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## **Women Entrepreneurship and Crowdfunding: results from online experiments.**

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### **Abstract**

Women Entrepreneurship and Crowdfunding: results from online experiments. Diego Zunino Innovation and Organizational Economics Department Copenhagen Business School 2015-2017 [dz.ino@cbs.dk](mailto:dz.ino@cbs.dk) Gender gap is an important and debated topic in the entrepreneurship literature. Several studies pointed out how entrepreneurship is a gendered context for women and how access to resources is a crucial aspect of the gender gap. A recent series of studies of crowdfunding (Greenberg & Mollick 2015; Marom et al. 2015) studied the relationship with gender dynamics. However, it is not clear what drives this attenuated difference. The most notable explanation for the phenomenon is homophily – i.e., female backers support female-led projects – but the conclusions are somehow trivial. On the one hand, there is the traditional homophily argument which further implies some taste-based discrimination (Marom et al. 2015), on the other hand there is choice homophily, where backers from a minority tend to support a founder from a certain minority in a discriminated context (Greenberg & Mollick 2015). We argue that observational data alone is problematic for studying this subject. Selection problems would harm the results when we compare men and women who self-selected in these contexts. In addition, we have little information about backers. In fact, previous research studied only the gender of the backers as it is the easiest to infer. We believe that experimental techniques would complement the earlier literature as it is possible to manipulate the gender and the context in a controlled environment. Experiments are particularly favorable to crowdfunding setting as their external validity is more credible vis-à-vis other traditional forms of funding. Following the experimental setup of Greenberg & Mollick (2015), we run two experiments where we manipulate the gender of the entrepreneur, its context, and we distribute the profiles to be rated by a group of respondents. In one study, we use Amazon Mechanical Turk (MTurk) to have a broad sample of participants that are hard to attract using lab experiments. The variety of respondents and the context of crowdfunding mitigate the problem of external validity. In the second study, we re-run the

experiment on a group of master student from an economics of innovation program at an elite European business school. The results suggest no significant differences in the tendency to finance crowdfunding projects run by female entrepreneurs. The results hold controlling for many different socio-demographic characteristics of the backers. In addition, we test for the potential explanations about homophily and we found no statistically significant effect of homophily between backers and founders, even after taking context into account. We study more deeply the interaction between gender of the founder and the only significant characteristic of the backers – their willingness to invest. We found that the straightforward positive association between higher willingness to invest in crowdfunding and higher interest to invest in the proposed project is driven by the interaction with the female entrepreneur variable. Additional analysis shows how the effect does not change when the backer is male or female. We contribute to the field by exploring what drives crowdfunding donation and we find that gender plays a role in an unexpected way: female entrepreneurs are more likely to be funded by those with more willingness to invest. REFERENCES Greenberg, J., & Mollick, E. R. (2015). Leaning in or leaning on? Gender, homophily, and activism in crowdfunding. Working Paper Marom, D., Robb, A., & Sade, O. (2015). Gender Dynamics in Crowdfunding (Kickstarter). Working Paper.

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## Introduction

Gender gap is an important and debated topic in the entrepreneurship literature. The discipline studies the gap across four dimensions: equality of predisposition, access to resources, entrepreneurial strategy, and performance (Jennings and Brush 2013). In this paper we will focus on the access to resources. Because entrepreneurship can be considered a gendered institution (Greenberg & Mollick 2015), its gatekeepers – the resource providers – are almost all male. The vast majority of venture capitalists, among the main channels to start a business, are male, and the share of women never exceeded 4% over 20 years (Carter et al. 2001). This prevents a smooth transition of women into entrepreneurship. The literature documents pretty well this phenomenon: women have more difficult access to resources in bank loans (Alesina et al. 2013), business angels (Becker-Blease & Sohl 2007), and venture capitalists (Gompers et al 2014).

Several studies pointed out how entrepreneurship is a gendered context for women. Besides the face validity about the figures on entrepreneurship in the United States (only 30% of the entrepreneurs are women, and no more than 4% of them are venture capitalists), there are several studies that focus on the context of entrepreneurship. Stereotyping can be thought as a good approximation, and it affects both sides of entrepreneurship: entrepreneurs and resource providers. For entrepreneurs, independently from the activity they undertake, women tend to define themselves less as entrepreneurs vis-à-vis to men (Verheul et al 2005). From a recent experiment, men seemed to value business opportunities more than women, and the difference was exacerbated when subjects were shown masculine stereotypes (Gupta et al. 2014). For the resource providers, the evidence seems similar. In another experiment (Buttner & Rosen 1988), loan officers were asked to rate characteristics of one of three randomly assigned groups: men, women, and successful entrepreneurs. The results show that women were never rated as close to entrepreneurs as men were. However, there are some industries where women outperform men (Kalnins & Williams, 2013) providing a source of variation in the level of “genderedness” of the context. There are mostly observational studies that focus on the above mentioned variation to study the interaction between individual gender and the context in crowdfunding.

A recent series of studies of crowdfunding (Greenberg & Mollick 2015; Marom et al. 2015; Radford 2015; Mohammadi & Shafi 2015; Barasinska & Schäfer 2014) started to study the relationship between this novel way of funding and gender dynamics. Crowdfunding is a novel way to collect resources through an open call in exchange of some sort of reward (Belleflamme et al 2012; Schwienbacher & Larralde 2010). According to Massolution, crowdfunding reached a size of \$ 16.2 bn in 2014, with an increase of 167% over 2013. North America grew by 145% and it is the leader in the market with \$ 9.46 bn raised in 2014. Campaigns are based on an all-or-nothing reward system: the project receives the resources from backers only if it reaches the pre-fixed goal. Founders of successful projects seem to have large social networks, they produce frequent interactions with the crowd, and they deliver videos (Mollick 2014). Evidence shows that entrepreneurs are collecting funds through crowdfunding, as a large share of successful projects turn into ventures (Mollick & Kuppuswamy 2014).

