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Access to Venture Capital Amongst Female-led Firms

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While the participation of women in entrepreneurship has increased in recent years, women's access to venture capital (VC) has not moved at the same pace. The gender gap in VC funding persists, as is also the case in other equity financing markets. Recent studies using socio-psychological perspectives indicate that the gap is associated with gender biases, which affect whether and how women entrepreneurs seek funding and how decision-makers evaluate business opportunities.

From the demand side, this relates to some women's tolerance for risk and their perceptions about external equity capital, which can lead to lower aspirations to seek business growth and to apply for VC funds. From the supply perspective, gendered beliefs about what makes a successful business founder, and lack of female role models may impact negatively on the evaluation of businesses led by women. These barriers may require interventions that go beyond a focus on just improving women's financial or technical skills.

Background

Despite the steady increase of women in entrepreneurship (GEM, 2017), equity investments in female-led business are still far from the levels of their male counterparts. In the US, for example, between 2011 and 2013, just over 15% of the deals (including seed, early-state, and later-stage venture capital funding) went to a venture that had at least one woman on the executive team (Brush, Greene, Balachandra, & Davis, 2018; Brush, Greene, Balachandran, & Davis, 2014). Although this was an improvement from the situation in 1999 when less

than 5% of the deals went to similar ventures (Brush, Carter, Gatewood, Greene, & Hart, 2001), less than 2.7% of the ventures getting VC funds were truly female-led in the sense that they had a female CEO (Brush et al., 2018; Brush et al., 2014). Although some anecdotal evidence suggests that female entrepreneurs could be discriminated in the market for equity financing, the academic research is still inconclusive and offers mixed findings.

A considerable amount of literature has examined the ability of women entrepreneurs in accessing debt capital more generally. Within this stream of research, large-scale quantitative studies demonstrate no gender discrimination in approval rates and loan terms once controlling for business characteristics, such as size, industry and growth rates (e.g. Arenius & Autio, 2006; Carter, Shaw, Lam, & Wilson, 2007). This contradicts the fact that women still report greater dissatisfaction and less favourable treatment regarding their banking experiences (e.g. Fabowale, Orser, & Riding, 1995; Verheul & Thurik, 2001; Walker & Joyner, 1999). Far less is known, though, about the mechanisms leading to the gendered disparity in the distribution of equity financing and in particular in VC funds (Jennings & Brush, 2013).

The consensus arising from most studies examining the gender distribution of finance is that the underlying mechanisms leading to the persistent differences arise mainly from subtle and often unconscious gender biases. These affect how women entrepreneurs seek funding on the one hand, and on how decision-makers evaluate business opportunities on the other. This encompasses many factors relating for example to women's tolerance of risk, their perceptions of equity finance and their business ambitions, as well as to gendered beliefs about what it is that makes a successful business leader.

Evidence

Supply-side evidence

Several theoretical rationales have been put forward to explain the empirical fact that women are assessed less favourably by investors relative to male applicants.

First, role congruency theory (Eagly & Karau, 2002) proposes that 'entrepreneurial potential' is not evaluated in a gender-neutral manner. This means that female entrepreneurs are likely to suffer credibility problems when pitching to investors due to the perceived incongruity between the female gender role and the entrepreneurial role. This would give, as a result, a significant advantage to men in accessing finance. At the core of this theory lies the belief that personal attributes are stereotypically defined as gender traits (Abele, 2003). In particular, 'communal' qualities, manifested by selflessness and the urge to help others, are attributed more strongly to women, while 'agentic' qualities manifested by self-assertion, confidence, and motivation to master, are more strongly attributed to men (Bem, 1974; Eagly & Steffen, 1984). Entrepreneurs and entrepreneurship, are therefore inherently portrayed as masculine; described mostly with agentic traits, for example with the entrepreneur as a bold, assertive risk-taker (Ahl, 2006; Eddleston & Powell, 2008) and represented mainly by successful cases and images of male entrepreneurs.

