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# Mind the Gap: The Role of Gender in Entrepreneurial Career Choice and Social Influence by Founders

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**Abstract**

Women continue to be disproportionately underrepresented in new venture creation. We investigate whether and how founders can differently influence future entrepreneurial career choices of their male and female joiners. Using a large sample of startup firms with personnel, where founders interact closely with joiners, we demonstrate that founders have a strong influence on a joiner's entrepreneurial career choice if both are female. We find empirical support for role modeling as a key underlying mechanism, accounting for alternative explanations such as selective matching based on gender and push-driven factors. These findings increase our understanding of the roles of socialization and organizational context in shaping the career outcomes of employees, and provide evidence of a multiplier effect of female entrepreneurs.

**Keywords:** Entrepreneurship, female leadership, gender gaps, organizations, role models

*"Mathilde (Cazenave) is actually the reason I started Aurate in a way (while working at Marc Jacobs)…. The emotional part and the management part is what I grew to ask Mathilde about the most; I look up to how she's done it in those roles." (Sophie Kahn, founder of Aurate)*

## Introduction

Understanding why entrepreneurial activities and behaviors unfold differently for different individuals, and how they can be promoted, has been at the center of attention of many scholars, including in strategy (e.g. Campbell, Ganco, Franco, and Agarwal, 2012; Carnahan, Agarwal, and Campbell, 2012; Lyons and Zhang, 2018). A deeply-rooted stream of research (Miller and Swanson, 1958) demonstrates that socialization – with peers (e.g. Eesley and Wang, 2017; Kacperczyk, 2013), parents (e.g. Lindquist, Sol, and van Praag, 2015), or coworkers (e.g. Nanda and Sørensen, 2010) – can shape individual preferences for entrepreneurship. A parallel line of inquiry has shown how certain organizational contexts (e.g. bureaucratic work environments or different corporate cultures) can spawn new entrepreneurs among employees (Dobrev and Barnett, 2005; Sørensen, 2007a; Sørensen and Fassiotto, 2011).

Despite the scholarly and policy interest in entrepreneurship, which has caused an increased understanding and promotion of entrepreneurial career choices, women remain largely underrepresented in new venture creation. This pattern is visible across various types of new ventures (e.g. Guzman and Kacperczyk, 2019; Thébaud, 2015) and even in countries where gender equality is relatively high (Tonoyan, Strohmeyer, and Jennings, 2019). Scholars in various fields have studied this persistent female underrepresentation in entrepreneurship (e.g. Markussen and Røed, 2017; Shahriar, 2018; Thébaud, 2010), and multiple (not mutually exclusive) explanations have been proposed.

First, the gendering of labor market positions prevents women from acquiring entrepreneurship-relevant resources and limits their exposure to opportunities for new venture

creation (Tonoyan *et al.*, 2019). Second, stereotypes and social norms generating gender specific role expectations are internalized by individuals and often discourage women from engaging in entrepreneurship by anticipation of negative stereotype threats (Kossek, Su, and Wu, 2017; Thébaud, 2010). Indeed, these threats are observed in critical stages of the entrepreneurial process such as VC funding (Guzman and Kacperczyk, 2019). Third, and as a consequence, men and women might develop distinct career preferences and opt out of certain occupations due to perceived misfit (Kossek *et al.*, 2017). In fact, evidence suggests that men and women have different preferences for specific careers and job attributes (Barbulescu and Bidwell, 2013), and heterogeneous preferences may in turn lead individuals to select (Greenberg, 2014; Roach and Sauermann, 2015; Sauermann, 2018) and stay (Carnahan, Kryscynski, and Olson, 2017) in different occupations and firms. All these explanations apply not only to female underrepresentation in entrepreneurship, but also to other male-dominated positions where women remain underrepresented, such as CEO and other management roles (Cook and Glass, 2014; Dezsö, Ross, and Uribe, 2016; Kogut, Colomer, and Belinky, 2014), advisory board membership (Ding, Murray, and Stuart, 2013), and patenting (Ding, Murray, and Stuart, 2006).

Therefore, identifying circumstances, remedies and interventions that promote female inclusion in male-dominated careers has been encouraged (Kossek *et al.*, 2017). In this paper, we analyze if and how startup founders can influence their (female) employees – startup joiners – to become a founder themselves. We do so by integrating sociological and organizational perspectives and building on prior work about the influence of workplace relationships on employees' career advancement (e.g. Colbert, Bono, and Purvanova, 2016) – especially mentoring and role modeling for career socialization (Kossek *et al.*, 2017; Lyons and Zhang, 2018). Startup founders are a particular source of influence for their employees that has been

overlooked by scholars concerned with the gender gap in entrepreneurship. We posit that social interactions at work, namely exposure to female founders who break stereotypes, can encourage (female) joiners to pursue entrepreneurship and reduce the gender gap in new venture creation. We theorize and test that the mechanism underlying the female founders' influence on (female) employees' future career choices is role modeling in its broad sense, which includes providing mentoring, knowledge, and inspiration. Prior evidence indicates that role modeling promotes entrepreneurship (Bosma *et al.*, 2012) and is the main reason why the children of entrepreneurial parents have a higher entrepreneurial propensity (Lindquist *et al.*, 2015; Sørensen, 2007b). We demonstrate that startup founders can be even more influential role models than parents for particular individuals.

We use startups as an empirical setting, where employer-employee (founder-joiner) interactions are likely direct and intense, possibly providing entrepreneurial career previews that can demystify the entrepreneurship process, update beliefs, and change preferences (Pryor *et al.*, 2016; Sørensen and Fassiotto, 2011). Employers, managers, and supervisors tend to steer the development of employees by providing motivation, inspiration, incentives, information, and knowledge (Artz, Goodall, and Oswald, 2017; Dezsö and Ross, 2012; Lazear, Shaw, and Stanton, 2015; Lyngsie and Foss, 2017). Building on social identity theory, we expect this to be more likely within same-gender pairs and stronger among minorities, such as women in entrepreneurship, via role modeling mechanisms.

Based on register data for Denmark, we analyze the occupational transitions of around 89,000 full-time employees (joiners) hired by about 14,000 new venture founders. We find overall support for our theory: employees joining a founder of the same gender are more likely to become entrepreneurs later; this finding is particularly prominent among women and is stronger

than the effect of other social interactions captured in our data. We theorize and confirm empirically that the influence of female founders is magnified in particular settings such as where women tend to be disproportionately underrepresented or lack prior contact with entrepreneurship. These patterns are in line with a broadly defined role modeling function of female founders for female joiners. Alternative explanations such as selection and push mechanisms are considered and tested, but not supported empirically.

Our study relates and contributes to multiple debates. First, we add to the discussion on the value of mentoring, especially for underrepresented groups (e.g. Lyons and Zhang, 2017, 2018), as an intervention to help reduce certain barriers such as stereotype threats. Role models and mentors have been shown to affect the education and occupational choices of minorities by helping them update their beliefs about their abilities, and changing their preferences for particular career paths (e.g. Eble and Hu, 2019; Kofoed and McGovney, 2017). We study a role model in relation to entrepreneurship that has not been considered yet: startup founders. In this case, role modeling takes the form of influencing the career choices of their hired joiners.

Second, by focusing on a social influence stemming from the workplace, we contribute to organizational and strategic management research that shows how different organizational contexts can stimulate particular employee behaviors and career choices, namely entrepreneurship and innovation (Carnahan *et al.*, 2012; Dobrev and Barnett, 2005; Lyngsie and Foss, 2017; Sørensen, 2007a; Sørensen and Fassioto, 2011).

Third, our study relates to the literature on early team formation and its organizational impacts (e.g. Beckman, Burton, and O'Reilly, 2007; Beckman and Burton, 2008). Startup founders are known to imprint their team composition through path dependence and homophily preferences, thereby setting the foundations of an organization's demography (Beckman and

Burton, 2008, 2011). Organizational and sociological streams of research in turn posit that an organization's demography – namely the presence of women in top ranks – can significantly shape the career dynamics of female versus male employees in the firm (e.g. Cohen, Broschak, and Haveman, 1998; Cohen and Huffman, 2007). By drawing on theory implying that homophily between employees and work superiors might promote social identification and role modeling (Gibson, 2004; Shapiro, Haseltine, and Rowe, 1978), especially if both belong to underrepresented groups such as women in business environments (Cohen and Broschak, 2013; Ely, 1994; Ibarra, 1992, 1997; McGinn and Milkman, 2013), we contribute to these lines of inquiry and provide results from a different setting: new ventures where female founders and female joiners work together.

Finally, our findings relate to the debate on how female representation in top hierarchies can affect firm outcomes (e.g. Dezsö and Ross, 2012; Dezsö *et al.* 2016; Kogut *et al*., 2014; Lyngsie and Foss, 2017). Female representation in top management is suggested to improve firm performance and innovation outputs, depending partly on how it influences the motivation and commitment of other women at lower levels in the organization (e.g. Dezsö and Ross, 2012; Lyngsie and Foss, 2017). Women at the top of (mostly large) corporations have been shown to act as agents of change able to transform social norms, narrow gender gaps, and break the so-called "glass ceiling" (e.g. Abraham, 2017; Cohen and Broschak, 2013; McGinn and Milkman, 2013). Our finding that female founders can be role models for their female joiners might help unpack new channels through which female representation at the top ultimately impacts firm performance and other milestones.

## Theoretical Background and Hypotheses

### Individual heterogeneous preferences and the value of mentoring

Individuals are heterogeneous in their preferences for certain job and firm attributes. This heterogeneity partly explains differences in sorting into certain occupations (e.g. Roach and Sauermann, 2015) and firms (e.g. Sauermann, 2018), as well as in retention (e.g. Carnahan *et al.*, 2017), effort provision, and productivity (e.g. Sauermann and Cohen, 2010; Sauermann, 2018). Entrepreneurship is an example of a career choice where individual preferences play an important role (Greenberg, 2014), given the relatively high barriers to entry (e.g. in the form of resources required) and the risks involved compared to working in an existing organization (Amit *et al.*, 2001). Dispositional characteristics such as attitude towards risk and taste for autonomy certainly shape one's preferences for an entrepreneurial career (e.g. Halaby, 2003)

Career preferences can also be influenced by the individual's environment. Social norms, shared cultural beliefs, and institutionalized labor market practices set expectations about particular career choices, leading to an underrepresentation of some groups of individuals in some roles. Preferences for alternative jobs and organizations are based on a combination of "opt-out" and "push-out" forces (Barbulescu and Bidwell, 2013; Shahriar, 2018; Tonoyan *et al.*, 2019; Thébaud, 2015). Identifying effective interventions to counteract these trends and forces is encouraged, and role modeling and mentoring are considered promising strategies to increase career socialization and improve job participation equality (Kossek *et al.*, 2017).

Role models – defined as cognitive constructions based on individual perceptions to be similar to others in particular roles, and the desire to increase this perceived similarity through emulation of attributes and achievement of identical goals (Gibson, 2004; Shapiro *et al.*, 1978) – have been shown to counterbalance stereotypes and change preferences in a variety of settings and at different stages in an individual's life or career. Access to mentoring, often via role

models, seems to have an influence on academic achievement (Eble and Hu, 2019; Gershenson *et al.*, 2018), education choices (Porter and Serra, 2018), job performance and progress (Blau *et al.*, 2010; Lyle and Smith, 2014), and occupational choices (Kofoed and McGovney, 2017; Lyons and Zhang, 2018). It seems that, at least in the short-term, exposure to role models affects preferences, aspirations, and beliefs (Kram and Isabella, 1985), especially among underrepresented groups such as gender and race minorities (e.g. Gershenson *et al.*, 2018; Kofoed and McGovney, 2017). Information and perceived ability updates tend to be greater for these groups, and can (partially) offset their lower predisposition to engage in settings where they feel vulnerable to social identity threat (Murphy, Steele, and Gross, 2007).

Workplace relationships can be a source of mentoring which shapes preferences and allows employees to flourish (Colbert *et al.*, 2016). As microsocial structures involving sets of routines and social interactions, workplaces can affect how employees form beliefs and legitimize opportunities identified through experience, observation, and communication (Nanda and Sørensen, 2010; Pryor *et al.*, 2016). Employees' motivation, job satisfaction, performance, retention, and career mobility have been shown to be molded by others in the workplace, most often hierarchical superiors with more authority, seniority, and experience (Abraham, 2017; Artz *et al.,* 2017; Artz and Taengnoi, 2016; McGinn and Milkman, 2013; Lazear *et al*., 2015), sometimes regarded by the individual as role models (Gibson, 2004). Mentoring processes in the workplace can provide employees with information and benchmarks, offer professional identities that they can observe and compare to (Ibarra, 1999), and provide encouragement and inspiration, emotional support and guidance, which might increase their motivation to follow a similar career path (Shapiro *et al*., 1978; McGinn and Milkman, 2013).

An important source of role modeling or mentoring, which has so far been overlooked by entrepreneurship scholars concerned with the evident gender gap in this area, is the exposure to startup founders in the work environment. We argue that work interactions with founders can influence employees' future entrepreneurship choices through a variety of channels. Being exposed to a founder at work might demystify the entrepreneurial process, and provide the so-called entrepreneurial career previews (Tonoyan *et al*., 2019) and career socialization processes (Kossek *et al*., 2017). These can change joiners' preferences and increase their confidence in their ability to follow a similar route. At a deeper level, exposure to a founder might open up learning and knowledge transfer opportunities, contacts, or other resources that may build employees' networks and skills (Sørensen, 2007b). All in all, we posit that these processes are components of (broadly defined) role modeling (Gibson, 2004; Kram and Isabella, 1985; Shapiro *et al.*, 1978) provided by startup founders to those individuals who join their ventures.