Another peculiarity of crowdfunding consists in the alleviation of some of the major constraints of the other channels of funding. For example, traditional constraints such as geography are attenuated through the information from the social network of the funders (Agrawal et al 2015). Analogously, we posit that gender gap can be attenuated. In fact, the pool of women backers of Kickstarter, a premier crowdfunding platform, is 44% -- a share much higher than other traditional sources (Marom et al 2015). Even if a bias may still exist, lower search costs and less need for monitoring (Agrawal et al 2015) could allow female founders to find enough investors (Greenberg & Mollick 2015). Moreover, the all-or-nothing reward

structure can facilitate women's success as women tend to be more risk averse (see Croson & Gneezy 2009 for a review) and set lower goals and ask less resources vis-à-vis men. In the literature, it is not clear what drives this attenuated difference.

The most notable explanation for the phenomenon is homophily – i.e., female backers support female-led projects – but the conclusions are somehow trivial. On the one hand, there is the traditional homophily argument which further implies some taste-based discrimination (Marom et al. 2015), on the other hand there is choice homophily, where backers from a minority tend to support a founder from a certain minority in a discriminated context (Greenberg & Mollick 2015). Thus, little is known about what mitigates gender bias.

We argue that observational data alone is problematic for studying this subject. Selection problems would harm the results when we compare men and women who self-selected in these contexts. In addition, there is little information about the backers and previous research studied mostly the gender as it is practical to infer. We believe that experimental techniques would complement the earlier literature as it is possible to manipulate the gender and the context in a controlled environment. In addition, experiments are particularly favorable to crowdfunding setting as their external validity is more credible vis-à-vis other traditional forms of funding. Following the experimental setup of Greenberg & Mollick (2015), we run two experiments where we manipulate the gender of the entrepreneur, its context, and we distribute the profiles to be rated by a group of respondents. In our setting, we highlight the role of the entrepreneur, showing him/her in a different page, giving a stronger role compared to traditional platforms. We believe that this provides us with upper bound estimation of the gender bias, if any. In one study, we use Amazon Mechanical Turk (MTurk) to have a broad sample of participants that are hard to attract using lab experiments. The variety of respondents and the context of crowdfunding mitigate the problem of external validity. To further mitigate the suspects about it, we re-run the experiment on a group of master student from an economics of innovation program at an elite European business school<sup>1</sup>.

The results suggest no significant differences in the tendency to finance crowdfunding projects run by female entrepreneurs. The results hold controlling for many different socio-demographic characteristics of the backers. In addition, we test for the potential explanations about homophily and we found no statistically significant effect of homophily between backers and founders, even after taking context into account. We more deeply the interaction between gender of the founder and the only significant characteristic of the backers – their willingness to invest – and we found that the straightforward positive association between higher willingness to invest in crowdfunding and higher interest to invest in the proposed project is driven by the interaction with the female entrepreneur variable. Additional analysis shows how the effect does not change when the backer is male or female. This finding supports the idea that crowdfunding is a more democratic tool to collect resources that does not rely, analogously to Agrawal et al (2015), on traditional constraints of other channels – in this case, homophily.

We contribute to the field in three ways. First, our study provides experimental evidence that corroborates our understanding about the absence of discrimination. Second, our study does provide evidence that socio-demographic characteristics of the backers do not affect the decision of funding, and it suggests that it can be a democratic tool to provide resources. Third, we further explore the mechanism of the decision to fund and we find out that gender plays a role in an unexpected way: female entrepreneurs are more likely to be funded by those with more willingness to invest. This paper proceeds

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<sup>1</sup> <http://bit.ly/1Kjrt32>

as following. The next section reviews the theory, section 3 describes the experimental evidence, section 4 discusses the results and their implications, and section 5 concludes.

## **Earlier Literature**

### ***Gender Gap***

Before even being relevant for the entrepreneurship literature, the gender gap is widely discussed within labor economics through discrimination studies (for an extensive review, see Altonji & Blank 1999). Audit studies confirm that simply being a woman is associated to a lower probability of hiring as a waitress in restaurants (Neumark et al. 1996). This is also extended to more sophisticated jobs. For example, among orchestra players, blind auditions increase the likelihood for a woman to be hired (Goldin & Rouse 2000).

With respect to other professional activities, entrepreneurship is considered a gendered institution (Greenberg & Mollick 2014). While there was interest in women entrepreneurship between 1982 and 1995, it lost traction after novelty vanished and male-centered business model became taken for granted (Baker et al. 1997). One of the gender differences can lie in the different environment women face while trying to start a business (Zhang et al 2009, Zunino 2015) and in the social capital (Sorenson & Stuart 2008). Stereotypes play a role too, and women are seen less as entrepreneurs with respect to men (Thebaud 2010, Gupta et al. 2014). Experiments confirm that entrepreneurship is a male endeavor: characteristics of a successful entrepreneur are more associated to those of a man (Buttner & Rosen 1988). For example, attractiveness is a premium for male entrepreneurs pitching the same business model, female entrepreneurs who are attractive suffer a negative – but insignificant – penalty (Wood-Brooks et al 2014).

