



How Gender Influences the Probability of Success in Crowdfunding

Phillip Thomas Vasconcelos Forsgren

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Abstract:

Female entrepreneurs have higher barriers of entry when compared to their male cohorts. Female discrimination is present when trying to gain access to finance in the traditional investment industry. In recent years, crowdfunding has emerged as a viable method of early venture financing. This paper investigates the correlation between female entrepreneurs and the likelihood of accessing finance on crowdfunding compared to males. The evidence shows that campaigns led by female entrepreneurs benefit from higher rates of success compared to their male counterparts. Furthermore, when investigating whether females, compared to males, experience a larger negative effect as goals increase in relation to success, results found that there is no difference between females and males. And finally, when analyzing whether female success rate in male dominated categories is lower compared to males, we see that females benefit from higher rates of success, compared to males. Female participation on the crowdfunding platform as is less than males, however, they succeed at higher rates than men, even in typically male dominated industries, illustrating that crowdfunding can help take steps towards breaking the cycle of female discrimination when investing.

As mulheres empresárias têm mais barreiras de entrada quando comparadas aos seus coortes masculinos. A discriminação feminina está presente quando tentam obter acesso a financiamento, num setor de investimentos tradicional. Nos últimos anos, o crowdfunding surgiu como um método viável de financiamento de risco inicial. Este trabalho investiga a correlação entre mulheres empresárias e a probabilidade de aceder a um financiamento especialmente devido ao crowdfunding. Em relação às taxas de sucesso feminino, os dados demonstram que campanhas lideradas por mulheres têm maiores taxas de sucesso em relação aos seus homólogos masculinos. Além disso, ao investigar se as mulheres sentem um efeito negativo maior à medida que os objetivos para alcançar o sucesso aumentam, em comparação com os homens, os resultados indicam que não há diferença entre homens e mulheres. E, finalmente, ao analisar se a taxa de sucesso feminino em categorias dominadas pelos homens é menor, verificamos que as mulheres beneficiam de maiores taxas de sucesso comparadas com os homens. Embora a taxa de participação feminina como líderes seja menor que a dos homens na plataforma de campanha crowdfunding, elas conseguem taxas mais elevadas de sucesso do que os homens, ilustrando que o crowdfunding pode ajudar a tomar medidas para quebrar o ciclo de discriminação feminina no que toca ao investimento.

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Abbreviations

Bn - Billion(s)	ICT - Information and Communication Technology
M - Million(s)	JOBS - Jumpstart Our Business Startups Act
SME - Small and Medium Size Enterprises	SME - Small and Medium Enterprises
CEO - Chief Executive Officer	USD - U.S. Dollar
CF - Crowdfunding	VC - Venture Capital or Venture Capitalist
CFI - Crowdfund Investing	
CFP - Crowdfunding Platform	
GDP- Gross Domestic Product	

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1. Introduction

1.1. Female Entrepreneurs

One of the largest growing populations of entrepreneurs globally are women who are making an important contribution to employment and economic growth (Kelley, et al., 2011; Brush, et al., 2014). In the United States, female company ownership has increased from 29% in 2007 to 38% in 2016. While this increase in ownership is impressive, women’s percentage of the nation’s business revenues has remained constant at 4% for the past 20 years (US Census 2012; American Express 2016).

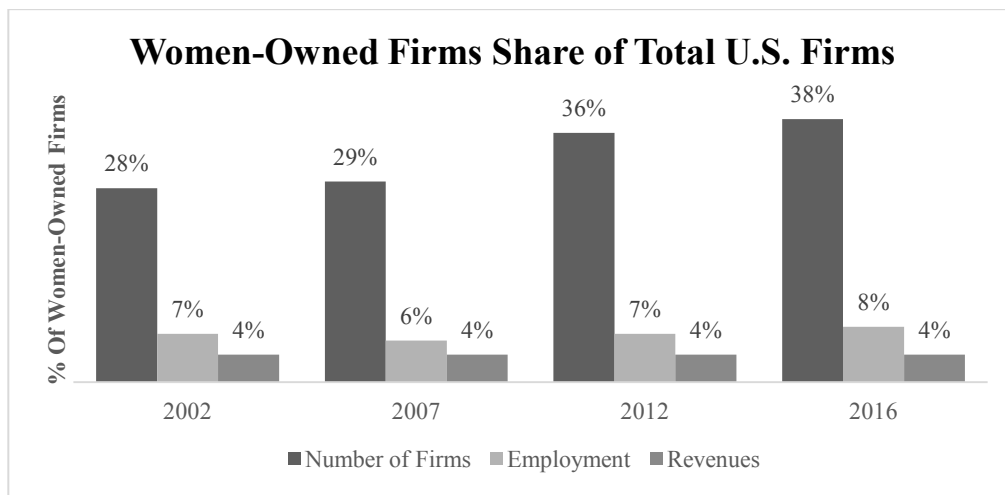


Figure 1 Women-Owned Firms Share of Total U.S. Firms

Source: 2002-2012 US Census Bureau, 2016 estimates, American Express OPEN/Womenable

Studies on financing investments, business-ownership, and entrepreneurship, have all yielded evidence that financing poses the biggest challenge when starting a business. All over the world, women entrepreneurs have been set at a disadvantage when compared to their male counterparts with comparable abilities and experience (Brush, 1992; Shaw, et al., 2006). There has been vast research and debate about women entrepreneurs struggling with gaining financial capital from traditional investments methods, however, only recently a discussion has started on the gender effects associated with the new investment platform known as crowdfunding (Greenberg & Mollick, 2016; Marom, et al., 2016; Mohammadi, et al., 2015).

Women entrepreneurs possess tremendous potential in human capital and economic development, however, they are burdened with higher barriers to enter the market. Many scholars agree that to eliminate the obstacles that female entrepreneurs face, a drastic change in institutions and legal protections needs be implemented (McCracken, et al., 2015; Revenga & Shetty, 2012). Within the investment industry, we see a rising disrupting force named crowdfunding (Goldman Sachs, 2015).

1.2. Crowdfunding

In 2008, the financial crisis heavily affected small businesses as investors became more risk averse (Stemler, 2013). This limited the availability of ventures to close their funding gap (Fink, 2012; Duygan-Bump, et al., 2011). This event, along with the rise of new digital platforms, triggered a line of activities leading up to the crowdfunding market seen today (Moritz & Block 2016). Initially, the concept started with donations and charity based funding of creative projects (e.g. art and film) (Goldman Sachs, 2015). Through time, it spread to other categories such as technology and software and towards reward-based platforms (Bradford, 2012; Meinshausen, et al., 2012). Now, crowdfunding models have expanded into debt or equity investments, targeting a more diverse pool of entrepreneurs and investors (World Bank, 2013).

Before crowdfunding, startups in need of seed funding were limited to three investment models; self-financing, bank loans or outside investors, namely, venture or angel capital. This system simply limited the number of startups which would be funded because the total pool of capital was finite (Traeger, et al., 2012). Furthermore, other disadvantages of using these methods (e.g. angel capital) to securing funding included using large amounts of time, communication, and personal risk if the project was self-financed (Rossi, 2014). Crowdfunding is a more democratic way of accessing funds by directly connecting entrepreneurs and investors where anyone can take part. Instead of being dependent on banks or venture capital, entrepreneurs can access a large community on the platform, and additionally refine ideas and measure interest, thus transforming which ideas go to market (Mollick, 2016).