Prejudice, therefore, can arise due to inconsistencies between the communal traits associated with women and the agentic traits that investors look for among potential investees that are associated with successful entrepreneurs. Female entrepreneurs that do manifest agentic, masculine stereotyped attributes, instead of the expected communal traits, might be unfavourably assessed by evaluators because they violate the consensual beliefs about their gender role (Eagly & Karau, 2002).

Based on this perspective, Malmström, Johansson, and Wincent (2017), recently showed that governmental venture capitalists in Sweden were influenced in their assessment process by deep-rooted gender stereotypes. By analysing the language and rhetoric used by financiers during decision-making group meetings, they found that male entrepreneurs were mainly described with qualities associated with masculinity and successful entrepreneurship. Conversely, female entrepreneurs were described with feminine attributes, often categorised as the opposite to entrepreneurs. As the authors argue, this 'group' mindset constructed using stereotypical images of men and women, constitutes a barrier to women entrepreneurs to access to governmental finance.

Another stream of research highlights the limited presence of women among financiers as a barrier to female entrepreneurs to access venture capital financing. Recent evidence from the US suggests that VC firms with women partners are twice more likely to invest in start-ups with at least one woman on the executive team, and three times more likely to invest in start-ups with a woman CEO, compared to VC funds with no women representation (Brush et al., 2014). This is similar to the findings on 'business angel' capital, where the small number of women investors has been argued to explain, at least partly, the gender funding gap that exists here too (Becker-Blease & Sohl, 2007).

Given the high information asymmetry between entrepreneurs and potential investors, particularly at early stages of the venture, organisational theorists propose that social relationships favour investment decisions by interjecting expectations of trust and reciprocity between the parties, which go beyond the mere transfer of information (Shane & Cable, 2002). This is why equity funding decisions tend to occur within a closed social network (Becker-Blease & Sohl, 2007). A widely cited predictor of network membership is sex, together with other attributes such as race or education, as similar personal characteristics are understood to enhance interpersonal attraction, trust, understanding and ultimately, foster relationships (Ibarra, 1992). This preference to associate with similar others, also referred as *homophily*, implies that entrepreneurs may have an inclination to seek capital among financiers within the same social network and that investors are more inclined to invest also within their social networks. The evidence from angel capital market indicates that sex-based *homophily* is stronger on the part of entrepreneurs seeking funding from potential investors of the same sex, with limited influence from investors' side awarding funding (Becker-Blease & Sohl, 2007).

These findings provide support, as scholars have suggested in the past, to measures aimed at incentivising the participation of women investors in the equity capital markets as this could increase the flow of women entrepreneurs applying for capital and ultimately the capital awarded to women entrepreneurs (Becker-Blease & Sohl, 2007; Brush et al., 2014; Harrison & Mason, 2000). Little is still known, however, about whether the careers of women professionals in the equity capital markets differ from those of men and how this influences the access to capital experienced by female entrepreneurs (Brush et al., 2018).

Demand-side evidence

While the comparison of applicants that are approved compared to those that are rejected can offer insights about credit constraints and potential discriminatory behaviours, factors affecting the application decision itself also need also be considered as part of reasons leading to the gender gap in VC. This is particularly the case if the extent of discouragement to apply is larger than rejection, as some earlier research has suggested (Freel, Carter, Tagg, & Mason, 2012).

Among the non-applicants, the group defined as 'discouraged' applicants has recently received increasing interest. This refers to the potential group of applicants who are creditworthy but are discouraged to apply by the prospects of being rejected (Kon & Storey, 2003). Several studies have shown that women are less likely to apply for credit because they believe that their applications will be rejected (Cavalluzzo, Cavalluzzo, & Wolken, 2002; Fielden, Davidson, Dawe, & Makin, 2003). These results suggest that women could also be 'discouraged' to seek capital from venture capital firms or business angels (Coleman & Robb, 2012; Orser, Riding, & Manley, 2006).

Again, the male-stereotyping of entrepreneurs, and more significantly of successful entrepreneurs, can act as a hurdle for women considering applying for venture capital. Since most of the industries where VC investments tend to be concentrated, such as software, computers or semiconductors, are perceived as masculine (Brush et al., 2018; Sweida & Reichard, 2013), the impact of gender stereotypes is exacerbated.