While it is common to think that the gender gap can be explained by different lifestyle choices of women, women entrepreneurs rather seem not to succeed because of lack of financial resources (Carter & Allen 1997). The literature is abundant of evidence that small firms operated by women obtain less funds with respect to men (Robb *et al.* 2009, Marlow & Patton 2005).

Evidence of lower funding to women businesses is widespread across categories of gatekeepers: banks (Alesina et al. 2013), angel investors (Becker-Blease & Sohl 2007, 2011), and venture capitalists (Gompers et al. 2014). The lack of startup funding translates in less women-led companies going for an IPO (Bigelow et al 2012).

### ***Crowdfunding***

Crowdfunding is a relatively new phenomenon that spun off from crowdsourcing (Kleeman et al 2008) and it is defined as “an open call, mostly through the internet, for the provision of financial resources either in form of donation or in exchange for the future product or some form of reward to support initiatives for specific purposes” (Belleflamme et al 2014).

Both people and companies can propose projects, when individuals seek for funding, single projects most often turn into ventures (Mollick 2014, Mollick & Kuppuswamy 2014). This makes crowdfunding an appealing mean to bootstrap a venture. A fact in support of the face validity of the relevance of crowdfunding for entrepreneurship is the JOBS and CROWDFUND acts that the US government passed in order to ease the fundraising through this channel (for a succinct review of the acts see Kaufman et al 2013).

Crowdfunding differs from traditional forms of investment because of the different goals of the investors that are in the platform. Crowdfunding investors are different from each other (Lin et al 2014) in reaping “community benefits” (Jeppesen & Frederiksen 2006, Gerber et al 2012). They can invest expecting proper

returns, they can be anticipated customers, or they just patronize (Ordanini et al 2011, Belleflamme et al 2014). The funders of reward-based crowdfunding behave differently from traditional investors, and they are sensitive to free-riding behavior and belonging to the project (Boudreau et al. 2015). Success factors of crowdfunded projects are still understudied. Descriptive exploratory studies highlight the role of social networks (Mollick 2014, Agrawal et al. 2015) in addition to the presence of the video, frequent updates, and proxies of higher quality (Mollick 2014). These peculiar characteristics make crowdfunding a novel alternative channel for individuals looking for funding. E.g., within crowdfunding, geography matters less because it abates the traditional costs of geographical distance (Brynjolfsson et al 2009): easier search, less need for monitoring, and information on what others have done (Agrawal et al 2015).

### ***Gender Gap and Crowdfunding***

We believe that easier search is the key aspect that can help to reduce the gender bias. Evidence from e-commerce shows that better search implies better match (Bakos 1997). A better match at the project level can reduce the salience of the entrepreneur's characteristics as proxy of the project's itself. Hierarchy structure is another salient antecedent of female participation in crowdfunding: women tend to be more involved whenever the structure is less hierarchical and more network-based (Whittington & Smith-Doerr 2008). To our knowledge, at the time there are two major studies that investigate gender and crowdfunding.

Marom et al (2014) studied the gender differences in crowdfunding projects and found initial encouraging evidence of higher presence of women as both entrepreneurs and investors, their higher success rate. Moreover they document initial evidence of homophily between entrepreneur's, investor's, and project's gender. A follow-up survey shows evidence of taste-based discrimination. Greenberg & Mollick (2014) analyze similar data from Kickstarter and found less gender disparity in crowdfunding vis-à-vis traditional channels. Moreover, the driver of homophile behavior appears to lie in a "subpopulation of female backers that disproportionately support women founder in areas in which women are historically represented (p. 36)". This appears in contrast with Marom et al (2014). To sum up, it seems that the factor that mitigates gender bias in crowdfunding is the homophily between the entrepreneurs and the backers, with the project's category which plays an ambiguous mediator role.

The studies mentioned above relied most exclusively on the use of archival data. This poses challenges to the measurement of gender bias because of the problem of selection. For example, (smarter) women can anticipate the potential discrimination in presenting an idea and ask for funding under the pseudonym of an organization. In addition, because women are more risk averse, only women on average of better quality choose to look for funding on crowdfunding. This is a very well-known problem in labor economics, where scholars relied, among other methods, on audit studies (most notably Neumark et al 1996, Goldin & Rouse 2000, and Bertrand & Mullainathan 2004). Audit studies manipulate, *ceteris paribus*, the discriminating variable in experimental or quasi experimental settings. Because the nature of our study is exploratory and there is no theory to test, we do not posit any hypothesis.

We contribute to the literature by adding experimental evidence to the topic. We design an experiment that in spirit recalls an audit study using Amazon Mechanical Turk (MTurk). MTurk is a platform that crowdsources tasks in exchange of a fixed (small payment), and it represents an appealing alternative to the lab. Previous studies in decision making (Paolacci et al. 2010), political science (Berinsky et al., 2012), and psychology (Buhrmester et al., 2011) compared traditional controlled lab experiments with those ran using Amazon Mechanical Turk. These studies confirmed the validity of Amazon Turk experiments as an alternative method for data collection.

### **Study 1**

## **Design**

In order to test empirically our hypotheses, we designed an online experiment that we ran in May 2015, which uses a completely randomized between-subject design. We framed the experiment as a decision situation, where the subjects were requested to evaluate a project to be posted on a premier crowdfunding platform. For each project, we randomized both the gender of the project (male, neutral, and female) and the gender (male and female) of the entrepreneur – a 3x2 design. We used Qualtrics software to design the experiment and randomize the project's and the entrepreneur's gender. Each subject had to evaluate only one of the six combinations. They had to provide feedback about the project, the entrepreneur, and they were asked to consider investing in the project.

