

Gender Dynamics in Crowdfunding (Kickstarter): Evidence on Entrepreneurs, Investors, Deals and Taste Based Discrimination

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Outline

1. Introduction & Motivation
2. Crowdfunding, Kickstarter and our Data
3. Gender and entrepreneurship
4. Gender and investors
5. Statistical/Economic discrimination
Vs taste based discrimination
6. Summary



Women in entrepreneurship and business investing

- **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 15 percent of angel investors and less than 10 percent of Venture capitalists** (Coleman and Robb 2012).
- **Women are clearly not participating at rates that men do in either entrepreneurship or in business investing.**

As the World Deflates / The End of Childhood

Newsweek

02.08.2015

**What
Silicon
Valley
Thinks
of Women**



Crowdfunding

A funding mechanism, which leverages the internet and social networks, in order to raise small amount of funds from a large number of investors



Women in entrepreneurship & business investing

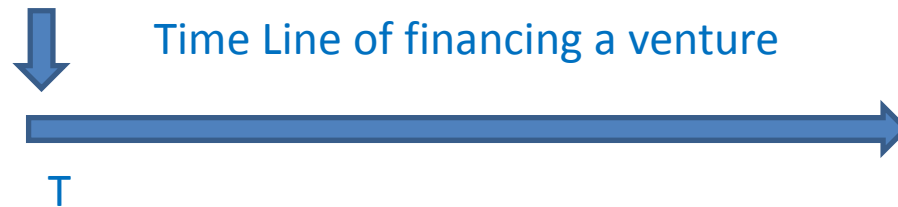
- Women make up less than 30 percent of business owners in the United States, and fewer than 20

Crowdfunding has the potential to “democratize” the capital markets by serving as a means for both women entrepreneurs and women investors to participate more fully → indeed...?

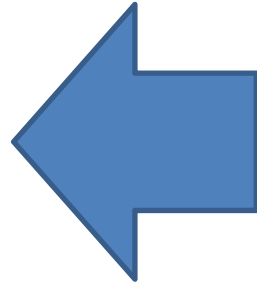
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Motivation

- Interesting Research Question – Gender
 - Academic
 - Market structure and equality
 - Policy
- Crowdfunding
 - Kickstarter
 - Interesting Lab
 - Leading crowdfunding platform
 - Over 20,000 projects
 - All or nothing – clear definition of success
- Pre- Seed Financing
 - Friends and family
 - Oculus Rift - \$2bill
- Text Mining Approach

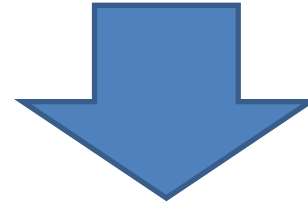


Gender
and
Discrimination



Literature

Entrepreneurship
& Financing of new
ventures



Crowdfunding

Crowdfunding

A funding mechanism, which leverages the internet and social networks, in order to raise small amount of funds from a large number of investors



Crowdfunding

- Massolution, a research company that specializes in crowdfunding, indicated that as of April 2012, there were 452 crowdfunding platforms active worldwide.
- Massolution indicated that during 2012 worldwide crowdfunding volume reached \$2.7B raised from over 1.1M campaigns. 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

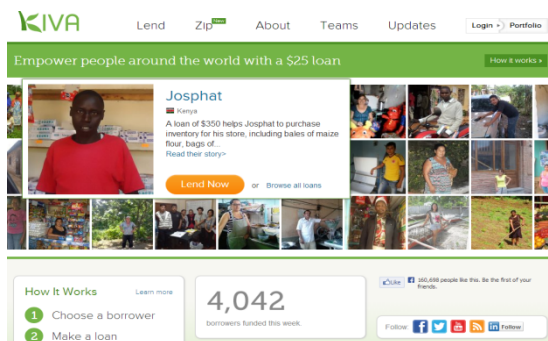
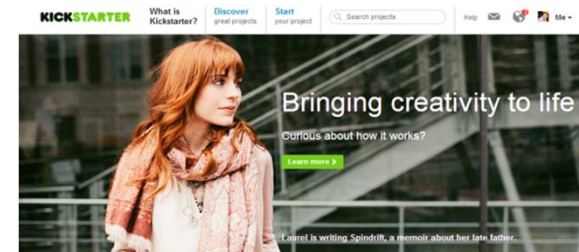
(1) The reward model

