

Gender Dynamics in Crowdfunding (Kickstarter):

Evidence on Entrepreneurs, Investors, Deals, and Taste-Based Discrimination

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Abstract:

This paper investigates whether a new market for early stage venture financing - crowdfunding (Kickstarter) - reduces the barriers of female entrepreneurs to raise pre-seed capital. Women are 35% of the project leaders and 44% of the investors on the platform and are concentrated in specific sectors. On average, men seek significantly higher levels of capital (and raise more) than women. However, women enjoy higher rates of success, even after controlling for category and goal. Only 23% (40%) of projects that men (women) invested in had female project leads. We conducted a survey of Kickstarter investors and find evidence of taste-based discrimination.

1. Introduction

Using the Internet to mobilize a crowd of supporters to fund a project or a business was an almost nonexistent approach a decade ago. Yet, in a relatively very short timeframe, billions of dollars have been raised recently on crowdfunding platforms to fund new projects and companies. Crowdfunding leverages the Internet and social networks in order to raise funds from a large number of investors, where individual investors usually contribute a small amount. In addition to reaching out to circles of family and friends, crowdfunding enables an entrepreneur seeking financing for early-stage ventures to reach out to an undefined large number of potential investors. Many of its supporters argue that crowdfunding has the potential to “democratize” the entrepreneurship funding process and capital markets by serving as a means for both women entrepreneurs and women investors to participate more fully¹.

This paper investigates whether or not crowdfunding, as a new form of venture financing, might have disproportionate effects on female entrepreneurs, who have typically been under-represented in both entrepreneurship and in funding entrepreneurs. Our paper investigates if participation rates by women are higher on a crowdfunding platform as entrepreneurs and as investors than those found in business ownership and investment more generally. In addition, we study gender dynamics with respect to the process of raising funding via a crowdfunding platform.

Women make up less than 30 percent of business owners in the United States, and fewer than 20 percent of businesses that have any employees other than the business owner herself (U.S. Census Bureau 2010). The gap is even larger on the investor side: Women make up less than 20 percent of angel investors in the U.S. (Sohl 2014) and less than 6 percent of partners at venture

¹ <http://www.forbes.com/sites/chicceo/2014/03/08/women-led-businesses-the-underserved-opportunity-sxsw-2014/>
<http://www.forbes.com/sites/women2/2013/12/04/why-equity-crowdfunding-is-good-news-for->
<http://www.forbes.com/sites/geristengel/2014/03/26/equity-crowdfunding-site-targets-the-gigantic-women-untapped-consumer-market>
<http://www.85broads.com/public/blogs/85-broads/articles/crowdfunding-a-new-way-for-women-to-jumpstart-their-businesses>
http://www.dallasnews.com/business/small-business/20130918-moolahoop-aims-to-help-female-entrepreneurs-raise-startup-capital-via-crowdfunding.ece?nclink_check=1

capital firms (Brush et. al 2014). The academic literature clearly documents that women are not participating at rates that men do in either entrepreneurship or in business investing.

Even for women who do launch firms, numerous studies have documented that women launch firms in sectors with lower capital requirements, such as retail and services, and, regardless of industry, with significantly smaller amounts of capital than men (ex. Carter, Williams and Reynolds 1997; Coleman and Robb 2009; Rosa, Carter and Hamilton 1996). Lower levels of capital can constrain the ability of firms to grow, as well as increase the risk of financial distress if the firm does not have sufficient liquidity to weather periods of adversity².

We use data from the crowdfunding platform Kickstarter. Kickstarter is one of the world's most prominent crowdfunding platforms. Serving as an intermediary between entrepreneurs seeking funding and potential investors (projects' backers), the Kickstarter platform utilizes the rewards-based crowdfunding model as a fundraising mechanism.

We used custom software to create our dataset, which retrieved information on 16,641 successful projects, 4,128 failed projects, 22,580 entrepreneurs, 1,108,186 investors (backers), and investments that total more than \$120 million. Our data cover the period from April 2009, which denotes the inception of Kickstarter, up to March 2012.

After eliminating projects in which the entrepreneurs were organizations rather than individuals or teams of individuals, we used a customized algorithm to determine the gender of the entrepreneur(s) and investor(s). We analyzed the names, cleaned the data where necessary, and extracted the first names. Our names-gender dictionary was compiled from online sources and

² Prior research suggests both demand-side and supply-side issues in the acquisition of financial capital. Demand-side issues include the preferences of the entrepreneur for growth, profits, industry sector, risk, and control, while supply-side factors would include the preferences of investors for specific types of industries, firms, or entrepreneurs. (Fabowale et al. 1995; Carter and Rosa 1998; Orser et al. 2006; Constantinidis et al. 2006). Further, there is some evidence that women continue to experience problems in terms of their relationships with lenders (Fabowale et al. 1995; Lee and Denslow 2004; Carter et al. 2007; Chaganti et al. 1995; Alsos et al. 2006; Becker-Blease and Sohl 2007; Greene et al. 2001; Brush et al. 2001, 2002; Menzies et al. 2004; Gatewood et al. 2009).

manual adaptations.³ After running the algorithm on our dataset we were able to classify, by gender, 13,533 projects with a single entrepreneur and 539 projects with teams of entrepreneurs.⁴

We first investigated whether or not the crowdfunding platform attracted higher female participation as project leaders, when compared to entrepreneurship more generally. Women-led projects made up about one-third of the projects led by one entrepreneur. We also document different participation rates by men and women across the different industries in Kickstarter. For example, the share of male entrepreneurs in the Comics, Games, and Technology categories was around the 85-90 percent. There was a majority of female entrepreneurs in the Dance category (74 percent) and females led more than half of the projects in Fashion and Food.

In examining the average financing goal by the gender of the entrepreneurs, our data indicated that females seek less funding than males, two-entrepreneur teams seek more funding than single entrepreneurs, and male teams seek more than female teams. Men not only seek higher levels of capital than women for their projects, they also raise more funds than women on average. The mean amount of funds raised by men was close to \$5,200, compared with a mean of about \$4,500 for women. Yet, the data also indicate that the higher the goal, the less the likelihood of success in reaching that goal. Women enjoyed higher rates of success (69.5 percent) compared with men (61.4 percent). One question that arises is whether or not women's relatively higher rate of success is due to their lower goals.

To investigate this, we matched projects by main category, sub-category, country of the entrepreneur, and goal amount, where the only difference was the gender of the entrepreneur (or the gender of the leading entrepreneur in the case of teams). We ended up with a subsample of 911 matched pairs. Women were still more likely than men to reach their funding goal (80 percent versus 74 percent), providing evidence that lower goals were not driving the higher rates of success among females.

³ It is used by several papers, for example Belenzon and Zarutskie (2012).

⁴ Further robustness checks revealed that this algorithm classified more than 95 percent of the names correctly. More about this mTurk experiment can be found at the "data" section (2.3).

We also investigate whether the platform attracts greater participation in investing by women, compared with business investing more generally. We were able to assign gender to 898,491 investors out of a total of 1,108,186 (81 percent of investors). We found that, like entrepreneurs, the majority of investors were also men. About 56 percent of the investors of the Kickstarter projects we identified were male, compared with 44 percent that were women. Interestingly, women actually made up a larger percentage of investors than entrepreneurs on this crowdfunding platform. This is a much higher participation level than is found by women in angel investing (20 percent) or venture capital (6 percent).

When we examined the preferences of investors for specific types of industries, we found that, similar to the case when discussing entrepreneurs, male investors were most interested in Comics, Product Design, Games, and Technologies, while the female investors dominate the Dance, Food and Theater categories. We next examined the relationship between the gender of the entrepreneurs (whether being one or two) and the share of females among the investors of the projects (disregarding sums of investments). Not only is the share of female (male) investors higher (lower) for the female-led projects than the male-led or male/female led—there is a clear trend that shows that the more the female is dominant in the project (i.e., two females>one female, one female>male, female-male>male female, one male>two males)—the share of female investors rises.

We next compared the share of investments in female-led projects to their share in the population of projects, for both males and females. The difference for the females' investors is positive, meaning that in almost every category they invested in more female-led projects, while the men chose to invest in male-led projects. For a matched sample (matched based on main category, sub-category, country, and fundraising goal) we still find that the absolute number of female investors was significantly higher for female-led projects and the number of male investors was significantly lower for female-led projects.

Questions arise around what factors explain the fact that female-led projects are predominantly financed by women. Is this driven by a certain type of discrimination or is it solely related to other alternative explanations not related to discrimination? There are two leading

explanations for discrimination in the economics literature. The first, by Becker (1957), focuses on “taste-based discrimination,” or personal prejudice, an economic player who dislikes or prefers not to be associated with individuals of a given race, gender, ethnicity, religion, certain defined status, or other defined personal characteristic. The second leading theory, by Arrow (1972) and Phelps (1972), focuses on “statistical discrimination”. According to this theory, discriminatory behavior can be rational and not resulted from prejudice behavior. Rather, it is the result of differences across groups in their specific relevant aggregate characteristics. Typically in statistical discrimination models, the discrimination in the marketplace involves stereotyping, which is used to cope with imperfect information.⁵

Are the differences that we document in the investment choices solely attributed to the industries in which these females operate or to the fact that there are more females in the female’s network? Are these differences due to the fact that females are less ambitious in their goals or business aspiration and hence do not attract male investors (statistical and economic discrimination)? Or is it also due to a gender equality (or inequality) attitude (taste-based discrimination)? In an attempt to disentangle taste-based discrimination from statistical discrimination and other potential explanations, we conducted a survey of nearly 200 investors from the Kickstarter platform and were able to match these investors to more than 100 projects in our database. We find evidence that some of the lower investment in female-led projects by men can be attributed to taste-based discrimination. Specifically, we find that gender equality attitude is correlated with the investment decision, above and beyond unobserved characteristics that may be associated with the fact that females invest in female-led projects.

We structure our paper in the following manner. Section 2 provides an overview of crowdfunding, the Kickstarter platform, and the data used in our analysis. Section 3 examines gender differences in participation on Kickstarter as an entrepreneur, while financial goals and the success of reaching those goals are examined in Section 4. We investigate the investor perspective

⁵ For an extensive discussion and review on taste-based or statistical discrimination see Guryan, J. and Charles, K. K. (2013).

in Section 5. Section 6 provides an investigation into taste-based versus statistical discrimination through an online survey of Kickstarter investors. A final section concludes.