**Gender homophily and social identification in founder-joiner interaction**

Role models are deemed critical for individual development in general (e.g. Eble and Hu, 2019; Gershenson *et al*., 2018) and career success in particular (e.g. Blau *et al*., 2010; Lyle and Smith, 2014). Role models serve various functions based on individual's needs, wants, and ambitions (Shapiro *et al.,* 1978), and their influence is based on individual perceptions, and is conditional on self-categorization and social comparison processes alongside highly psychologically salient dimensions such as gender (Kofoed and McGovney, 2017; McGinn and Milkman, 2013). People connect most often and most strongly with similar others (McPherson, Lynn, and Cook, 2001), also inside organizations (Ibarra, 1992, 1997) with both peers (Kleinbaum, Stuart, and Tushman, 2011) and superiors (McGinn and Milkman, 2013). Therefore, the intensity and value of social interactions are partially a function of homophily.

First, in line with similarity-attraction theory, resemblance among individuals is shown to increase communication and valuation of the knowledge transmitted by others (Reagans, 2011). Second, network psychosocial benefits such as role modeling, tend to be stronger in interactions between demographically similar, and particularly same-gender individuals (Ibarra, 1992, 1997). Third, the conveying of competence and confidence is often gender-typed, and social identification tends to be a pre-condition for the transmission of values, attitudes, knowledge, and motivation in individual interactions with others (Ibarra, 1999). Consequently, social influence driven by either exposure or learning channels (Sørensen, 2007b) might be amplified in same-gender interactions. In sum, we conjecture that gender homophily between founders and joiners improves social identification and strengthens the founder's influence on employees' choice to follow a similar career path.

*Hypothesis 1 (H1). The propensity to start an entrepreneurial career will be greater for joiners working with a founder of the same rather than a different gender.*

However, same-gender founders may play different roles and fulfill different needs for male and female joiners. According to gender and workplace network theories, men and women gain access through homophilous relationships to different resources (Moore, 1990; Ibarra, 1992, 1997), focusing on either instrumental career objectives or social support (Chatman and O'Reilly, 2004). While men seem to prefer men for both types of resources, women derive greater social support and inspiration from other women – though possibly at the expense of career enhancing resources such as network and status returns that could possibly be better obtained from participation in male networks and male-typed jobs (Chatman and O'Reilly, 2004; Ibarra, 1992). Nevertheless, we have reasons to argue that women joining young and small firms

are more influenced than men by same-gender founders in relation to the decision to become an entrepreneur.

First, female founders might be able to provide larger information updates, narrow the void in inspiration and perceived potential, and counteract the low predisposition for entrepreneurship among their female joiners, more than male founders can do in relation to male joiners. Facing negative gender norms and stereotype threats, women might perceive themselves as having lower ability in male-dominated spaces (e.g. Eble and Hu, 2019; Koellinger, Minniti, and Schade, 2013; Thébaud, 2010). Furthermore, women tend to have lower scores on several dispositional characteristics often correlated to preferences for entrepreneurship, such as risk-taking and taste for autonomy (Halaby, 2003).

Second, individuals with less familiarity with entrepreneurship tend to be influenced more by peers or mentors with entrepreneurial experience (Eesley and Wang, 2017; Lyons and Zhang, 2017, 2018; Nanda and Sørensen, 2010). Women are less likely than men to have (direct or indirect) experience in entrepreneurship (e.g. Koellinger *et al*., 2013), leaving them at a disadvantage in the relatively lengthy process of opportunity conceptualization (Pryor *et al*., 2016). Social interactions with entrepreneurs with whom they identify could alert them to opportunities or legitimize opportunity spaces they might otherwise ignore.

Third, while numerical underrepresentation induces perceptions of vulnerability to social identity threat (Murphy *et al*., 2007), social ties tend to be stronger among minorities. This could result in both greater social influence from female founders due to activist choice homophily (Greenberg and Mollick, 2017) and greater demand for, or openness to, the benefits from social identification among female employees (Cohen and Broschak, 2013; Ely, 1994; Ibarra, 1992, 1997; McGinn and Milkman, 2013; Moore, 1990).

Finally, although women might sometimes face a trade-off between support from similar (female) ties and strategic resources more often derived from dissimilar (male) interactions (Chatman and O'Reilly, 2004; Ibarra, 1992), the potential returns from heterophilous relationships might be weaker in the absence of some degree of social identification (Ibarra, 1999). Therefore, based on the above, we hypothesize that:

*Hypothesis 2 (H2). The positive influence of a same-gender founder on a joiner's propensity to start an entrepreneurial career will be stronger in the case of women than men.*

**Heterogeneities in female founders' social influence**

We conjecture that role modeling (broadly defined) is the mechanism underlying the previous hypothesized relationship. However, the influence of role models can be increased by different cognitive and structural dimensions such as the type of attributes, skills, and behaviors perceived as worth imitating, and the (geographic or social) proximity to the role model (Gibson, 2004). We theorize that female founders will be more influential as role models in certain conditions, depending on the a) female entrepreneur's performance (which may signal reputation and legitimacy), b) social proximity (identification) between founder and joiner, and c) joiner's entrepreneurship-relevant experience gaps. These conditions might increase the supply of, and/or the demand for, the mentoring and role modeling functions served possibly by female founders.

First, high-performing role models or mentors might be especially influential in the career development of more junior individuals (Blau *et al*., 2010; Lyle and Smith, 2014). However, role congruity theory suggests that gendered expectations about men's and women's competence in male-dominated roles often put female leaders at a disadvantage, due to greater scrutiny and distorted assessment of their capabilities (Eagly and Karau, 2002; Lee and James, 2007; Thébaud, 2010; Yang and Triana, 2019). We argue that female founders able to counteract

these mental models (e.g. via high performance or industry selection) can legitimize female entrepreneurship to a greater extent and be a more important source of mentoring for other women.

Second, while similarity of demographic characteristics – such as gender – produces interpersonal attraction, and thus emphasizes tie strength between individuals (Ibarra, 1992; 1997; McPherson *et al.*, 2001), both identification and propinquity (in time or space) can further reinforce this effect (Reagans, 2005, 2011). Social identification tends to increase if individuals have multiple attributes in common and their social category is made more salient by means of numerical cues. Therefore, mentoring functions will become more effective with increased social identification between mentor and mentee, due to a possibly stronger perception of in-group status and cohesion (McGinn and Milman, 2013), greater openness to communication (see Reagans, 2011 for peer interactions), and reduced competition for mentor's attention (see Lindquist *et al.,* 2015 for evidence within families).

Finally, having access to mentoring from role models might have a particularly strong impact for individuals not yet exposed to (direct or indirect) entrepreneurial career previews which could have changed beliefs about or preferences for entrepreneurship (Greenberg, 2014; Lentz and Laband, 1990; Lyons and Zhang, 2018; Tonoyan *et al.*, 2019). We expect the existence of such gaps to leave more room for role models to provide information and create awareness of the different phases involved in entrepreneurship (Pryor *et al.*, 2016). We therefore hypothesize that:

*Hypothesis 3 (H3). The positive influence of a female founder on a female joiner's propensity to embark on an entrepreneurial career will increase with the a) performance of the*

*founder as an entrepreneur, b) intensity of social identification between founder and joiner, c) joiner's entrepreneurship-relevant experience gaps.*

We acknowledge that role modeling, broadly defined, encompasses functions that can be categorized as social exposure and learning processes (Sørensen, 2007b). Theoretically, both are plausible and can be expected to occur. We (tentatively) test their validity and relative strength in post-hoc analyses.

## Data and Methods

### Data sources and sample

Our analysis is based on register data maintained by Statistics Denmark: the Integrated Database for Labor Market Research (IDA). These data are attractive for this study for several reasons. First, they cover everyone legally resident in Denmark and provide detailed yearly data at the individual level. Second, they cover a wide range of labor market phenomena, allowing us to construct workers' career histories including transitions between occupations and workplaces. Finally, IDA is a longitudinal matched employer-employee dataset which means that employees can be linked to employers over time. These unique features allow us to distinguish between employees and their employers at the workplace level, and to observe career changes over time.

We start by identifying new ventures hiring personnel and their respective founders. We exclude new organizations created as separations from other firms or mergers of existing firms. We also exclude part-time founders with no registered business address and new firms with no employees other than the founder. This likely excludes most necessity-driven, less committed, and less growth-oriented founders who would be unlikely to be entrepreneurial mentors.

In addition to the above sampling criteria, our analysis requires clear definitions of founders and joiners (Roach and Sauermann, 2015). We draw on the yearly classifications of

individuals' primary occupations and define founders as employers in a newly created venture that employs personnel. Job classifications confirm that the firm founder tends to head the new organization (e.g. occupy the top management/CEO role). We define joiners as employees (who are not family members – parents, spouses, or children) hired by the startup founder at entry or at a later date. We adopt two extra procedures to address the challenge in distinguishing founding team members from early joiners (see also Sørensen, 2007a). First, we focus on startups with single founders since founding members might be joiners wrongly registered as co-founders – although in a robustness check we obtain similar results for startups founded by teams of two or more founders. Second, we distinguish between early and late joiners and restrict our analyses to the latter, since this sample excludes possible co-founders.

We include all startups founded between 2003 and 2007 that hired at least one employee by the end of the entry year. Data for the years prior to 2003 are used to obtain the labor histories of founders and joiners. We focus on full-time joiners who are more likely to interact closely with and be affected by the firm founder. Including part-timers may also disqualify the sample because part-time workers may have the intention to start their own firm as a hybrid entrepreneur. However, robustness checks show that including part-time joiners does not change our findings significantly.

We follow employees from the moment they join the firm until they leave (possibly to immediately found their own firm) or until the last available year of information (2012 in our data). We track joiners' subsequent occupations and classify them as entrepreneurs according to a broad and a strict definition. The broad definition includes all joiners who become founders of new businesses with or without personnel (i.e. both self-employed and employer categories). The strict definition considers only joiners who found a firm hiring at least one employee, in line with

the definition of founders in our sample. This latter definition presumably excludes potential independent contractors who are less likely to engage seriously in new venture creation (Sørensen, 2007a, 2007b).

Our core sample includes 13,931 startups with a unique full-time founder, 29 percent of whom are female. We identify a total of 89,189 full-time joiners with no other primary occupation; 54,523 were hired after the startup year and are labeled "late joiners." About 2,000 full-time joiners become entrepreneurs (broad definition) immediately after leaving the firm, and 32 percent of these hire personnel (strict definition).[1] The share of women among those who become founders varies between 29 percent and 31 percent depending on the definition.

Table 1 presents descriptive statistics at the joiner-level and distinguishes joiners who became founders (column 1) from those who did not switch to an entrepreneurial career during the period observed (column 2). Column 3 reports the size and significance of the difference between groups. Table 1 also compares future founders with those who leave the firm for some other reasons than entrepreneurship (columns 4 and 5).[2] We observe a negative relationship between joiners' propensity to become founders and a strong presence of women in the startup – measured either by the presence of a female founder or by a greater representation of female peers among coworkers. However, if we analyze women separately we observe the opposite pattern: female joiners who become entrepreneurs more often worked in a female founded firm and had a larger share of female peers in the firm (table SA.2). These patterns are unlikely to be driven by differences in education or experience levels across male and female founders, since these tend to be rather similar (table SA.3, panel A). The observed patterns may be explained

[1] About 10% of those leaving the founder's startup firm and who become entrepreneurs engage in another occupation in parallel. Removing them from our sample does not significantly change our results.
[2] Comparable statistics for the subsample of late joiners are provided in the supplementary appendix SA.1.

partially by the different industry distributions of female and male founders (table SA.3, panel B), so all estimations include controls for the industry distribution of female and male-led firms in addition to all of the variables in table 1.

*** Table 1 here ***

Table 2 presents statistics for the outcome variable and provides initial evidence supportive of our first hypothesis: joiners working with same-gender founders are more likely to become entrepreneurs. Interestingly, gender gaps in entrepreneurship rates are evident, even in this particular group of employees who selected into startups. However, this gap is significantly smaller for ventures founded by women. The statistics further show that both male and female founders tend to hire a greater share of same-gender employees, possibly due to the gender composition in their industry, or to a preference for same-gender matches. To mitigate selection concerns, we use an econometric method which considers the correlation between joiners' and founders' unobserved traits, and perform several robustness checks to account for selective matching based on gender by employing inverse probability treatment weights (IPTW), instrumental variables, and a two-stage model which takes into account the endogeneity of matching as in Azoulay, Stuart, and Liu (2017).

*** Table 2 here ***

**Methods**

Both joiner's and founder's unobserved characteristics might (partly) drive a joiner's decision to become an entrepreneur. Joiners differ from each other in several aspects which we cannot observe such as innate ability, entrepreneurial talent, and preferences for certain work environments and social interactions. Likewise, founders likely differ in various unobserved attributes such as leadership style, mentoring skills, and entrepreneurial talent which might affect

a joiner's probability to pursue an entrepreneurial career. Furthermore, joiners may choose to work for certain founders and not for others, while founders select specific types of joiners they like. Therefore, the influence of founders on joiners might be different according to unobserved features driving their match. In other words, the unobserved traits of founders and joiners are possibly correlated, and their match is unlikely to be random (see also Eesley and Wang, 2017; Lazear *et al*., 2015, for similar issues in other contexts).