Earlier evidence suggests that that the masculine stereotyping of entrepreneurs is translated into lower level self-efficacy among women. In other words, women's perception of their own capability to succeed as an entrepreneur is lowered as the result of the gender incongruence (Chen, Greene, & Crick, 1998; Gupta, Goktan, & Gunay, 2014; Gupta, Turban, & Bhawe, 2008; Wilson, Kickul, & Marlino, 2007). This phenomenon, also referred to as 'stereotype threat' (Steele & Aronson, 1995), was originally developed to explain differences between black and white students in academic settings, it has also been applied to explain gender differences in maths performance (Spencer, Steele, & Quinn, 1999). In the context of venture capital applications, this would translate to a women's lower sense of capability to succeed in raising money, and therefore, in some cases, voluntarily deciding not to apply despite having the ability to obtain funding.

At the same time, evidence drawn from different disciplines suggests that women have a lower tolerance for risk (Kepler & Shane, 2007). This is manifested not only on their higher risk perception, but also on their lower participation in risky human behaviour, such as crime, gambling, driving, and sports (Harris, Jenkins, & Glaser, 2006). In the view of stereotypically defined attributes, women's higher risk aversion confirms a stereotypical expectation of how women should behave, aligned with qualities of caution and risk avoidance (Marlow & Swail, 2014). The higher risk perception and behaviour of women could lead them to use less equity capital, as they would perceive that it could bring the venture to a higher level of risk and could imply losing control over their firms (Coleman & Robb, 2009; Verheul & Thurik, 2001).

The idea that women prefer smaller, more manageable firms, is consistent with the evidence that women entrepreneurs prefer to set a maximum business size for their business that is compatible with the achievement of personal goals (Cliff,

1998; Du Rietz & Henrekson, 2000). Indeed, women entrepreneurs are found to be motivated more strongly by non-economic goals, including contributing to society (Hechavarria, Ingram, Justo, & Terjesen, 2012; Sullivan & Meek, 2012), achieving a better work-family balance (DeMartino & Barbato, 2003; Parasuraman & Simmers, 2001), or pursuing personal aspirations (Buttner & Moore, 1997). While traditional depiction of entrepreneurs features an individual driven mainly by monetary gains, who would choose entrepreneurship as the occupation to maximise the monetary gains over other alternative career choices, the evidence shows that the value that individuals derive from non-monetary aspects can be even of greater importance (Amit, MacCrimmon, Zietsma, & Oesch, 2001; Rindova, Barry, & Ketchen, 2009).

Overview and evidence gaps

Overall, despite the efforts in understanding the challenges faced by women entrepreneurs in raising capital to their ventures, the gender gap in equity capital, and also venture capital markets, is still a reality that is only partly understood. Most recent research takes a theorerical approach and suggests that many of these difficulties are deeply rooted and structural (networks, homophily and gender stereotypes), affecting both supply- and demand-sides, and as such will require interventions that go beyond a focus on improving women's financial or technical skills and abilities (Brush et al., 2018). Further research adopting socio-psychological approaches could be helpful to shed further light on these factors and what can be done to create change.

In general, there is still little solid UK evidence on female entrepreneurs and their experiences of accessing venture capital, and the lack of robust data in this area makes it difficult to assess the extent of the problem and whether any progress in closing the gender gap has been achieved. There is some evidence from the Global Entreprepreneurship Monitor (GEM) data in 2015 that only 5% of women in the UK use equity/VC capital compared to just over 20% in the US but the sample sizes are too small to indicate that this is a significant difference.

Sources

Abele, A. E. 2003. The dynamics of masculine-agentic and feminine-communal traits: Findings from a prospective study. Journal of Personality and Social Psychology, 85(4): 768.

Ahl, H. 2006. Why research on women entrepreneurs needs new directions. Entrepreneurship: Theory & Practice, 30(5): 595-621.

Amit, R., MacCrimmon, K. R., Zietsma, C., & Oesch, J. M. 2001. Does money matter?: Wealth attainment as the motive for initiating growth-oriented technology ventures. Journal of Business Venturing, 16(2): 119-143.