2.0 Crowdfunding, Kickstarter and Data

2.1 Crowdfunding

At inception, crowdfunding was mainly utilized in the creative arts. Today, it is used widely by many different kinds of people for very different reasons. Entrepreneurs have joined the crowd, using this funding mechanism for things such as seed financing for startup costs, financing for the manufacturing and distribution of a product or prototype, or to purchase equipment or inventory to scale their businesses. Massolution, a research company specializing in crowdfunding, indicated that platforms collectively raised \$2.7 billion and successfully funded more than 1 million campaigns in 2012. In 2013, investments through crowdfunding grew to more than \$5 billion, where the largest markets are in North America and Western Europe (Wilson and Testoni 2014).

Crowdfunding is categorized into different types, distinguished by what investors are promised in return for their contributions (Bradford 2011). The donation model is when investors give money on a platform and receive nothing in return for their contribution. Although the contributor's motive is often charitable, the recipient's need not be. The lending model is based on a loan, where contributors are only providing the funds temporarily and repayment is expected. In some cases, investors are promised interest on the funds they loan. In other cases, they receive only their principal back. The equity model offers investors a share of the profits or an equity stake in the business they are helping to fund. Other popular ways to fund entrepreneurship activity are the reward model and the pre-purchase model. These two crowdfunding models are similar to each other, and often appear together on the same sites. The reward model offers something to the investor in return for the contribution, but without interest or part of the earnings of the business. The reward could be small, such as a keychain, or it could be something with a little more cachet, like the investor's name appearing in the credits of a movie. The pre-purchase model is similar in

nature, whereby contributors receive the product that the entrepreneur is making. For example, if the entrepreneur produces a music album, contributors would receive a copy of the album.

2.2 *Kickstarter*

Kickstarter is one of world's leading crowdfunding platforms and is considered by many as the most popular reward-based platform. Serving as an intermediary between entrepreneurs seeking funding and potential investors (projects' backers), the Kickstarter platform utilizes the reward-based crowdfunding model as a fundraising mechanism.⁶ It is also a platform that has been used by budding entrepreneurs to launch businesses. Kuppuswamy and Mollick (2014) conducted a survey of design, technology, and video games projects that raised money on Kickstarter before mid-2012 and found that more than 90 percent of successful projects remained ongoing ventures.

Researching the fundraising process through the crowdfunding platform, Kickstarter offers us a number of advantages: (1) Kickstarter focuses on projects for profit only (2) we can focus on early-stage finance, usually the least exposed stage to outsiders; (3) we have three years of data; (4) the data enable us to have a very clear definition of success – the entrepreneur sets a goal and must reach it, otherwise the entrepreneur gets zero funding; (5) we have a substantial number of ventures with gender detail on both the entrepreneurs and the investors.⁷

Kickstarter aims to fund a specific project, such as a musician's album recording or computer game. Kickstarter provides clear guidelines for what constitutes a project, stating:

⁶ For the purpose of defining who is an investor and what is an investment, we follow the definition that is suggested by many finance textbooks (see for example Bodie Kane and Marcus, "Essential of investments", chapter 1); "an investment is a current commitment of money or other resources in the expectation of reaping future benefits." An investor in the Kickstarter platform currently commits a small sum of money to support a risky project (with uncertainty) for the promise of reaping future benefits. Some of the benefits are specified (the reward) and additional benefits can also be emotional (being part of the creation of a venture that can make a difference). Those that disagree with this investment / investor definition can replace the term "investors" to "project's backers" and view the analysis as investigation of preferences – the results remain the same.

⁷ For an example of the use of Kickstarter data in examining the dynamics of crowdfunding, please see Mollick (2013).

"Funding for projects only. A project has a clear goal, like making an album, software, a computer game, a book, or a work of art. A project will eventually be completed, and something will be produced by it. A project is not open-ended. Starting a business, for example, does not qualify as a project." However, many entrepreneurs use crowdfunding to test a product, as well as pricing and components, before going on to actually launch a firm.

Since its inception in 2009 until September 2014, Kickstarter has accounted for more than 69,000 successfully funded projects, and attracted over 6.9 million investors, contributing over \$1.3 billion (Kickstarter.com). Initial fundraising through crowdfunding can help startups grow, perhaps even offering an alternative to the traditional pre-seed financing approach of mainly using the entrepreneur's own capital, family, and friends. Upon success at the initial stage, the venture can continue its timeline of financing later and seek seed-funding solutions, like angel investment, venture capital, or governmental support. For example, Oculus Rift raised via crowdfunding about \$2.5 million for a virtual reality (VR) headset designed specifically for video games, which provides an immersive experience. Oculus VR - the company behind Oculus Rift – went on to raise \$16 million in a series A round, and another \$75 million in a B round before being acquired by Facebook for \$2 billion. In a survey of individuals who successfully launched products in creating games, new products, or new technologies on Kickstarter, Ethan Mollick and Venkat Kuppuswamy (2014) found that 58 percent of them were seeking to launch a business, and only a quarter were launching one-time projects (the rest were from existing organizations). Given the current limitations of equity crowdfunding, many individuals seeking to launch businesses are turning to rewards-based platforms (Mollick and Robb 2015).

Kickstarter projects are divided into the following thirteen categories: Art, Comics, Dance, Design, Fashion, Film and Video, Food, Games, Music, Photography, Publishing, Technology, and Theater. These categories were grouped in our analysis into three main categories: Artistic projects, Gaming projects, and Technological projects. Kickstarter utilizes an "all-or-nothing" funding mechanism whereby entrepreneurs only receive funding if they reach their funding goal within the allotted investment timeframe, unlike other platforms, such as Indiegogo.com, where entrepreneurs have the option to get the funds they raise, even if they don't reach their goal. On

Kickstarter, if the investment goal is not reached within the allotted timeframe, the funds are returned to the investors.

2.3 Data

During March 2012, we used customized software to collect information from the platform. We collected data on 16,641 successful projects, 4,128 failed projects, 22,274 entrepreneurs, 1,108,186 investors, and total investments of more than \$120 million. Our study period covers three years, from the inception of Kickstarter in April 2009 through March 2012. All textual data from the available projects on the site have been downloaded, as well as data about the creators of the projects and investors. It is important to note that Kickstarter offers direct access only to projects that are still raising funds or successful projects – and not to the failed ones. We bypass this limitation by using the list of links to projects that the funders have invested in and collecting the same information from them as well, via our custom-made software. We were able to download failed projects, which have received at least one investment by an investor who funded a successful, or an ongoing project in our database. According to official Kickstarter statistics, these projects made up about 20 percent of all failures.⁸

In preparing the data, we first removed projects with entrepreneurs' names, which included company names (for example, Ltd.). We then extracted the project leaders' first names from each of the projects and classified project leaders by gender, by comparing the entrepreneurs' first names with lists of male and female names from various online sources. After running the names through an algorithm to classify the names by gender using a dictionary of common names for males/females, we then manually verified a large sample of those names.

⁸ Only in cases where the project failed, and did not receive any requests for funding from any known investor in our database, we are unable to locate the URL of this project. This may cause underrepresentation in the data of failed projects (of the very unsuccessful projects) mainly from the first years of activity of Kickstarter. About 6,000 projects were not funded at all, which make up a large portion of the failures we are missing. These projects would probably be screened out of our dataset even if we could gather them, due to the nature of projects – that they did not receive any investment at all – and could potentially bias our results. We did robustness tests on sub samples of our data and found that our main results hold. Kickstarter's official statistics could be found at <http://www.kickstarter.com/help/stats>.

Ultimately, we were able to classify 13,533 projects that successfully completed the attempt to raise funding by gender (out of 20,769). Overall, men made up almost two-thirds of the project leaders (8,867), while women made up just over one-third (4,666). In addition to the gender of the entrepreneurs, we were also able to determine the gender of the investors for each project, as long as the backers entered their full names. We were able to assign gender to 81 percent of the investors over the period (898,491 investors out of a total of 1,108,186).

As a further robustness check on our gender classification, we randomly selected 1,000 projects from our sample and presented a short survey in Mechanical Turk, one of the biggest crowdsourcing platforms.⁹ Two different evaluators, who used the photos of the entrepreneurs for the evaluation, categorized all 1,000 projects. We found that the dictionary used to classify names was able to predict correctly 98 percent of the males and 96.5 percent of the females; validating the algorithm we used to classify the projects in our database.

3. Gender and Entrepreneurship

A large literature has documented the sex structuring of organizations, including the segregation of men and women into different areas of study, jobs, occupations, firms, and industries (Baron and Bielby 1985; Charles and Bradley 2009; Charles and Grusky 2004). While women-owned businesses make up about 30 percent of firms in the United States, ownership rates vary dramatically by industry (U.S. Census Bureau 2012). A number of studies indicate that women continue to start firms in low-growth sectors of service and retail, which are typically less capital intensive, and could reflect higher financing barriers for women-owned firms than for men (Fairlie and Robb 2009; Robb 2002; Watson and Robinson 2003).

However, one might expect gender gaps to be smaller in terms of participation in acquiring capital on crowdfunding platforms, as well as the performance of entrepreneurs. The Internet enables almost free entry, thus there are less gatekeepers that may be biased and hence limit entry of a wider distribution of both investors and entrepreneurs. In addition, the Internet allows

⁹ <https://www.mturk.com/mturk/welcome>. The potential evaluators that were eligible to participate in the survey were qualified by their prior experience and feedbacks on the mTurk platform.

participation in a much more anonymous fashion. There is often little or no in person or face-to-face interaction between project leaders and backers, thus women might feel more comfortable launching a project or idea in this space, even in industries that are typically male dominated. The same holds true for investors in this space.

Overall, we find that women consist of 35 percent of the entrepreneurs in our sample from the platform.¹⁰ Yet, we find women are highly represented in some industries and very under-represented in others. As shown in Table 1, the shares of male entrepreneurs in the Comics, Design, Games, and Technology categories range between 75-92 percent. There is a majority of female entrepreneurs in the Dance category (77 percent), and women make up more than half of the project leaders in Fashion and Food.

[Insert Table 1 here]

While these categories are not directly comparable to industry categories of U.S. firms, the large gender differences in category distributions seem to mimic the gender differences in the industry distribution seen with U.S. firms. In the general business population, data from the U.S. Census Bureau indicate that women-owned firms make up about 30 percent of firms (and equally owned by males and females another 17.5 percent), but firms owned by women are far more concentrated in health care and social assistance (54.5 percent), educational services (48.5 percent), other services (40.6 percent), administrative and support services (37.6 percent) and retail (35.1 percent). (Please see Appendix 1). Thus, while we do find that females are participating at slightly higher levels on Kickstarter than entrepreneurship in general, the industry segregation appears to still characterize the categories in which they participate.

In addition to the single entrepreneurs described above, there are projects that involved teams of two leading entrepreneurs in which we could identify the gender of both entrepreneurs. There were 539 projects that had two project leaders (two female, two male, one female-one male, or one male-one female). Out of 331 partnerships where at least one woman was involved, 66

¹⁰ The distribution was calculated according to the number of projects in each category and each project received equal weight.

percent were partnerships with men. However, only half of the partnerships with at least one man involved a woman as well.