We leverage the longitudinal and hierarchical structure of our data to partially address these issues. Since we track all joiners from the moment they are hired until they leave the firm, joiners are "nested" (or clustered) within founders. We can therefore employ multi-level mixed-effects models (see Abowd, Kramarz, and Woodcock, 2008; Lazear *et al*., 2015; Woodcook, 2015) which allow us to measure two kinds of effects: a) fixed effects, i.e. standard regression coefficients (intercepts and slopes) describing the population as a whole, as in an ordinary regression, and b) random effects in the form of intercepts that can vary across individuals to account for unobserved heterogeneity at various levels.[3] By observing heterogeneous joiners nested within heterogeneous founders, we can add founder-level and joiner-level intercepts while still accounting for the fact that joiners are clustered within founders. This allows us to control for two important sources of bias. First, we control for heterogeneous organizational contexts captured by founder heterogeneity, which might affect joiners' transitions to entrepreneurship.

[3] The traditional random and fixed effects (RE, FE) estimators are not suitable alternatives for our analysis. First, RE would provide inconsistent estimates since we likely violate its rather strict assumptions (no relationship between observables and unobservables). Second, FE is not ideal since our key variable of interest (founder gender) is time-invariant for most joiners. We would be able to identify the coefficient of interest only for a small subsample of joiners, conditional on their mobility across firms with founders of different gender, or within-firm changes in employers which could be driven by other unobserved factors. Multi-level mixed-effects models account for the nested structure of our data – which is important since the intra-class correlations are significant in our case – and address unobserved heterogeneity at both the joiner and founder levels, but with much less restrictive identification assumptions than the traditional RE estimator (Abowd *et al*., 2008; Woodcook, 2015).

Second, given the hierarchical structure of the data, we allow each founder to have a unique influence on each joiner depending on the correlation between their unobserved traits.

We estimate multi-level mixed effects models for discrete time duration data. Formally, the probability of each joiner *i*, with founder *b*, leaving to become an entrepreneur in year *t+1*, is modeled as a function of different joiner-founder gender combinations, while controlling for joiner and founder characteristics (see table 1), year, region, and industry fixed effects, and both founder and joiner-by-founder unobserved heterogeneity. The baseline three-level mixed model for the joiner's probability of becoming a founder in *t+1* is modeled as:

$$\Pr(E_{ibt+1} = 1) = H(\beta_1 FM_{ib} + \beta_2 MF_{ib} + \beta_3 FF_{ib} + \boldsymbol{X}_{it}\boldsymbol{\alpha} + \boldsymbol{Z}_{bt}\boldsymbol{\delta} + \tau_t + \gamma_y + \mu_j + \lambda_r + \zeta_{ib}^{(2)} + \zeta_b^{(3)} + \varepsilon_{ib}) \qquad (1)$$

where $FM_{ib}$ is equal to 1 if the joiner is a woman and the founder is a man; $MF_{ib}$ is a dummy variable for the opposite gender combination (i.e. a male joiner working for a female founder); and $FF_{ib}$ is 1 if both joiner and founder are female. The coefficients of these three dummy variables measure the influence of the different gender combinations on the probability of a joiner becoming an entrepreneur after leaving the firm, relative to the baseline group of male joiners and male founder. The vectors $\boldsymbol{X}_{it}$ and $\boldsymbol{Z}_{bt}$ represent joiner and founder characteristics which can vary over time; $\tau_t$ are dummy variables for joiner tenure (in years); $\gamma_y$, $\mu_j$, and $\lambda_r$ are year, industry (2-digit), and region fixed effects; $\zeta_{ib}^{(2)}$ and $\zeta_b^{(3)}$ are the joiner-by-founder and founder-level random effects with zero mean and variances $\psi^{(2)}$ and $\psi^{(3)}$, respectively; $\varepsilon_{ib}$ is the level 1 error term; and $H(\cdot)$ is the inverse complementary log-logistic function. Time subscripts are omitted for simplicity of notation, but all explanatory variables refer to time *t*.

We acknowledge that this method does not account fully for selection in the founder-joiner match. We conduct various robustness checks to mitigate this concern. Besides estimating our baseline model in subsamples potentially less plagued by selection, we use IPTW,

instrumental variables, and a two-stage model to account for partially deliberate matching (see also Azoulay *et al.*, 2017).

## Results

### Same-gender founders and joiners' future transition to entrepreneurship

We start by estimating equation (1) for all the joiners in our sample. Table 3 shows the main results for both the broad and strict definitions of joiner transition to entrepreneurship. Columns 2 and 4 distinguish the subsample of late joiners, i.e. employees hired at least one year after firm foundation, which more precisely differentiates joiners from co-founders.

*** Table 3 here ***

The estimates confirm the descriptive results. On average, men are more likely than women to become entrepreneurs, in line with the evidence on a gender gap in entrepreneurship rates. However, a Wald test shows that this gap is significantly reduced for startups set up by joiners working with a female founder, especially when applying the stricter definition of entrepreneurship (i.e. founding ventures with personnel). This difference is caused by a *higher* likelihood of becoming a founder for women employed by a female rather than a male founder, and not by a *lower* probability of men becoming founders when working for a female rather than a male founder (the coefficients in the second row are negative, but at most marginally significant). These results provide partial support for Hypothesis 1 – for female but not male employees – and strong support for Hypothesis 2. Based on the average marginal effects for the subsample of late joiners, we conclude that the predicted female entrepreneurship probability is 30 percent higher if the founder is also a woman compared to if the founder is a man (89 percent higher using the stricter entrepreneurship definition). The coefficients of the control variables (provided in the supplementary appendix SA.4) are in line with prior evidence. As an illustration,

education and age influence the probability of becoming an entrepreneur positively (as in Koellinger *et al*., 2013), where the latter influence peaks at the age of 41 years for the broader entrepreneurship definition.

The last two rows in table 3 show significant and quite sizeable intra-class correlations. This implies that joiners working for the same founder are usually more similar to each other than joiners working for different founders, supporting our choice of a method that accounts for the nested structure of the data and the dependence among observations. Our models produce larger standard errors, and thus more conservative estimates than more standard methods such as linear regressions (OLS results in table SA.5 produce consistent findings).

**Robustness checks**

We summarize several robustness checks in table 4 and present them in Appendix tables. Our results hold when we a) include team-founded startups, b) measure founder influence by the cumulative time (in years) with a same-gender founder at work, c) include part-time employees, d) focus on subsamples where random matching between joiners and founders is more likely (e.g. joiners coming from closed or downsizing firms), and e) restrict the sample to surviving startups, confirming that the main result is not driven by a higher exit rate of female founders, which could push joiners into entrepreneurship. We next revisit gender sorting concerns.

*** Table 4 here ***

Table 2 provided some evidence of founder-joiner gender sorting in our sample. We regress each firm's share of same-gender workers on founder gender, controlling for industry, year, firm age, size, and skill composition, and find that female founders still have a slightly greater preference for same-gender employees compared to men founding firms with similar skill structures in similar industries. Yet, the difference is moderate and does not create a major

selection bias: female founders are 15 percent more likely than male founders to hire same-gender employees, corresponding only to one quarter of a standard deviation of the share of same-gender joiners in the sample. Our results hold if we apply IPTW to account for this apparently stronger preference for a same-gender match among female founders and joiners.

**Same-gender founder influence compared to other social interactions**

Before delving into the underlying mechanisms of founder influence, we compare the importance of same-gender founders to the social influences studied earlier such as of peers, parents, and spouses with entrepreneurship experience.[4] Employers are likely to differ from parents or peers because they share professional traits with the employee, have some authority based on life experience and professional knowledge (Lazear *et al*., 2015; Nanda and Sørensen, 2010), and have the ability to become a mentor (Kram and Isabella, 1985; Shapiro *et al*., 1978). We compare the relative strength of each of these social interactions by estimating baseline specifications (columns 2 and 4 in table 3) separately for male and female joiners, and extending them by including a) the share of (female and male) coworkers with entrepreneurship experience, b) a dummy variable for spouses with entrepreneurship experience, and c) two dummy variables for parental entrepreneurship (mother and father). Table 5 reports z-standardized coefficients to make size effects comparable.

*** Table 5 here ***

We find remarkable gender differences: for female joiners, the strongest influence on their entrepreneurship choice is clearly the female founder. The influence is more than twice as strong (using the broader definition, column 1) as the influence of entrepreneurial mothers,

[4] Note that we focus on employees who have joined an entrepreneurial firm, whereas earlier studies analyzed broader samples of individuals less exposed to an entrepreneurial setting.

which is (previously found to be) substantial too (Greene, Han, and Marlow, 2013; Lindquist *et al*., 2015).[5] Female founders turn out to have the strongest influence for women, especially for those founding a startup with personnel where entry barriers and gender stereotypes might be more pronounced. For male joiners, we confirm that both a father and male peers with entrepreneurial experience influence future entrepreneurship transitions most strongly (see also Kacperczyk, 2013; Lindquist *et al*., 2015), with comparable effect sizes.[6]

We next investigate the mechanisms explaining the sizeable influence of female founders on female joiners' future entrepreneurship choices.

**Mechanisms: Are Female Founders Role Models for their Female Joiners?**

**Heterogeneities in female founders' social influence**

The higher propensity of female joiners to try entrepreneurship after working with a female founder is a necessary but not sufficient condition to support role modeling as a mechanism. If female founders are meaningful role models, their influence must be amplified in particular settings, as predicted by Hypothesis 3.

First, we investigate how the influence of female (versus male) founders varies with their relative performance in the industry (table 6). We find that joiners' entrepreneurial choices are influenced more strongly by female founders running relatively high-performing firms. Second, we test whether the female founder influence changes depending on the numerical representation of women in the firm or industry (table 7). Female founders are most influential if they lead male-dominated teams (columns 1 and 2). We find similar patterns across industries (columns 3

[5] Yet, the paucity of entrepreneurial mothers in the current sample might reduce the estimation power and explain the low explanatory power here.

[6] A standard deviation increase in each variable improves men's likelihood of becoming a founder with personnel by 0.14 standard deviations. The standard deviations of *% Male coworkers with e-ship experience*, *Father ever entrepreneur* and *Strict e-ship definition* are, respectively, 0.189, 0.140, and 0.064 in the sample used for the last model of Table 5.

and 4): although the coefficients are not statistically different, the female founder influence is evident in male-dominated and gender balanced, but not in female-dominated, industries.[7]

*** Tables 6 and 7 here ***

These results resonate with the idea that women in male-dominated roles can be stronger sources of influence on other women if they can break gender stereotypes and biased expectations about their competence (Eagly and Karau, 2002) – for instance by exhibiting high performance (Dezsö and Ross, 2012; Yang and Triana, 2019), in line with Hypothesis 3a. Also, in environments with pronounced numerical underrepresentation, cohesion among minorities and social identification are stronger, which can facilitate interpersonal connections, and thus communication (Reagans, 2005, 2011) and mentoring (McGinn and Milman, 2013).

We next test how the female founder influence changes with the intensity of joiner-founder social identification, based on other shared attributes besides gender. Table 8 shows that female founders have a stronger influence on female joiners if both are similar in age and education background (Wald tests confirm statistical significance). Similarities in all dimensions tested (including birthplace and motherhood status) strengthen the female founder influence on female joiners: women are 60 to 90 percent more likely to pursue entrepreneurship after working with a female (versus a male) founder who is similar to themselves in any of these characteristics, compared to up to 30 percent when employed by female founders dissimilar in age, educational background, or birth place. Thus, we find strong support for Hypothesis 3b.

Finally, a lack of exposure to entrepreneurs might increase the individual's entrepreneurship-relevant resources gap (Tonoyan *et al.*, 2019) and leave more room for a role

[7] If same-gender founders are stronger role models in a (gender) minority context, then male founders should have a stronger influence on male joiners in female-dominated settings too. Table SA.11 supports this, but less strongly than among women.

model to provide mentoring and valuable information updates (Kossek *et al.*, 2017). We test whether female joiners who (i) previously worked in a mature firm, and (ii) do not have an entrepreneurial mother are more strongly influenced by a female founder than other women in the startup. First, mature firms are less likely than young firms to promote entrepreneurial behavior among employees (Dobrev and Barnett, 2005; Sørensen, 2007a; Sørensen and Fassiotto, 2011). Second, an entrepreneurial parent can provide an entrepreneurial career preview which instills a preference for a similar career path (Greenberg, 2014; Lentz and Laband, 1990) especially within same-gender pairs (Greene *et al*., 2013; Lindquist *et al*., 2015). Table 9 shows that the female founder influence is significantly larger when female joiners have less previous exposure to entrepreneurship via those two channels, as theorized in Hypothesis 3c. Taken together, our findings provide consistent support for role modeling (broadly defined) as the mechanism explaining the female founder influence.[8]

*** Tables 8 and 9 here ***

**Alternative mechanisms**

Female founders might increase the likelihood of their female employees becoming entrepreneurs due to *push* factors. Women could be more often induced to leave organizations led by female founders, if female employers somehow favor male employees by acting as "queen bees" or "cogs in the machine," creating a hostile environment for other women in the firm (e.g. Srivastava and Sherman, 2015). If so, female joiners who leave might become entrepreneurs to escape wage inequality, risk of displacement, or a dissatisfying work environment. However, we

[8] In additional analyses, we tested whether the female founder influence is conditioned by the length of time in the firm. We found a significant link between founder gender and joiner's future transition to entrepreneurship only for joiners who stayed with a female founded firm for two or more years, but not just one year (table SA.12). This is in line with the role modeling mechanism which requires some minimum exposure and personal interaction to produce significant changes in preferences. Moreover, it gives us additional confidence that selection is not the main driver of our results, but a "treatment" instead.

found no evidence of push factors playing a role. On the contrary, table 10 indicates that female joiners are relatively more protected when working with female founders: they are less likely to move to another job or to unemployment, and face a smaller wage differential relative to their male counterparts in the firm. Men, in contrast, are about 17 (22) percent more likely to move to another job (unemployment) when working with a female, rather than a male, founder. We therefore discard the alternative explanation that female joiners become entrepreneurs to escape less friendly or discriminatory firms led by female founders.