Arenius, P. & Autio, E. 2006. Financing of small businesses: Are Mars and Venus more alike than different? Venture Capital, 8(2): 93-107.

Becker-Blease, J. R. & Sohl, J. E. 2007. Do women-owned businesses have equal access to angel capital? Journal of Business Venturing, 22(4): 503-521.

Bem, S. L. 1974. The measurement of psychological androgyny. Journal of Consulting and Clinical Psychology, 42(2): 155-162.

Brush, C., Carter, N. M., Gatewood, E. J., Greene, P. G., & Hart, M. 2001. The

Diana Project: Women business owners and equity capital: The myths dispelled.
Brush, C., Greene, P., Balachandran, L., & Davis, A. E. 2014. Women Entrepreneurs 2014: Bridging the Gender Gap in Venture Capital.
Brush, C., Greene, P., Balachandra, L., & Davis, A. 2018. The gender gap in venture capital- progress, problems, and perspectives. Venture Capital, 20(2): 115-136.
Buttner, E. H. & Moore, D. P. 1997. Women's organizational exodus to entrepreneurship: self-reported motivations and correlates with success. Journal of Small Business Management, 35(1): 34-46.
Carter, S., Shaw, E., Lam, W., & Wilson, F. 2007. Gender, entrepreneurship, and bank lending: The criteria and processes used by bank loan officers in assessing applications. Entrepreneurship Theory and Practice, 31(3): 427-444.
Cavalluzzo, K. S., Cavalluzzo, L. C., & Wolken, J. D. 2002. Competition, Small Business Financing, and Discrimination: Evidence from a New Survey. The Journal of Business, 75(4): 641-679.
Cliff, J. E. 1998. Does one size fit all? Exploring the relationship between attitudes towards growth, gender, and business size. Journal of Business Venturing, 13(6): 523-542.
Coleman, S. & Robb, A. 2009. A comparison of new firm financing by gender: evidence from the Kauffman Firm Survey data. Small Business Economics, 33(4): 397-411.
Coleman, S. & Robb, A. 2012. A rising tide: Financing strategies for women-owned firms: Stanford University Press.
Chen, C. C., Greene, P. G., & Crick, A. 1998. Does entrepreneurial self-efficacy distinguish entrepreneurs from managers? Journal of Business Venturing, 13(4): 295-316.
DeMartino, R. & Barbato, R. 2003. Differences between women and men MBA entrepreneurs: exploring family flexibility and wealth creation as career motivators. Journal of Business Venturing, 18(6): 815-832.
Du Rietz, A. & Henrekson, M. 2000. Testing the female underperformance hypothesis. Small Business Economics, 14(1): 1.
Eagly, A. H. & Steffen, V. J. 1984. Gender stereotypes stem from the distribution of women and men into social roles. Journal of Personality and Social Psychology, 46(4): 735-754.
Eagly, A. H. & Karau, S. J. 2002. Role congruity theory of prejudice toward female leaders. Psychological Review, 109(3): 573-598.
Eddleston, K. A. & Powell, G. N. 2008. The role of gender identity in explaining sex differences in business owners' career satisfier preferences. Journal of Business Venturing, 23(2): 244-256.
Fabowale, L., Orser, B., & Riding, A. 1995. Gender, structural factors, and credit terms between Canadian small businesses and financial institutions. Entrepreneurship Theory and Practice, 19(4): 41-65.
Fielden, S. L., Davidson, M. J., Dawe, A. J., & Makin, P. J. 2003. Factors inhibiting the economic growth of female owned small businesses in North West England. Journal of Small Business and Enterprise Development, 10(2): 152-166.
Freel, M., Carter, S., Tagg, S., & Mason, C. 2012. The latent demand for bank debt: characterizing 'discouraged borrowers'. Small Business Economics, 38(4): 399-418.
GEM. 2017. GEM 2016/2017 Women's Entrepreneurship Report.
Gupta, V. K., Turban, D. B., & Bhawe, N. M. 2008. The effect of gender stereotype activation on entrepreneurial intentions. Journal of Applied Psychology, 93(5): 1053-1061.