The dramatic growth of crowdfunding can be characterized by the number of platforms and size of investments made through the years. As illustrated in the chart below:

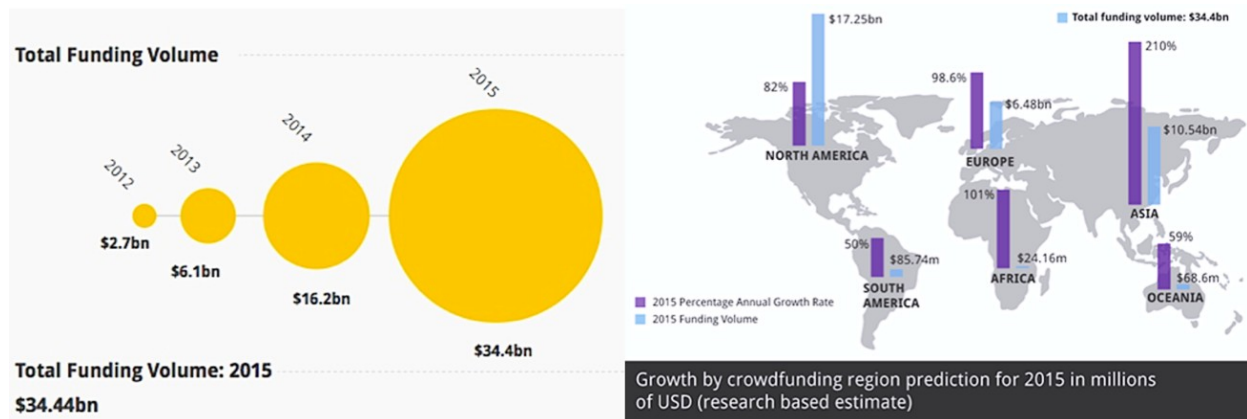


Figure 2 Global Crowdfunding, 2015

Source: Massolution Crowdfunding Industry Report 2015

In 2012, the Massolution Industry Report showed 452 active crowdfunding platforms which raised \$2.7Bn in total, and by 2015, the number of crowdfunding platforms more than doubled reaching 1,250 active sites, raising \$34.4Bn. The geographical distribution is North America \$17.2Bn, Asia \$10.54Bn, Europe \$6.48Bn, Oceania \$68.6M, South America \$85.74M, Africa \$24.16M (Massolution, 2015). Though the North America has the highest amounts in crowdfunding, Europe and Asia have higher growth rates, and Asia's rate of 210% annual growth is more than double of any other region.

Crowdfunding platforms have raised impressive amounts of funding in a multitude of industries. The most successful funding campaigns have been reward-based models, including Pebble's smartwatch (\$20.3M), Bragi' headphones (\$3.4M), Exploding Kitten's card game (\$8.8M) and Oculus virtual reality headset (\$2.4M). Successful crowdfunding campaigns often lead to future company success and possibly acquisition by larger companies, as was the case for Oculus selling to Facebook for \$2Bn, two years after its Kickstarter campaign.

The aggressive expansion of crowdfunding can be accredited to the rise of the 2.0 internet and other technologies, accessibility (Surowiecki, 2004), and favorable government regulations. The internet coverage grows daily with the core ability of combining technology and communication which are essential for crowdfunding operations (Misra, et al., 2016). From 2010 to 2017 internet users have grown from 2Bn to approximately 3.6Bn users (Internet Live Stats, 2017). Internet enabled devices have taken control of the market and have a positive annual compounded growth

of 23.1% predicted from 2014 to 2020 leading to approximately 50Bn devices (Stalder, 2009) (Columbus, 2016). The internet has opened access to people to instantaneously communicate and provide access to information (Castells, 2009; Wolf, et al., 2012). These evolvments have made crowdfunding a click-away for investors who want to contribute or donate (Aaker & Akutsu, 2009).

Governments are trying to help entrepreneurs and SMEs by revising regulations to accommodate crowdfunding, as seen in the United States passing the regulation in the Jumpstart Our Business Startups (JOBS) Act in 2012. The JOBS Act was passed in 2012, however, was only officially effective in 2016. This Act encourages the use of crowdfunding of SMEs giving certain exemptions to previous regulations.¹ Now entrepreneurs and SMEs can raise up to \$1M from the crowd (non-authorized investors) with the use of equity crowdfunding. As this regulation is rather novel, how the market will react to it is yet to be researched thoroughly.

With the rise of the internet and governmental efforts, crowdfunding has drastically lowered the barriers for entrepreneurs to gain access to capital. Anyone with an idea or project can sign up on a crowdfunding platform and start a funding campaign. By eliminating pitfalls for female entrepreneurs due to the discrimination gaining funds from traditional methods (e.g. bank loans and venture capital) crowdfunding may give a more equal opportunity for female entrepreneurs (Mollick, 2016).

This paper seeks to analyze females in crowdfunding, investigating gender biases in crowdfunding platforms. The relationships hypothesized are based on a comprehensive review of literature regarding crowdfunding, gender bias, and stereotyping. Data will be collected from the crowdfunding platform Kickstarter.

The paper starts with the history and characterization of crowdfunding and how it has evolved as a viable means of capital investment. This is followed by the history of the inequality females face throughout the world. It then focuses on female entrepreneurship and the several challenges it faces, most critically, financial investment. The paper then discusses the similarities and differences between the conventional investment methods and the innovative crowdfunding

¹ United States Securities Act of 1933 restricts investments in the U.S. securities market and financial investments into SME to authorized investors.

platform, to identify lessons learned and applicable strategies. Followed by country differences and its effect on success rate of women and the differences between success rate of women and index. The paper then shows the descriptive statistics of the campaigns on Kickstarter and analysis the participation and success rates of female entrepreneurs when controlling for goal, category and country to explore the efficacy of the use of Kickstarter for eliminating barriers for women entrepreneurs to raise finance. Finally, the paper offers suggestions for female entrepreneurs seeking capital, policy makers, conventional investment industries, and further studies.

2. Literature Review

This section assesses the current state of knowledge for research on the crowdfunding phenomenon and female entrepreneurs. The relevant definitions and models of crowdfunding will be addressed as it relates to entrepreneurial ventures. Global developments of female equality and entrepreneurship will be outlined and relevant variables affecting female entrepreneurial ventures will be analyzed. From previous researchers' discoveries, hypothesis for analysis are formulated.

2.1. Definitions

Crowdfunding has gained widespread attention with researchers each adopting their own definition based on their findings. By combining several scholastic work documenting crowdfunding, Bouncken et al. (2015, p.409) define crowdfunding as, "raising financial funding from the public, represented by a group of people, by using specific internet-based platforms."

Crowdfunding encompasses elements of *Crowdsourcing* and *Microfinancing*. Jeff Howe (2006) was the first scholar to define *Crowdsourcing* as, "The act of taking a job traditionally performed by a designated agent (usually an employee) and outsourcing it to an undefined, generally large amount of people in the form of an open call. (Howe, 2006, p.1)". In short, crowdfunding takes a task typically performed by an individual and outsourcing it to a large audience apparently without bias. *Microfinancing* typically is a small loan received by a small firm (Mincer, 2008). In *Microfinancing*, the focus is on the firm, in *Crowdfunding* the focus is on the crowd (Rossi, 2014).

2.2. Crowdfunding

This process of crowdfunding starts with an entrepreneur or company selecting a crowdfunding platform (e.g. Kickstarter.com or Gofundme.com) to launch a campaign. The entrepreneur sets up the campaign by describing the venture idea, product or service, and the goal to be raised and how the money will be used. The entrepreneur states the terms of their returns-on-investment given in return to the investors for the money invested. From the investor side, investors can browse through a list of campaigns, select the campaigns which are of interest, and contribute to those based on what the entrepreneur offers in exchange for their capital. In all, the internet-based platforms; bring entrepreneurs and investors together and facilitate the flow of investments and funds between the two parties (Vidra, 2012) [See Appendix C].