We still have not fully excluded the possibility that the female founders effect is due to selection instead of treatment effects. In the case of selection effects, female employees who join female founders may have a greater preference for entrepreneurship *ex-ante* (unobservable to us). Treatment effects would instead be the prevalent explanation in case female joiners working with female founders experience a change in preferences for entrepreneurship (e.g. via role modeling/mentoring). The heterogeneities we find in female founders' influence (in tables 6 to 9) seem to be indicative of stronger treatment than selection effects. Besides, our econometric approach mitigates selection concerns (albeit not perfectly) by adjusting for correlations between founders' and joiners' unobserved traits.[9]

Nevertheless, we run additional tests to mitigate selection concerns. If selection explains our results, female employees deliberately leaving prior jobs to join a female founder should be more likely to become entrepreneurs later than those joining for exogenous reasons. While we cannot measure motivations, we can distinguish joiners who lost their job due to prior firm closure from those previously employed in a relatively stable firm. We deem it likely that people

[9] The ideal empirical design would randomly match joiners and founders independently of their gender, but this is unrealistic in this setting. However, field and natural experiments conducted in other contexts document significant treatment effects resembling role modeling and mentoring (e.g. Eble and Hu, 2019; Gershenson *et al.*, 2018).

who have lost their job accept more random job offers than people who have the choice of staying at their previous employer. The results show that "forced" and "voluntary" joiners of a female founder's venture (as we define them) are equally likely to become entrepreneurs in the next stage (the coefficients are not statistically different in model 1 of table 11). This mitigates our selection concerns. Next we consider joiners' prior contact to female employers in startup settings, which might reveal a preference for working with female entrepreneurs. We find that female founders play a role only for those lacking such exposure (table 11, column 2). Hence, again we conclude that selection is unlikely to fully drive our findings.

Finally, we address the endogenous gender sorting in founder-joiner matches in two ways to verify whether our estimates are indeed mainly driven by a treatment effect. First, we instrument gender-matches with two variables: whether a founder and joiner were born in the same region, and whether both have (or none has) children. Both variables increase social identification and significantly predict gender sorting. In contrast, they are unrelated to joiners' future choices of entrepreneurship, being valid instruments according to the Sargan test of overidentifying restrictions (table 12, columns 1 and 2). Second, we address selection concerns by admitting that the matches of founders and joiners that are observed are only the realized matches, possibly driven by unobserved preferences. We follow Azoulay *et al.* (2017) and estimate a Heckman two-stage model that considers the observation of only actual (vs. potential but never realized) matches as a case of sample selection. We use the two instruments described above as exclusion restrictions in the first stage, given they are significant predictors of pairing between joiners and founders, but not of future entrepreneurial career choices. In constructing the set of counterfactual ties between each joiner and eligible founders, we consider startups in the same 2-digit industry and year that hired at least one employee living in the same

municipality as the focal joiner. On average, each joiner has 18 counterfactual startups (and founders) which they could have joined instead. We then jointly estimate the selection equation (Probit model for realized versus counterfactual matches) and the outcome equation (transition to entrepreneurship). Table 12 (columns 3 and 4) reports the estimated coefficient of *Female Founder* obtained from the outcome equation.

Both methods still result in significant differences in joiners' propensities to become entrepreneurs depending on founder gender. To conclude, while we cannot completely rule out selection effects, we are confident that the main explanation for our findings is role modeling.

*** Tables 10 to 12 here ***

**Narrowing down the role modeling mechanism**

We have so far employed a broad definition of role modeling which includes providing mentoring, knowledge, and inspiration. It would be interesting to identify which aspect of role modeling explains why female joiners in startups with female founders are more prone to become entrepreneurs. We describe tentative findings from two explorative tests using our data.

We first explore whether role models transfer knowledge and skills. We test how the performance of female joiners who start their own firms depends on the gender of their previous employer. We find no differences in early performance between joiners who had worked with a female versus a male founder besides a greater probability of hiring personnel, which might be a signal of stronger commitment or higher growth aspirations (table SA.13). Neither sales nor survival in entrepreneurship is significantly affected by founder gender.

We next consider whether role models might convey industry-specific human or social capital. If so, joiners should be more likely to start a new firm in the same industry as their previous employer (see also Sørensen, 2007b) when having an employer who is a role model

than when lacking an employer-role model. However, we find the female joiners' decision to start up in the same industry to be independent of previous employer gender (table SA.14).

Although these insignificant results might be driven by the small sample size, they hint at the transmission of skills or industry-specific knowledge not being the main function of female founders. Our collective results suggest that the influence of female founders is related mostly to the transmission of intangible assets such as preferences for certain job attributes or awareness of entrepreneurship as a viable career path, more than the effect on entrepreneurial skills (see also Greenberg, 2014 applied to entrepreneurial parents and their children).

**Discussion and Conclusions**

Role congruity and stereotype threat theories suggest that female underrepresentation in male-dominated roles is partly driven by women's lack of identification with occupations that are stereotypically masculine, and lower confidence in both their abilities and their success prospects (Barbulescu and Bidwell, 2013; Eble and Hu, 2019; Kossek *et al*., 2017; Thébaud, 2010). This inevitably shapes women's preferences for particular career paths such as entrepreneurship.

By acknowledging that both social interactions (Nanda and Sørenson, 2010) and organizations (Sørensen and Fassiotto, 2011) shape individual preferences for entrepreneurship, and integrating theories of gender inequality in career choices (Kossek *et al.*, 2017) with evidence on the value of workplace relationships for career advancement (Colbert *et al*., 2016; McGinn and Milkman, 2013), we propose that startup founders can be a particularly relevant source of influence on joiners' preferences for entrepreneurship. Drawing on social identification theory, we predict that this influence might be more pronounced in same-gender matches and stronger for women based on (broadly defined) role modeling mechanisms.

We find a strong and robust influence of female founders on the future entrepreneurial career decisions of female joiners, which is surprisingly greater than other social interactions studied so far, such as peer effects and parental role models. Moreover, we find that female founders are particularly influential when their businesses perform and are run in male-dominated settings (which might grant them greater legitimacy as entrepreneurs). Their influence is also stronger if there is strong social identification between founder and joiner (by virtue of belonging to a minority and having characteristics other than gender in common), and for joiners with wider entrepreneurship-relevant resource gaps due to lack of exposure to entrepreneurial career previews. These findings are indicative of a treatment effect that female founders can have on female joiners – one that resembles role modeling in a broad sense, including functions such as mentoring, teaching, motivating, and acting as an example (e.g. Bosma *et al*., 2012; Shapiro *et al*., 1978). While our data do not allow us to completely disentangle the specific functions underlying founder influence, our collective tests suggest that female founders provide mostly motivation and inspiration which help other women to update their beliefs and fill in informational gaps, rather than transferring knowledge or resources.

We provide several contributions to existing theory. First, by extending our understanding of the role of organizational context in shaping individual preferences for entrepreneurial careers, we contribute to career dynamics theory more broadly and to entrepreneurship theories specifically (e.g. Carnahan *et al.*, 2012; Sørensen and Fassiotto, 2011). We theorize about and provide empirical evidence on the role of a particular feature of the organizational context: the exposure to certain types of employers in startup settings and their capacity to act as role models. This capacity varies for different combinations of employees and employers, consistent with social identification and organizational demography theories. With

these findings we respond to calls for research on "*how working side by side with the organization's founders affects the propensity of other employees to consider starting their own ventures*" (Burton, Sørensen, and Dobrev, 2016, p. 242), and help explain why "*two people working for the same firm may have different risks of becoming entrepreneurs if they have been exposed to different work conditions*" (Sørensen and Fassiotto, 2011, p. 1328).

By shedding new light on possible ways to enhance female participation in entrepreneurship, our study contributes also to theories of gender inequality in entrepreneurship, and particularly to debates on the value of social networks, role models, and mentors as interventions to help women "lean in" more often, shape their preferences and mitigate gender bias and stereotypes (Kossek *et al.*, 2017). Although entrepreneurship involves more risk and requires different resources than other occupations or individual decisions, our study might have implications for other settings involving minorities, given the cumulative evidence on the value of role models for underrepresented groups throughout their lifecycle (e.g. Blau *et al.*, 2010; Eble and Hu, 2019; Gershenson *et al.*, 2018; Porter and Serra, 2018).

This study has links also to theories suggesting that women in top management roles can contribute to changing social norms and reducing the relative disadvantages which often block female workers' career progress in organizations (e.g. Abraham, 2017; Cohen and Broschak, 2013; McGinn and Milkman, 2011). Although we study a rather specific setting (new ventures in which female founders and female joiners work together), our findings are aligned to those theories and concur with the assumption that one potential mechanism through which female representation in top management impacts firm performance might be their influence on employees' preferences and motivation (e.g. Dezsö and Ross, 2012; Lyngsie and Foss, 2017). Understanding whether and how female leaders can influence employees' motivations and

commitment and how this might mediate their impact on organizational outcomes might be a promising research avenue to unpack the multifaceted role of female representation in top hierarchies of organizations.

Finally, this study adds to a rich research stream on early team formation and the so-called founder imprinting effect (e.g. Beckman *et al.*, 2007; Beckman and Burton, 2008, 2011). We confirm that homophily preferences may partly drive the match between founders and joiners and hence shape an organization's demography. Besides possibly affecting several firm milestones (e.g. Beckman *et al.*, 2007), we show that founders and their firm's demographic composition can also imprint the future of individuals in them through mechanisms not uncovered before.

Our findings have practical implications as well, particularly for current debates on role models as policy tools. The historical lack of female entrepreneurs – and hence role models – is pointed as a key cause for the paucity of women in entrepreneurship (Markussen and Røed, 2017). Female role models might attenuate gendered perspectives, stereotypes, and women's general disadvantages (e.g. in raising VC funding – see Guzman and Kacperczyk, 2019), and provide the missing incentives for other women (Thébaud, 2010; Yang and Triana, 2019). Female founders acting as role models could have a multiplier effect by narrowing the gender gap in new venture creation both directly and indirectly.

Additionally, our study indicates that entrepreneurial role models may fulfill different functions for men and women. First, the demand for and openness to entrepreneurial role models may be greater among women due to their lack of exposure to entrepreneurship and their perception of belonging to a low-status group due to gender stereotypes (Yang and Triana, 2019). Second, the supply of role models might be greater among women due to activist choice

homophily according to which members of minority groups choose to support each other given their perceptions of common group-level barriers (Greenberg and Mollick, 2017). While we cannot disentangle these demand and supply effects, we hope to encourage research on this topic.

We acknowledge some other limitations of our study. First, while startups provide an appropriate setting to investigate whether and how founders affect joiners' future entrepreneurship transitions, we recognize that joiners of young firms may differ from employees in established companies (e.g. Sauermann, 2018). This issue is mitigated by the fact that we do not look only at early hires but also include employees joining the firm later. However, more research in other settings is needed to verify the external validity of our findings.

Second, our data limit our ability to infer the motivations of both joiners and founders driving their match. We have addressed the issue in multiple ways, and we are confident that selection is not the main driver of our findings. Role modeling is likely to be a crucial mechanism underlying female founder influence. We can define role modeling only in broad terms encompassing several functions, and can only provide tentative evidence supporting a narrower definition of role modeling due to data limitations. We avoid any causal interpretations and invite future research to delve more into the functions of role models in entrepreneurship.

An additional concern in our setting is that founders might be perceived as peers rather than employers depending on the task division between founder and joiner. However, we found similar effects for later joiners who are less likely to perceive the founder as a peer. In this case, by being the employer and playing a leadership role in the firm, the founder is likely to be perceived as hierarchically superior, as someone who has achieved a social position which the joiner has yet to achieve, and thus, as a role model rather than a peer. Moreover, we found real

peers (co-workers with prior entrepreneurial experience) to have virtually no influence on female joiners' decision to embark on entrepreneurship.

Finally, our findings do not offer a conclusive answer about how role models might help narrowing the gender gap in venture performance. We found no significant association between founder gender and female joiners' future entrepreneurial performance in the short run. It might be that the learning effects possibly accruing from the exposure to role models take longer to realize, or are conditional on some circumstances (e.g. industry similarity). Future research could try to identify which factors improve joiners' chances of learning from role models and perform better in their own ventures.

On a related note, it would be interesting to analyze the implications of joiners' exit decisions for the source firm. Employee entrepreneurship is demonstrated to have a large adverse impact on the source firm performance (Campbell *et al.*, 2012) which might suggest that being a role model could be a double-edged sword for female entrepreneurs if joiners' exits are detrimental to their own firm success. This might help explain the gender gap in entrepreneurial performance. We hope this study paves the way for more research on these topics.

**REFERENCES**


Abowd JM, Kramarz F, Woodcock S. 2008. Econometric analyses of linked employer-employee data. In *The Econometrics of Panel Data,* Mátyás L, Sevestre P (eds). Springer: Berlin; vol. 22: 727-760.

Abraham M. 2017. Pay formalization revisited: Considering the effects of manager gender and discretion on closing the gender wage gap. *Academy of Management Journal* **60**(1): 29-54.

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

Artz BM, Taengnoi S. 2016. Do women prefer female bosses? *Labour Economics* **42**(2): 194-202.

Artz BM, Goodall AH, Oswald AJ. 2017. Boss competence and worker well-being. *Industrial and Labor Relations Review* **70**(2): 419-450.

Azoulay P, Stuart TE, Liu CC. 2017. Social influence given (partially) deliberate matching: Career imprints in the creation of academic entrepreneurs. *American Journal of Sociology* **122**(4): 1223-1271.