Team formation is also an interesting dynamic to study due to the large gender differences we see in business formation. About 61 percent of the total teams included a female, compared with 79 percent for males. However, when we compare this to the females as part of teams of business owners overall, we find women are less likely than men to be part of teams of business owners, especially those with high growth potential (Coleman and Robb 2014. Godwin et al. 2006) argue that as a result of sex-based stereotypes, women entrepreneurs face unique obstacles in accessing resources for their ventures, and one way to overcome these obstacles is to partner with men, especially in male-dominated industries. In three of the four categories that had the lowest percentages of single female leads, females had higher representation on teams (Comics, Design, and Games). Technology was the only category that did not have higher female participation: We will examine their funding goals and success rates in the next section.

4. Gender and investment and funding success

Prior research suggests that significant gender differences in firm employment, size, and growth rates persist (e.g. Coleman and Robb 2009; Fairlie and Robb 2009 ; Bitler et al. 2001). Women have been portrayed in the literature as less confident and more likely to underestimate their skills and performance in various business-related contexts (e.g. Bandura 1986; De Bruin, Brush and Welter 2007; Fletcher 2001; Morales-Camargo, Sade, Schnitzlein, and Zender 2013; among others) and to be less aggressive in career choices and advancement (e.g. Bertrand, Goldin, and Katz 2010; Buser, Niederle, and Oosterbeek 2012).

On the Kickstarter platform, entrepreneurs don't receive any funds if they do not reach their goal, so a higher goal implies a higher risk of not succeeding, and higher risk aversion among females is well documented (Byrnes, Miller, and Schafer 1999; Croson and Gneezy 2009; Reuben, Sapienza, and Zingales 2010). Women also tend to negotiate less than men, and settle for less than what they want instead of asking for more (Babcock, Laschever, Gelfand, and Small 2003; Bowles,

Babcock, and Lai 2007; Castillo, Petrie, Torero, and Vesterlund 2013; Säve-Söderbergh 2007). In addition, women typically have smaller networks and, thus, may feel they have access to fewer investors (Aldrich, Reese, and Dubini 1989; Klyver and Grant 2010; Olm, Carsrud, and Alvey 1988).¹¹

Thus, we examine if the financial goals vary by gender within the different industry categories, as well as whether or not there are any gender differences in the likelihood of successfully reaching the financial goals. In addition, we examine whether the goals and success rates vary depending on whether women are in industries that are either male-dominated or female-dominated.

The fundraising goal for each project is provided in the data. As shown in Table 2, there are large gender differences in the average goal, both by industry and overall. For women, average goals per category ranged from about \$3,200 in Dance to nearly \$19,000 in Technology. For men, the average goal per category ranged from a low of less than \$3,000 in Dance to more than \$67,000 in Games. Overall, the average goal for female-led projects was about \$6,300, compared with an average of more than \$9,400 for men. Different factors may be driving the lower average goal amounts by females.

[Insert Table 2 here]

There were also large differences in goal amounts by industry/category. One aspect we investigate is whether or not women in categories with a larger than average share of females behave differently than women in categories that are male dominated. Research has shown very different motivations, growth intentions, and owner characteristics of women-owned businesses in non-traditional industries compared with traditional industries (ex. Garcia 2007). Interestingly, the average goal for female-led projects exceeded that of male-led projects in four categories: Comics, Dance, Music, and Technology, only one of which (Dance) was a category in which women were much more highly represented than men (77 percent). In two of the categories,

¹¹ Carter et al. (2003) did not find any impact on social networks and the likelihood of using equity financing.

Comics and Technology, women were very much in the minority of those groups (about 15 percent-16 percent); far below the share they had in general (34 percent). The last category, Music, was a category in which the share of mixed gender teams was second only to Film and Video.¹²

Women have a higher rate of success (80 percent) than do men (76 percent). The same holds true when we include all female groups and all male groups. When we compare the distribution of successful projects by gender with the original distribution of projects in Table 1, we see females had higher rates of success across every single category except Games (see Table 3). Interestingly, we see that females appear to be relatively more successful in the categories where they had a higher than average share in that category compared with overall. In the two categories where females had the highest share, Dance and Fashion, the gender differences in success were also the largest. In the Dance category, where women had 77 percent of the projects and 79 percent of the successful projects, the female success premium was 2.2 percentage points. In Fashion, where women led about 58 percent of the projects, they led nearly 64 percent of the successful projects in that category, for a success premium of 5.5 percentage points, the largest in all categories. Overall the gender difference was about three percentage points, and was statistically significant.

[Insert Table 3 here]

In terms of funds raised, the mean amount of funds raised by men overall was nearly \$6,000, compared with about \$5,000 for women (Figure 1). These differences were statistically significant. Yet, in terms of funds raised, we see that teams of two females raised on average more than either mixed teams or single male-led teams. Teams with two males raised on average the largest amount, more than \$19,000, but teams with two females raised on average nearly twice the amount raised by single male-led teams (\$9,989, versus \$5,936, which was statistically significant).

[Insert Figure 1 here]

¹² In examining the mean goal by single person lead, same gender team, and mixed gender team, we see an interesting ordering. Two-entrepreneur teams seek on average more funding than single entrepreneurs and male teams seek on average more than female teams.

The data indicate that the higher the goal, the less the likelihood of success in reaching that goal.¹³ One question that follows from this is whether or not the relatively higher rate of success by women's projects is just due to their lower financial goals. To investigate this, we used propensity-scored matching to pair selected projects by the exact main category, sub-category, country of the entrepreneur, and fundraising goal, where the only difference was the gender of the entrepreneur (or the gender of the leading entrepreneur in the case of teams). We ended up with a subsample of 911 matched pairs. In the matched sample, women were still more likely than men to reach their funding goal (80 percent versus 73.7 percent), which provides evidence that the lower goal amounts are not driving the higher success rates among females. There was no statistically significant difference in terms of the amount raised for these matched pairs.

Successful projects raise, at a minimum, the goal that they set. In reality, successful projects raise much more than the goal on average. This “premium” – the amount raised in excess of the goal – could be due to several factors:

- 1) One must reach her goal to get funds in Kickstarter. Therefore the entrepreneur has an incentive to ask for an amount that is no more than what she actually needs. Some people might in fact seek to raise a lot more than their stated goal, but purposefully set the goal low in order to increase the likelihood of raising some initial base of funds.¹⁴
- 2) People might not feel confident in their ability to raise the amount they need, so they set the goal for an amount they feel they can successfully raise.
- 3) People underestimate the demand for their product or prototype, and set a goal that reflects what they think the demand will be.

¹³ Success rates in the sample are higher than actual ones, as explained earlier. Look at <http://www.kickstarter.com/help/stats> for the official statistics. We could not access data about projects, which did not receive indication of investment from any potential investors or from any investor that invested in a successful project. For a discussion on the level of goal and probability of success at Kickstarter see Marom and Sade (2014).

¹⁴ It is important to note that there is a lower limit to the goal that an entrepreneur may ask for, as she must raise enough funds to guarantee her ability to undertake the project.

This implies that women might set their goals lower than men for a given desired level of funding, due to a variety of reasons:

- 1) Women may be more risk averse than men (Ahl 2004 ; Gneezy and List 2013).
- 2) Women may have lower confidence than men (Bandura 1986; Croson and Gneezy 2009; Estes and Hosseini 1988).¹⁵
- 3) Women may underestimate the potential demand for their product or service more than men do (Langowitz and Minniti 2007; Niederle and Vesterlund 2005).

Women may feel there will be implicit biases against their levels of competence, especially in male-dominated categories/industries (Ridgeway 2009; Whittington 2007).

When we compare all of the projects that reached their goal, interesting differences emerge by the gender of the project leader. As shown in Table 4, on average, males raised more than five times their goal amount and their mean premium was more than three times that of females. Overall, women raised 45 percent more than their goal amounts on average. Raise premiums and the gender-gaps in those premiums varied dramatically by industry.¹⁶ In Fashion, where women made up the majority of project leaders, they raised on average more than six times their goal, compared with men who raised about 30 percent on average more than their goal. Yet in Dance, where women were also a majority of project leaders, they raised on average only 21 percent more than their goal, compared with men who raised nearly three times their goal on average. In most of the categories where women were very under-represented, they raised two to three times their goal (Comics 2.2; Games 3.1; Technology 2.8), much more than their raise premium overall. If we look at the ratio of the male raise premium to the female raise premium, we see that women had larger raise premiums in just two categories: Fashion, where the raise premium by men was just 20 percent that of women, and Games, where the premium was just over 90percent that of women. There is not one clear story that explains the wide variation across industry categories.

[Insert Table 4 here]

¹⁵ Gender is also documented to be highly correlated with sensation seeking attribute (Grinblatt, and Keloharju 2009)

¹⁶ Raise premiums are calculated as (total raised-goal)/goal.

Yet, these premiums are confounded by different goals and different industry category distributions. A cleaner comparison is to look at the raise premiums of successful projects from our matched pairs. These projects were matched on industry and had the same goals and varied only by project leader gender. These are found in Table 5. Now the story is quite clear. Conditional on goal amount, men and women actually achieved similar premiums. Women raised 43 percent more and men raised 40 percent more than their goals. Yet in industries where women made up the vast minority of leaders, they raised far more in excess of their goals than did men. The only category in which men did substantially better than women was in Publishing, where they raised more than two times their goal, compared with just 31 percent more than their goal for women.

[Insert Table 5 here]

This finding is consistent with the academic literature (Bandura 1986; Croson and Gneezy 2009; Estes and Hosseini 1988) that finds women either being less confident and/or more risk averse than men. Our data suggest that women are setting their funding goals ex-ante lower than men for a desired level of funding, especially in categories that are male dominated, even though ex-post they substantially raise more than their goal compared to men. Further investigation of this is warranted, given the fact that if this were true, that knowledge itself might influence women to be more confident in their abilities, or be willing to take more risks.

5. Gender and Kickstarter Investors

A number of articles cite women's lack of access to angel investor or venture capital networks as a constraint that reduces their likelihood of securing external equity (Brush, Carter, Gatewood, Greene, and Hart 2009; Brush, Greene, and Hart 2001; Marlow and Patton 2005). In terms of investment activity and patterns, researchers have found that women were significantly more likely to apply for funding from angel networks, which have a higher proportion of women investors (Becker-Blease and Sohl 2007). This suggests that women entrepreneurs' willingness to apply for external equity may be suppressed by the relatively small number of angel investors and venture capitalists that are women.