In the past, equity or debt financing were the two options to raise fund. In equity funds, investors gained shares in exchange for capital and were also given some control of the company, this also came at a higher risk. When debt financing was used, investors were involved in an agreement to receive their principle payment with interest (Rossi, 2014). This method required less risk and had seniority over equity claims, however, for many startups and SMEs without any cash flows or collateral, this was a deterrent for investors (Berger & Udell, 1998). During a company’s lifecycle, the method of how a firm acquires financing can vary mainly due to the risk and guarantees the entrepreneur offers to investors (Lasrado, 2013), and as seen in the chart below, Crowdfunding covers a wider range of the financial stage starting from initial conception, through seed and early phases, to the expansion stage.

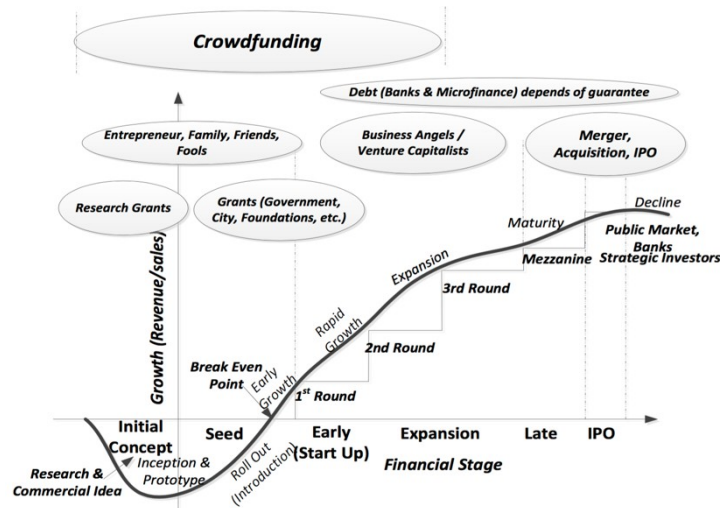


Figure 3 New Venture Financing Lifecycle

Source: (Lasrado, 2013)

2.2.1. Crowdfunding Models

In crowdfunding, there are usually three parties involved: the entrepreneurs, the intermediaries and the investors (Tomczak & Brem, 2013). Based on the crowdfunding platforms regulations, and the agreement of what is exchanged for the investment, crowdfunding can be classified into four models: donation, reward, lending and equity (Bradford, 2012; Giudici, et al., 2012).

- Donation model: Investors are not awarded with any material for their contribution to the venture, however, the reward can be immaterial, including public acknowledgements of investors' pledges (Leimeister & Zogaj, 2013).
- Reward Model: Investors can gain either material or immaterial rewards. Public acknowledgement or the investor's name can be on the project. Material awards to the investors in the form of pre-sales or pre-orders before the product or services are on the market is commonly used (Hemer, et al., 2011; Röthler & Wenzlaff, 2011).
- Lending Model: investors give the project small loans with a fixed interested rate and payment plan. The contracts can be arranged among a variety of parties including peer-to-peer (Hemer, et al., 2011; Kaltenbeck, 2011; Kortleben & Vollmar, 2012) or contract between individuals and companies (Mach, et al., 2013).
- Equity Model: The investors become partners in the venture as the investments they put into the venture buy them shares of the company being fundraised. This is a material reward for the investors as they receive profit sharing (Brem & Wassong, 2014).

The benefits of using crowdfunding include exposure to high amounts of pooled investment capital, with a proven track record of success (e.g. Pebble Watch, Oculus VR) and allows testing of concepts and gain market validation in the early stages. Other benefits include hedging risk, word-of-mouth marketing from potential customers, and introduction to repeat clients. The audience also benefits with access to new and innovate products (e.g. rewards-based CF) or having the chance buy a part of a firm (equity-based CF). The platform is easier to use in many dimensions and works as a useful marketing tool. Additionally, it allows for pre-sales, brainstorming and feedback, and due to the audience size - an accurate cumulative market forecast can be made for projects and it is free (Prive, 2012; Rossi, 2014; Surowiecki, 2004).

2.3. Gender Discrimination

All over the world the gender gap, the inequality between women and men, is still evident (Kelley, et al., 2011). Within the past century the imbalance is present in rights, salaries, positions of political power, heads of companies, and in some countries, access to education (Revenga & Shetty, 2012). Though there have been movements towards equality, there is still a large gap. Grant Thornton's Business Report (2016) showed that women in companies across senior positions, are still a minority with 23% in human resources directors, 21% as chief financial officers, 11% as chief marketing officers and only 9% at the head of the company as the chief executive officer or managing director. Research regarding women in entrepreneurial roles show that historically, women have a lower likelihood, when compared to men, to be self-employed or to start a company (Blanchflower & Meyer, 1994; Reynolds, 1997; Blanchflower & Oswald, 1998). In a recent study, Adachi and Hisada (2016) found that women were less likely to be entrepreneurs because of personal risk aversion, credit constraints or discrimination.

Nonetheless, recently the pathway for female leadership has gotten easier as more women gain higher career positions as well as political roles (PWC, 2017). Though the forecast for women entrepreneurs is positive, their ability to contribute to job creation and economic development is still burdened by gender specific constraints. Women constantly face higher challenges than their male counterparts in economic and social paradigms, giving women unequal opportunities in a range of situations including evaluation of performance, hiring processes, employment contract negotiation, promotions and financial investments. Studies have shown that women's own confidence about their abilities and worth in the labor market along with external market practices of tokenism, structural constraints, negative stereotyping have allowed for this inequality to perpetuate. This inequality results in underutilized human resources, as well as the underestimate of critical roles women play in economic development (McCracken et al., 2015; American Express OPEN, 2016).

The United Nations and other international organizations have attempted to close the gender gap with programs giving an equal access to opportunities, however, inequalities have remained present and women have yet to be treated equal to their male colleagues (Sarfaraz & Faghieh, 2011). Women play a critical role in the entrepreneurial trend and their contributions depend on the promotion of gender equality from their respective governmental institutions (Sarfaraz et al.,

2014). Women currently account for 49.5% of the world population (US Census Bureau, 2017). Despite being half of the population, Revenga and Shetty (2012) state that barriers in certain labor sectors and lack of representation in political positions have contributed to women having less power when making decisions and life choices when compared to their male counterparts.

Entrepreneurship propels innovation and often leads to the creation of new products, services or technologies. Furthermore, entrepreneurship establishes new industries and is in the best interest of a nation (Audretsch, D. B., 2002; Porter, 1990). With new companies, new employment opportunities appear for the communities, helping the economy grow, increase productivity and promote competition. However, this economic development must have the participation of women. Allen et al. (2007) found that the global entrepreneurial activity rate suffers from a significant gender gap. Supporting this, Parker (2009) argued that though the rate of female entrepreneurs has increased, men still represent the clear majority of entrepreneurs in developed economies. Eliminating the gap between females and males promotes efficiency in economies and increases productivity by using women's talents and skills more fully. By directing spending towards empowering women in leadership roles in business, politics and social settings give a more even representation of labor force, thus, enriching countries diversity and growth outlooks (Revenga & Shetty, 2012). Supporting this, PWC (2017) found that closing the gender gap would promote a country's development, and forecasted that the overall gains for female earnings would yield \$2 trillion in OECD countries and OECD GDP would increase by approximately \$6 trillion.

