Spotlight
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Why do women-led tech firms appear less entrepreneurial, and what actually helps?

How employees perceive women leaders, not just senior gatekeepers, shapes a venture's entrepreneurial orientation.

FRANCESCA VISINTIN · DANIEL PITTINO · GIANCARLO LAUTO · GOUYA HARIRCHI

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The glass ceiling is the metaphor everyone knows: capable women blocked from the top by the people already there. This study points at something underneath it. When a woman does lead — when she founds and runs the firm — her authority can still give way. Not because superiors deny her a promotion, but because the people she manages quietly withhold their belief in her. The authors call this the **paper floor**. It looks solid. It can crack without warning.

Their question is concrete. Do women-led high-tech ventures pursue entrepreneurial strategies less aggressively than men-led ones, and if so, why? Entrepreneurial orientation — a firm's appetite for innovation, proactiveness, and risk-taking — is a well-established engine of growth in young technology firms. Most research treats it as something leaders set. Visintin, Pittino, Lauto and Harirchi argue it is something employees grant. A leader can push an entrepreneurial agenda, but it only takes hold if the people around her act on it.

The theory underneath this is role congruity. We carry stereotyped expectations of how men and women should behave — men as assertive and dominant, women as warm and communal — and we carry an equally stereotyped picture of "the entrepreneur": bold, aggressive, heroic, and, by long habit, male. A woman in the founder's chair sits at the collision of those scripts. Observers register the mismatch and discount her, and the discount does not disappear just because she has already proved herself. In high-tech industries the problem compounds: the scientific and technical domain is read as masculine too, so women founders absorb what the authors, borrowing from earlier work, call a double masculinity penalty.

WHAT WE STUDIED

The team assembled a sample of 463 new technology-based firms in Italy — companies under ten years old, operating in high-tech sectors, and not wholly owned by a parent company. Data came from telephone interviews with each firm's founder-CEO or designated lead, conducted over three weeks in 2018, then matched with financial records from Orbis.

Italy is a deliberate choice. Women make up roughly 22% of entrepreneurs there, against 32% across the EU, and female labour-force participation is among the lowest in the OECD. If role expectations bite anywhere, they bite here. In the sample, 39% of firms were women-led, the average firm was five years old and small — fewer than two employees beyond the founding team — and about a third had passed through a support organisation.

Entrepreneurial orientation was measured with Covin and Slevin's nine-item scale. Two moderators were tested. The first, **bricolage**, is the practice of "making do" — solving problems by recombining whatever resources are already at hand rather than waiting to acquire the ideal ones — captured with a validated nine-item scale. The second was whether the firm had been hosted by an entrepreneurial support organisation: an incubator, accelerator, or science park. The regressions carried the usual controls (firm age and size, prior experience, ownership concentration, region, industry) and added a Heckman correction for the over-representation of women-led

firms. Common-method bias was checked and came back clean.

Two things to keep in mind. This is a study of new technology firms in general, not family firms specifically. And the researchers never measured employees' perceptions directly — role congruity is the mechanism they theorise and then probe indirectly, a limitation they are candid about.

KEY INSIGHTS

Women-led ventures do score lower on entrepreneurial orientation

Across models, the woman-founder coefficient is negative and significant (−0.346, $p < 0.05$). Firms led by women showed a measurably lower entrepreneurial posture than comparable men-led firms. The effect is not enormous, but it is consistent, and it survives both the controls and the selection correction. Read carefully, this is not a claim about what women do. The authors are explicit that it reflects a perceived mismatch between the entrepreneurial role and a woman occupying it — a judgement made by observers, including a firm's own staff.

That distinction is the whole point of bringing employees into the frame. Entrepreneurial orientation is not a solo performance. Opportunity recognition, innovation, the push to scale — these depend on a team that recognises the leader's direction and runs with it. If employees, even unconsciously, doubt that a woman fits the role, they engage less, and the firm's entrepreneurial posture softens regardless of what the founder intends.

Bricolage closes the gap — but only for women

The interaction between woman founder and bricolage is positive and significant (0.277, $p < 0.05$). As women-led firms leaned more on bricolage, their entrepreneurial orientation rose. For men-led firms the line is essentially flat: more bricolage, no change. Resourceful improvisation does something for women leaders that it does not do for men.