Barbulescu R, Bidwell M. 2013. Do women choose different jobs from men? Mechanisms of application segregation in the market for managerial workers. *Organization Science* **24**(3): 737-756.

Beckman CM, Burton MD. 2011. Bringing organizational demography back in: Time, change and structure in top management team research. In M. Carpenter (Ed.), *Handbook of Research on Top Management Teams*. Edward Elgar.

Beckman CM, Burton MD. 2008. Founding the future: Path dependence in the evolution of top management teams from founding to IPO. *Organization Science* **19**(1): 3-24.

Beckman CM, Burton MD, O'Reilly C. 2007. Early teams: The impact of team demography on VC financing and going public. *Journal of Business Venturing* **22**(2): 147-173.

Blau FD, Currie JM, Croson RTA, Ginther DK. 2010. Can mentoring help female assistant professors? Interim results from a randomized trial. *American Economic Review* **100**(2): 348-352.

Bosma N, Hessels J, Schutjens V, van Praag M, Verheul I. 2012. Entrepreneurship and role models. *Journal of Economic Psychology* **33**(2): 410-424.

Burton MD, Sørensen JB, Dobrev SD 2016. A careers perspective on entrepreneurship. *Entrepreneurship Theory Practice* **40**(2): 237-247.

Campbell BA, Ganco M, Franco AM, Agarwal R. 2012. Who leaves, where to, and why worry? Employee mobility, entrepreneurship and effects on source firm performance. *Strategic Management Journal* **33**(1): 65-87.

Carnahan S, Agarwal R, Campbell BA. 2012. Heterogeneity in turnover: The effect of relative compensation dispersion of firms on the mobility and entrepreneurship of extreme performers. *Strategic Management Journal* **33**(12): 1411-1430.

Carnahan S, Kryscynski D, Olson D. 2017. When does corporate social responsibility reduce employee turnover? Evidence from attorneys before and after 9/11. *Academy of Management Journal* **60**(5): 1932-1962.

Chatman JA, O'Reilly CA. 2004. Asymmetric reactions to work group sex diversity among men and women. *Academy of Management Journal* **47**(2): 193-208.

Cohen LE, Broschak JP. 2013. Whose jobs are these? The impact of the proportion of female managers on the number of new management jobs filled by women versus men. *Administrative Science Quarterly* **58**(4): 509-541.
Cohen LE, Broschak JP, Haveman HA. 1998. And then there were more? The effect of organizational sex composition on the hiring and promotion of managers. *American Sociological Review* **63**(5): 711-727.
Cohen P N, Huffman ML. 2007. Working for the women? Female managers and the gender wage gap. *American Sociological Review* **72**(5): 681-704.
Colbert AE, Bono JE, Purvanova RK. 2016. Flourishing via workplace relationships: Moving beyond instrumental support. *Academy of Management Journal* **59**(4): 1199-1223.
Dezsö CL, Ross DG. 2012. Does female representation in top management improve firm performance? A panel data investigation. *Strategic Management Journal* **33**(9): 1072-1089.
Dezsö CL, Ross DG, Uribe J. 2016. Is there an implicit quota on women in top management? A large-sample statistical analysis. *Strategic Management Journal* **37**(1): 98-115.
Ding WW, Murray F, Stuart TE. 2006. Gender differences in patenting in the academic life sciences. Science **313**(5787): 665-667.
Ding WW, Murray F, Stuart TE. 2013. From bench to board: Gender differences in university scientists' participation in corporate scientific advisory boards. *Academy of Management Journal* **56**(5): 1443-1464.
Dobrev SD, Barnett WP. 2005. Organizational roles and transition to entrepreneurship. *Academy of Management Journal* **48**(3): 433-449.
Eagly AH, Karau SJ. 2002. Role congruity theory of prejudice toward female leaders. *Psychological Review* **109**(3): 573-598.
Eble A, Hu F. 2019. Stereotypes, role models, and the formation of beliefs. Working Paper.
Eesley C, Wang Y. 2017. Social influence in career choice: Evidence from a randomized field experiment on entrepreneurial mentorship. *Research Policy* **46**(3): 636-650.
Ely RT. 1994. The effects of organizational demographics and social identity on relationships among professional women. *Administrative Science Quarterly* **39**(2): 203-238.
Gershenson S, Hart CMD, Hyman J, Lindsay C, Papageorge NW. 2018. The long-run impacts of same-race teachers. NBER Working Paper No. 25254.
Gibson DE. 2004. Role models in career development: New directions for theory and research. *Journal of Vocational Behaviour* **65**(1): 134-156.
Greenberg J. 2014. What you value or what you know? Which mechanism explains the intergeneration transmission of business ownership expectations? In H. Greve and MDL Seidel (Eds.), *Adolescent Experiences and Adult Work Outcomes: Connections and Causes*. Emerald Pub. Ltd.
Greenberg J, Mollick E. 2017. Activist choice homophily and crowdfunding of female founders. *Administrative Science Quarterly* **62**(2): 341-374.
Greene FJ, Han L, Marlow S. 2013. Like mother, like daughter? Analyzing maternal influences upon women's entrepreneurial propensity. *Entrepreneurship Theory & Practice* **37**(4): 687-711.
Guzman J, Kacperczyk A. 2019. Gender gap in entrepreneurship. *Research Policy*. DOI: 10.1016/j.respol.2019.03.012
Halaby CN. 2003. Where job values come from: family and schooling background, cognitive ability and gender. *American Sociological Review* **68**(2): 251-278.

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.
Ibarra H. 1997. Paving an alternative route: Gender differences in managerial networks. *Social Psychology Quarterly* **60**(1): 91-102.
Ibarra H. 1999. Provisional selves: Experimenting with image and identity in professional adaptation. *Administrative Science Quarterly* **44**(4): 764-791.
Kacperczyk A. 2013. Social influence and entrepreneurship: The effect of university peers on entrepreneurial entry. *Organization Science* **24**(3): 1-20.
Kleinbaum AM, Stuart TE, Tushman ML. 2011. Discretion within constraint: homophily and structure in a formal organization. *Organization Science* **24**(5): 1316-1336.
Koellinger P, Minniti M, Schade C. 2013. Gender differences in entrepreneurial propensity. *Oxford Bulletin of Economic Statistics* **75**(2): 214-234.
Kofoed MS, McGovney E. 2017. The effect of same-gender and same-race role models on occupational choice: Evidence from randomly assigned mentors at WestPoint. *Journal of Human Resources*. DOI: 10.3368/jhr.54.2.0416.7838R1.
Kogut B, Colomer J, Belinky M. 2014. Structural equality at the top of the corporation: Mandated quotas for women directors. *Strategic Management Journal* **35**(6): 891-902.
Kossek EE, Su R, Wu L. 2017. "Opting out" or "Pushed out"? Integrating perspectives on women's career equality for gender inclusion and interventions. *Journal of Management* **43**(1): 228-254.
Kram KE, Isabella L. 1985. Mentoring alternatives: The role of peer relationships in career development. *Academy of Management Journal* **28**(1), 110-132.
Lazear E, Shaw KL, Stanton CT. 2015. The value of bosses. *Journal of Labor Economics* **33**(4): 823-861.
Lee PM, James EH. 2007. She'-Eos: Gender effects and investor reactions to the announcements of top executive appointments. *Strategic Management Journal* **28**(3): 227-241.
Lentz BF, Laband D. 1990. Entrepreneurial success and occupational inheritance among proprietors. *Canadian Journal of Economics* **23**(3): 563-579.
Lindquist M, Sol J, van Praag M. 2015. Why do entrepreneurial parents have entrepreneurial children? *Journal of Labor Economics* **33**(2): 269-296.
Lyle DS, Smith JZ. 2014. The effect of high-performing mentors on junior officer promotion in the US Army. *Journal of Labor Economics* **32**(2): 229-258.
Lyngsie J, Foss N. 2017. The more, the merrier? Women in top management teams and entrepreneurship in established firms. *Strategic Management Journal* **38**(3): 487-505.
Lyons E, Zhang L. 2017. The impact of entrepreneurship programs on minorities. *American Economic Review Papers & Proceedings* **107**(5): 303-307.
Lyons E, Zhang L. 2018. Who does (not) benefit from entrepreneurship programs? *Strategic Management Journal* **39**(1): 85-112.
Markussen S, Røed K. 2017. The gender gap in entrepreneurship – The role of peer effects. *Journal of Economic Behaviour & Organization* **134**(1): 356-373.
McGinn KL, Milkman KL. 2013. Looking up and looking out: Career mobility effects of demographic similarity among professionals. *Organization Science* **24**(4): 1041-1060.
McPherson M, Lynn S, Cook JM. 2001. Birds of a Feather: Homophily in Social Networks. *Annual Review of Sociology* **27**(1): 415–444.
Miller DR, Swanson GE. 1958. The changing American parent: A study in the Detroit area. Oxford, England: Wiley.

Moore G. 1990. Structural determinants on men's and women's personal networks. *American Sociological Review* **55**(5):726-735.
Murphy MC, Steele CM, Gross JJ. 2007. Signaling Threat: How situational cues affect women in math, science, and engineering settings. *Psychological Science* **18**(10): 879-885.
Nanda R, Sørensen JB. 2010. Workplace peers and entrepreneurship. *Management Science* **56**(7): 1116-1126.
Porter C, Serra D. 2018. Gender differences in the choice of major: The importance of female role models. Working Paper.
Pryor C, Webb JW, Ireland RD, Ketchen DJ. 2016. Toward an integration of the behavioral and cognitive influences on the entrepreneurship process. *Strategic Entrepreneurship Journal* **10**(1): 21-42.
Reagans R. 2005. Identity and competition: Predicting tie strength from demographic data. *Management Science* **51**(9): 1374-1383.
Reagans R. 2011. Close encounters: Analyzing how social similarity and propinquity contribute to strong network connections. *Organization Science* **22**(4): 835-849.
Roach M, Sauermann H. 2015. Founder or joiner? The role of preferences and context in shaping different entrepreneurial interests. *Management Science* **61**(9): 2160-2184.
Sauermann H, Cohen WM. 2010. What makes them tick? Employee motives and firm innovation. *Management Science* **56**(12): 2134-2153.
Sauermann H. 2018. Fire in the belly? Employee motives and innovative performance in start-ups versus established firms. *Strategic Entrepreneurship Journal* **12**(4): 423-454..
Shahriar AZM. 2018. Gender differences in entrepreneurial propensity: Evidence from matrilineal and patriarchal societies. *Journal of Business Venturing* **33**(6):762-779.
Shapiro E, Haseltine F, Rowe M. 1978. Moving up: Role models, mentors, and the 'patron system'. *Sloan Management Review* **6**(1): 19–47.
Sørensen JB. 2007a. Bureaucracy and entrepreneurship: Workplace effects on entrepreneurial entry. *Administrative Science Quarterly* **52**(3): 387-412.
Sørensen JB. 2007b. Closure and exposure: Mechanisms in the intergenerational transmission of self-employment. In *The Sociology of Entrepreneurship*. *Research in Sociology of Organizations,* Ruef M, Lounsbury M (eds). Emerald Group Publishing Limited, **25**: 83-124.
Sørensen JB, Fassiotto MA. 2011. Organizations as fonts of entrepreneurship. *Organization Science* **22**(5): 1322-1331.
Srivastava SB, Sherman EL. 2015. Agents of change or cogs in the machine? Reexamining the influence of female managers on the gender wage gap. *American Journal of Sociology* **120**(6): 1778-1808.
Thébaud S. 2010. Gender and entrepreneurship as a career choice: do self-assessments of ability matter? *Social Psychology Quarterly* **73**(3): 288-304.
Thébaud S. 2015. Business as plan B: Institutional foundations of gender inequality in entrepreneurship across 24 industrialized countries. *Administrative Science Quarterly* **60**(4): 671-711.
Tonoyan V, Strohmeyer R, Jennings JE. 2019. Gender gaps in perceived start-up ease: Implications of sex-based labor market segregation for entrepreneurship across 22 European countries. *Administrative Science Quarterly*. DOI: 10.1177/0001839219835867.
Woodcock SD. 2015. Match effects. *Research in Economics* **69**(1): 100-121.
Yang T, Triana MC. 2019. Set up to fail: Explaining when women-led businesses are more likely to fail. *Journal of Management* **45**(3): 926-954.