2.3.1. Gender Success Trends in Crowdfunding

On Kickstarter, Greenberg and Mollick (2014) found evidence that a partial determinate of success for women was lower funding goals. In a similar study, Frydrych, et al., (2014) also used Kickstarter data and found that the success can be predicted partially by the duration of campaign as well as the goal. Additionally, Marom et al. (2016) study investigated how gender affects success rates on Kickstarter crowdfunding platforms and found that women have higher rates of success using crowdfunding. This provides evidence that crowdfunding platforms lower the barriers of women entrepreneurs to secure access to funding in the United States. Marom et al.'s (2016) study confirms that crowdfunding promotes female entrepreneurship, and when compared to the traditional financing mechanisms, rewards-based crowdfunding is more likely to

provide the funding for women to pursue their ventures. As such, the following relationship is hypothesized:

H₁: Females experience higher success rates in crowdfunding activities compared to males

2.3.2. The Effect of Goal Amount

Studies have found that women feel discriminated in the process of gaining finance in traditional methods such as bank loans (Orhan & Scott, 2001). In fact, there is even a larger difference between genders in gaining funding from angel investors, private equity or venture capital. (Brush et al., 2004; Harrison & Mason, 2007; Robb & Robinson, 2014). Women entrepreneurs have been set at a disadvantage compared to males when applying for investment capital (Brush, 1992; Shaw et al., 2005). Barasinska and Schafer (2014) found that women-owned businesses were charged higher interest rates and were less able to gain a loan compared to their males with equal capabilities. This discrimination is hidden as they are subtle and often reasoned with different “status expectations and gendered roles” (GEM, 2012).

Studying the crowdfunding platform Kickstarter, Marom et al. 2016 found that females only accounted for one-third of the participants on the platform. This indicates that females are less likely to take part in launching a project on crowdfunding platforms. Past research argues that females on average have less confidence compared to men (Bandura, 1986; Croson & Gneezy, 2009), are more risk averse, (Gneezy & List, 2013), and underestimate the market’s demand for their project (Langowitz & Minniti, 2007). In all, females have notoriously been discriminated in the investment market, with less probability of raising desired goal amount. Consequently, females on average have lower expectations of the valuation of their new venture and expect lower capital raised. Based on this, one can draw the assumption that investors will expect females to pledge for lower goal amount compared to males. Consequently, females might have a more negative effect of pledging high amount of goals as it would be seen as overestimating the market value of the venture. Therefore, the following relationship is hypothesized:

H₂: Females have a stronger negative effect of higher pledged goal amount compared to males

2.3.3. The Effect of Industry

Women historically have been constrained by governmental and institutional conditions such as

occupational closure² and occupational segregation. Such recent examples could be seen in several more developed countries not allowing women to serve in the military. This influences female entrepreneurs because closure and segregation restrict females to a narrower scope of entrepreneurial opportunities (Kobeissi, 2010). Consequently, female entrepreneurs make different choices as to what types of ventures to pursue compared to men (Quadrini, 2008). Furthermore, studies have argued that women have a grouping instincts to specific industries due to less of a pay gap as well as less discriminatory hiring processes (Appleton et al., 2009). These choices lead to females choosing to establish companies in certain industries, and supported by several studies, women-owned companies have a tendency to be focused in sectors such as service and retail (Loscocco, et al., 1991; Du Rietz & Henrekson, 2000). The percent of female owned companies remains small in more technological industries (e.g. software companies) (Morris, et al., 2006). Research by American Express (2016) concurs with these findings. Using data from the U.S. Census Bureau, they found that women-owned businesses were present in every industry, however, 61% of the businesses were in four sectors; other services (e.g. nail salons and pet stores), healthcare and social assistance (e.g. nurseries and elderly living facilities), professional services (e.g. law firms and management companies) and administrative and support services (e.g. tourism agencies and office administration). This might be because females feel they will be more appreciated in industries with higher presence of female entrepreneurs. Studying gender discrimination in different industries, Ridgeway (2009) found that in male-dominated industries, females felt that the male colleagues perceived women as having less capabilities than men, even though both had the same background and experience. On the Kickstarter platform, entrepreneurs can pick which category³ to launch their campaign. In 2016, females had the highest participation in the categories Dance (77.5%), Fashion (69.4) and Food (69.4%). However, males' participation dominated the categories Design, Games, Film and Technology with more than 70% participation rate (Marom, et al., 2016). These male-dominated categories account for the highest amount of successful capital raised with more funds than all other categories combined (Kickstarter Stats, 2017). As research show that male dominated industries tend to have higher amount for successful capital raised, and that females perceived themselves as discriminated in male-dominated industries, the following relationship can be

² Occupational Closure can be defined as the exclusion of specific groups from specific areas of employment (Kobeissi, 2010)

³ Art, Comics, Dance, Design, Fashion, Film and Video, Food, Games, Music, Photography, Publishing, Technology, and Theater.

hypothesized:

H₃: Females succeed at lower rates in male-dominated industries on crowdfunding platforms, compared to males

In the next chapter, the sources and structures of available datasets will be explored. The process of data consolidation and variable selection will be outlined. With this information, the models used for answer the hypotheses will be outlines and our findings will be explained.

3. Methodology

This section highlights the datasets used and how it is processed in the hypothesis models. As a descriptive quantitative study, the goal of this paper is to describe the effect of being female has on the participation and success rates present on Kickstarter, compared to males. We can do this by manipulating the gender variable while holding all other variables constant (*ceteris paribus*). This way any apparent variances can be accredited to being female or male.

Then, an interaction variable is used to determine whether female success rates on crowdfunding relates to their level of goals. Furthermore, we investigate whether females experience lower success rates compared to males when participating to male-dominated industries.

3.1. Dataset Sources:

This paper uses publicly available data from companies and organizations, which include data from Kickstarter⁴, the United States Treasury Bureau⁵ and a series of Name-banks⁶. The core dataset used for this analysis is collected from Kickstarter, and is combined with data from the other organizations to adjust some central variables in the core dataset (e.g. currency from US Treasury) to have consistency in measurements.

⁴ Kickstarter Statistics - <https://www.kickstarter.com/help/stats>

⁵ United States Department of the Treasury - Treasury Reporting Rates of Exchange 2016: <https://www.fiscal.treasury.gov/fsreports/rpt/treasRptRateExch/historicalRates.htm>

⁶ See Reference List: Name Databases

Kickstarter, the largest reward-based crowdfunding platform, can be seen as an industry standard as many of Kickstarter's features were drafted into the United States JOBS Act (Franzen, 2012). Therefore, Kickstarter is a valid platform to gather data on projects to build statistical models. Our Kickstarter's campaign data can be compiled automatically with the use of a webcrawler. Webcrawlers (crawlers) are tools used in web indexing and datamining. These crawlers are internet robots which are programmed to gather specific information from sites. The crawler scans through a webpage they were assigned (Kickstarter campaign page), gathers the specific information requested and repeats the process as it crawls through all the pages (e.g. individual campaign webpages on Kickstarter) on the site. While they are crawling, the information they gather is saved into a designated data table (NWBC, 2017).

From the webcrawler, approximately 250,000 campaigns were cataloged from the beginning of Kickstarter in 2009 up to February 2017, as the data is continuously updated. This study uses the compiled data⁷ from Kickstarter campaigns launched from January 1, 2016 to December 31, 2016.