Drawing from the existing ongoing research on crowdfunding (Greenberg & Mollick 2015, Marom et al. 2015), we chose "Fashion" as category for "female" projects (women are overrepresented among founders), "Film" for "neutral" projects (men and women are balanced), and "Games" for "male" projects (men are overrepresented). We selected one project from each category on the Kickstarter platform among those complying with three criteria: (1) fully funded; (2) goal between \$ 30,000 and \$ 40,000; (3) developed by an individual and not by a group or a company.

For each project, we generate a male and female version. As a baseline, we used the original narrative about the founder posted on Kickstarter, modified as follows. We changed the name of the entrepreneur with a gender neutral name (Taylor), and we removed the part of the narrative that could be identified as masculine or feminine. Then, we "gendered" the projects through pronouns and a picture of a young white individual wearing a business casual attire.

## **Procedure**

The online survey consists of five steps – as shown in fig. 1. In step 1, we describe briefly what crowdfunding is to the participant and we ask her whether she has heard about crowdfunding before, and how likely she would invest in a crowdfunded project. In step 2, we provide the participant with the instructions asking her to provide feedback on the project, paying attention to each single characteristic. The participant read the project's description and answered an attention check. In step 3, the participant read the description of the entrepreneur and saw his/her picture. After, we use two attention checks concerning the activity of the entrepreneur and his/her gender. In step 4, we collected socio-demographic information about the participant. In step 5, we finally collected subjects' feedback about the project and the entrepreneur.

The experiment was run on 300 subjects on MTurk in exchange of a small fee. The participant was asked to click on the Qualtrics link. Participants had to provide their MTurk ID in order to avoid multiple respondents. We recruited 271 subjects, of whom 244 successfully passed the three attention checks, and 234 answered from the United States and not from somewhere else.

## **Results**

Table 1 reports the descriptive statistics of the respondents. In our sample of 234 respondents, women are 56%, and they are overrepresented with respect to the 44% of women who participate to crowdfunding (Marom et al 2015). Around half of the sample is under 30, followed by 39% of people between 31 and 45, and 13 percent of people older than 45. The average education is quite high: the majority of the subjects (63%) have college education, and an additional 15% has master education or

above. The information about employment is somehow reassuring about external validity. In fact, students are only 15% of the sample, unemployed have the same share, and 70% of the sample is employed. Notably, 15% of the sample define themselves as self-employed.

The vast majority of the subjects, 84%, already know crowdfunding and they are on average agnostic (average score of 5.37 out of 10) about investing in a crowdfunding project.

In addition, we draw a comparison between male and female subjects. Table 1 reports the observables of the two groups: the last column reports the difference and its statistical significance. Women in the sample are significantly more likely to be married and to have children, a higher number of them is unemployed and there is a lower number of employees. These differences suggest that there are more unemployed married women with children, a profile that is consistent to the housewife. In addition, women are *ex ante* less willing to invest in crowdfunding<sup>2</sup>, even if there is no statistical difference in the knowledge of crowdfunding.

We analyzed the respondents' reactions to the proposed project by focusing on the target variables of interest illustrated in Table 2. Clearly, the variables of interest have different nature. We used respectively linear regression and ordinal logistic regression to explore the relations between the numerical and the ordinal target variables and some focal explanatory variables. As a preliminary analysis, we tested the relations between the target variables and the socio-demographic characteristics of the respondents. Quite interestingly, we did not find significant relations for any target variable besides the willingness to invest in crowdfunding. Thus, we will not report the table. We retain the only significant variable, and we add the type of the project and the founder to the models. There, we observed significant relations between all the response variables and the type of project. For sake of brevity, we will report only the key target variables, i.e. "Choice" and "Entrepreneur's rating". In the appendix, we report the regressions with the other response variables. Table 3 presents the results.

In the first model, we observe that, with respect to the "neutral" project, the "male" project, followed by the "female" project received higher consensus both in the choice to invest and in the rating of the entrepreneur. We then moved to the analysis of the relation between the responses and the founder's gender. While there is not significant relationship between the founder's gender and the propensity to fund the project, we observe that there is a significant relationship between the entrepreneur's rating and the gender of the founder. *Ceteris paribus*, women who present a project on crowdfunding are considered better than their men counterparts. This result - same funding with better rating of the entrepreneur - suggests the existence of some taste discrimination.

In the second model, we unbundle the gender differences by looking at the interactions with the type of project and the gender of the entrepreneur. We observe an interesting pattern: for the investment decision, there is no evidence that a woman presenting a project that is "masculine" will decrease the probability of funding. In addition, if the respondent has higher propensity to invest in crowdfunding, she will be more likely to invest if the project is sponsored by a woman. For what concerns the rating of the entrepreneur, there is evidence of a reward in term of identity between the "gender" of the project and the gender of the entrepreneur. Male projects presented by male and female projects presented by female tend to be more favorably seen by the respondents. Moreover, we still observe the pattern above: the more likely the respondent would invest in crowdfunding, the better she thinks of the entrepreneur if she is a woman.