# TABLES

**Table 1.** Summary statistics at the joiner-level, according to their decision to enter entrepreneurship afterwards [a] (all full-time joiners)

| | (I) Future founders | (II) Non-founders | Difference (I-II) | | (III) Movers (not to e-ship) | Difference (I-III) | |
|---|---|---|---|---|---|---|---|
| | N=1,966 | N=87,223 | | | N=44,368 | | |
| ***Joiner characteristics*** | | | | | | | |
| Female joiner | 0.319 | 0.516 | -0.197 | (0.000) | 0.522 | -0.203 | (0.000) |
| Age | 35.20 | 33.08 | 2.129 | (0.000) | 31.41 | 3.799 | (0.000) |
| ≤ Secondary Education | 0.436 | 0.548 | -0.112 | (0.000) | 0.573 | -0.137 | (0.000) |
| Vocational Education | 0.394 | 0.306 | 0.088 | (0.000) | 0.289 | 0.105 | (0.000) |
| Short-medium higher education/Bachelor | 0.122 | 0.110 | 0.013 | (0.049) | 0.103 | 0.019 | (0.000) |
| Master or PhD | 0.048 | 0.036 | 0.012 | (0.011) | 0.035 | 0.014 | (0.003) |
| Married | 0.397 | 0.303 | 0.094 | (0.000) | 0.272 | 0.125 | (0.000) |
| Number of children | 1.012 | 1.041 | -0.028 | (0.289) | 1.089 | -0.077 | (0.005) |
| Number of different workplaces in the past [b] | 6.447 | 6.015 | 0.432 | (0.000) | 5.546 | 0.901 | (0.000) |
| Years in unemployment (cumulative sum) | 1.876 | 1.580 | 0.296 | (0.000) | 1.511 | 0.365 | (0.000) |
| Worked in a young firm (previous 5 years) [c] | 0.427 | 0.335 | 0.091 | (0.000) | 0.337 | 0.090 | (0.000) |
| Worked in a micro firm (previous 5 years) [c] | 0.699 | 0.571 | 0.128 | (0.000) | 0.589 | 0.114 | (0.000) |
| Worked in a large firm (previous 5 years) [c] | 0.122 | 0.171 | -0.049 | (0.000) | 0.169 | 0.047 | (0.000) |
| Later joiners (entering after startup year) | 0.500 | 0.614 | 0.114 | (0.000) | 0.517 | -0.017 | (0.129) |
| ***Workplace characteristics*** | | | | | | | |
| Firm size (log of employment) | 1.825 | 2.785 | -0.960 | (0.000) | 2.734 | -0.909 | (0.000) |
| Share of female workers in the workforce | 0.385 | 0.512 | -0.127 | (0.000) | 0.513 | -0.128 | (0.000) |
| ***Founder characteristics*** | | | | | | | |
| Founder age | 39.47 | 42.19 | -2.720 | (0.000) | 41.52 | -2.054 | (0.000) |
| Female founder | 0.275 | 0.320 | -0.045 | (0.000) | 0.317 | -0.042 | (0.000) |
| Number of different workplaces in the past [b] | 7.720 | 8.339 | -0.619 | (0.000) | 8.233 | -0.513 | (0.000) |
| Years in unemployment (cumulative sum) | 1.524 | 1.572 | -0.047 | (0.359) | 1.554 | -0.030 | (0.557) |
| Number of different workplaces as an employer | 2.396 | 2.744 | -0.348 | (0.000) | 2.588 | -0.192 | (0.000) |

[a] All these variables are measured at the time of joiner's entry into the firm. "Future founders" refer to joiners entering entrepreneurship according to the broader definition (self-employment and founders of new ventures hiring at least one employee). [b] It includes all workplaces, including those where the individual had short-term and part-time/secondary jobs. [c] Young, micro and large firms defined as firms up to 10 years old, up to 10 employees, and more than 100 employees, respectively. P-values in parentheses.

**Table 2.** Share of female and male employees entering entrepreneurship in male- and female-led startups [a]

| | Female founders | Male founders |
|---|---|---|
| Share of female employees | 0.659 | 0.340 |
| Share of female employees becoming entrepreneurs | 0.032 | 0.023 |
| Share of male employees becoming entrepreneurs | 0.054 | 0.062 |
| Difference (gender gap in entrepreneurship entry rate) | -0.022 | -0.039 |

[a] Statistics based on all full-time joiners; similar patterns are observed when restricting the analysis to late full-time joiners.

**Table 3.** Founder-joiner gender match and joiners' future transition to entrepreneurship (full-time joiners only)

| | Broad e-ship definition | | Strict e-ship definition | |
|---|---|---|---|---|
| | All FT joiners | Late FT joiners | All FT joiners | Late FT joiners |
| F Joiner & M Founder | -1.2223 | -1.3683 | -1.2983 | -1.3055 |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| M Joiner & F Founder | -0.0966 | -0.2755 | -0.2343 | -0.0515 |
| | (0.444) | (0.057) | (0.200) | (0.817) |
| F Joiner & F Founder | -0.7620 | -1.0271 | -0.5660 | -0.6182 |
| | (0.000) | (0.000) | (0.005) | (0.012) |
| Observations | 154,590 | 92,605 | 151,452 | 91,352 |
| Log Likelihood | -8,012.5 | -4,003.5 | -2,934.9 | -1,467.6 |
| Wald test of equality of coefficients (F Joiner & M Founder = F Joiner & F Founder) | 14.04(0.000) | 4.45(0.035) | 15.51(0.001) | 7.26(0.007) |
| Founder Intra-Class Correlation | 0.1306 | 0.0830 | 0.1326 | 0.1167 |
| Joiner \| Founder Intra-Class Correlation | 0.6381 | 0.5690 | 0.7772 | 0.6541 |

Three-level mixed complementary log-logistic models. P-values in parentheses. F (M) stands for Female (Male). All the specifications control for workers' demographic and family characteristics, tenure, previous labor experience (including characteristics (size and age) of previous workplaces), current workplace characteristics (size, share of female employees), founder's characteristics (age, previous unemployment spells, experience in employment and as employer), as described in Table 1. Industry, region, and year fixed effects are also included.

**Table 4.** Summary of robustness checks and sensitivity analyses to baseline results

| Robustness check/Sensitivity Analysis: | Reported in: |
|---|---|
| Estimations including startups with multiple founders | SA.6 |
| Alternative measure for joiners' exposure to same-gender founders | SA.7 |
| Alternative sub-samples: | |
| - Including part-time joiners | SA.8-a) |
| - Joiners coming from closed or downsizing firms | SA.8-b) |
| - Excluding startups whose founder left and was replaced by another employer | SA.8-c) |
| - Startups surviving until the end of the observation period | SA.8-d) |
| Analysis of non-random (gender) selection | SA.9 |
| Applying Inverse Probability Treatment Weights accounting for gender sorting in the founder-joiner match | SA.10 |

All these robustness checks are provided in a Supplementary Appendix.

**Table 5.** Comparing same-gender founders, with same-gender peers, spouses and parents in entrepreneurship

| | Women | | Men | |
|---|---|---|---|---|
| | Broad e-ship definition | Strict e-ship definition | Broad e-ship definition | Strict e-ship definition |
| Same-gender Founder | 0.2202 | 0.4818 | 0.0842 | 0.1331 |
| | (0.002) | (0.000) | (0.149) | (0.414) |
| % Female coworkers with e-ship experience | 0.0506 | 0.0024 | 0.0131 | 0.0413 |
| | (0.364) | (0.982) | (0.752) | (0.691) |
| % Male coworkers with e-ship experience | 0.0931 | 0.0785 | 0.0853 | 0.1422 |
| | (0.167) | (0.483) | (0.029) | (0.046) |
| Spouse entrepreneur | 0.0019 | 0.0491 | -0.0247 | 0.1231 |
| | (0.975) | (0.587) | (0.717) | (0.204) |
| Mother ever entrepreneur | 0.0917 | 0.0681 | 0.0519 | 0.0649 |
| | (0.079) | (0.442) | (0.152) | (0.380) |
| Father ever entrepreneur | 0.0820 | 0.1204 | 0.1014 | 0.1443 |
| | (0.150) | (0.168) | (0.002) | (0.015) |
| Observations | 49,426 | 47,448 | 43,179 | 42,540 |
| Log Likelihood | -1,472.0 | -508.0 | -2,604.6 | -959.4 |

Z-standardized coefficients; late full-time joiners. P-values in parentheses. Control variables as in Table 3. Entrepreneurship experience by peers, spouses, or parents includes any spell in self-employment or employer categories as a primary occupation, for at least one year.

**Table 6.** Heterogeneous influence of female founders on female joiners' entrepreneurship choices, depending on firm performance relative to the industry

| | Broad e-ship | Strict e-ship | Broad e-ship | Strict e-ship |
|---|---|---|---|---|
| Female founder & above mean sales | 0.9921 | 2.2779 | | |
| | (0.000) | (0.000) | | |
| Female founder & below mean sales | 0.3364 | 0.9847 | | |
| | (0.018) | (0.002) | | |
| Female founder & above mean productivity | | | 0.9345 | 2.1501 |
| | | | (0.002) | (0.000) |
| Female founder & below mean productivity | | | 0.3447 | 1.0390 |
| | | | (0.042) | (0.001) |
| Observations | 33,402 | 32,275 | 33,402 | 32,275 |
| Log Likelihood | -1,197.4 | -429.8 | -1,183.1 | -430.3 |
| Wald test of equality of coefficients | 6.10(0.014) | 6.95(0.008) | 4.09(0.043) | 5.99(0.014) |

P-values in parentheses. Control variables included. Labor productivity is measured as the logged ratio between sales level and total employment. Results are robust when using the median performance as a threshold. Further tests splitting performance variables into four quartiles lead to similar conclusions.

**Table 7.** Heterogeneous influence of female founders on female joiners' entrepreneurship choices: (fe)male-dominated vs. gender balanced workforces and industries

| | Broad e-ship | Strict e-ship | Broad e-ship | Strict e-ship |
|---|---|---|---|---|
| Female founder & Male dominated workforce | 1.4917 | 2.4364 | | |
| | (0.000) | (0.000) | | |
| Female founder & Gender balanced workforce | 0.4514 | 1.1877 | | |
| | (0.011) | (0.001) | | |
| Female founder & Female dominated workforce | 0.2296 | 0.4520 | | |
| | (0.068) | (0.115) | | |
| Female founder & Male dominated industry | | | 0.7771 | 1.2911 |
| | | | (0.073) | (0.019) |
| Female founder & Gender balanced industry | | | 0.4109 | 0.9640 |
| | | | (0.002) | (0.000) |
| Female founder & Female dominated industry | | | 0.3279 | 0.6111 |
| | | | (0.111) | (0.115) |
| Observations | 49,426 | 48,978 | 49,426 | 48,978 |
| Log Likelihood | -1,476.8 | -495.5 | -1,484.1 | -497.2 |
| Wald test of equality of coefficients (1 = 2) | 8.18(0.004) | 3.77(0.052) | 0.69(0.405) | 0.35(0.557) |
| Wald test of equality of coefficients (2 = 3) | 1.64(0.200) | 4.98(0.026) | 0.16(0.691) | 0.87(0.352) |
| Wald test of equality of coefficients (1 = 3) | 13.68(0.000) | 10.19(0.001) | 0.91(0.341) | 1.04(0.308) |

P-values in parentheses. Estimations restricted to female full-time late joiners. The results are consistent in the full sample of female joiners. Male-(female-) dominated workforces [industries] are defined as firms [industries] where the average share of female employees is smaller (larger) than or equal to 25% (75%). The results are robust to alternative thresholds. Control variables included, in addition to firm performance.

**Table 8.** Heterogeneous influence of female founders on female joiners' entrepreneurship choices: similarity on other individual attributes (broad definition of entrepreneurship)

| | Age rank | Education background | Birth place | Motherhood status |
|---|---|---|---|---|
| Female founder with same status | 0.6865 | 0.8941 | 0.7672 | 0.5989 |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| Female founder with different status | 0.2848 | 0.3235 | 0.3043 | 0.1801 |
| | (0.024) | (0.014) | (0.017) | (0.213) |
| Observations | 49,426 | 46,777 | 49,229 | 49,385 |
| Log Likelihood | -1,507.7 | -1,420.1 | -1,493.2 | -1,506.2 |
| Wald test of equality of coefficients | 8.72(0.003) | 11.96(0.000) | 8.12(0.000) | 9.50(0.002) |

P-values in parentheses. Control variables included. Results for the stricter definition of entrepreneurship are qualitatively similar. Similarity in age rank means an absolute age difference not greater than five years. Similar education means same level and field of education. Similarity in motherhood status means either that both are mothers, or that none of them have children.

**Table 9.** Heterogeneous influence of female founders on female joiners, depending on their previous exposure to entrepreneurship

| | Broad e-ship | Strict e-ship | Broad e-ship | Strict e-ship |
|---|---|---|---|---|
| FF & Previously young firm | 0.4720 | 0.7264 | | |
| | (0.105) | (0.183) | | |
| FF & Previously mature firm | 0.6435 | 1.0610 | | |
| | (0.001) | (0.004) | | |
| Previous firm was young | 0.0073 | 0.0170 | | |
| | (0.978) | (0.973) | | |
| FF & Entrepreneurial mother | | | 0.9016 | 1.1578 |
| | | | (0.124) | (0.053) |
| FF & No entrepreneurial mother | | | 0.3989 | 0.9517 |
| | | | (0.012) | (0.006) |
| Entrepreneurial mother | | | 0.1665 | 0.2950 |
| | | | (0.745) | (0.604) |
| Observations | 36,917 | 36,372 | 49,426 | 47,448 |
| Log Likelihood | -1,045.00 | -363.8 | -1,438.2 | -495.1 |
| Wald test of equality of 1st and 2nd coefficients | 0.270(0.605) | 0.290(0.592) | 0.710(0.399) | 0.100(0.757) |

FF stands for "Female Founder". P-values in parentheses. The first two columns are restricted to female late joiners who were employed immediately before joining the startup. Control variables included.

**Table 10.** Founder gender, joiners' exit, and current wages

| | Probability of moving to another job | Probability of moving to unemployment | Hourly wages (log) |
|---|---|---|---|
| Female joiner | 0.1551 | 0.0328 | -0.0849 |
| | (0.000) | (0.754) | (0.000) |
| Female founder | 0.1874 | 0.2435 | -0.0099 |
| | (0.000) | (0.069) | (0.502) |
| Female joiner * Female founder | -0.2287 | -0.4569 | 0.0317 |
| | (0.000) | (0.004) | (0.019) |
| Observations | 92,771 | 92,771 | 52,870 |
| Log Likelihood | -38,160.0 | -7,330.3 | -34,970.9 |

P-values in parentheses. Control variables included. Last column restricted to individuals reporting non-missing wages.