3.2. Procedure

This study's data is a combination of data gathered from Kickstarter using a web-crawler to access individual characteristics of the entrepreneurs, such as goal, location and time of campaign. It was important to clean the data for errors and missing entries. This was easily done by sorting through the data by category to find missing entries. The data extraction errors may have occurred when the web crawler was extracting data from a campaign page which was taken down. Additionally, any campaigns with missing URLs were eliminated as they were needed to confirm all the extracted data matched correctly for a random sample test.

To assign gender, we followed the procedures from Marom et al. (2016) and built a name library⁸. First we retrieved data tables with thousands of first-names and corresponding gender. The list of names, the name library, built consisted of 29,832 entries with an even sum of each gender: 14,932 females (50.05%) and 14,900 males (49.95%). Next, by using a reference

⁷Untreated Data can be found at: <https://www.dropbox.com/s/75rxb32xdtipjbd/kickstarter%20projects.csv.zip?dl=0>

⁸ The term Name-gender Library, is used in this paper as the dataset which has names and most likely gender associated with it.

function in excel, we cross-referenced the names in the name library with the creators' names from the Kickstarter dataset, enabling us to assign gender and to each entrepreneur by first name. As the function only read the first name, further cleaning of the data to eliminate campaigns made by multiple creators and partnerships or companies was done. We executed a lookup function on excel to identify certain keywords or symbols (LLC, LTD, Comp., Company, &) and any entries labeled with company keywords and any creators with two or more founders were reclassified as a company and eliminated from our data.

Kickstarter's campaign contributions can vary in currency (e.g. U.S. Dollar, Australian Dollar). To enable an accurately comparison between the different currencies⁹ the US dollar was selected as the currency standard, due to the majority of the sample population using the dollar and accessibility of reliable data. Appendix A shows the US Department of Treasury quarterly and annual international exchange rate reports from 2016 used in the data. The rates were averaged for 2016 and used to convert foreign currencies into US dollars for the variables of Goal and Amount Raised.

3.3. Measures – Key Variables

- **Female:** Dummy Variable for being Female (1) or Male (0)
- **Goal:** The target funding to be raised for the project. Data eliminated of extreme values of less than \$100 and greater than or equal to \$1Million. All currencies have been exchange to USD.
- **Log of Goal:** The Goal of each campaign and using
- **Amount of Funds raised:** The actual amount raised by the project. This amount can surpass the Campaign goal. All currencies have been exchange to USD.
- **Backers:** The number of investors supporting the venture.
- **Category:** Entrepreneurs can choose the category in which their project is in. There are 13 main categories, included in those are Art, Film, Dance, Technology and Comics.
- **Duration:** Amount of time the project lasted, though there is no project minimum, maximum length is 60 days.

⁹ Variables involving currencies are Goal Amount and Pledged Amount.

- **Month:** Numeric value for months of the year ranging from 1-12.
- **Day of Month:** Numeric value of day in the month ranging from 1-31.
- **Location:** Countries were assigned after reading the currencies of the campaign. Countries¹⁰ using the Euro as a currency were grouped together into variable: Euro.
- **Technical:** Dummy Variable for Male dominated categories of Design, Games, Film and Technology (1), all other categories (0).
- **Success:** Dummy Variable for successfully reaching funding (1), all others (0).

To test H₁ we structure the following regressions. First we test the effect of being female on the success rate. Then we test the effects of being females on success rate, controlling for goals, the number of backers, duration of campaign, location of the campaign and the industry category the products or services is in.

$$H_1: \text{Regression 1:}$$

$$\text{Success} = \beta_1 \text{Female} + \beta_0 + u_e$$

$$H_1: \text{Regression 2:}$$

$$\text{Success} = \beta_1 \text{Female} + \beta_2 \log(\text{Goal}) + \beta_3 \text{Backers} + \beta_4 \text{Duration} + \beta_5 \text{Location} + \beta_6 \text{Category} + \beta_0 + u_e$$

To test H₂ we structure the following regressions. Model 1 tests if being female and higher goals of funding has a negative effect on success, compared to males. In the second regression, we control for goals, the number of backers, duration of campaign, location of the campaign and the industry category the products or services is in.

$$H_2: \text{Regression 1:}$$

$$\text{Success} = \beta_1 \text{Female} + \beta_2 \text{Goal} + \beta_3 [\text{Female} * \text{Goal}] + \beta_0 + u_e$$

$$H_2: \text{Regression 2:}$$

$$\text{Success} = \beta_1 \text{Female} + \beta_2 \text{Goal} + \beta_3 \text{Backers} + \beta_4 \text{Duration} + \beta_5 [\text{Female} * \text{Goal}] + \beta_6 \text{Location} + \beta_7 \text{Category} + \beta_0 + u_e$$

To test H₃ we structure the following regressions. One to test if being female and choosing to launch a product in male-dominated industries has a negative effect on success rate, compared to males. Next, we test the effects of being female on success rate, controlling for goals, the

¹⁰ Countries grouped into the Euro Variable were: Austria, Belgium, France, Germany, Ireland, Italy, Luxembourg, Netherlands and Spain.

number of backers, duration of campaign, location of the campaign and the industry category the products or services is in.

H₃: Regression 1:

$$Success = \beta_1 Female + \beta_2 Goal + \beta_2 [Female * Technical] + \beta_0 + u_e$$

H₃: Regression 2:

$$Success = \beta_1 Female + \beta_2 Goal + \beta_3 Backers + \beta_4 Duration + \beta_5 [Female * Technical] + \beta_6 Location + \beta_7 Category + \beta_0 + u_e$$

All the hypothesis use regressions which yields an output of log-odds, therefore to see the probabilities we must be preform the reversing the log function, or the antilogarithm, as seen in the formula:

$$Log-to-Probability Formula: p = e^{a + \beta c} / (1 + e^{a + \beta c})$$

Note: There p is the probability, and e is Leonhard Euler's the irrational number of approx. 2.718.

4. Sample Profile:

Table 1 illustrates the statics for campaign goals, amount pledged, the percentage funded, success rate and duration for the population. The total sample of 33,366 projects is further divided into 9,064 female and 24,302 male campaigns to capture variations in the gender populations as seen in the following summary statics table.

4.1. Summary Statistics

Total					
Statistic	N	Mean	St. Dev.	Min	Max
Female	33,366	0.272	0.445	0	1
Male	33,366	0.728	0.445	0	1
Duration (Days)	33,366	33.177	11.367	1.016	60.042
Success	33,366	0.315	0.465	0	1
Goal (\$)	33,366	21,169.790	57,457.230	100.000	998,000.000
Pledged (\$)	33,366	4,558.134	25,465.380	0.000	2,482,054.000
% Funded	33,366	0.728	2.534	0.000	139.510
Backers	33,366	61.368	241.825	0	11,483
Female					
Duration (Days)	9,064	32.747	11.402	1.016	60.042
Success	9,064	0.368	0.482	0	1
Goal (\$)	9,064	15,385.010	43,506.020	100.000	953,905.600

Pledged (\$)	9,064	4,156.125	16,323.480	0.000	1,119,030.000
% Funded	9,064	0.678	1.695	0.000	70.880
Backers	9,064	54.232	185.274	0	9,293
Male					
Duration (Days)	24,302	33.338	11.352	1.118	73.958
Success	24,302	0.296	0.456	0	1
Goal (\$)	24,302	23,327.350	61,722.370	100.000	998,000.000
Pledged (\$)	24,302	4,708.073	28,123.060	0.000	2,482,054.000
% Funded	24,302	0.746	2.783	0.000	139.510
Backers	24,302	64.030	259.737	0	11,483

Table 1: Summary Statistics – A complete list of Variables in model can be found in the Appendix

4.2. Results

The result was 33,366 funding ventures with \$152M¹¹ in pledges. The population had 10,523 successful campaigns giving a success rate of 31.5%. A general overview of the data, shows several notable facts, females (males) represent 27.2% (72.8%) of the population. Females and Males have rather comparable averages in the length of duration for their campaigns being approximately a month long, with similar standard deviations of about 11 days. All other aggregates between the females and males are noticeably different. In terms of average success, females have a higher averaged rate of 36.8% to males 29.6%.