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<sup>2</sup> consistently with the literature about women and risk preferences (Croson & Gneezy 2009)

In the third model, we further unpack the gender differences by looking whether the gender of the respondent to observe whether there is homophily. I.e., respondents finance entrepreneurs of their same gender. We observe that there is evidence of homophily at the project rather than the entrepreneur level. The gender of the entrepreneur seems not to matter for the investment decision. For the entrepreneur level, if the entrepreneur is a woman, she suffers a penalty in the propensity to be funded. However, the level of willingness to invest in crowdfunding compensates the discount: we observe the positive interaction between the level of willingness in crowdfunding and woman entrepreneur for men only ( $\chi^2 = 4.30, p=0.04$ ). For women, the interaction is small, negative, and insignificant. For men, the average value for willingness to invest in crowdfunding (5.77 out of 10) compensates for the penalty assigned to women entrepreneurs.<sup>3</sup>

For the rating of the entrepreneur, we observe that none of the variables of interest are significant for men. Looking at women, the respondents tend to rate more favorably men who propose a “masculine” project or women who propose a “feminine” project. In addition, there seems to be an analogue relationship between gender and willingness to invest in crowdfunding. Being a female entrepreneur *per se* is negatively associated to a positive rating, however the more a woman respondent is willing to invest in crowdfunding, the more she will rate the female entrepreneur positively. Interesting enough, if a woman respondent is willing to invest in crowdfunding, she will rate a male entrepreneur more negatively. This pattern seems analogous to findings of Greenberg & Mollick (2014): the so-called “activist” women tend to favor women entrepreneurs in crowdfunding. Moreover, among the above mentioned relationships, the only one that is statistically significant across gender of respondents is the negative relationship between willingness to invest and rating of the entrepreneur ( $\chi^2 = 4.84, p=0.03$ ).

## Study 2

For sake of external validity, we re-ran study 1 on a sample of students and alumni from an elite business school in Italy.

## EXPERIMENT IN PROGRESS

### Conclusion

Our exploratory analysis provides interesting evidence about the gender dynamics in crowdfunding. First of all, there seems not to be evidence of a penalty for women entrepreneurs on crowdfunding platforms. This is an important result, as we may have overestimated the role of the entrepreneur on crowdfunding platforms by showing the information on a separate page. Usually, the salience of the entrepreneur is minimized and backers devote more attention to the project. The only concern may arise if we consider that women are better rated with respect to the male counterparts while they get the same amount of funding. We could interpret this evidence as a case of slight taste discrimination.

In addition, we unpacked the gender differences by looking at the identity between gender of the entrepreneur and the gender of the project. On one hand, by looking at the investment choice, we observed that there is no premium for the identity between female entrepreneur and female project, while it is the case for a male entrepreneur for a male project. On the other hand, this premium exists for the rating of the entrepreneur, inflating the evidence about mild taste discrimination.

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<sup>3</sup> In fact, if we substitute the control variable “willingness to invest in crowdfunding” with its standardized transformation, we observe that the main effect of “female entrepreneur” turns insignificant (not reported).

We study further the gender dynamics by looking at the gender of the backers. We observe that the homophily that usually exists at the funder-entrepreneur level shifts to the project level: in fact, men tend to finance more “masculine” projects and women tend to finance more “feminine” projects irrespective of the gender of the entrepreneur. Given that our experiment highlighted the role of the entrepreneur over the project, this represents an upper-bound estimate.

In support of crowdfunding as a gender bias-free environment, we observe that the more a backer is willing to invest in crowdfunding, the more this backer will invest in a project if presented by a woman. This means that more (potentially) active backers tend to favor women – we decide to explore further this interaction by looking at a gender-specific effect. Notably, men are driving the support to female entrepreneurs.

The results of this experiment suggest that a reward-based crowdfunding platform seems not to be seriously troubled by gender bias. What usually drives gender bias is that institutions are gendered and they favor entrepreneurs of the same sex. In this case, men who are more willing to invest in crowdfunding are those who are favoring the investment in women, while women are alighting the other side of taste discrimination, i.e. believing women to be better but rewarding them the same.

## References

- Agrawal, A., Catalini, C., & Goldfarb, A. (2015). Crowdfunding: Geography, Social Networks, and the Timing of Investment Decisions. *Journal of Economics & Management Strategy*, 24(2), 253-274.
- Altonji, J. G., & Blank, R. M. (1999). Race and gender in the labor market. *Handbook of labor economics*, 3, 3143-3259.
- Alesina, A. F., Lotti, F., & Mistrulli, P. E. (2013). Do women pay more for credit? Evidence from Italy. *Journal of the European Economic Association*, 11(s1), 45-66.
- Baker, T. E., Aldrich, H., & Nina, L. (1997). Invisible entrepreneurs: the neglect of women business owners by mass media and scholarly journals in the USA. *Entrepreneurship & Regional Development*, 9(3), 221-238.
- Bakos, J. Y. (1997). Reducing buyer search costs: Implications for electronic marketplaces. *Management science*, 43(12), 1676-1692.
- Becker-Blease, J. R., & Sohl, J. E. (2007). Do women-owned businesses have equal access to angel capital?. *Journal of Business Venturing*, 22(4), 503-521.
- Becker-Blease, J. R., & Sohl, J. E. (2011). The effect of gender diversity on angel group investment. *Entrepreneurship Theory and Practice*, 35(4), 709-733.
- Belleflamme, P., Lambert, T., & Schwienbacher, A. (2014). Crowdfunding: Tapping the right crowd. *Journal of Business Venturing*, 29(5), 585-609.
- Berinsky, A. J., Huber, G. A., & Lenz, G. S. (2012). Evaluating online labor markets for experimental research: Amazon. com's Mechanical Turk. *Political Analysis*, 20(3), 351-368.
- Bertrand, M., & Mullainathan, S. (2004). Are Emily and Greg More Employable Than Lakisha and Jamal? A Field Experiment on Labor Market Discrimination. *American Economic Review*, 94(4), 991-1013.
- Bigelow, L., Lundmark, L., Parks, J. M., & Wuebker, R. (2014). Skirting the Issues Experimental Evidence of Gender Bias in IPO Prospectus Evaluations. *Journal of Management*, 40(6), 1732-1759.
- Brooks-Wood, A., Huang, L., Kearney, S. W., & Murray, F. E. (2014). Investors prefer entrepreneurial ventures pitched by attractive men. *Proceedings of the National Academy of Sciences*, 111(12), 4427-4431.
- Brynjolfsson, E., Hu, Y., & Rahman, M. S. (2009). Battle of the retail channels: How product selection and geography drive cross-channel competition. *Management Science*, 55(11), 1755-1765.
- Buhrmester, M., Kwang, T., & Gosling, S. D. (2011). Amazon's Mechanical Turk a new source of inexpensive, yet high-quality, data?. *Perspectives on psychological science*, 6(1), 3-5.
- M. Carter, N., & R. Allen, K. (1997). Size determinants of women-owned businesses: choice or barriers to resources? *Entrepreneurship & Regional Development*, 9(3), 211-220.