(2) The pre-purchase model

(3) The lending model

(4) The equity model

(5) The donation model



Our Data

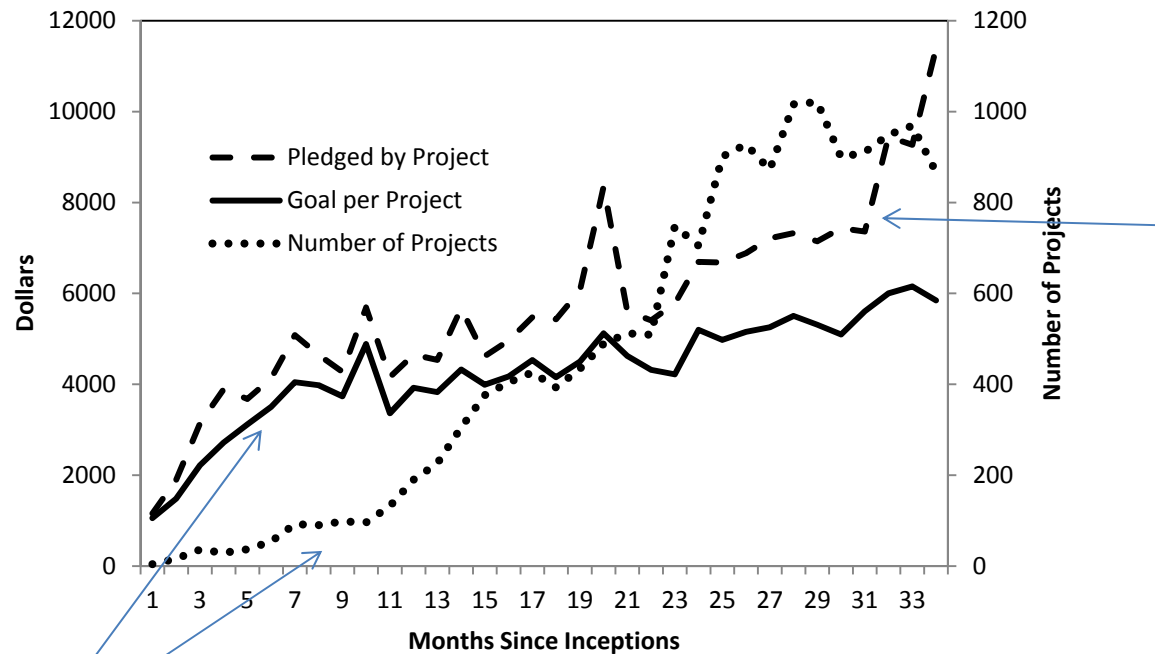
KICKSTARTER (April 2009-March 2012):

<https://www.kickstarter.com/>

- 16,641 successful projects
- 4,128 failed projects*
- 22,274 entrepreneurs
- 1,108,233 investors
- Investments that sum to more than \$120M
- 13 Categories – artistic, games, design & technology.

KickStarter

- <http://www.kickstarter.com/>



Successful projects

Overall

Classifying Projects by Gender

1. Analyzed the sample
2. Removed projects - company names (for example ltd)
3. Extracted first names
4. Gender Classification by a dictionary of common names for males/females
5. Manual verification - 1,000 projects by Mechanical Turk

→ **We were able to classify 13,533 projects by gender**

→ Another 539 projects had more than one entrepreneur (leader)
(2 female, 2 male, 1 female-1 male, or 1 male-1 female)

Our Initial Questions:

- Are female entrepreneurs financing more (or fewer) ventures via online crowdfunding (Kickstarter) compared with male entrepreneurs?
- Are there gender differences in project sector/industry?