When looking at the aggregate goal of female and male campaigns, it is \$15,385.01 to \$23,327.35 respectively. Both standard deviations are high however, males have higher standard deviation than females. This clearly illustrates a distribution is skewed to the right due to a small percentage of projects with high goals.

This also shows that the average for goals is influenced by some campaigns having high goal levels. Following recommendations from other research which used Kickstarter data (Mollick, 2014) extreme values (high and low goals) were deleted. The reasoning in removing the extremes was due to the campaigns being unrealistic in efforts towards ventures and gave distorted results in the models (Mollick, 2014; Thies et al., 2016). Values of \$1M and greater and values of \$100 and lower were eliminated¹². However, as the extreme values of \$1M or more, were eliminated, the impact should be minimal. When analyzing the upper and lower extremes

¹¹ Actual value of total pledges is \$152,086,709

¹² Of 746 campaigns removed, 221 had goals valued greater than or equal to \$1 Million and 525 had goals less \$100.

of goal amounts, females were only accounting for 75 out of 525 (14.2%) of projects under \$100 and 20 out of 220 (9%) of the \$1M and over. These figures are below their aggregate participation on the platform of 18%. The \$1M and over eliminated campaigns had 0 successful projects (0%) and the \$100 had 366 successful projects (69.7%). Before eliminating the extreme values, they were included in the analysis and did not impact the significance levels of any of the models, simply skews the distribution of goals and success more to the left. Doing a Z test for these values gives -0.3667 for goals of less than \$100 and 17.036 for values over \$1M. This shows we were correct in eliminating the higher end of \$1M, however, further eliminations of campaigns with goals of \$193,523.48 and higher would have been acceptable.¹³

Kickstarter's total statistics¹⁴ shows 125,535 successful projects and 224,900 failed projects, yielding a success rate of 35.8%. Kickstarter reports a higher success rate though their data has not removed same extremes which may raise aggregate success rate. Measurement errors could likely occur from miss-aligned data though these would be expected to be randomly scattered in the population. Therefore, while the coefficients may be different from using every single Kickstarter campaign ever launched, the significance of the variables in the models used should not be effected. Additionally, this rate is an average for several years of campaigns. Therefore, the analysis continues under the assumption that the data is comparable to Kickstarter data overall.

To test H_1 , where we state than women have higher success in crowdfunding platforms we run two logistic regressions, in the first model only the two variables we want to see interact, Female on Success and then we add the control variables to get a better fitting model.

¹³ Three standard deviations from the mean (99.7% of population remaining)

¹⁴ Kickstarter stats are updated daily: <https://www.kickstarter.com/help/stats>, Date of success and failure project statistics: May 30, 2017

<i>Dependent variable:</i>		
Success		
	(1)	(2)
female	0.328*** (0.026)	0.265*** (0.040)
log(ex.goal)		-1.032*** (0.017)
backers		0.042*** (0.001)
duration		-0.016*** (0.002)
Constant	-0.868*** (0.014)	6.377*** (0.172)
Location	No	Yes
Category	No	Yes
Observations	33,366	33,366
Log Likelihood	-20,719.350	-10,004.320
Akaike Inf. Crit.	41,442.710	20,072.630
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01	

Note: Location and Category are factor variables and have been bundled at the end of the table.

Table 2: H₁ Female Success Rates in Kickstarter

We then can analyze which model fits better by looking at the Akaike Information Criterion (AIC).¹⁵ This is a measure for statistics models and generally favors the lower valuation of the AIC reported in the data. Therefore, model 2 is the better model for this hypothesis. The outcomes show that the females have a significant higher success rate than men ($p < .01$). After controlling for backers duration, and location and category, even though the effect is smaller it's still significant, thus, females still have a higher success rate, compared to men ($p < .01$). Next we calculate the log-to-probability to yield the following results:

H₁ Probability	Model 1 Success Probability	Model 2 Success Probability
Female	0.5812141	0.567606
Male	0.4187859	0.432394

Table 3: H₁ Logit to Probability

This shows that female entrepreneurs benefit from higher rates of success on Kickstarter, ceteris

¹⁵ Abbreviated as Akaike Inf. Crit. in Table 2

paribus. These findings are consistent with the results of previous research (Marom et al., 2016; Greenberg & Mollick, 2014). Therefore, H_1 can be accepted.

To test H_2 , to test the effect of goal and gender, we run two logit regressions with the first model having Success dependent on Females and an interaction term for Females and Goals. The second logistical model includes controls to get a better fitting model.

	<i>Dependent variable:</i>	
	Success	
	(1)	(2)
female	0.181*** (0.033)	0.204*** (0.047)
ex.goal	-0.00004*** (0.00000)	-0.0003*** (0.00001)
backers		0.054*** (0.001)
duration		-0.019*** (0.002)
female:ex.goal	0.00001*** (0.00000)	0.00003*** (0.00001)
Constant	-0.349*** (0.018)	-0.810*** (0.125)
Location	No	Yes
Category	No	Yes
Observations	33,366	33,366
Log Likelihood	-19,298.970	-9,785.237
Akaike Inf. Crit.	38,605.940	19,606.470
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01	

Note: Location and Category are factor variables and have been bundled at the end of the table.

Table 4: H_2 Female Success Rates with Higher Goal Amounts

Looking for the better suiting model, the AIC reported model 2 with a lower score (38,605.94>19,606.47). First looking at the goal, we found that goals have a negative coefficient, which was significant ($p<0.01$) meaning, that with higher goals, the lower the chances are of success for both males and females. Although significant ($p<0.01$) with a positive coefficient, the interaction effect between goals and females is very small, as such, we conclude that females do not have difference in affect of goal on success. From there we calculate the log-odds to probability for H_2 .

H ₂ Probability	Model 1 Success Probability	Model 2 Success Probability
Female	0.5000017	0.5000069
Male	0.4999983	0.4999931

Table 5: H₂ Logit to Probability

It is important to note that the model for H₂'s success probability involves an interactive variable was between a dummy (Female) and a continuous (Goal) variable. The probabilities are almost equal which indicates that goal has the same effect on success rates on females and males. In other words, we do not find that females do not have a stronger negative effect of higher goal amounts on success, compared to males, therefore H₂ is rejected.

H₃ stated that females have lower success rates in male dominated categories. These categories of Design, Games, Film and Technology were bundled into a dummy variable of technical to measure whether females had lower success rates in these industries overall.

	<i>Dependent variable:</i>	
	Success	
	(1)	(2)
female	0.208*** (0.032)	0.135*** (0.044)
technical	-0.289*** (0.028)	-0.441*** (0.043)
log(ex.goal)		-0.992*** (0.015)
backers		0.041*** (0.001)
duration		-0.016*** (0.002)
female:technical	0.225*** (0.056)	0.497*** (0.081)
Constant	-0.729*** (0.019)	6.121*** (0.159)
Location	No	Yes
Category	No	Yes
Observations	33,366	33,366
Log Likelihood	-20,665.940	-10,639.740
Akaike Inf. Crit.	41,339.890	21,317.490
Note:	*p<0.1; **p<0.05; ***p<0.01	

Note: Location and Category are factor variables and have been bundled at the end of the table.