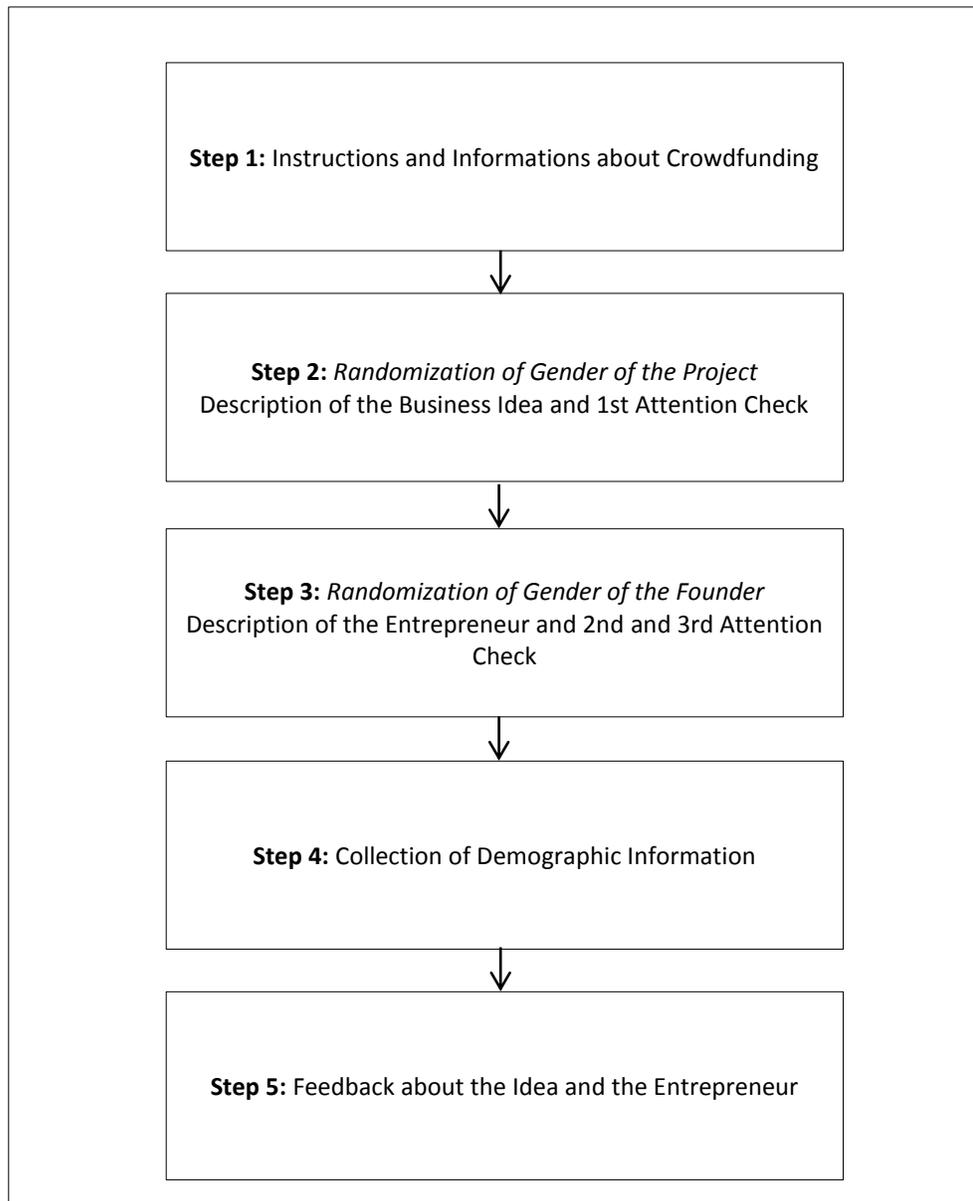
- Choi, Y. R., & Shepherd, D. A. (2004). Entrepreneurs' decisions to exploit opportunities. *Journal of management*, 30(3), 377-395.
- Goldin, C., & Rouse, C. (2000). Orchestrating Impartiality: The Impact of "Blind" Auditions on Female Musicians. *The American Economic Review*, 90(4), 715-741.
- Gompers, P. A., Mukharlyamov, V., Weisburst, E., & Xuan, Y. (2014). Gender effects in venture capital. Available at SSRN 2445497.
- Greenberg, J., & Mollick, E. R. (2015). Leaning in or leaning on? Gender, homophily, and activism in crowdfunding. *Working Paper*.
- Jeppesen, L. B., & Frederiksen, L. (2006). Why do users contribute to firm-hosted user communities? The case of computer-controlled music instruments. *Organization science*, 17(1), 45-63.
- Kalnins, A., & Williams, M. (2014). When do female-owned businesses out-survive male-owned businesses? A disaggregated approach by industry and geography. *Journal of Business Venturing*, 29(6), 822-835.
- Kaufman, Z. D., Kassinger, T. W., & Traeger, H. L. (2013). Democratizing Entrepreneurship: An Overview of the Past, Present, and Future of Crowdfunding. *Bloomberg BNA Securities Regulation & Law Report*, 45(5), 208-217.
- Kleemann, F., & Voss, G. G. (2008). Un(der) paid Innovators: The Commercial Utilization of Consumer Work through Crowdsourcing. *Science, Technology & Innovation Studies*, 4(1).
- Goldin, C., & Rouse, C. (2000). Orchestrating Impartiality: The Impact of "Blind" Auditions on Female Musicians. *The American Economic Review*, 90(4), 715-741.
- Lin, Y., Boh, W. F., & Goh, K. H. (2014). How Different are Crowdfunders? Examining Archetypes of Crowdfunders and Their Choice of Projects. In *Academy of Management Proceedings* (Vol. 2014, No. 1, p. 13309).
- Marlow, S., & Patton, D. (2005). All credit to men? Entrepreneurship, finance, and gender. *Entrepreneurship Theory and practice*, 29(6), 717-735.
- Marom, D., Robb, A., & Sade, O. (2014). Gender Dynamics in Crowdfunding (Kickstarter): Evidence on Entrepreneurs, Investors, Deals and Taste Based Discrimination. *Investors, Deals and Taste Based Discrimination* (October 10, 2014).
- Mollick, E. (2014). The dynamics of crowdfunding: An exploratory study. *Journal of Business Venturing*, 29(1), 1-16.
- Mollick, E. R., & Kuppaswamy, V. (2014). After the campaign: Outcomes of crowdfunding. *UNC Kenan-Flagler Research Paper*, (2376997).
- Mollick, E., & Nanda, R. (2014). *Wisdom or Madness? Comparing Crowds with Expert Evaluation in Funding the Arts* (No. 14-116). Harvard Business School.