Females have historically made up less than 15 percent of the angel investors in the United

States (Harrison and Mason 2007; Padnos 2010). The Center for Venture Research estimated that women angels represented 19.4 percent of the angel market in 2013. Women-owned ventures accounted for 23 percent of the entrepreneurs who were seeking angel capital, and 19 percent of these women entrepreneurs received angel investment in 2013. (Sohl 2014).

The venture capital industry continues to be heavily male-dominated as well. Brush et al. (2004) found that women represented only 9 percent of management-track venture capitalists in 2000 and were twice as likely as men to leave the industry before attaining senior-level positions. Of the U.S.-based companies that received a round of venture capital financing in 2010, only 6 percent had a female CEO, 7 percent had a female founder, and 10 percent had a female founder or CEO at some point (Dow Jones Venture Source 2011). Most recently, Brush et al. (2014) noted that the number of women partners in VC firms has actually declined from an earlier study using 1999 data from 10 percent of all firms to 6 percent of all firms.

One explanation in the literature for women's purported exclusion or limited access to interaction networks is preference for homophily, i.e., interaction with others who are similar on given attributes such as sex, race, and education (Ibarra 1992; Rogers and Kincaid 1981). Research has found that women were significantly more likely to apply for funding from angel networks having a higher proportion of women investors (Becker-Blease and Sohl 2007). This suggests that women entrepreneurs' willingness to apply for external equity may be suppressed by the relatively small number of angel investors and venture capitalists that are women. There are a few angel groups and venture capital funds that specifically target female entrepreneurs, but they are the exception rather than the rule.¹⁷

There are very few women founding partners for VC firms, and the percentage of women in the VC industry has actually declined. According to a 2011 study by National Venture Capital Association, the percentage of VC investors that were women was 11 percent, down from 14 percent in 2008. The Forbes Midas List ranks the top 100 tech investors each year, prioritizing newer, bolder, and earlier bets. In 2013, only three women made the Midas List. In 2014, four

¹⁷ Some examples are Astia Angels, Golden Seeds, and 37 Broads.

women made the top 100.

In a study by Gompers et al. (2014), the authors used VentureSource data on all venture capital investments made between 1975 and 2003 and found that 79 percent of the VC firms had no female venture capital investors. Of those firms that had a female venture capital investor, the vast majority (126 out of 169) had only one. They had information on 3,225 male venture capitalists and 212 female venture capitalists, with females representing just 6.1 percent of the sample.

Other recent data and research show these situations persist. An examination of U.S.-based VC firms that had raised a minimum of one fund of at least \$200 million (since 2009) yielded a total of ninety-two VC firms. The study found that only twenty-three of the 542 partner-level VCs identified in these firms were female, or 4.2 percent, which is even lower than the 4.6 percent of female CEOs among the *Fortune* 500. Of the ninety-two firms, only seventeen had one or more senior female partners. Of those seventeen, just five firms had two or more senior female partners. Of those five, only one firm (Scale Venture Partners) had at least three senior female partners.¹⁸

Having so few women on the funding side matters. Brush et al. found that VC firms with women partners were twice as likely to invest in companies with a woman on the management team (34 percent vs. 13 percent). Similarly, VC firms with women partners were three times more likely to invest in companies with women CEOs (58 percent vs. 15 percent) (Brush (2014)).

Women entrepreneurs continue to report well-documented challenges to being taken seriously when pitching to VC firms. Jules Pieri, co-founder and CEO of the Daily Grommet online marketplace, recently posted this experience:

It often feels like a 1969 office scene when you visit a VC in their native environment. The offices are swish and modern, but the workforce looks like the cast from Mad Men, diversity-wise. The only women you see moving along the corridors are serving admin roles (i.e., coffee) or are 26-year-old associates who are just passing through. One VC I visited made me seriously question my ambition to fund a startup. He was friendly enough. But the office walls were covered with endless pictures of all-male startup teams, and after hearing my pitch he asked, with a vapid grin,

¹⁸ Fortune.com blog by Dan Primack @danprimack FEBRUARY 6, 2014.

"So do you work out of your home?" I had 15 employees. I had impressive angel investors backing me. This was my third startup experience. Seriously? Did I work out of my HOME? And this is a relatively young VC, so he gets no free pass for being over the hill.¹⁹

Interestingly, women actually made up a larger percentage of investors than their ratio as entrepreneurs on this crowdfunding platform. While the majority of investors on the platform were still men, they made up only about 56 percent of the investors (500,767) on the Kickstarter platform, compared with 44 percent that were women (397,724) (See Table 6). However, serial investors were more likely to be men. If we restrict the investor pool to those with at least five investments, the share of male serial investors rises to more than 70 percent, while the share of female serial investors drops to less than 30 percent.²⁰

To examine the investment patterns of the males and females in Kickstarter, we take a look at the categories of the projects where they invested. Similar to the case of entrepreneurs, male investors were most interested in Comics, Product Design, Games, and Technologies, while the female investors dominate the Dance, Food, and Theater categories.

[Insert Table 6 here]

When we examine the gender of the investors of female- and male-led projects, we find distinct investing patterns. While more than 40 percent (about 60 percent) of the investments made by female investors were invested in projects led by female (male) entrepreneurs, only 22.6 percent (77.4 percent) of the investments by male investors went to female (male) led projects.²¹

When we further examine the gender of the entrepreneurs (whether it's one or two) and the share of females among the investors of the projects (disregarding sums of investments), we also find interesting results. We find that the share of female investors is not only higher for the female-led projects than the male-led or male/female led, but also that the more the female is dominant in

¹⁹ <http://jules.thegrommet.com/2013/02/11/visit-a-vc-and-party-like-its-1969/>

²⁰ Yet this number is encouraging, as it is about twice what we see in equity capital markets and more than 2/3 of female investors have made at least five investments on Kickstarter.

²¹ We have only the number of investments, not amounts. So, for example 30 percent of the investors went to female-led projects, not 30 percent of the investment funds.

the projects (i.e. 2 females>1 female, 1 female>male, female-male>male-female, 1 male>2 males), the higher the share of female investors (Figure 2). It should be clear that this is not a female characteristic – if we looked at the share of male investors, we would have gotten the same picture. Investors are more likely to fund entrepreneurs from the same gender.

[Insert Figure 2 here]

We next compare the share of investment in female-led projects to their share in the population of projects, both for males and for females. Table 7 presents an analysis of the male and female investments by the gender of the single entrepreneur leading the project, across all categories. For example, in the Art category, out of all the art projects that males invested in, 34.5 percent were female-led. The first column describes the percentage of such projects in our dataset, and the difference is calculated between this column and each of the male/female investor results. The difference for the females' investors is positive, meaning that in almost every category, female-led projects are financed relatively more by female investors. We see a similar pattern for serial investors (defined as those with five or more investments). These results are consistent with the findings from Harrison and Mason (2007), who found that female angel investors were more likely to invest in businesses owned and managed by women and Brush (2014), who found the same in VC.

[Insert Table 7 here]

Successful projects must tap a wide network of investors. A successful project attracted an average of ninety-nine investors (median fifty-one), while the failed projects averaged only nineteen investors (median nine). As shown in Table 10, teams with two males had on average the highest number of investors (270) and the highest average amount per investor (\$94). Teams with two females had the second highest number of investors on average, but it was less than half the average number of investors for projects led by teams of two males (113 versus 270). Teams with at least one male also had higher mean amounts per investor. Single project leaders had fewer numbers of investors on average, with women having sixty-five investors and men having eighty-one investors. This provides some evidence that teaming up with someone (of either gender) can help women reach broader networks of potential investors. A person's social network may be a

driver of success. Research has shown a larger social network is associated with the increased likelihood of funding success on Kickstarter²².

[Insert Table 8 here]

We next examine the 911 matched pairs described earlier, which were matched projects by main category, sub-category, country, and fundraising goal, where the only difference was the gender of the entrepreneur. Even after controlling for category, sub-category, and funding goal, we still find that the absolute number of female investors was significantly higher for female-led projects and the number of male investors was significantly lower for female-led projects, even though there was no statistically significant difference in the absolute number of backers overall. We also see that the percentage of female investors is significantly higher for female-led projects (55 percent) than for male-led projects (46.7 percent). Finally, and as noted earlier, the female-led projects had a higher rate of success in achieving the funding goal than did male-led projects. All of these differences were statistically significant. This last finding is consistent with previous research, which found that women were relatively more successful in settings with flatter, more flexible, network-based organizational structures (Whittington and Smith-Doerr 2008). Perhaps women feel this funding mechanism allows them to establish credibility by having being further along in developing their project ideas. While we cannot control for the quality of the project, previous academic research documents that women are more likely to wait to apply for funding until they are further along with their business plan and have a longer track record (Coleman and Robb 2012).

5.1 Multivariate regression

We next employed a generalized linear model (and a Tobit model) for a multivariate regression, which tests the effects of various attributes of the project on the share of female

²² <http://www.appsblogger.com/behind-kickstarter-crowdfunding-stats/>

investors.²³

$$\text{Share } F_i = \alpha + \beta X_i + \gamma_{1,2} \text{DUMMIES}_i + \epsilon_i \quad (1)$$

Where Share F_i is the fraction of female investors in a given project i , Dummies is a vector of two dummy variables, "All female" and "All male," which have a value of one in cases where all the entrepreneurs in that particular project are females/males, and X_i is the vector of control variables including: industry (the thirteen categories set by Kickstarter), country of project, amount of the financial goal of the project, and whether or not the project appears in the "Staff" (Kickstarter staff highlight the project) or "Popular" sections.²⁴ As shown in Table 11, the coefficient on the dummy for male project leader is negative and statistically significant. For projects with male leadership there is lower participation of female investors. This is the case for the whole sample, and the effect is even stronger in non-traditional industries for women, such as Games and Comics, where men make up the vast majority of leaders.

Interestingly, the coefficients on staff picks (equal to 1 when Kickstarter staff highlight the project) is negatively correlated (and statistically significant) with the share of female investors, which could indicate that women are less influenced by outsiders' opinion in their investment decisions.²⁵

[Insert Table 9 here]

6. *Taste-Based Discrimination versus Statistical/ Economic Discrimination*

What may explain the gender investment pattern in Kickstarter? Can this result be attributed to gender discrimination in the marketplace? And, if so, to what type of discrimination? There are two main reasons why people might discriminate, both of which are conscious decisions

²³ We also ran the model with only single entrepreneur leads with one dummy for female leaders and got similar results.

²⁴ Popular projects are those that pass some threshold of activity and number of followers as determined by Kickstarter.