Table 6: H₃: Female Success Rates in Male-Dominated Industries

For H_3 , the AIC has a lower score in model 2 (41,339.89 > 21,317.49), therefore, model 2 is a better fit. We run the same analysis as in H_2 , an interaction variable was done between females and technical to moderate the influence of females being in those categories. Running a logit model, the coefficient in these technical fields in both models are negative and significant ($p < .01$). Meaning, campaigns in these technical industries have a lower chance of success. However, females have a positive interaction effect with technical industries, which, after including control variables, outweighs the negative effect technical industries have on success in general. In other words, females have a higher chance of success in technical industries compared to males.

H3 Probability	M1 Success Probability	M2 Success Probability
Female	0.5561095	0.6216834
Male	0.4438905	0.3783166

Table 7: H_3 Logit to Probability

After converting the logistic model to probability, we see that females have a higher success rates in male dominated industries. In all, H_3 is rejected.

5. Conclusion and Discussion

Crowdfunding reduces barriers in which ventures can be funded and has both disrupted the traditional investment industry and helped female entrepreneurship. Female entrepreneurship is raising and this contributes to economies reaching a higher potential in development and efficiency. Women are, however, still burdened with societal and in some cases political constraints. When looking for traditional investment, females face an uphill battle at gaining investment for their companies, compared to their male colleagues. New technology and developments in the recent decades have brought about new ways to gain capital. Crowdfunding has gained a reputation as an innovative way for entrepreneurs to raise funding for their ventures. Given its recent establishment and dramatic growth since, crowdfunding is still largely understudied, and the existing ones predominately provide exploratory insights (Mollick, 2014). In this section, we discuss our findings in light of previous literature, and derive academic and managerial implications from our results.

When testing our first hypothesis, we found that female entrepreneurs have higher rates of

success compared to men in a rewards-based crowdfunding platform. The output from our regression shows that this rate is significant even when controlling for other factors which have empirically been determinants of success (e.g. campaign goal, duration, backers). Looking over the summary statistics, females did have lower average goals and these findings are comparable to other research in female entrepreneurial literature (Greenberg & Mollick 2014; Alsos et al., 2006).

When testing our second hypothesis, we rejected the null hypothesis, that females have a stronger negative effect of higher pledged goal amount, compared to males on crowdfunding platforms. The output showed that both females and males have lower probabilities of success as their goal amount increases and the negative effect of increasing the campaign goal was relatively equal for males compared to women. In other words, at as goals increase, we did not find either females or males increasing their probability of success.

Furthermore, our third hypothesis stated that women have lower success rates in male dominated industries. Surprisingly, we found that this is not the case, as women have higher rates of success in all four male dominated industries: Design, Games, Film and Technology. These technical fields have a negative effect on success in general, however, as females have a positive interaction effect with technical industries, which, outweighs the negative effect technical industries have on success in general, females have a higher chance of success in technical industries compared to males. This indicates that females are not discriminated in male-dominated industries and highlights the positive effect crowdfunding has of female entrepreneurs.

In all, our finds indicate that crowdfunding helps women gain capital. Additionally, females have a smaller negative effect of goal amount compared to males. Furthermore, women also have higher success rate in male-dominate industries in crowdfunding platforms.

5.1. Theoretical Implications

Current literature agrees that the use of crowdfunding can be beneficial for women in gaining finance for their ventures. This study extends the positive effects of crowdfunding on female entrepreneurs in a rewards-based platform. Our findings contradict previous research that indicate that females will be discriminated on crowdfunding platforms. First of all, this study

shows that females and males equally have lower probabilities of success when for setting goals for higher amounts of funding. Second, we demonstrate that females will not have lower success rates in male-dominated industries, which indicate that investors do not discriminate females based on industry categories. In all, our findings highlight the need for further research on this topic, to validate the positive effects crowdfunding have on female entrepreneurs. Additionally, we encourage further research on the effects gender has on crowdfunding platforms, particularly, on equity-based crowdfunding.

5.2. Managerial Implications

The findings of this study also have important managerial implications, particularly for female entrepreneurs. This study highlights the effects of crowdfunding in three ways. First, crowdfunding generates higher success rates for females, compared to males. Second, as goals increase for campaigns, which intuitively has decreases the likelihood of success, females and males appear to experience the decrease equally. Third, crowdfunding creates opportunities for governments which promotes female entrepreneurs.

Frist, empowered with the knowledge that females have another viable method of financing projects, females considering launchings a product or company should consider crowdfunding as possibly a first choice in raising capital. Second, females who have previously been turned down by traditional investment methods, can re-pitch their investment idea on the crowd and experience a democratic approach, free of discrimination, as a second attempt on the entrepreneurial idea.

Second, past research has shown that females tend to have lower levels of confidence regarding starting a venture and are more risk averse (Gneezy & List, 2013). By using the platform, females can test their ideas at very early stages in the idea's lifecycle, saving them from potentially overinvesting in project which has no market. This will enable the entrepreneur to receive valuable feedback from potential customers and possibly pivot the business model to the target audience. This will reduce the risk of unsuccessful product launching, and therefore might

encourage females that are unsure about the business idea to create a campaign on a crowdfunding platform.

Lastly, based on this study findings crowdfunding has positive effects for female entrepreneurs and females who are considering launching new ventures. For countries promoting female entrepreneurship, this knowledge has valuable governmental implications. Governments can combine preexisting programs and institutions in their infrastructure (e.g. U.S. Small Business Administration) with crowdfunding platforms where they see suited. For example, governmental institutions (e.g. U.S. Small Business Administration) can help female entrepreneurs set up their crowdfunding campaign pitch by providing initial funding and support for making videos, prototypes and simple marketing tools to gather investments from the crowd. In developed and developing economies, crowdfunding could generate a positive cycle for women's equality. Crowdfunding has the ability to serve as a mechanism for women to have funding, build social networks and build confidence in the market (World Bank 2013) and their successes will encourage other women to participate. This will promote female entrepreneurship, create employment opportunities and overall increase the economic development of the country.

6. Limitations and Future Research

Though the results in this paper are of interest, they only represent a glimpse of female entrepreneurship characteristics in the crowdfunding industry. As only Kickstarter data was used, this paper is limited to reward-based crowdfunding and other forms of funding including equity-based models are of interest. There are potential differences in how the ventures market themselves and the connections they make with investors. Another limitation is that this paper considers the entrepreneurs and the characteristics of their campaigns, though the investors are absent from the analysis.

Age was a limitation in the analysis. However, in the GEM 2012 Report, showed that even in different age groups, participation of entrepreneurship was either the same or comparable in the young and older demographics. This held true in geographic and economic differences, showing that in most of the world, entrepreneurship is just as popular with young and older women entrepreneurs. Only two regions had younger females participated at higher rates than their elders; developing parts of Europe and Israel. Since these regions were not included in the data

set, this would not impact the results.

The findings are limited to the publicly available information. Also, our analysis was limited to a cross-section of the data, analyzing insights for 2016, however several years of data could have been compared. This would give a better view of the tendencies overall, as fluctuations in different years are averaged out to give a better reading of the core tendency of funding in the industry. Using time series data, trends could be analyzed and discussed.