**Table 11.** Heterogeneous influence of female founders, depending on female joiners' (possibly) deliberate selection into the firm

| | (1) | (2) |
|---|---|---|
| FF & Previous firm closed down | 0.8449 | |
| | (0.005) | |
| FF & Previous firm did not close down | 0.5272 | |
| | (0.000) | |
| Previous firm closed down | -0.8284 | |
| | (0.001) | |
| FF & Previous female employer in startup | | 0.2766 |
| | | (0.470) |
| FF & Previous male employer in startup | | 0.5715 |
| | | (0.003) |
| Previous female employer in startup | | 0.3665 |
| | | (0.261) |
| Observations | 36,917 | 32,958 |
| Log Likelihood | -1,434.4 | -1,177.4 |
| Wald test of equality of 1st and 2nd coefficients | 1.00 (0.316) | 0.51 (0.474) |

FF stands for "Female Founder". P-values in parentheses. Broad definition of entrepreneurship, and estimations restricted to late joiners. Model (1) is restricted to female joiners who were employed immediately before joining the current firm. Model (2) is further restricted to joiners whose previous employer can be identified in the data. Control variables included.

**Table 12.** Addressing endogeneity in founder-joiner same-gender match

| | Broad e-ship | Strict e-ship | Broad e-ship | Strict e-ship |
|---|---|---|---|---|
| | IV | IV | Two-stage Selection model | Two-stage Selection model |
| Female Founder | 0.0819 | 0.0797 | 0.0739 | 0.1547 |
| | (0.022) | (0.004) | (0.050) | (0.011) |
| Observations | 49,229 | 48,783 | 353,066 | 353,066 |
| F-test Relevant Instruments | 15.751 (0.000) | 14.012 (0.000) | - | - |
| Chi2 test Overidentifying Restrictions | 2.470 (0.116) | 0.837 (0.360) | - | - |
| Rho | | | 0.020 (0.631) | 0.068 (0.302) |

P-values in parentheses. Estimations restricted to female late joiners. The instruments in the first two models are a) whether joiner and founder share the same birthplace and b) whether both joiner and founder (or none of them) are mothers. The last two models use the method proposed by Azoulay *et al*. (2017) to correct for possibly deliberate matching between mentees and mentors. We use the instruments of IV estimations as exclusion restrictions in the two-stage (Heckit) selection model. The second stage is a Probit model for the decision to become an entrepreneur after leaving the current firm. The respective average marginal effects are 0.0021 (0.046) and 0.0016 (0.016) (P-values in parentheses), corresponding to a 15% increase in the average rate of future entrepreneurship using the broad (39% using the strict) definition.

## SUPPLEMENTARY ONLINE APPENDIX

**Table SA.1.** Summary statistics for full-time late joiners [a], separately for future founders, non-founders, and movers

| | (I) Future founders | (II) Non-founders | Difference (I-II) | | (III) Movers (not to e-ship) | Difference (I-III) | |
|---|---|---|---|---|---|---|---|
| | N=982 | N=53,541 | | | N=22,940 | | |
| ***Joiner characteristics*** | | | | | | | |
| Female joiner | 0.340 | 0.516 | -0.176 | (0.000) | 0.535 | -0.194 | (0.000) |
| Age | 34.73 | 31.77 | 2.961 | (0.000) | 29.62 | 5.109 | (0.000) |
| ≤ Secondary Education | 0.469 | 0.585 | -0.117 | (0.000) | 0.634 | -0.165 | (0.000) |
| Vocational Education | 0.365 | 0.286 | 0.079 | (0.000) | 0.265 | 0.100 | (0.000) |
| Short-medium higher education/Bachelor | 0.123 | 0.099 | 0.024 | (0.022) | 0.082 | 0.040 | (0.000) |
| Master or PhD | 0.044 | 0.030 | 0.014 | (0.016) | 0.019 | 0.025 | (0.000) |
| Married | 0.403 | 0.273 | 0.130 | (0.000) | 0.231 | 0.172 | (0.000) |
| Number of children | 1.061 | 1.087 | 0.026 | (0.497) | 1.167 | -0.107 | (0.007) |
| Number of different workplaces in the past [b] | 6.580 | 6.136 | 0.444 | (0.001) | 5.344 | 1.236 | (0.000) |
| Years in unemployment (cumulative sum) | 1.912 | 1.512 | 0.400 | (0.000) | 1.422 | 0.490 | (0.000) |
| Worked in a young firm (previous 5 years) [c] | 0.416 | 0.336 | 0.080 | (0.000) | 0.332 | 0.084 | (0.000) |
| Worked in a micro firm (previous 5 years) [c] | 0.711 | 0.591 | 0.120 | (0.000) | 0.600 | 0.111 | (0.000) |
| Worked in a large firm (previous 5 years) [c] | 0.116 | 0.141 | -0.025 | (0.026) | 0.118 | 0.002 | (0.882) |
| ***Workplace characteristics*** | | | | | | | |
| Firm size (log of employment) | 1.925 | 2.632 | -0.707 | (0.000) | 2.457 | -0.532 | (0.000) |
| Share of female workers in the workforce | 0.423 | 0.514 | -0.091 | (0.000) | 0.525 | -0.102 | (0.000) |
| ***Founder characteristics*** | | | | | | | |
| Founder age | 40.43 | 42.28 | -1.851 | (0.000) | 41.10 | -0.674 | (0.028) |
| Female founder | 0.287 | 0.328 | -0.041 | (0.006) | 0.336 | -0.049 | (0.001) |
| Number of different workplaces in the past [b] | 7.851 | 8.467 | -0.616 | (0.000) | 8.195 | -0.344 | (0.004) |
| Years in unemployment (cumulative sum) | 1.541 | 1.530 | 0.011 | (0.880) | 1.536 | 0.005 | (0.947) |
| Number of different workplaces as an employer | 2.435 | 2.745 | -0.310 | (0.000) | 2.490 | -0.055 | (0.356) |

[a] Full-time late joiners correspond to full-time employees joining the new venture after the startup year. All these variables are measured at the time of joiner's entry into the firm. "Future founders" refer to joiners entering entrepreneurship according to the broader definition (self-employment and founders of new ventures hiring at least one employee).
[b] It includes all workplaces, including those where the individual had short-term and part-time/secondary jobs.
[c] Young, micro and large firms defined as firms up to 10 years old, up to 10 employees, and more than 100 employees, respectively.
P-values in parentheses.

**Table SA.2.** Summary statistics for full-time joiners, as in Table 1 of the paper, but for male and female joiners separately. [a]

| | Men | | | | Women | | | | Difference (Men-Women; future founders) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Future founders N=1,349 | Non-founders N=42,217 | Difference | | Future founders N=617 | Non-founders N=45,006 | Difference | | | |
| ***Joiner characteristics*** | | | | | | | | | | |
| Age | 34.56 | 33.31 | 1.253 | (0.000) | 36.58 | 32.86 | 3.724 | (0.000) | -2.024 | (0.000) |
| ≤ Secondary Education | 0.478 | 0.551 | -0.073 | (0.000) | 0.355 | 0.545 | -0.190 | (0.000) | 0.123 | (0.000) |
| Vocational Education | 0.397 | 0.323 | 0.074 | (0.000) | 0.388 | 0.291 | 0.096 | (0.000) | 0.010 | (0.696) |
| Short-medium higher education/Bachelor | 0.085 | 0.086 | 0.001 | (0.976) | 0.193 | 0.130 | 0.062 | (0.000) | -0.106 | (0.000) |
| Master or PhD | 0.039 | 0.040 | -0.001 | (0.909) | 0.066 | 0.033 | 0.032 | (0.000) | -0.026 | (0.016) |
| Married | 0.378 | 0.285 | 0.093 | (0.000) | 0.438 | 0.319 | 0.119 | (0.000) | -0.060 | (0.010) |
| Number of children | 0.979 | 0.945 | 0.034 | (0.297) | 1.083 | 1.129 | -0.046 | (0.325) | -0.104 | (0.079) |
| Number of different workplaces in the past [b] | 6.388 | 6.282 | 0.105 | (0.363) | 6.573 | 5.764 | 0.809 | (0.000) | -0.185 | (0.290) |
| Years in unemployment (cumulative sum) | 1.754 | 1.544 | 0.210 | (0.004) | 2.136 | 1.613 | 0.523 | (0.000) | -0.382 | (0.003) |
| Worked in a young firm (previous 5 years) [c] | 0.439 | 0.341 | 0.098 | (0.000) | 0.401 | 0.329 | 0.072 | (0.000) | 0.038 | (0.000) |
| Worked in a micro firm (previous 5 years) [c] | 0.710 | 0.583 | 0.127 | (0.000) | 0.675 | 0.560 | 0.115 | (0.000) | 0.035 | (0.000) |
| Worked in a large firm (previous 5 years) [c] | 0.106 | 0.168 | -0.062 | (0.000) | 0.157 | 0.174 | -0.017 | (0.028) | -0.051 | (0.000) |
| Later joiners (entering after startup year) | 0.484 | 0.614 | -0.130 | (0.000) | 0.534 | 0.615 | -0.081 | (0.000) | -0.050 | (0.038) |
| ***Workplace characteristics*** | | | | | | | | | | |
| Firm size (log of employment) | 1.746 | 2.605 | -0.858 | (0.000) | 1.992 | 2.954 | -0.962 | (0.000) | -0.245 | (0.001) |
| Share of female workers in the workforce | 0.182 | 0.248 | -0.066 | (0.000) | 0.818 | 0.760 | 0.058 | (0.000) | -0.636 | (0.000) |
| ***Founder characteristics*** | | | | | | | | | | |
| Founder age | 38.65 | 41.33 | -2.681 | (0.000) | 41.21 | 42.99 | -1.780 | (0.000) | -2.560 | (0.000) |
| Female founder | 0.152 | 0.172 | -0.019 | (0.063) | 0.537 | 0.459 | 0.078 | (0.000) | -0.384 | (0.000) |
| Number of different workplaces in the past [b] | 7.493 | 8.401 | -0.908 | (0.000) | 8.204 | 8.282 | -0.077 | (0.605) | -0.711 | (0.000) |
| Years in unemployment (cumulative sum) | 1.508 | 1.515 | -0.007 | (0.911) | 1.559 | 1.625 | -0.066 | (0.487) | -0.051 | (0.632) |
| Number of different workplaces as an employer | 2.324 | 2.695 | -0.371 | (0.000) | 2.551 | 2.790 | -0.240 | (0.000) | -0.227 | (0.007) |

[a] All these variables are measured at the time of joiner's entry into the firm. "Future founders" refer to joiners entering entrepreneurship according to the broader definition (self-employment and founders of new ventures hiring at least one employee). [b] It includes all workplaces, including those where the individual had short-term and part-time/secondary jobs. [c] Young, micro and large firms defined as firms up to 10 years old, up to 10 employees, and more than 100 employees, respectively. P-values in parentheses.

**Table SA.3. Panel A.** Summary statistics for female and male founders (measured at startup year)

| | Female founders (N=4,036) | Male founders (N=9,895) | Difference (F-M) | |
|---|---|---|---|---|
| Age | 42.23 | 41.87 | 0.358 | (0.053) |
| ≤ Secondary Education | 0.310 | 0.288 | 0.022 | (0.000) |
| Vocational Education | 0.420 | 0.499 | -0.079 | (0.000) |
| Short-medium higher education/Bachelor | 0.189 | 0.125 | 0.064 | (0.000) |
| Master or PhD | 0.081 | 0.088 | -0.007 | (0.112) |
| Married | 0.590 | 0.613 | -0.023 | (0.010) |
| Number of children | 1.198 | 1.206 | -0.008 | (0.274) |
| Number of different workplaces in the past | 7.700 | 7.581 | 0.119 | (0.074) |
| Years in unemployment (cumulative sum) | 2.208 | 1.387 | 0.821 | (0.000) |
| Number of different workplaces as an employer | 2.224 | 2.559 | -0.335 | (0.000) |

P-values in parentheses.