Gupta, V. K., Goktan, A. B., & Gunay, G. 2014. Gender differences in evaluation of new business opportunity: A stereotype threat perspective. Journal of Business Venturing, 29(2): 273-288.
Harris, C. R., Jenkins, M., & Glaser, D. 2006. Gender differences in risk assessment: why do women take fewer risks than men? Judgment and Decision Making, 1(1): 48.
Harrison, R. T. & Mason, C. M. 2000. Venture capital market complementarities: the links between business angels and venture capital funds in the United Kingdom. Venture Capital, 2(3): 223-242.
Hechavarria, D. M., Ingram, A., Justo, R., & Terjesen, S. 2012. Are women more likely to pursue social and environmental entrepreneurship? In K. D. Hughes & J. E. Jennings (Eds.), Global women's entrepreneurship research: Diverse settings, questions and approaches: 135–151. Cheltenham/Northampton, U.K.: Edward Elgar.
Ibarra, H. 1992. Homophily and Differential Returns: Sex Differences in Network Structure and Access in an Advertising Firm. Administrative Science Quarterly, 37(3): 422-447.
Jennings, J. E. & Brush, C. G. 2013. Research on women entrepreneurs: challenges to (and from) the broader entrepreneurship literature? The Academy of Management Annals, 7(1): 663-715.
Kepler, E. & Shane, S. 2007. Are male and female entrepreneurs really that different?: Office of Advocacy, US Small Business Administration.
Kon, Y. & Storey, D. J. 2003. A Theory of Discouraged Borrowers. Small Business Economics, 21(1): 37.
Malmström, M., Johansson, J., & Wincent, J. 2017. Gender stereotypes and venture support decisions: how governmental venture capitalists socially construct entrepreneurs' potential. Entrepreneurship Theory and Practice, 41(5): 833-860.
Marlow, S. & Swail, J. 2014. Gender, risk and finance: why can't a woman be more like a man? Entrepreneurship & Regional Development, 26(1/2): 80-96.
Orser, B. J., Riding, A. L., & Manley, K. 2006. Women entrepreneurs and financial capital. Entrepreneurship Theory and Practice, 30(5): 643-665.
Parasuraman, S. & Simmers, C. A. 2001. Type of employment, work–family conflict and well-being: a comparative study. Journal of Organizational Behavior, 22(5): 551-568.
Rindova, V., Barry, D., & Ketchen, J. D. J. 2009. Entrepreneuring as emancipation. Academy of Management Review, 34(3): 477-491.
Shane, S. & Cable, D. 2002. Network ties, reputation, and the financing of new ventures. Management Science, 48(3): 364-381.
Spencer, S. J., Steele, C. M., & Quinn, D. M. 1999. Stereotype threat and women's math performance. Journal of Experimental Social Psychology, 35(1): 4-28.
Steele, C. M. & Aronson, J. 1995. Stereotype threat and the intellectual test performance of African Americans. Journal of Personality and Social Psychology, 69(5): 797-811.
Sullivan, D. M. & Meek, W. R. 2012. Gender and entrepreneurship: a review and process model. Journal of Managerial Psychology, 27(5): 428-458.
Sweida, G. L. & Reichard, R. J. 2013. Gender stereotyping effects on entrepreneurial self-efficacy and high-growth entrepreneurial intention. Journal of Small Business and Enterprise Development, 20(2): 296-313.
Verheul, I. & Thurik, R. 2001. Start-up capital: "does gender matter?". Small Business Economics, 16(4): 329-346.
Walker, D. & Joyner, B. E. 1999. Female entrepreneurship and the market process: Gender-based public policy considerations. Journal of

Developmental Entrepreneurship, 4(2): 95-116.
Wilson, F., Kickul, J., & Marlino, D. 2007. Gender, entrepreneurial self-efficacy, and entrepreneurial career intentions: implications for entrepreneurship education. Entrepreneurship: Theory & Practice, 31(3): 387-406.

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