Gender Distribution

Table 1: Distribution of Projects by Gender

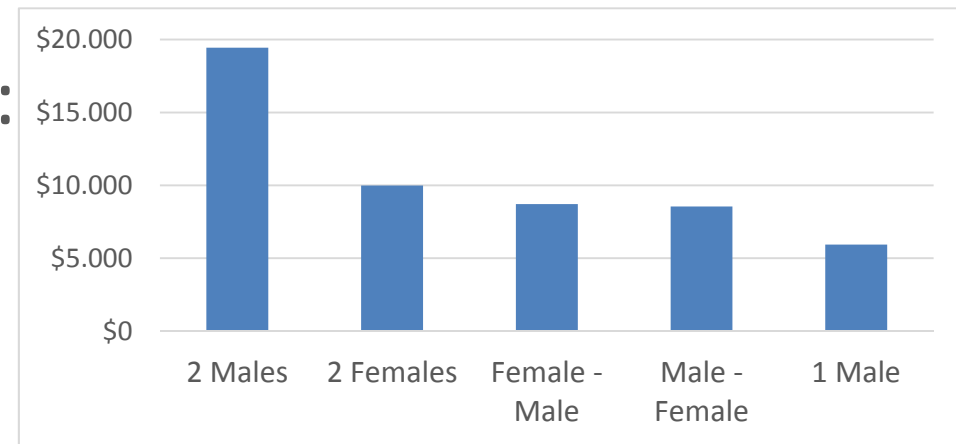
Category	Gender		# of Projects
	Female	Male	
Art	45.9%	54.09%***	1,137
→ Comics	14.7%	85.26%***	407
★ Dance	77.05%***	23.0%	305
→ Design	25.5%	74.51%***	463
★ Fashion	58.23%***	41.8%	249
→ Film & Video	29.3%	70.73%***	4,302
★ Food	54.78%***	45.2%	356
→ Games	7.7%	92.35%***	379
→ Music	30.8%	69.21%***	3,030
Photography	40.6%	59.36%***	593
Publishing	40.6%	59.4%***	1,170
→ Technology	16.9%	83.08%***	201
Theater	44.6%	55.37%***	941
Total	34.5%	65.52%***	13,533

Our Research Questions: Gender and Entrepreneurship

- Do female entrepreneurs have similar funding goals compared with male entrepreneurs?
- Are there gender differences in the rates of success of fundraising on online crowdfunding platforms?

Goal and Success

- Goal: Male > Female
- Received investment:
Male > Female



- Pro of Success: Female > Male
 - Success → fundraising – all or nothing

Is higher rate of success by women's projects just due to their lower financial goals?

- To investigate this, we matched projects by main category, sub-category, country, time, 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.
- Women were still more likely than men to reach their funding goal (80% versus 73.7%)
- **The higher rates of success among females not being driven by lower goals**

Our Research Questions: Gender and Investors

- % of female investors?
- Distribution?

Gender and Investing

- We were able to assign gender to 81% of the investors over the period (898,491 investors out of a total of 1,108,186).
- About 56% of the investors of the Kickstarter projects we identified were male, compared with 44% that were women.
- Serial investors are more likely to be men – focusing only on investors with at least 5 investments – the share of male investors rises to more than 70%.

