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

Presenter: Manwai C. Ku, Stanford University
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 under-representation 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 & Kobrynnowicz 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)
  - Would buy the product (~3.0 vs. 2.3)

Evidence for the human capital explanation
RESULTS (114 MEN)

2 OF 3

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

<table>
<thead>
<tr>
<th>Status</th>
<th>Men</th>
<th>Women</th>
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<tbody>
<tr>
<td>Non-technical</td>
<td>4.85</td>
<td>4.49</td>
</tr>
<tr>
<td>Technical</td>
<td>4.36</td>
<td>4.60</td>
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<tr>
<th>Ability to penetrate the market</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-technical</td>
<td>3.44</td>
<td>3.14</td>
</tr>
<tr>
<td>Technical</td>
<td>2.79</td>
<td>3.45</td>
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- 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.