- Neumark, D., Bank, R. J., & Van Nort, K. D. (1996). Sex Discrimination in Restaurant Hiring: An Audit Study. *The Quarterly Journal of Economics*, 915-941.
- Ordanini, A., Miceli, L., Pizzetti, M., & Parasuraman, A. (2011). Crowd-funding: transforming customers into investors through innovative service platforms. *Journal of service management*, 22(4), 443-470.
- Paolacci, G., Chandler, J., & Ipeirotis, P. G. (2010). Running experiments on amazon mechanical turk. *Judgment and Decision making*, 5(5), 411-419.
- Riquelme, H., & Rickards, T. (1992). Hybrid conjoint analysis: An estimation probe in new venture decisions. *Journal of Business Venturing*, 7(6), 505-518.
- Robb, A., Ballou, J., DesRoches, D., Potter, F., Zhao, Z., & Reedy, E. J. (2009). An overview of the Kauffman Firm Survey: results from the 2004-2007 data. *Available at SSRN 1392292*.
- Sorenson, O., & Stuart, T. E. (2008). Bringing the context back in: Settings and the search for syndicate partners in venture capital investment networks. *Administrative Science Quarterly*, 53(2), 266-294.
- Whittington, K. B., & Smith-Doerr, L. (2008). Women inventors in context: Disparities in patenting across academia and industry. *Gender & Society*.
- Zhang, Z., Zyphur, M. J., Narayanan, J., Arvey, R. D., Chaturvedi, S., Avolio, B. J., ... & Larsson, G. (2009). The genetic basis of entrepreneurship: Effects of gender and personality. *Organizational Behavior and Human Decision Processes*, 110(2), 93-107.
- Zunino, D. (2015). Born Entrepreneur, but where? A twin study on the moderating effect of the institutional environment on the predisposition to self-employment. *Working Paper*.

## Tables and Figures

**Figure 1.** Description of the Experiment

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**Table 1.** Descriptive Statistics

|                        | Total |       | Female |       | Male  |       | Difference | t statistic |
|------------------------|-------|-------|--------|-------|-------|-------|------------|-------------|
|                        | mean  | s.d.  | mean   | s.d.  | mean  | s.d.  |            |             |
| Age 18-30              | 0.483 | 0.501 | 0.454  | 0.500 | 0.519 | 0.502 | 0.065      | 0.992       |
| Age 31-45              | 0.385 | 0.488 | 0.385  | 0.488 | 0.385 | 0.489 | 0.000      | 0.000       |
| Age 45-65              | 0.132 | 0.340 | 0.162  | 0.369 | 0.096 | 0.296 | -0.065     | -1.467      |
| Age 65+                | 0.389 | 0.489 | 0.446  | 0.499 | 0.317 | 0.468 | -0.129     | -2.018**    |
| Married                | 0.393 | 0.489 | 0.515  | 0.502 | 0.240 | 0.429 | -0.275     | -4.438***   |
| Has children           | 0.222 | 0.417 | 0.215  | 0.413 | 0.231 | 0.423 | 0.015      | 0.280       |
| Education: High school | 0.628 | 0.484 | 0.615  | 0.488 | 0.644 | 0.481 | 0.029      | 0.452       |
| Education: College     | 0.150 | 0.357 | 0.169  | 0.376 | 0.125 | 0.332 | -0.044     | -0.940      |
| Education: Master      | 0.556 | 0.498 | 0.500  | 0.502 | 0.625 | 0.486 | 0.125      | 1.919*      |
| Job: Employee          | 0.145 | 0.353 | 0.154  | 0.362 | 0.135 | 0.343 | -0.019     | -0.413      |
| Job: Self-Employed     | 0.145 | 0.353 | 0.215  | 0.413 | 0.058 | 0.234 | -0.158     | -3.474***   |
| Job: Unemployed        | 0.154 | 0.362 | 0.131  | 0.338 | 0.183 | 0.388 | 0.052      | 1.092       |
| Job: Student           | 0.838 | 0.370 | 0.846  | 0.362 | 0.827 | 0.380 | -0.019     | -0.395      |
| Knows Crowdfunding     | 5.372 | 2.560 | 5.046  | 2.505 | 5.779 | 2.581 | 0.733      | 2.193**     |
| Willingness to invest  | 0.483 | 0.501 | 0.454  | 0.500 | 0.519 | 0.502 | 0.065      | 0.992       |
| N                      | 234   |       | 130    |       | 104   |       |            |             |