The reason the authors give is the sharpest idea in the paper. Bricolage — adaptive, collaborative, resourceful — happens to align with the traits stereotypically expected of women. So when a woman leads through bricolage, she is not seen as violating the role; employees read her as competent on terms they already accept, and they extend the cooperation that turns intent into orientation. It works less because it is objectively superior and more because it slips past the bias.

Support organisations did nothing

The third hypothesis failed outright. Being hosted by an incubator, accelerator, or science park had no measurable effect on the gender–EO relationship, in either direction. This deserves to be sat with. Such organisations are widely promoted as a lever for women's entrepreneurship, yet here the supposed remedy simply did not move the outcome. The authors offer two readings: that these are masculinised environments reproducing the very norms they claim to dismantle, or that Italian incubators have not yet built services tailored to minority-led firms. Either way, the policy comfort of "just add an incubator" looks thin.

Where the firm sits changes the story

A follow-up model used the local prevalence of high-tech women entrepreneurs as a proxy for how congruent a woman leader seems in that place. The pattern is striking. In provinces where women entrepreneurs are rare — and scepticism presumably higher — bricolage gave women-led firms a strong lift (marginal effect 0.379, $p = 0.004$). Where women entrepreneurs are common, the lift faded to nothing (0.079, not significant). For men, bricolage did little anywhere, and in high-congruity areas it even turned slightly negative. Bricolage, in short, is a compensating move. It matters most exactly where bias is worst, and stops mattering once the bias eases.

TAKEAWAYS

For women founders, the practical message is uncomfortable but useful. Some of what reads as a personal limit is actually other people's perception — and some of those people are on the payroll. The study's pointed reminder is that women entrepreneurs often work hard to convince investors and customers while taking their own employees' commitment for granted. Internal buy-in is not automatic. It has to be built, deliberately, the same way external relationships are.

Bricolage emerges as a credible tool, and the authors are careful — rightly — not to oversell it. They do not advise women to make bricolage their default strategy. Their worry runs the other way: because improvisational, make-do approaches are the ones stakeholders most readily accept from women, leaning on them too hard could quietly confine women to incremental innovation and away from the larger, bolder bets. A coping mechanism for bias should not harden into a ceiling of its own.

IMPACT

The contribution here is a shift in where we look. Entrepreneurial orientation has mostly been studied as a top-down property — what leaders decide. This paper adds a bottom-up channel: followers' perceptions of the leader. That reframes the glass ceiling itself. The

barrier is not only senior gatekeepers withholding advancement; it is also subordinates withholding recognition — the paper floor that can give way beneath a woman who already holds the top job.

For family firms, the lens transfers cleanly even though the sample is not family-based. A daughter stepping into leadership is judged by long-tenured non-family employees as much as by relatives, and that judgement shapes whether her strategic agenda gains traction. The paper's own references point this way, citing work on whether family firms gain more from female leadership than non-family firms do. The internal-stakeholder question — does the team actually credit her authority? — is one any succession should take seriously.

The limits are worth naming. Entrepreneurial orientation was self-reported, which may itself carry a gendered discount. The role-congruity mechanism was proxied, not measured. A single yes/no variable lumped very different support organisations together. And the Italian setting, with its low base rate of women in tech, may sharpen effects that look milder elsewhere. What comes next is largely methodological: an instrument that captures, directly, whether employees perceive their leader as congruent with the entrepreneurial role.

RECOMMENDATIONS

1. Build internal legitimacy on purpose. Do not assume employees credit your authority because you hold the title — invest in the relationships that turn a strategic agenda into shared action.
2. Use bricolage where scepticism is high. In environments with few women leaders, resourceful, make-do approaches earn cooperation that more conventional postures may not.
3. Do not let bricolage become a cage. Treat it as one tool among several, and keep deliberately pursuing the larger, riskier innovations — not only the improvised wins.
4. Judge support organisations on evidence, not reputation. An incubator place is not a fix for role bias; ask whether its services are genuinely designed for minority-led firms.
5. For policymakers and advisors: widen the picture of who counts as an entrepreneur. Publicise a variety of women role models and fund coaching that strengthens communication and leadership presence, so internal perceptions shift alongside external ones.

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CEFEO AUTHORS



Daniel Pittino

Professor

Jönköping International Business School

daniel.pittino@ju.se

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