



VENTURE CAPITAL DECISION-MAKING: GENDERED ASSUMPTIONS ABOUT TECHNICAL KNOWLEDGE AND SOCIAL NETWORKS

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ORIGINS

- Where this study began:
 - Clayman Institute for Gender Research, Stanford University, 2007-2008
 - Co-authored with Dr. Andrea Henderson, Dr. Justine Tinkler, and Dr. Londa Schiebinger
- Motivation: why are women under-represented in the high-tech entrepreneurship that is so prominent in Silicon Valley?



BACKGROUND

- Women own less than 5% of information technology firms, despite general increase in the number of women entrepreneurs (NCWIT 2007).
- Women-owned firms are less likely to secure external funding, particularly venture capital.
 - In 2003, women headed only 4.5% of all venture-funded firms and garnered only 4.2% of the 19 billion dollars in venture capital invested (NWBC 2005).
 - In 2006, less than 4% of venture-backed tech companies had women CEOs (VentureOne 2006).



ISSUES

- Venture capital is critical for firm success.
 - Financing is a critical component of high-tech firms.
 - Firms that survive past the start-up stage are more likely to have venture backing to fund later stages of growth (Manigart and Struyf 1997).
- Women-owned firms are less likely than men-owned firms to secure venture capital.
 - One of the leading explanation for their underrepresentation in high-growth, high-tech entrepreneurship (Aspray & Cohoon 2007; Fairlie 2006; Brush et al. 2002; Verheul & Thurik 2001)



EXPLANATIONS

- Question: why are women less likely than men to secure venture capital?
- #1: women are less likely than men to have technical backgrounds (*human capital*).
 - Industry-related experience is critical to VC assessment.
 - One Silicon Valley VC said: “...we fundamentally need more women trained in technical disciplines.”
- #2: women are less likely than men to be connected to key players in the VC world (*social capital*).
 - Women have fewer ties to successful entrepreneurs and venture capitalists than do men (Brush et al. 2006; Ibarra 1997; Renzulli, Aldrich & Moody 2000).



SOCIOLOGICAL INQUIRY

- Solutions would be:
 - To increase the number of women in technical fields of study
 - To facilitate the forming of ties to entrepreneurs and venture capitalists among women
- Can the picture be more complicated?
 - The valuation of human capital and social capital may be influenced by cultural assumptions about gender.
 - Social psychological theory of *double standards* could be relevant.



DOUBLE STANDARDS THEORY

- Status beliefs attached to gender influence our expectations about men's and women's competence.
 - In masculine-typed settings (e.g., engineering), men are expected to perform better than women.
 - Women's failure in these settings is associated with expected lack of ability, while women's success is associated with luck (i.e., attribution bias).
 - As a result, women need to do more and make fewer errors in order to be seen as competent—*double standards*.

Foddy & Graham 1987; Foschi 1996; Foschi, Lai & Sigerson 1994; Biernat & Kobrynowicz 1997; Biernat & Fuegen 2001; Lyness & Heilman 2006



OUR HYPOTHESES

- Given that high-tech entrepreneurship is a highly male-dominated field, we expect that double standards may influence how much human capital and social capital matter in the procurement of venture capital.
- *Technical background and social networks help both women and men, but*
 - *Not having a technical background hurts women more so than men.*
 - *Having strategic ties helps women more so than men.*



SIGNIFICANCE

- Not all high-tech entrepreneurs have technical backgrounds.
 - What is the impact of not having a technical background on aspiring entrepreneurs?
 - Are there gender differences in this impact?
- Social networks are widely known as important for getting a job, getting ahead, getting started.
 - Some research suggests that for women in customarily male places, having strong ties to men may be especially important for gaining legitimacy.
 - Just what kind of ties help women?



METHODS

○ Experimental design

- We start with one business plan (a mobile communications platform) and made four versions of it.

Male, computer science	Male, history
Female, computer science	Female, history

- In all four versions, the founder has an MBA.
- We asked MBA students in the Stanford Business School Entrepreneur Club to participate:
 - They were asked to evaluate the entrepreneur and the business plan as though they were VCs.
 - They would receive greater monetary rewards if their evaluations match that of actual VCs.



ITEMS

- Evaluation of the venture
 - Likelihood of scheduling a meeting
 - The percentage of investment willing to invest
 - Market potential of the product
- Evaluation of the entrepreneur
 - Importance of technical knowledge
 - Ability to penetrate the market
 - Status, competence, and sociability
- Evaluation of the influence of contacts
 - Having a trusted colleague vouch for the entrepreneur
 - If the trusted colleague is the entrepreneur's college roommate



RESULTS (114 MEN)

1 OF 3

- Response rate is higher in the male-tech condition.
 - 80%, vs. 51-70% in the other conditions
 - Possible bias favoring technical men
- Technical background helps both women and men in terms of decision-making and product evaluation.
 - Percentage of investment willing to make (~22% vs. 12%)
 - Likelihood of scheduling a meeting (~4.2 vs. 3.7)
- Evidence for the human capital explanation
 - Would buy the product (~3.0 vs. 2.3)



RESULTS (114 MEN)

2 OF 3

- Not having a technical background hurts women more than men in terms of entrepreneur ratings.

Status	Men	Women
Non-technical	4.85	4.49
Technical	4.36	4.60

Ability to penetrate the market	Men	Women
Non-technical	3.44	3.14
Technical	2.79	3.45

- Not having a technical degree is a status advantage for men, but not for women.
- Evidence of double standards in the valuation of human capital



RESULTS (114 MEN)

3 OF 3

- Having a technical background helps with getting a meeting, social contact or no social contact.
- But, having a trusted colleague vouch for the entrepreneur helps women more so than men in terms of getting more favorable reviews.
 - Having this trusted colleague is seen as more important for women (5.08-5.10) than for men (4.56-4.74), regardless of technical background.
- Evidence of double standards in the valuation of social capital
 - Implications on the gender of social ties



RESULTS (41 WOMEN)

- In our smaller sample of women participants, technical entrepreneurs are again rated as more competent, *but*
 - Products are rated as more unique among women entrepreneurs than among men, and
 - Non-technical women entrepreneurs are seen as higher-status and more able to penetrate the market.
- The gender of the VC may influence evaluations of entrepreneurs.
 - VC firms with women partners are more likely than VC firms without women partners to provide funding to women-led ventures (Brush et al. 2006).



SUMMARY OF FINDINGS

- We find evidence for the conventional human capital and social capital explanations, but we also find evidence for subtle gendered assumptions in the evaluation of entrepreneurs.
 - Women's legitimacy as high-tech entrepreneurs may be more often questioned than that of men's.
- Because VC impressions of the entrepreneur can figure heavily into ultimate decisions to invest or not invest, these findings warrant important consideration.



IMPLICATIONS

- Supply-side efforts to encourage technical education among women and to promote networking among women can help level the playing field.
- Demand-side efforts to raise gender awareness among VCs may be important in light of our findings.
- Increasing the number of women VCs may help raise the representation of women in high-tech entrepreneurship.