Note. Respondents who passed the three attention checks and responding from the US. Significance levels: \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

**Table 2.** Target variables and their characteristics

| Variable                              | Description   | Type   |
|---------------------------------------|---|--|
| <i>Project Related variables</i>      |   |  |
| <b>Choice</b>                         | <b>Are you interested in investing in this project?</b> | <b>Categorical ordinal variable (0=No; 1=Maybe; 2=Yes)</b> |
| Project Interest                      | How much interesting do you consider the project?       | Numerical discrete variable ranging from 0 to 10.          |
| Project Success                       | Will the project be successful?                         | Numerical discrete variable ranging from 0 to 10.          |
| <i>Entrepreneur Related variables</i> |   |  |
| <b>Entrepreneur's rating</b>          | <b>How do you consider the funder?</b>                  | <b>Numerical discrete variable ranging from 0 to 10.</b>   |
| Entrepreneur is able                  | Will the funder be able to complete the project?        | Numerical discrete variable ranging from 0 to 10.          |
| Entrepreneur is committed             | Will the funder be devoted to the project?              | Numerical discrete variable ranging from 0 to 10.          |

Note. The bold response variables are those that we report in the corpus of the study.

**Table 3.** Gender and context effects and interactions.

| <i>Dep. var</i><br><i>Resp. gender</i> | Model 1                       |                               | Model 2            |                               | Model 3                        |                               |                               |                     |
|--|-------------------------------|-------------------------------|--------------------|-------------------------------|--------------------------------|-------------------------------|-------------------------------|---------------------|
|  | Choice                        | Rating                        | Choice             | Rating                        | Choice                         | Choice                        | Rating                        | Rating              |
|  | Pooled                        |                               | Pooled             |                               | Males                          | Females                       | Males                         | Females             |
| Female Ent                             | 0.380<br>(0.279)              | 0.452 <sup>+</sup><br>(0.261) | -0.862<br>(0.762)  | -1.026<br>(0.744)             | -2.311 <sup>+</sup><br>(1.295) | 0.971<br>(1.248)              | 0.0551<br>(0.999)             | -2.200*<br>(0.921)  |
| Female proj                            | 0.612 <sup>+</sup><br>(0.340) | 0.884**<br>(0.325)            | 0.658<br>(0.509)   | 0.0749<br>(0.508)             | 0.209<br>(0.734)               | 1.416 <sup>+</sup><br>(0.777) | 0.199<br>(0.661)              | -0.131<br>(0.583)   |
| Female ent*<br>Female proj             |                               |                               | 0.0794<br>(0.698)  | 1.657**<br>(0.628)            | -0.0417<br>(1.083)             | -0.491<br>(0.993)             | 0.572<br>(0.980)              | 2.286**<br>(0.795)  |
| Male proj                              | 1.187***<br>(0.330)           | 1.084***<br>(0.322)           | 1.365**<br>(0.463) | 1.279*<br>(0.494)             | 1.096 <sup>+</sup><br>(0.616)  | 1.727*<br>(0.785)             | 1.001 <sup>+</sup><br>(0.584) | 1.608*<br>(0.626)   |
| Female ent*<br>Male proj               |                               |                               | -0.168<br>(0.678)  | -0.285<br>(0.637)             | -0.192<br>(0.951)              | -0.514<br>(1.033)             | -1.146<br>(0.878)             | 0.125<br>(0.876)    |
| Willingness<br>to invest               | 0.152**<br>(0.052)            | -0.003<br>(0.058)             | 0.047<br>(0.065)   | -0.084<br>(0.088)             | -0.028<br>(0.098)              | 0.169<br>(0.122)              | 0.093<br>(0.094)              | -0.268**<br>(0.097) |
| Female ent*<br>Willing to inv          |                               |                               | 0.231*<br>(0.110)  | 0.193 <sup>+</sup><br>(0.106) | 0.450*<br>(0.177)              | -0.008<br>(0.167)             | 0.146<br>(0.148)              | 0.322*<br>(0.139)   |
| <i>(Pseudo)R</i> <sup>2</sup>          | 0.055                         | 0.069                         | 0.066              | 0.125                         | 0.079                          | 0.072                         | 0.167                         | 0.167               |
| <i>N</i>                               | 234                           | 234                           | 234                | 234                           | 104                            | 130                           | 104                           | 130                 |

Notes: Robust standard errors in parentheses. Choice models are Ordered logistic regressions (would you invest? 0= No, 1=Maybe, 2=Yes). Significance levels: + p < 0.10, \* p < 0.05, \*\* p < 0.01, \*\*\* p < 0.001