²⁵ We conducted the estimation using GLS and Tobit (as our dependent variable is percent). The quality and magnitude of our results remain the same.

by the discriminating person. The first reason – taste-based (Becker 1957) – is typically based on personal preferences or reasons. The second reason – statistical discrimination (Arrow 1972 and Phelps 1972) – is because being part of a specific group provides information about a relevant characteristic (e.g., in our context, the evidence that women-owned firms are smaller than men in terms of sales and employment or focused in an area that may be less attractive for investment) (Bertrand et al. 2004; List 2004). Differentiating between the two types of discrimination and separating them from alternative explanations is clearly not an easy task. Our approach is to solicit a gender attitude from individuals and contrast it with investment choices.

To investigate this issue in the context of investing on Kickstarter, we undertook a survey of Kickstarter investors and project leaders if they had also invested.²⁶ Of the 898,491 investors classified by gender, we were able to obtain 894 email accounts. Of the 14,072 project leads classified by gender, we were able to obtain 1,441 email accounts. In the end, 160 respondents completed the survey. Seventy-nine of the respondents were women and eighty-one were men.²⁷

Table 10 shows some of the patterns by gender of our respondents. In our sample, women were more likely than men to make ten+ investments (13 percent versus 10 percent) and less likely than men to make only one investment (15 percent versus 20 percent) on a crowdfunding platform. Women were also slightly more likely than men to make multiple contributions to a given campaign (17 percent versus 14 percent). The reasons for contributing also varied dramatically by gender. More than half of men contributed for the reward, compared with less than 30 percent of women. More than 82 percent of women contributed to support the person leading the campaign, compared with about three quarters of men. Finally, less than 59 percent of women contributed to support a cause, compared with nearly 68 percent of men.

Women were much less likely to contribute to a stranger’s campaign (40.5 percent versus 65.4 percent). This is consistent with the finding in Table 9, which found that women were less

²⁶ We initially sent the survey on November 11th, 2013, and offered a \$10 Amazon gift card as an incentive. (See Appendix 2 for the survey instrument). We sent out two reminders before increasing our incentive offer to a \$20 Amazon gift card.

²⁷ To obtain a gift card, respondents had to give us their email (again) and not all respondents did so. We ended up distributing ninety-one gift cards valued at \$10 and twenty-six gift cards valued at \$20.

influenced by outsiders in their investment decisions than were men. Yet women were twice as likely as men to give to someone who was known by a friend or family member, but not to themselves personally (16.5 percent versus 8 percent). Women made higher levels of contributions than did men, with women twice as likely to state that their largest contribution was \$500 or more (5.1 percent versus 2.5 percent).

[Insert Table 10 here]

In addition to asking the respondents about their activity on crowdfunding platforms, we also asked them questions about their attitudes toward gender. In general these questions were collected from previous work in research about gender attitudes. There are some common practices in gender attitude research (Glick and Fiske 1997; Spence and Helmreich 1978).

Respondents were asked if they agreed or disagreed with the following statements (that all were used in previous gender related research work):

- 1) All in all, family life suffers when the woman has a full-time job.
- 2) A preschool child is likely to suffer if his or her mother works.
- 3) Having a full-time job is the best way for a woman to be an independent person.
- 4) A woman and her family would all be happier if she goes out to work.
- 5) Both the husband and wife should contribute to the household income.

As shown in Table 11, there was substantial variation in the responses by gender. The largest gender differences were for the questions that asked about children and family life. Women were much more likely to feel that working full time was harmful for the family and children than men. More than half of the women responding stated that they strongly agreed with the statement that family life suffers when the woman had a full-time job and just under half strongly agreed with the statement that a preschool child is likely to suffer if his or her mother works. This compares with less than 30 percent of men for the first statement and less than 20 percent of men for the second statement.

[Insert Table 11 here]

Using our survey responses, and building upon common practices in previous research on

gender and attitudes (e.g., Glick and Fiske 1997; Spence and Helmreich 1978) , we created a gender inequality measure using the survey responses mentioned above as well as survey responses to questions about who does or should do the cleaning and washing in the household. We converted the answers given on a scale of "Strongly Agree" to "Strongly Disagree" to numerical values – 2 for “Strongly Agree” if it agrees with a chauvinistic statement, through 0 for "Neither Agree nor Disagree", up to (2) for “Strongly Disagree”. If the statement has a feminist view to it, the values are reversed – 2 for “Strongly Disagree”, etc. The answers about the cleaning and washing tasks were: "Mostly my spouse/partner" (does the housekeeping tasks) were given the value of 2 if a man answers that and - 2 if given by a woman. "Shared equally" has been given -2, while "Strongly Agree" (with the statement the women should do the tasks) was given a 2. "Pay someone to wash/iron clothes" is -1. We then build our measure of gender inequality by adding all the values from the gender-related answers. The higher the score, the less he or she perceives gender equality should exist.

Out of all the responses that we received via our survey, we were able to match 18 percent of them to specific projects in our database.²⁸ We use this measure in order to learn if one’s tendency to invest in his or her own gender can be driven from many reasons, and if gender equality attitude plays a role.²⁹ We use this measure as a control in a regression where our dependent variable is the gender of the entrepreneur/project leader (GE). We look only at the gender of the first entrepreneur (the leader), disregarding if s/he has any partner.³⁰

$$GE = \alpha + \beta GI + \eta INVF + \phi SI + \gamma AgeInv + \lambda IND + \varepsilon \quad (2)$$

Controlling for gender of the investors (dummy INVF), a dummy variable for being a serial investor (SI), which takes the value of 1 if the investor has contributed to five or more projects,

²⁸Some of the answers that we received to the questions were too general or ambiguous to be matched to our data.

²⁹Our dummy variable for gender can be consistent with statistical discrimination arguments as well as arguments such as: females may have more females in their social network.

³⁰ Our results were robust to the inclusion of team-led projects.

age (in years) of the investor (AgeInv), and the industry of the project (IND) - we find that the gender inequality measure (GI) is negatively and marginally statistically significant in relation to investing in female entrepreneurs' projects (See Table 12). It is important to note that this is above and beyond the tendency to invest in one's own gender (dummy INV), which is also marginally statistically significant³¹. While the tendency to invest in one's own gender can be consistent with several potential explanations, the gender equality measure is an indication that taste-based discrimination, which is usually very hard to document, is an important factor in the investment decision of our sub-sample. Examining the male and female investors separately, we found that the measure is negative and marginally statistically significant for men, while there is no statistically significant preference relating this measure for women.

For a robustness test, we conducted discriminant analysis (DA) using again the same set of variables; the gender inequality measure, gender of the investors (dummy INV), serial investors (SI), age of investors (AgeInv) and industry of the project (IND). The DA enables us to investigate the differences between the gender categories on the basis of the attributes of the cases, indicating which attributes contribute most to group separation while using a canonical discriminant function. It determines the most parsimonious way to distinguish between groups. The DA model that we used is significant ($p= 0.01$) and the Canonical Correlation equals 0.3. The canonical coefficients indicate that the gender dummy has the largest weight (0.78), indicating again the tendency to invest in projects led by individuals of his/her own gender. A second set of important factors with similar magnitude but opposite direction are the gender equality index and the goal (canonical structure coefficients of 0.47 and 0.45 respectively). These indicate again the importance of the investor attitude above the initial tendency to invest in projects led by an individual of one's own gender.³²

[Insert Table 12 here]

³¹ We repeated the same estimation using logit, probit and OLS and our findings were similar.

³² We also conducted the DA using Std. canonical discriminant function coefficients; the quality of our results remains the same.

7. Conclusions

We find that women are participating as project leaders on the Kickstarter platform (35 percent) at slightly higher rates than women in entrepreneurship in the United States. From inception until March 2015, more than 80,000 projects have been successfully funded on Kickstarter, with more than 8.1 million investors contributing nearly \$1.6 billion. This type of pre-purchase-rewards-based crowdfunding can provide important startup capital for individuals seeking to launch businesses and there are many stories of projects that raised money this way evolving into successful companies. The structure of these relatively new markets, which are open to the crowd, can reduce cultural barriers that participants in the marketplace may face in the traditional financial markets. In this paper we investigate if the Kickstarter platform fulfills on this promise.

We document higher participation rates by women, as both project leaders and project backers, than are found more generally in entrepreneurship and equity investing. We also document different participation rates by men and women across the various industries in Kickstarter. Women's relative participation is higher at categories that historically are considered more "female related" areas. A majority of female entrepreneurs is documented in the Dance category (74 percent) and females led more than half of the projects in Fashion and Food. Yet, the share of male entrepreneurs in the Comics, Games and Technology categories was around the 85-90 percent.

Our findings that women had lower goals and lower raises across project categories are similar to findings from the entrepreneurial finance literature more generally. We also find that women enjoy higher rates of success in funding their projects, even after controlling for category and goal amount. Women were relatively more successful in the categories where they had a higher-than-average share in that category compared with overall. In the two categories where females had the highest share, Dance and Fashion, the gender differences in success were also the largest.

This suggests that women are setting their funding goals ex-ante lower than men for a desired level of funding, especially in categories that are male dominated, even though ex-post they substantially raise more than their goal compared to men. This finding is consistent with the academic literature that women are less confident (Bandura 1986; Croson and Gneezy 2009; Estes and Hosseini 1988) and/or more risk averse (Ahl 2004) than men. Further investigation is needed to better understand these dynamics.

Women are participating at higher rates on the platform as investors than as project leaders, making up nearly 45 percent of the investors. More than 40 percent of the investments made by female investors went to female-led projects, compared with less than 23 percent of investments made by male investors. Men are even less likely to invest in projects that are female led in categories that are non-traditional industries for women, such as Games and Comics, where men make up the vast majority of leaders.

A survey of Kickstarter investors revealed differences between men and women in their reasons for investing in projects. More than half of men contributed for the reward, compared with less than 30 percent of women. Women were much less likely to contribute to campaigns of people not known to them. We use the survey answers about gender equality questions in order to investigate if taste-based discrimination plays a role in the investment decisions of our subsample. Using survey responses and common practice from the gender literature, we construct a measure of gender inequality perception. We find, after controlling for the initial tendency to invest in projects led by individuals of one's own gender, a negative effect of this measure on investing in female entrepreneurs' project. This was true for men, but not for women. This is consistent with taste-based discrimination by men for female-led projects. In his seminal work, Becker made a distinction between the average and marginal taste-based discrimination. Following his intuition, if a female entrepreneur is aware of the differences in discriminatory treatment among investors, then she may focus her effort on those areas where she will find investors that are less likely to discriminate against her, which in our case may explain the concentration of females in female-related categories on the platform. It is also consistent with the recent emergence of new crowdfunding platforms that specifically support female-led businesses and projects such as

MoolaHoop (<http://www.moola-hoop.com/>), Plum Alley (<https://plumalley.co/>), Portfolia (<http://portfolia.com>), and others.