Gender of Investors

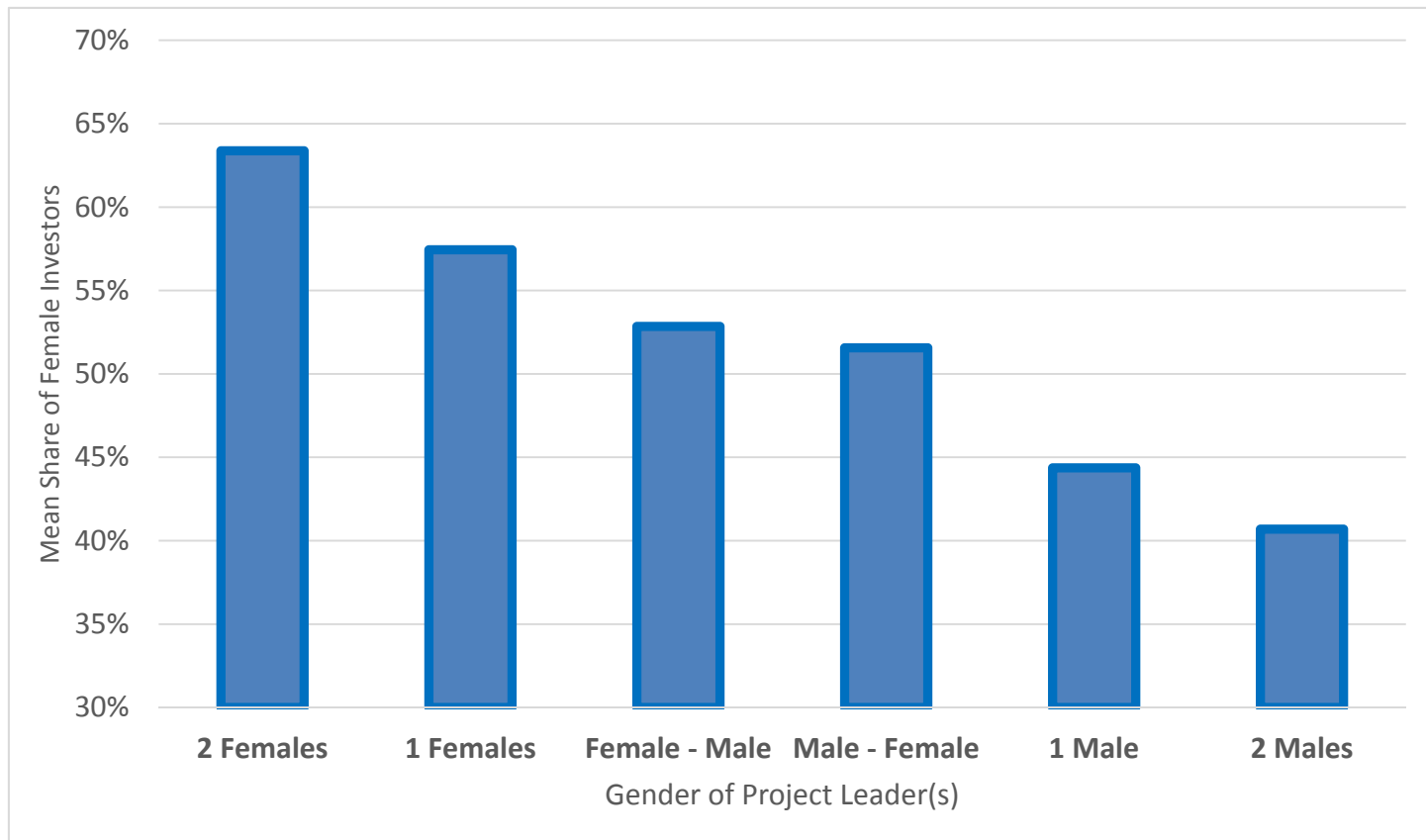
Table 11

Category	Gender of Investor	
	Female	Male
Art	54.9%	45.1%
Comics	33.4%	66.6%
Dance	65.7%	34.3%
Design	38.9%	61.1%
Fashion	58.2%	41.8%
Film & Video	48.7%	51.3%
Food	58.0%	42.0%
Games	16.1%	83.9%
Music	47.1%	52.9%
Photography	52.9%	47.1%
Publishing	51.8%	48.2%
Technology	23.1%	76.9%
Theater	56.6%	43.4%

Our Research Questions: Gender and Investors

- Are female investors more likely to finance female entrepreneurs as opposed to male entrepreneurs? What about male investors?