Regulations such as the JOBS Act require additional attention as they are even more recent in the evolution of the crowdfunding industry. Whether this regulation, which is deemed to lower barriers in crowdfunding, has an impact on women entrepreneurs having access to equity finance has yet to be determined. As previous research reflects on female entrepreneurship behavior to be more risk-averse compared to their male counterparts, and therefore, having higher regulations may be aiding females in equity crowdfunding. However, it is important to address that in equity financing, in general along with crowdfunding, investments tend to have more risk associated with the venture. The analysis in this paper suggests that a deeper investigation with larger datasets across different models of crowdfunding would contribute to current literature, uncovering insights to aid policy makers refine regulations to help female entrepreneurs.

The number of backers is included in the calculations; however, the gender could influence the investments. However, the results of this descriptive study draw several findings which should be of interest to female entrepreneurs and investing researchers.

How will women entrepreneurs overcome this inequality rise to rates that are now unbalanced, and have been throughout time? How will the investment industry, which has perpetuated this imbalance, evolve to help women? How will policy makers, responsible with the equality to their citizens, fix this issue?

Crowdfunding and female entrepreneurship have both seen grown in the past few decades and both seem to evolve as their presence grows. Future scholarship into the dynamics of women and crowdfunding is required.

I. Appendix

Appendix A

US Dollar Exchange Rate 2016*						
Country	Abbreviation	March (3/16)	June (6/16)	Sept (9/16)	Dec (12/16)	2016 Average
AUSTRALIA	AUD	1.298	1.344	1.313	1.385	1.335
CANADA	CAD	1.293	1.295	1.316	1.346	1.3125
SWITZERLAND	CHF	0.96	0.978	0.975	1.019	0.983
DENMARK	DKK	6.539	6.697	6.675	7.054	6.74125
EURO ZONE**	EUR	0.878	0.9	0.896	0.949	0.90575
UNITED KINGDOM	GBP	0.694	0.745	0.772	0.812	0.75575
HONG KONG	HKD	7.754	7.759	7.754	7.756	7.75575
MEXICO	MXN	17.17	18.58	19.46	20.652	18.9655
NORWAY	NOK	8.272	8.385	8.03	8.621	8.327
NEW ZEALAND	NZD	1.439	1.407	1.375	1.437	1.4145
SWEDEN	SEK	8.098	8.489	8.618	9.063	8.567
SINGAPORE	SGD	1.342	1.347	1.364	1.445	1.3745

*Foreign Currencies in the table reflect respective country's currency into 1 (One) United States Dollar.

**Countries in data using Euro were: Austria, Belgium, France, Germany, Ireland, Italy, Luxembourg, Netherlands and Spain.

Source: US Department of Treasury

Table 8: U.S. Dollar Exchange Rate 2016

Appendix B

Statistic	N	Mean	St. Dev.	Min	Max
id	33,366	2,071,824.000	154,671.500	1,804,761	2,347,071
ks_id	33,366	1,078,439,178.000	616,866,815.000	18,520	2,147,429,880
female	33,366	0.272	0.445	0	1
male	33,366	0.728	0.445	0	1
company	33,366	0.000	0.000	0	0
duration	33,366	33.177	11.367	1.016	60.042
month	33,366	6.126	3.386	1	12
day	33,366	15.159	8.872	1	31
success	33,366	0.315	0.465	0	1
goal	33,366	24,445.740	92,014.390	80	6,000,000
pledged	33,366	4,954.114	29,373.580	0.000	3,257,695.000
ex.goal	33,366	21,169.790	57,457.230	100.000	998,000.000
ex.pledged	33,366	4,558.134	25,465.380	0.000	2,482,054.000
percentage_funded	33,366	0.728	2.534	0.000	139.510
backers	33,366	61.368	241.825	0	11,483
has_accurate_category	33,366	0.998	0.040	0	1
technical	33,366	0.351	0.477	0	1

Table 9: Summary Statistics Used in Model

Note: Table 6 shows the descriptive statistics of all the variables used in building the models and creating dummy variables. Females (Males) are found to be 27.2% (72.8%) of the participants. The average time a Kickstarter campaign sets as its funding window duration is 33.177 days and an aggregated goal is approximately \$24,445.74.

Appendix C

Fundamental Model of Crowdfunding

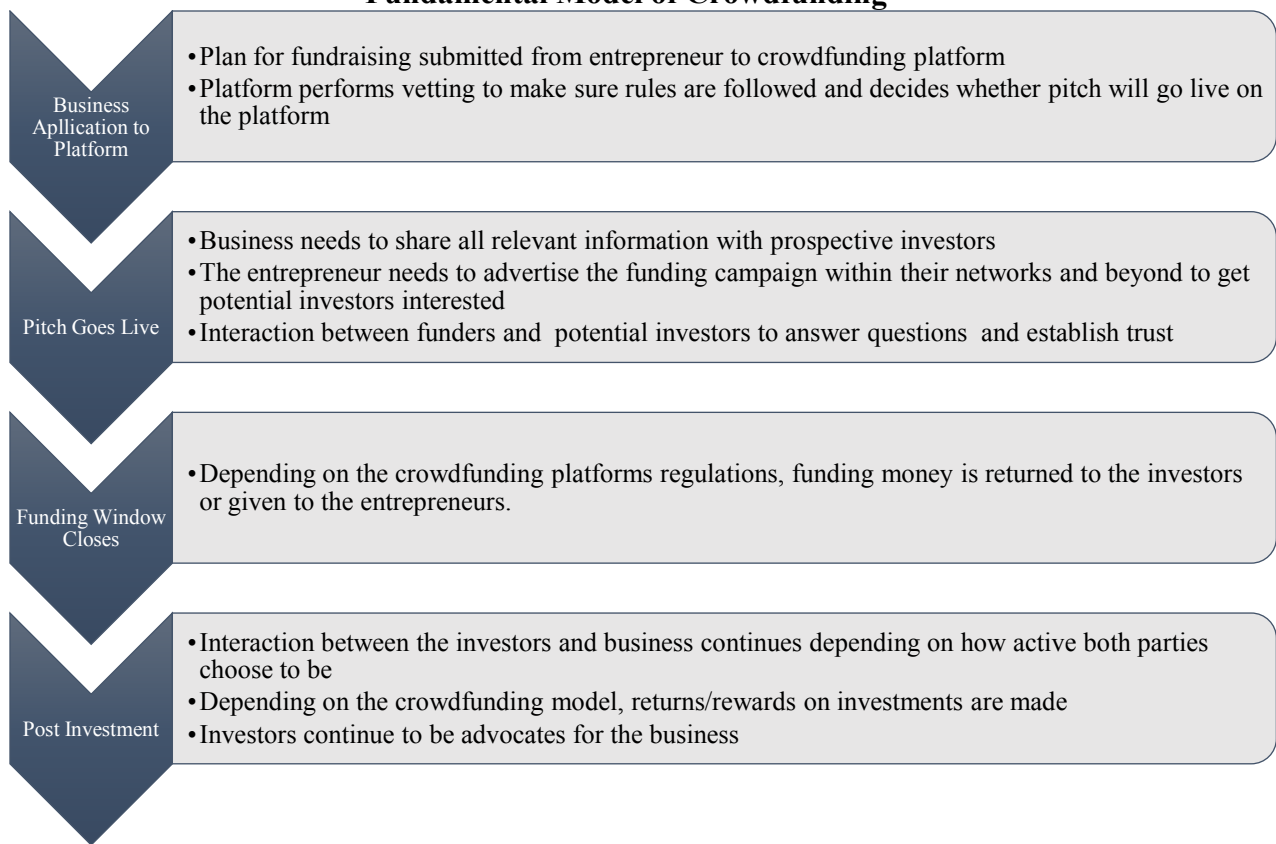


Table 10: Fundamental Model of Crowdfunding

Revised from Source: Vidra E., 2012.

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