One may ask if the low female entrepreneur participation in technology-related projects is characteristic of just reward-based platforms or that pre-seed financing of relatively small amounts is raised to large extent from friends and family. In order to provide additional evidence, we contacted OurCrowd, a leading global equity crowdfunding platform for accredited investors that funds early stage start-ups.³³ The OurCrowd portfolio consists mainly of technology companies (technology here is broadly defined; from medical devices to algorithms).³⁴

We received data on investments during the period October 2012 to January 2015, totaling \$78 million to fifty-three firms in in seventy-six funding rounds (some firms had more than one funding round via OurCrowd). The average funding campaign in the sample was just over \$1 million, while the median is about \$725,000. Interestingly, yet consistent with our intuition, over a sample duration of more than two years, **none** of the CEOs or leading founders of these fifty-three technology-related firms was female.

To summarize, if we need to give a “one word” answer to the question – “Does crowdfunding eliminate gender barriers that women face in trying to raise money for ventures?” our answer would be: “No.” It does not. However, on a promising note, our findings provide some indication that crowdfunding platforms may lead to increased participation of women on the entrepreneurship side and on the investing side, as well as increased flows of capital to female-led projects. Clearly, we are only beginning to see the impact that these new markets have on the broader economic activity in the market. A whole host of future research efforts will be needed to further investigate the impact of these new markets.

³³ OurCrowd invests its own capital and brings selected startups to its accredited membership. OurCrowd investors must meet stringent accreditation criteria and invest a minimum of \$10,000 per deal of their choice. OurCrowd provides post-investment support to its portfolio companies, assigning industry experts as mentors and taking board seats.

³⁴ ReWalk, one of OurCrowd’s portfolio companies, completed a successful IPO on the NASDAQ.

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Table 1: Distribution of Projects by Gender

This table presents the gender distribution by categories of projects that have only one entrepreneur. The data were collected from Kickstarter during the period of April 2009 to March 2012 and were classified by gender with custom software. This table consists solely of projects where the leading entrepreneur was either a single male or single female. About two thirds of the entrepreneurs are males, but in three categories there is a statistically significant female majority – Dance, Fashion, and Food.

*, **, and *** indicate that the coefficients are statistically significantly different at the 10 percent, 5 percent, and 1 percent level, respectively

Category	Gender		# of Projects
	Female	Male	
Art	45.9%	54.19%***	1,137
Comics	14.7%	85.3%***	407
Dance	77.1%***	23.0%	305
Design	25.5%	74.5%***	463
Fashion	58.2%***	41.8%	249
Film and Video	29.3%	70.7%***	4,302
Food	54.8%***	45.2%	356
Games	7.7%	92.4%***	379
Music	30.8%	69.2%***	3,030
Photography	40.6%	59.46%***	593
Publishing	40.6%	59.4%***	1,170
Technology	16.9%	83.1%***	201
Theater	44.6%	55.47%***	941
Total	34.5%	65.5%***	13,533

**Table 2: Fundraising Campaign Mean Goal by Gender
(Single Project Leaders Only)**

This table presents means of female and male fundraising goals by category, for single project leaders only (total of 13,533 projects). The data were collected from Kickstarter during the period of April 2009 to March 2012 and were classified by gender with custom software. Kickstarter asks project leaders to classify their projects into one of thirteen categories, specified below.

For each category, we calculated the mean average for female and for male (female mean and male mean respectively). The difference is measured by subtracting female mean from male mean. Difference as a percentage of female goal = (Female-Diff)/Female.

*, **, and *** indicate that the differences between the means are statistically significantly different at the 10 percent, 5 percent, and 1 percent level, respectively.

Category	Mean of Goal		Diff at % of Female Goal	
	Female	Male	Difference	Goal
Art	4,221.6	5,016.3	-794.7	81.2%
Comics	4,952.1	4,307.2	644.8	87.0%
Dance	3,231.4	2,847.4	384.0	88.1%
Design	6,575.2	14,122.4	-7,547.2***	-14.8%
Fashion	5,148.0	6,188.2	-1,040.2	79.8%
Film and Video	10,199.3	9,783.0	416.2	95.9%
Food	7,696.6	8,708.1	-1,011.4	86.9%
Games	7,088.3	67,305.0	-60,216.7	-749.5%
Music	4,790.9	4,094.7	696.2***	85.5%
Photography	4,472.5	4,778.5	-306.0	93.2%
Publishing	4,962.5	5,298.2	-335.7	93.2%
Technology	18,715.0	15,462.7	3,252.3	82.6%
Theater	3,686.6	4,100.6	-414.0	88.8%
Total	6,305.1	9,438.7	-3,133.6	50.3%

Table 3: Distribution of Projects by Gender – All vs. Successful

This table presents the distribution of projects according to the different categories of projects that were led by one entrepreneur. Kickstarter asks project leaders to classify their projects into one of thirteen categories, specified below. The first two columns are calculated from the full sample (both successful and failed campaigns). The second two columns are only those campaigns that were successful in reaching their goals.

*, **, and *** indicate statistically significantly different at the 10percent, 5 percent, and 1 percent level, respectively.

	Distribution of All Projects by Gender		Distribution of Successful Projects by Gender	
Category	Female	Male	Female	Male
Art	45.9%	54.1%***	48.0%	52.0%
Comics	14.7%	85.3%***	16.1%	83.9%***
Dance	77.05%***	23.0%	79.3%***	20.8%
Design	25.5%	74.5%***	28.3%	71.7%***
Fashion	58.23%***	41.8%	63.7%***	36.3%
Film and Video	29.3%	70.7%***	30.4%	69.6%***
Food	54.78%***	45.2%	56.0%**	44.0%
Games	7.7%	92.4%***	7.6%	92.4%***
Music	30.8%	69.2%***	32.3%	67.7%***
Photography	40.6%	59.4%***	43.3%	56.7%***
Publishing	40.6%	59.4%***	42.0%	58.0%***
Technology	16.9%	83.1%***	16.5%	83.5%***
Theater	44.6%	55.4%***	45.7%	54.3%***
Total	34.5%	65.6%***	36.2%	63.8%***
Observations	13,533		10,561	

Table 4: Raise Premiums in All Successful Projects

This table presents the average raise premium by category and gender of successful projects. The raise premium is the ratio between the goal and the fundraising result (pledge). In Kickstarter it must be more than 1, due to the "all or nothing" rule (the entrepreneur gets the pledges only if he/she reaches the goal). Kickstarter asks project leaders to classify their projects into one of thirteen categories, specified below. The ratio of male vs. female premium is calculated by dividing the mean of male-led project premiums by the mean of female-led premiums. Category means are calculated by averaging the mean pledge / goal in each of the category's projects.

*, **, and *** indicate that the coefficients are statistically significantly different at the 10 percent, 5 percent, and 1 percent level, respectively.

Category	Raise Premium - Successful Female-Led		Raise Premium - Successful Male-Led		Ratio of male / female premium
	Mean	Std. Dev.	Mean	Std. Dev.	
Art	1.32	0.68	2.94	17.74	2.23**
Comics	2.14	2.78	5.73	65.72	2.68
Dance	1.21	0.56	2.92	13.33	2.41**
Design	1.59	1.09	14.50	109.75	9.12
Fashion	6.29	52.44	1.30	0.65	0.21
Film and Video	1.26	1.56	9.19	314.38	7.31
Food	1.20	0.31	1.51	1.68	1.26***
Games	3.13	6.78	2.88	5.55	0.92
Music	1.25	0.46	3.21	46.23	2.56*
Photography	1.26	0.72	1.43	1.10	1.13**
Publishing	1.42	2.05	1.59	2.59	1.12
Technology	2.83	7.36	2.96	4.41	1.05
Theater	1.20	0.46	3.62	51.01	3.00
Total	1.45	9.01	5.49	186.90	3.79

Table 5: Raise Premium by Gender and Category (Matched Pairs)

This table compares the raise premium of female-led vs. male-led successful projects, with the same methodology as Table 4, but using the matched pairs' sub-dataset. Kickstarter asks project leaders to classify their projects into one of thirteen categories, specified below. The matched pairs had the same exact main category, sub-category, country of the entrepreneur, and fundraising goal, where the only difference was the gender of the entrepreneur (or the gender of the leading entrepreneur in the case of teams).

*, **, and *** indicate that the coefficients are statistically significantly different at the 10percent, 5 percent, and 1percent level, respectively.

Category	Raise premium – Successful Female-Led		Raise premium – Successful Male-Led		Ratio of Male to Female Premium
	Mean	Std. Dev.	Mean	Std. Dev.	
Art	1.414	0.835	1.238	0.321	0.876**
Comics	2.015	1.574	1.315	0.299	0.652**
Dance	1.146	0.186	1.173	0.165	1.024
Design	2.047	1.743	1.732	1.962	0.846
Fashion	1.991	2.651	1.505	0.793	0.756
Film and Video	1.239	0.439	1.298	0.640	1.047
Food	1.170	0.268	1.118	0.151	0.955
Games	4.040	8.250	2.040	1.407	0.505
Music	1.264	0.438	1.213	0.333	0.960
Photography	1.220	0.293	1.289	0.456	1.056
Publishing	1.310	0.708	2.106	5.394	1.608*
Technology	4.728	10.691	2.445	1.926	0.517
Theater	1.178	0.217	1.191	0.429	1.011
Total	1.426	1.832	1.404	2.050	0.985

Table 6: Proportion of Investors by Gender by Category

This table presents the distribution of the investors' gender in each category, based on the total number of investors (not by investments). The data were collected from Kickstarter during March 2012. Data were classified by gender using custom software. Kickstarter asks project leaders to classify their projects into one of thirteen categories, specified below. The total number of investors for this table was 681,367. Differences in category preferences for investment by investor gender are apparent.

Category	Gender of Investor		# of Projects
	Female	Male	
Art	54.9%	45.1%	830
Comics	33.4%	66.6%	334
Dance	65.7%	34.3%	267
Design	38.9%	61.1%	302
Fashion	58.2%	41.8%	186
Film and Video	48.7%	51.3%	3171
Food	58.0%	42.0%	299
Games	16.1%	83.9%	217
Music	47.1%	52.9%	2194
Photography	52.9%	47.1%	469
Publishing	51.8%	48.2%	779
Technology	23.1%	76.9%	81
Theater	56.6%	43.4%	855

Table 7: Percentage of Male/Female Investors by the Gender of the Leading Entrepreneur

This table presents an analysis of the male and female investments by the gender of the single entrepreneur leading the project, across all categories. Kickstarter asks project leaders to classify their projects into one of thirteen categories, specified below. Female-led project investments are compared by the percentage of male and female investors. The difference is calculated as the percent of female-led projects invested by male/female investors and the percent of projects with female entrepreneurs.

