratization power of CF: the capacity to cognitively stimulate potential entrepreneurs to start a project thanks to this image of easy access to financial resources. We can hypothesize that CF stimulates entrepreneurship from word to deed. Future studies might investigate this specific question by using surveys.

5.4 Conclusion

The digitalization of entrepreneurial finance and more specifically CF is gaining momentum both in the economic and academic worlds (Le Pendeven et al., 2021). Their contribution to the democratization of entrepreneurship is central in terms of social justice and economic relevance but remains under-researched. Our paper contributes to this debate. With a rich sample of France's cultural entrepreneurship projects, we explore the likelihood of the crowd to equally fund projects led by 'diverse' entrepreneurs and 'traditional' entrepreneurs, to equally

fund non-mainstream projects and mainstream projects, and to have a positive effect on the mid and long-term economic development of the successfully funded projects.

According to our findings, CF is a neutral financial solution in terms of gender, age, geography and ethnicity. We also demonstrate that mainstream and non-mainstream projects are likely to be equally funded in reward-based CF. It means that the CF is not impacted by the perception of novelty, but mainly by the projects' relevance and the online campaign's quality. Concerning the democratization of entrepreneurship by enabling the projects to deliver expected and future products and their economic sustainability, our results highlight a clear and significant impact of funding success. Informal entrepreneurs (non-professional authors) are willing to create firms. Regarding the small size of the campaigns and the non-effect of the campaign's size, we can say that CF stimulates formal entrepreneurship by enhancing informal entrepreneurs to create firms, beyond only funding them, and that's a key point: CF is useful far beyond funding.

APPENDICES

APPENDIX A - Ex-Ante Novelty/Quality/Feasibility Evaluation

This table shows an evaluation of the accuracy of novelty, quality and feasibility of a project evaluation made *ex-post* (what is done in this study) compared to an ex-ante evaluation (*ex-post* evaluations are based on campaign pages in December 2020 and *ex-ante* evaluations are made at the beginning of the campaign – historical pages where retrieved using the web.archive.org website). This comparison is made on a sub-sample of 20 projects and evaluated by the same research assistants more than a month after the first evaluation (with no allowance to go on the web or check their previous evaluations). Results show no significant difference in evaluation for Novelty nor for Feasibility/Realism. Low significance for Quality is not problematic regarding the insignificance of results for this variable in our study.

	Ex-Post Evaluation		Ex-Ante Evaluation		
Variables	Nbr Obs	Mean	Nbr Obs	Mean	Diff in Mean T-test
Novelty	89	3.236	70	3.057	0.179
Quality	89	3.281	70	3	0.281*
Feasibility/Realism	89	3.157	70	3.314	-0.157
Stakeholders And Reach	89	2.888	70	2.457	0.430***
Relevance	89	3.067	70	2.814	0.253

APPENDIX B

Criteria	Details
Novelty	This project displays a high degree of artistic ingenuity. Assuming it was completed as planned, this project would advance the art form. This project is original
Quality	The proposal for the project is of high quality. The video added to the proposal in a meaningful way. The artistic vision of the proposal is clear
Feasibility/Realism	The artistic or commercial goals of this project are

	achievable. The individual or group proposing this project is qualified to complete the project. This project can be implemented with the resources in the proposal.
Stakeholders and Reach	This project would reach a diverse audience. This project would attract a wide range of potential funders and stakeholders. This project would be commercially viable/profitable
Relevance	Assuming it was completed as planned, this project would advance a cultural, political or artistic dialogue. This project promotes a high sense of audience engagement. I feel personally excited about this project

All questions asked on a 1–5 point Likert scale, with 1 being “strongly disagree” and 5 being “strongly agree.”

Table A1. Criteria used by Mollick and Nanda (2016).

APPENDIX C - Variable Descriptions

Variable	**Definition**
Success Dummy	Dummy variable equal to 1 if the campaign raised at least the funding goal and 0 otherwise
Completion Ratio	Amount raised divided by Goal
Amount Raised	Total amount collected during the campaign
Number of Backers	Number of individual contributors
Woman Leader	Dummy variable equal to 1 if the campaign leader is a woman and 0 otherwise
Woman Ratio In The Team	Ratio of women in the team
At Least One Woman In Team	Dummy variable equal to 1 if there is at least 1 woman in the team and 0 otherwise
Ethnic Minority Leader	Dummy variable equal to 1 if the campaign leader is non-white and 0 otherwise

Ethnic Minority Ratio In The Team	Ratio of non-whites in the team
At Least One Non-White In The Team	Dummy variable equal to 1 if there is at least 1 non-white in the team and 0 otherwise
Extreme Age Leader	Dummy variable equal to 1 if the campaign leader is of extreme age (below 23yo or above 60yo) and 0 otherwise
Ratio Of Extreme Age In Team	Ratio of extreme age in the team
At Least 1 Extreme Age In Team	Dummy variable equal to 1 if there is at least 1 extreme age in the team and 0 otherwise
Book Publication	Dummy variable equal to 1 if the book has been published since the end of the campaign and 0 otherwise
Still Active (Publisher)	Dummy variable equal to 1 if the publishing firm is still active or acquired by M&A and 0 otherwise
Future Books Publication (Publisher)	Dummy variable equal to 1 if at least one more book has been published by the publisher besides the CF campaign and 0 otherwise
Creation Firm (Authors)	Dummy variable equal to 1 if the informal entrepreneur created a firm since the CF campaign and 0 otherwise
Future Books Publication (Authors)	Dummy variable equal to 1 if at least one more book has been published by the author besides the CF campaign and 0 otherwise
Goal	Amount that the team would like to raise during the campaign
Pre-Sale Dummy	Dummy variable equal to 1 if the book is already completed and 0 otherwise
No Publisher	Dummy variable equal to 1 if no publishing firm is involved in the project at time of campaign start and 0 otherwise
Description Length	Length of the textual description of the project (in number of characters)
Paris/Idf Dummy	Dummy variable equal to 1 if the project is located in Paris or French « Ile de France » region and 0 otherwise.

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