Investors Vs
entrepreneurs
% of female
investors



Share of Female Investors Controlling for Other Variables

Variable		Significance
All female	Positive	Significant
All male	Negative	Significant
Log (Goal)	Positive	Significant
Staff Picks	Negative	Significant
Popular	Negative	Marginal significant
Category + Country		

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

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 1 in cases where all the entrepreneurs in that particular project are females/males, and X_i is the vector of control variables including: industry, country, 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.

Findings so far

- Distinct gender differences in:
 - Platform Participation
 - Industries/sectors of projects
 - Funding Goals
 - Funding Raised
 - Success Rates
 - Profile of investors of projects

Taste Based Discrimination Vs Statistical/Economic Discrimination



Arrow, Kenneth J. 1972. Some Mathematical Models of Race in the
Labor Market.

Becker, Gary S. 1957. The Economics of Discrimination.

Survey

Gender Attitude Statements

- 1. All in all, family life suffers when the woman has a full time job*
- 2. A pre school 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*

Agree / disagree ? → **Gender equality measure**

		Female	Male	
Family life suffers when the woman has a full time job				
	Strongly disagree	7.7%	11.3%	
	Disagree	20.5%	22.5%	
	Neither Agree nor Dis	16.7%	36.3%	
	Agree	2.6%	1.3%	
	Strongly agree	52.6%	28.8%	
	Total	100%	100%	
A pre school child is likely to suffer if his or her mother works				
	Strongly disagree	12.7%	17.3%	
	Disagree	17.7%	25.9%	
	Neither Agree nor Dis	16.5%	30.9%	
	Agree	5.1%	6.2%	
	Strongly agree	48.1%	19.8%	
	Total	100%	100%	

Gender equality matters...

	Investment in a Female Led Project	Female	Male
	LOGIT		
Gender inequality Measure	-0.103*	-0.022	-0.172*
	(0.058)	(0.091)	(0.095)
Investor is Female	0.863*		
	(0.490)		
Serial Investor	-0.317		-1.387
	(0.772)		(0.950)
Age	0.310	0.426	0.463
	(0.203)	(0.453)	(0.321)
Constant	-2.341	-1.281	-0.293
	(-0.35)	(1.976)	(1.477)
Pseudo R ²	0.1468	0.0795	0.1955
Observations	114	46	60

Similar results with PROBIT

Summary – Gender Dynamics in Crowdfunding





- 1. Participation of women:** greater in crowdfunding (compared to general statistics), both as investors and as entrepreneurs.

Yet still low participation, comparison.

- 2. Distinct gender differences,** in all aspects.
- 3. Taste Based discrimination**

THANKS

Pledges by Gender & teams

Gender of Entrepreneur	Mean of Pledged (\$)	Std. Dev.
 2 Females	9,988.8	14,755.5
 1 Females	5,049.1	14,133.6
Female - Male	8,714.1	11,023.8
Male - Female	8,553.5	10,574.8
 1 Male	5,936.3	24,972.0
 2 Males	19,445.6	71,892.2
Total	5,916.0	23,278.7

Success by Gender

	Distribution		Distribution among successful projects	
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 & 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%

Gender of Investors

Table 14

Gender	# Of Investors		Amount per Investor	
	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 16

	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%

Investors survey

CROWDFUNDING

Finally, a Financing Strategy That Favors Women

BY KIMBERLY WEISUL @WEISUL

A new study has some encouraging news for women entrepreneurs. **Inc.**

Study: Women face fewer barriers raising cash through crowdfunding

By NIV ELIS
08/18/2014

THEJERUSALEM POST

Is crowdfunding the next great emancipator for women in business?

AUGUST 21, 2014

ThinkAdvisor

Kickstarter: The Rosie the Riveter of Investing?

More female investors and entrepreneurs are participating in crowdfunding platforms, with more success than men

SMALL BUSINESS

Kickstarter Closes the 'Funding Gap' for Women

THE WALL STREET JOURNAL.
WSJ

Studies Show Women Are More Successful Than Men at Raising Money Online Via Kickstarter, Indiegogo