*, **, and *** indicate that the coefficients are statistically significantly different at the 10 percent, 5 percent, and 1 percent level, respectively.

Category	Percent of Projects with Female Entrepreneurs	Percent of Female-Led Projects Invested by Male		Percent of Female-Led Projects Invested by Female	
		Investors	Difference	Investors	Difference
Art	42.5%	34.5%	-7.9%***	50.0%	7.6%***
Comics	17.6%	13.2%	-4.3%***	29.1%	11.5%***
Dance	77.5%	75.7%	-1.8%***	78.4%	0.9%**
Design	6.6%	3.1%	-3.6%***	19.7%	13.1%***
Fashion	69.4%	59.5%	-9.9%***	76.5%	7.1%***
Film and Video	28.5%	22.8%	-5.7%***	35.2%	6.7%***
Food	49.6%	42.6%	-7.0%***	54.9%	5.3%***
Games	7.3%	6.7%	-0.6%***	11.8%	4.5%***
Music	34.5%	31.6%	-2.9%***	37.9%	3.4%***
Photography	41.4%	38.0%	-3.4%***	44.4%	3.0%***
Publishing	40.0%	29.8%	-10.1%***	50.4%	10.5%***
Technology	12.5%	10.8%	-1.7%***	19.5%	7.0%***
Theater	45.0%	42.8%	-2.2%***	46.6%	1.6%***
Total	30.1%	22.6%	-7.4%***	40.3%	10.3%***

Table 8: Number of Investors and Estimated Individual Investment by Team Composition

This table presents the total number of investor and the estimated individual investment (pledged/number of investors) in all the dataset, including successful and failed projects. We can see that teams with two males had on average the highest number of investors (270) and highest average amount per investor (\$94). Teams with two females had the second highest number of investors on average, but it was less than half the average number of investors for projects led by teams of two males (113 versus 270). Teams with at least one male also had higher mean amounts per investors. Single project leaders had fewer numbers of investors on average, with women having about sixty-five investors and men with eighty-one investors.

Gender	Number Of Investors		Estimated individual investment	
	Mean	Std. Dev.	Mean (\$)	Std. Dev.
2 Females	113.20	106.125	82.23	54.187
1 Female	64.57	91.622	78.22	66.414
Female – Male	97.58	100.552	85.83	57.350
Male – Female	99.75	110.736	87.42	54.357
1 Male	81.36	305.385	77.57	77.119
2 Males	269.97	801.734	94.36	87.235
Total	79.11	268.125	78.22	73.436

Table 9: Regression on the Share of Female Investors

This table presents GLM and TOBIT regressions on the share of female investors across all projects, which identified gender of both investors and entrepreneurs. Project category is controlled for in the first three columns. Traditional categories are where women make up the majority of entrepreneurs. Non-traditional categories are the ones in which women make up the minority of entrepreneurs. "All female" and "All male" have a value of 1 in cases where all the entrepreneurs in that particular project are females/males. Dummy country has a value of 1 if country of project is the USA, Log(goal) is the logarithm of the amount of the financial goal of the project, dummies have a value of 1 if the project appears in the "Staff" (Kickstarter staff highlight the project) or "Popular" sections. The Mentions variable counts the number of self-mentions of the entrepreneur in the description text. *, **, and *** indicate that the coefficients are statistically significantly different at the 10 percent, 5 percent, and 1 percent level, respectively.

	GLM	TOBIT	Non- Traditional	Traditional
All Female Dummy	0.045*** (0.013)	0.045*** (0.013)	0.073 (0.058)	0.043** (0.018)
All Male Dummy	-0.057*** (0.013)	-0.058*** (0.013)	-0.212*** (0.056)	-0.065*** (0.018)
Log(Goal)	0.005*** (0.001)	0.005*** (0.001)	-0.013*** (0.004)	0.009*** (0.002)
Mentions	0.000 (0.002)	0.000 (0.002)	-0.006 (0.008)	0.002 (0.002)
Staff Picks	-0.028*** (0.005)	-0.028*** (0.005)	-0.025* (0.014)	-0.019*** (0.007)
Popular	-0.146* (0.079)	-0.161** (0.081)		-0.162 (0.161)
Country = USA	-0.007	-0.007	0.004	-0.008
Category Controlled	V	V	X	X
R2 / Pseudo R2	(0.006)	(0.006)	(0.022)	(0.007)
Observations	9,681	9,681		

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 10: Survey of Kickstarter Investors - Descriptive Statistics

This table presents the general answers to the survey, by gender. We undertook a survey of Kickstarter investors and project leaders if they had also invested. Of the 898,491 investors classified by gender, we were able to obtain 894 email accounts. Of the 14,072 project leads classified by gender, we were able to obtain 1,441 email accounts. In the end, we had 160 respondents that completed the survey. Seventy-nine of the respondents were women and eighty-one were men.

	Female	Male
Number of Contributions		
1	15.2%	19.8%
2-4	49.4%	48.1%
5-9	22.8%	22.2%
10+	12.7%	9.9%
Total	100.0%	100.0%
Multiple Contributions?		
No	83.1%	86.4%
Yes	16.9%	13.6%
Reason for Contribution		
For the reward	29.1%	54.3%
Support the person	82.3%	74.1%
Support the cause	58.2%	67.9%
Other	3.8%	0.0%
Given to a Stranger?		
No	43.0%	25.9%
Yes, but it was someone known to a friend or family member of mine	16.5%	8.6%
Yes, the person or people were completely unknown to me	40.5%	65.4%
Largest Contribution		
\$500+	5.1%	2.5%
\$250-\$499	5.1%	5.0%
\$100-\$249	27.8%	31.3%
\$50-\$99	26.6%	31.3%
\$25-\$49	27.8%	12.5%
<\$25	6.3%	17.5%
Don't remember	1.3%	0.0%

Table 11: Survey of Kickstarter Investors – Gender Attitudes

This table presents results of a survey of Kickstarter investors and project leaders if they had also invested. Of the 898,491 investors classified by gender, we were able to obtain 894 email accounts. Of the 14,072 project leads classified by gender, we were able to obtain 1,441 email accounts. In the end, we had 160 respondents that completed the survey. Seventy-nine of the respondents were women and eighty-one were men.

		Male	Female
Family life suffers when the woman has a full-time job	Strongly disagree	11.30%	7.70%
	Disagree	22.50%	20.50%
	Neither Agree nor Dis	36.30%	16.70%
	Agree	1.30%	2.60%
	Strongly agree	28.80%	52.60%
	Total	100%	100%
A preschool child is likely to suffer if his or her mother works	Strongly disagree	17.30%	12.70%
	Disagree	25.90%	17.70%
	Neither Agree nor Dis-	30.90%	16.50%
	Agree	6.20%	5.10%
	Strongly agree	19.80%	48.10%
	Total	100%	100%
Having a full-time job is the best way for a woman to be an independent person	Strongly disagree	21.30%	21.50%
	Disagree	15.00%	19.00%
	Neither Agree nor Dis-	47.50%	31.60%
	Agree	5.00%	17.70%
	Strongly agree	11.30%	10.10%
	Total	100%	100%
A woman and her family would all be happier if she goes out to work	Strongly disagree	14.80%	12.80%
	Disagree	7.40%	17.90%
	Neither Agree nor Dis-	66.70%	53.80%
	Agree	3.70%	9.00%
	Strongly agree	7.40%	6.40%
	Total	100%	100%
Both the husband and wife should contribute to the household income	Strongly disagree	25.90%	24.40%
	Disagree	7.40%	12.80%
	Neither Agree nor Dis-	50.60%	47.40%
	Agree	12.30%	14.10%
	Strongly agree	3.70%	1.30%
	Total	100%	100%

Table 12: Multivariate Analysis of the Survey

This table presents Logit and Tobit regressions of the investment in a female-led project controlling for all the investors' attributes. The gender inequality measure was created using 160 investors' answers about who does or should do the cleaning and washing in the household. We convert the answers given on a scale of "Strongly Agree" to "Strongly Disagree" to numerical values - 2 for Strongly Agree if it agrees with a chauvinistic statement, through 0 for "Neither Agree nor Disagree", up to (2) for Strongly Disagree. If the statement has a feminist view to it, the values are reversed - 2 for Strongly Disagree, etc. Then we build our measure of gender inequality, by adding all the values from the gender-related answers. The higher the score - the less he or she perceives gender equality should exist. We control for gender of the investors (dummy INV), serial investors (SI), age of investors (AgeInv) and industry of the project (IND).

*, **, and *** indicate that the coefficients are statistically significantly different at the 10 percent, 5 percent, and 1 percent level, respectively.

	<i>Investment in a Female-Led Project</i>			<i>Investment in a Female-Led Project</i>		
	<i>Female</i>	<i>Female</i>	<i>Male</i>	<i>Female</i>	<i>Female</i>	<i>Male</i>
	<i>LOGIT</i>			<i>PROBIT</i>		
Gender inequality Measure	-0.103*	-0.022	-0.172*	-0.064*	-0.012	-0.102*
	(0.058)	(0.091)	(0.095)	(0.035)	(0.057)	(0.056)
Investor is Female	0.863*			0.527*		
	(0.490)			(0.291)		
Serial Investor	-0.317		-1.387			
	(0.772)		(0.950)			
Age	0.310	0.426	0.463	-0.158		-0.836
	(0.203)	(0.453)	(0.321)	(0.461)		(0.583)
Constant	-2.341	-1.281	-0.293	0.193	0.259	0.286
	(-0.35)	(1.976)	(1.477)	(0.123)	(0.279)	(0.191)
R ² / Pseudo R ²	0.1468	0.0795	0.1955	0.1478	0.0788	0.196
Observations	114	46	60	114	46	60

Figure 1: Funds Raised by Successful Project and Project Leaders

Figure 1 presents the mean funds raised by the gender of the entrepreneur(s). Teams of two entrepreneurs received more funds than single entrepreneurs, and men received more than women.

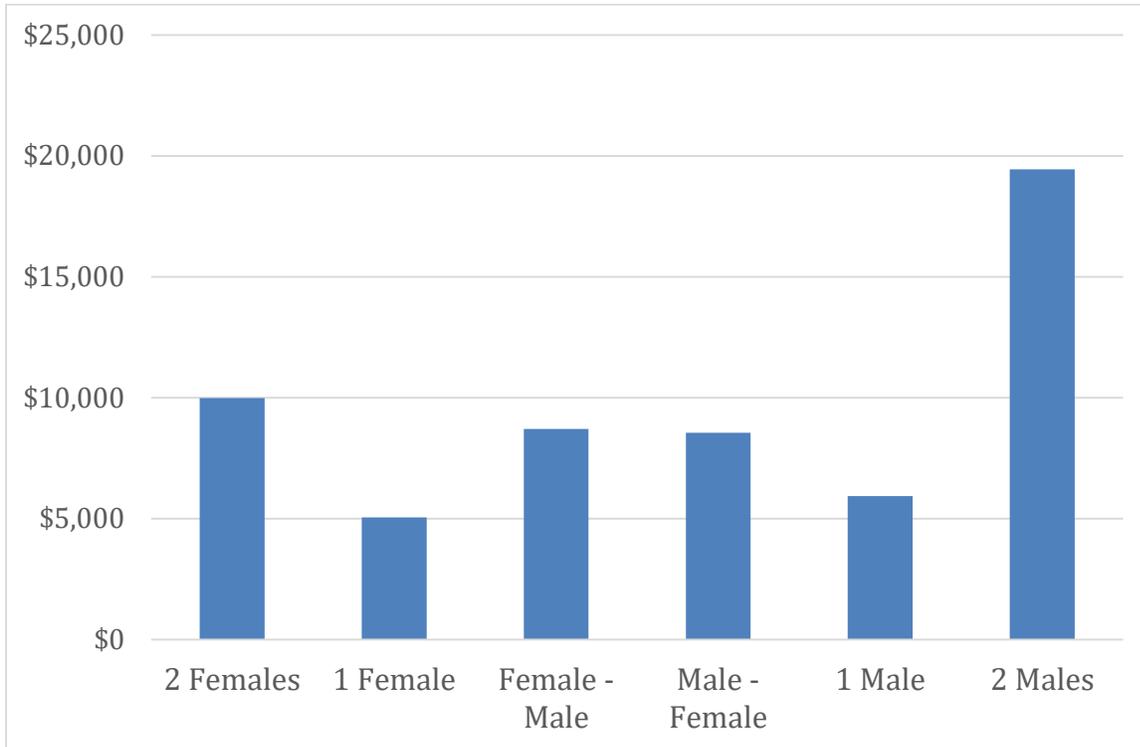
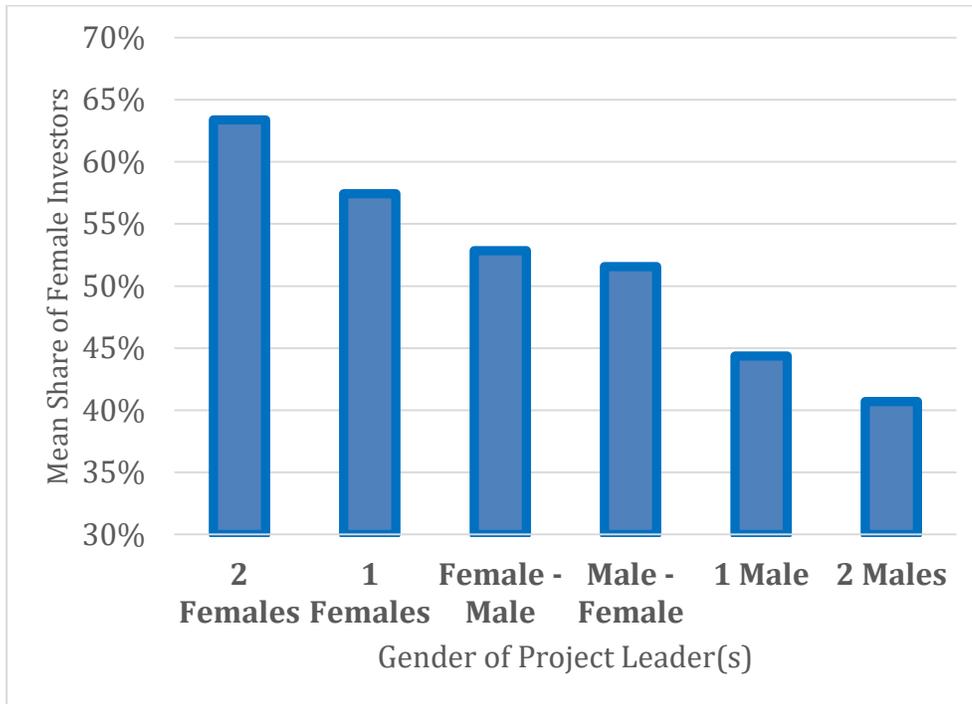


Figure 2: Share of Female Investors on Kickstarter Platform

Figure 2 presents the mean share of female investors for every type of project leadership. We find not only that the share of female investors is higher for the female-led projects than the male-led or male/female led, but also that the more the female is dominant in the projects (i.e. 2 females > 1 female, 1 female > male, female-male > male female, 1 male > 2 males), the higher the share of female investors.



**Appendix 1: Industry Distribution of Firms by Owner Gender
(United States, 2007)**

	Female- owned	Male- owned	Equally male-/ female- owned
Health care and social assistance	54.5%	33.5%	12.0%
Educational services	48.5%	37.5%	13.9%
Other services (except public administration)	40.6%	43.0%	16.5%
Administrative and support, and waste management, and remediation services	37.6%	46.8%	15.6%
Retail	35.1%	41.3%	23.6%
Arts, entertainment, and recreation	31.4%	53.6%	14.9%
Professional, scientific, and technical services	29.5%	55.5%	15.0%
Industries not classified	28.1%	51.5%	20.4%
Real estate, and rental, and leasing	26.9%	50.8%	22.3%
Information	26.7%	57.7%	15.6%
Accommodation and food services	25.9%	47.7%	26.4%
Finance and insurance	20.8%	63.6%	15.5%
Utilities	19.5%	58.3%	22.2%
Manufacturing	19.4%	58.9%	21.6%
Wholesale	19.3%	60.6%	20.1%
Mining, quarrying, and oil and gas extraction	15.7%	58.1%	26.2%
Management of companies and enterprises	11.6%	76.3%	12.1%
Transportation and warehousing	11.6%	71.4%	17.0%
Agriculture, forestry, fishing, and hunting	10.5%	63.0%	26.5%
Construction	8.0%	75.9%	16.1%
ALL	29.6%	52.9%	17.5%

Source: United States Census Bureau's Survey of Business Owners (2007).

Appendix 2: Online Crowdfunding Survey

1) How many contributions have you made on crowdfunding platforms such as Kickstarter and Indiegogo in the past three years? (This can be any kind of crowdfunding platform: debt, equity, reward-based, donation).*

- None
 - 1
 - 2-4
 - 5-9
 - 10-19
 - 20-49
 - 50+
-

About your contributions:

2) Have you ever made multiple contributions/investments to the same campaign over the funding period?

- Yes No

3) What are the reasons you have contributed to crowdfunding campaigns?

- I wanted the reward offered
- I wanted to support the person leading the campaign
- I wanted to support the cause or idea of the campaign
- Other

4) Have you ever contributed to a crowdfunding campaign of someone who you didn't know?

- No
- Yes, but it was someone known to a friend or family member of mine
- Yes, the person or people were completely unknown to me

5) What is the SMALLEST contribution you have made to a crowdfunding campaign?

- < \$10 \$11-\$24 \$25-\$49 \$50-\$99 \$100-\$249 \$250+
- I don't remember

6) What is the LARGEST contribution you have made to a crowdfunding campaign?

- <\$25

- \$25-\$49
- \$50-\$99
- \$100-\$249
- \$250-\$499
- \$500-\$999
- \$1000-\$4999
- \$5000-\$9999
- \$10,000 +
- I don't remember

7) What is the AVERAGE contribution you have made to crowdfunding campaigns?

- <\$25
- \$25-\$49
- \$50-\$99
- \$100-\$249
- \$250-\$499
- \$500-\$999
- \$1000-\$4999
- \$5000+
- I don't remember

8) When do you typically contribute in an online crowdfunding campaign?

- In the first day of the campaign
- In the first week of the campaign
- In the first month of the campaign
- In the last week of the campaign
- In the last day of the campaign
- Varies by campaign

9) **Please list any Kickstarter projects you have backed in the past.**

About you:

10) What is your age?

- 18-24 25-34 35-44 45-54 55-64 65+

11) What is your highest education level achieved?

- 12th grade or less
 Graduated high school or equivalent
 Some college, no degree
 Associate degree
 Bachelor's degree
 Graduate degree (Masters, MBA, PhD, MD, JD)

12) What Industry do you work in?

- Accounting Advertising Aerospace / Aviation / Automotive
Agriculture / Forestry / Fishing Biotechnology
Business / Professional Services Business Services (Hotels, Lodging Places)
Computers (Hardware, Desktop Software) Communications
Construction / Home Improvement Consulting Education Engineering
/ Architecture Entertainment / Recreation Finance / Banking /
Insurance Food Service Government / Military Healthcare / Medical
 Internet Legal Manufacturing Marketing / Market Research / Public
Relations Media / Printing / Publishing
Mining Non-Profit Pharmaceutical / Chemical Research /
Science Real Estate Retail Telecommunications
Transportation /Distribution Utilities Wholesale
Don't work and/or Full time student
- Other: _____

13) Are you male or female?

- Male Female

14) What is your household income?

- Less than \$25,000
 \$25,000 to \$34,999
 \$35,000 to \$49,999
 \$50,000 to \$74,999
 \$75,000 to \$99,999
 \$100,000 to \$124,999
 \$125,000 to \$149,999

\$150,000 or more

Gender Perceptions

15) Do you personally agree or disagree ...All in all, family life suffers when the woman has a full time job

- Strongly disagree
- Somewhat disagree
- Neither Agree nor Disagree
- Somewhat agree
- Strongly agree

16) Do you personally agree or disagree ...A preschool child is likely to suffer if his or her mother works

- Strongly disagree
- Somewhat disagree
- Neither Agree nor Disagree
- Somewhat agree
- Strongly agree

17) Do you personally agree or disagree ...Having a full-time job is the best way for a woman to be an independent person

- Strongly disagree
- Somewhat disagree
- Neither Agree nor Disagree
- Somewhat agree
- Strongly agree

18) Do you personally agree or disagree ...A woman and her family would all be happier if she goes out to work

- Strongly disagree

- Somewhat disagree
- Neither Agree nor Disagree
- Somewhat agree
- Strongly agree

19) Do you personally agree or disagree ...Both the husband and wife should contribute to the household income

- Strongly disagree
- Somewhat disagree
- Neither Agree nor Disagree
- Somewhat agree
- Strongly agree

20) Do you personally agree or disagree ...the female(s) in the household does/should do most of the household cleaning.

- Strongly Disagree
- Somewhat disagree
- Neither Agree nor Disagree
- Somewhat agree
- Strongly Agree

21) Do you personally agree or disagree ...the female(s) in the household should do the majority of the washing and ironing of clothes.

- Strongly Disagree
- Somewhat disagree
- Neither Agree or Disagree
- Somewhat agree
- Strongly Agree

Thank You!