**Table SA.3. Panel B.** Industry-distribution of firms founded by men and women

| **Female founders** | |
|---|---|
| Wholesale and retail trade | 25.7% |
| Accommodation and food service activities | 21.2% |
| Other technical business services | 13.0% |
| Educational support activities and health care services | 10.0% |
| Sports, amusement and recreation activities | 6.3% |
| Primary sector (total) | 4.4% |
| Construction | 4.3% |
| Manufacturing industries (total) | 2.4% |
| Repair of personal goods | 2.4% |
| Business consultancy activities | 2.0% |
| Other (sum of services in which the share of firms is lower than 2%) | 8.1% |
| **Total (4,036 newly founded firms)** | **100%** |

| **Male founders** | |
|---|---|
| Wholesale and retail trade | 14.9% |
| Construction | 14.7% |
| Accommodation and food service activities | 14.1% |
| Agriculture and horticulture | 13.2% |
| Other technical business services | 10.8% |
| Transport and storage services | 7.5% |
| Manufacturing industries | 5.1% |
| Educational support activities and health care services | 4.5% |
| Business consultancy activities | 3.3% |
| Other primary sector activities | 1.4% |
| Other (sum of services in which the share of firms is lower than 2%) | 10.6% |
| **Total (9,895 newly founded firms)** | **100%** |

**Table SA.4.** Founder-joiner gender match and joiners' future transition to entrepreneurship (full-time joiners only) (Table 3 in the paper, now reporting coefficients for control variables)

| | Broad e-ship definition | | Strict e-ship definition | |
|---|---|---|---|---|
| | All FT joiners | Late FT joiners | All FT joiners | Late FT joiners |
| F Joiner & M Founder | -1.2223 | -1.3683 | -1.2983 | -1.3055 |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| M Joiner & F Founder | -0.0966 | -0.2755 | -0.2343 | -0.0515 |
| | (0.444) | (0.057) | (0.200) | (0.829) |
| F Joiner & F Founder | -0.7620 | -1.0271 | -0.5660 | -0.6182 |
| | (0.000) | (0.000) | (0.005) | (0.012) |
| Age | 0.1963 | 0.2049 | 0.1887 | 0.2059 |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| Age squared | -0.0024 | -0.0025 | -0.0027 | -0.0030 |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| Secondary education | 0.0958 | 0.0616 | 0.0073 | 0.2445 |
| | (0.442) | (0.713) | (0.969) | (0.297) |
| Vocational education | 0.2231 | 0.1481 | 0.2476 | 0.1904 |
| | (0.009) | (0.204) | (0.045) | (0.279) |
| Short-medium higher education | 0.4911 | 0.5032 | 0.5448 | 0.7919 |
| | (0.000) | (0.004) | (0.003) | (0.001) |
| Bachelor | 1.0231 | 1.2547 | 0.719 | 0.5360 |
| | (0.000) | (0.000) | (0.021) | (0.267) |
| Master or PhD | 0.8144 | 0.9439 | 0.4970 | 0.4472 |
| | (0.000) | (0.000) | (0.061) | (0.268) |
| Married | 0.1975 | 0.1840 | 0.3423 | 0.2799 |
| | (0.016) | (0.105) | (0.1196) | (0.101) |
| Number of children | 0.0018 | 0.0120 | 0.0328 | 0.0379 |
| | (0.954) | (0.781) | (0.470) | (0.553) |
| Number of different workplaces | -0.0011 | -0.0056 | 0.0632 | 0.0470 |
| | (0.924) | (0.710) | (0.000) | (0.026) |
| Years in unemployment | -0.0146 | -0.0133 | -0.0451 | -0.0241 |
| | (0.296) | (0.492) | (0.039) | (0.446) |
| Worked in a young firm | 0.1735 | 0.1647 | 0.1014 | 0.0403 |
| | (0.017) | (0.094) | (0.311) | (0.779) |
| Worked in a micro firm | 0.1724 | 0.3393 | 0.0296 | 0.1269 |
| | (0.036) | (0.004) | (0.801) | (0.449) |
| Worked in a large firm | -0.2562 | -0.2619 | -0.0445 | -0.0134 |
| | (0.010) | (0.062) | (0.739) | (0.944) |
| Early joiner (startup year) | 0.2632 | | 0.1335 | |
| | (0.001) | | (0.239) | |
| Firm size | -0.3890 | -0.3558 | -0.3058 | -0.3493 |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| Share of female workers | -0.0628 | 0.1190 | -0.0257 | -0.0120 |
| | (0.660) | (0.242) | (0.909) | (0.967) |
| Founder: age | -0.0250 | -0.0214 | -0.0329 | -0.0436 |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| Founder: no. different workplaces before | 0.0085 | 0.0249 | 0.0301 | 0.0368 |
| | (0.438) | (0.077) | (0.019) | (0.062) |
| Founder: years in unemployment | -0.0165 | -0.0015 | 0.0358 | 0.0360 |
| | (0.343) | (0.948) | (0.117) | (0.246) |
| Founder: no. workplaces as employer before | 0.0065 | 0.0062 | 0.0164 | 0.0502 |
| | (0.780) | (0.827) | (0.540) | (0.183) |
| Industry, year, and tenure dummies | Yes | Yes | Yes | Yes |
| Observations | 154,590 | 92,605 | 151,452 | 91,352 |
| Log Likelihood | -8,012.5 | -4,003.5 | -2,934.9 | -1,467.6 |
| Wald test of equality of coefficients: (F Joiner & M Founder = F Joiner & F Founder) | 14.04(0.000) | 4.45(0.035) | 15.51(0.001) | 7.26(0.007) |

Three-level mixed complementary log-logistic models. P-values in parentheses. F and M stand for Female and Male, respectively.

**Table SA.5.** Founder-joiner gender match and joiners' future transition to entrepreneurship (full-time joiners only) – OLS estimates

| | Broad e-ship definition | | Strict e-ship definition | |
|---|---|---|---|---|
| | All FT joiners | Late FT joiners | All FT joiners | Late FT joiners |
| F Joiner & M Founder | -0.0079 | -0.0081 | -0.0031 | -0.0027 |
| | (0.000) | (0.000) | (0.000) | (0.000) |
| M Joiner & F Founder | -0.0014 | -0.0031 | -0.0012 | -0.0003 |
| | (0.270) | (0.024) | (0.075) | (0.729) |
| F Joiner & F Founder | -0.0055 | -0.0069 | -0.0017 | -0.0014 |
| | (0.000) | (0.000) | (0.005) | (0.049) |
| Observations | 154,590 | 92,605 | 151,452 | 91,352 |
| R squared | 0.0095 | 0.0088 | 0.0042 | 0.0042 |
| Wald test of equality of coefficients (F Joiner & M Founder = F Joiner & F Founder) | 14.68 (0.000) | 2.81 (0.093) | 16.15 (0.000) | 7.81 (0.005) |

Similar to Table 3 in the main paper but using linear regression models with clustered standard errors at the employee-employer pair-level.

**Table SA.6.** Founder-joiner gender match and joiners' future transition to entrepreneurship (all startups - solo and multiple founders; full-time employees only)

| | Broad e-ship definition | | Strict e-ship definition | |
|---|---|---|---|---|
| | All FT joiners | Late FT joiners | All FT joiners | Late FT joiners |
| F Joiner & Only M Founders | -1.2394 | -1.3051 | -1.5834 | -1.3271 |
| | (0.000) | (0.000) | (0.000) | (0.0005) |
| M Joiner & At least one F Founder | -0.1457 | -0.3993 | -0.1991 | -0.0919 |
| | (0.389) | (0.020) | (0.292) | (0.696) |
| F Joiner & At least one F Founder | -0.7910 | -0.9510 | -0.6445 | -0.5827 |
| | (0.000) | (0.000) | (0.001) | (0.006) |
| Observations | 202,043 | 118,718 | 199,117 | 117,465 |
| Log Likelihood | -9,948.9 | -4,881.5 | -3,707.5 | -1,851.5 |
| Wald test of equality of coefficients (F Joiner & Only M Founders = F Joiner & At least one F Founder) | 16.79(0.000) | 6.13(0.012) | 22.79(0.000) | 11.75(0.001) |

Three-level mixed complementary log-logistic models. P-values in parentheses. F (M) stands for Female (Male). All the specifications control for workers' demographic and family characteristics, tenure, previous labor experience (including characteristics (size and age) of previous workplaces), current workplace characteristics (size, share of female employees, industry), founder's characteristics (age, previous unemployment spells, experience in employment and as employer), as in Table SA.4.

**Table SA.7.** Founder-joiner gender match and joiners' future transition to entrepreneurship (alternative measure for the exposure to same-gender founders; full-time later joiners)

| | Broad e-ship definition | Strict e-ship definition |
|---|---|---|
| Female Joiner | -1.0351 | -1.1749 |
| | (0.000) | (0.000) |
| Cumulative time with same gender founder | -0.0488 | -0.1016 |
| | (0.246) | (0.199) |
| Female Joiner * Cumulative time with SG Founder | 0.0921 | 0.2124 |
| | (0.053) | (0.038) |
| Observations | 92,605 | 91,352 |
| Log Likelihood | -4,210.5 | -1,470.4 |

Three-level mixed complementary log-logistic models. P-values in parentheses. Controls included as in Table SA.4. Cumulative time with same gender founder measured in years, since joiner's entry in the current firm. Further tests for a non-linear relationship between the cumulative time with a same gender founder and joiners' transition to entrepreneurship did not reveal any significant non-linear associations. Alternative specifications using the share of total tenure with a same-gender founder produce similar conclusions.

**Table SA.8.** Founder-joiner gender match and joiners' future transition to entrepreneurship - alternative subsamples

**a) All joiners (part-time & full-time) in startups with a solo founder**

| | Broad e-ship definition | Strict e-ship definition |
|---|---|---|
| F Joiner & M Founder | -0.9565 | -1.0110 |
| | (0.000) | (0.000) |
| M Joiner & F Founder | -0.0379 | -0.1661 |
| | (0.667) | (0.241) |
| F Joiner & F Founder | -0.5872 | -0.4645 |
| | (0.000) | (0.001) |
| Observations | 245,314 | 241,107 |
| Log Likelihood | -12,806.7 | -4,882.4 |
| Wald test of equality of coefficients (F Joiner & M Founder = F Joiner & F Founder) | 18.09(0.000) | 15.44(0.000) |

**b) Joiners coming from closed or downsizing firms**

| | Broad e-ship definition | Strict e-ship definition |
|---|---|---|
| F Joiner & M Founder | -1.2249 | -1.6726 |
| | (0.000) | (0.000) |
| M Joiner & F Founder | -0.0917 | -0.4009 |
| | (0.618) | (0.342) |
| F Joiner & F Founder | -0.7068 | -0.9083 |
| | (0.000) | (0.030) |
| Observations | 32,084 | 30,728 |
| Log Likelihood | -1,050.0 | -369.7 |
| Wald test of equality of coefficients (F Joiner & M Founder = F Joiner & F Founder) | 7.18(0.007) | 2.97(0.085) |

**c) Excluding startups whose founder left and was replaced by another employer**

| | Broad e-ship definition | Strict e-ship definition |
|---|---|---|
| F Joiner & Only M Founders | -1.4104 | -1.2882 |
| | (0.000) | (0.000) |
| M Joiner & At least one F Founder | -0.1285 | 0.0661 |
| | (0.518) | (0.731) |
| F Joiner & At least one F Founder | -0.9419 | -0.3293 |
| | (0.000) | (0.116) |
| Observations | 71,718 | 70,631 |
| Log Likelihood | -3,445.9 | -1,260.6 |
| Wald test of equality of coefficients (F Joiner & M Founder = F Joiner & F Founder) | 6.22(0.013) | 20.27(0.000) |

**d) Startups surviving until the end of the observation period (2012)**

| | Broad e-ship definition | Strict e-ship definition |
|---|---|---|
| F Joiner & Only M Founders | -1.0862 | -1.6129 |
| | (0.000) | (0.000) |
| M Joiner & At least one F Founder | -0.2950 | -0.7053 |
| | (0.273) | (0.058) |
| F Joiner & At least one F Founder | -0.6633 | -0.7402 |
| | (0.009) | (0.010) |
| Observations | 63,442 | 60,613 |
| Log Likelihood | -1,879.3 | -665.2 |
| Wald test of equality of coefficients (F Joiner & M Founder = F Joiner & F Founder) | 3.59(0.058) | 7.83(0.005) |

Three-level mixed complementary log-logistic models. P-values in parentheses. All the specifications control for the same variables as in Table SA.4. Estimations in panels b) to d) are restricted to late full-time joiners.

**Table SA.9.** Founder gender and preferences for same-gender employees

| | Same gender workers (%) | Same gender hires (%) |
|---|---|---|
| Female founder | 0.1011 | 0.1101 |
| | (0.000) | (0.000) |
| Number of observations | 48,680 | 36,977 |
| R-squared | 0.0808 | 0.1257 |

OLS regression with cluster robust standard errors, clustered at the firm-level. P-values in parentheses. Both estimations control for industry (2digit), year, firm age, firm size, skill composition in the firm (share of workers in management, top-skill, medium-skill, and low-skill occupations; share of workers with secondary, vocational, and university education), and share of full-time employees. The second estimation is restricted to firm-year observations with at least one new hire.

**Table SA.10.** Inverse probability of treatment weighted estimations (treatment: same gender founder)

| | Broad e-ship | Strict e-ship |
|---|---|---|
| F Joiner & M Founder | -1.1075 | -1.2338 |
| | (0.000) | (0.000) |
| M Joiner & F Founder | -0.1062 | -0.0972 |
| | (0.501) | (0.689) |
| F Joiner & F Founder | -0.8236 | -0.5437 |
| | (0.000) | (0.079) |
| Industry, year, and tenure dummies | Yes | Yes |
| Observations | 92,605 | 91,352 |
| Log Likelihood | -5,152.6 | -2,071.8 |
| Wald test of equality of coefficients (F Joiner & M Founder = F Joiner & F Founder) | 4.26(0.039) | 6.67(0.010) |

Three-level mixed complementary log-logistic models. P-values in parentheses. Estimations restricted to late full-time joiners. The first stage equation is a probit model, where the founder gender is regressed on the variables listed in Table 1 (joiner, founder, and workplace characteristics, together with industry, region, and year fixed effects). The results on the first stage are available upon request. The main results remain qualitatively similar when inversely weighting for the probability of joining a female vs. a male founder, and when extending the first stage with a set of interactions between "female joiner" and other joiner/founder characteristics, which would capture possible biases driven by female joiners/founders with certain characteristics being more likely to match.

**Table SA.11.** Male founders and male joiners' entrepreneurship choices in (fe)male-dominated workforces and industries

| | Broad e-ship | Strict e-ship | Broad e-ship | Strict e-ship |
|---|---|---|---|---|
| Male founder & Male dominated workforce | 0.0814 | -0.1406 | | |
| | (0.679) | (0.571) | | |
| Male founder & Gender balanced workforce | 0.4820 | 0.2528 | | |
| | (0.019) | (0.321) | | |
| Male founder & Female dominated workforce | 0.9233 | 0.6329 | | |
| | (0.002) | (0.095) | | |
| Male founder & Male dominated industry | | | -0.0362 | -0.3223 |
| | | | (0.885) | (0.335) |
| Male founder & Gender balanced industry | | | 0.5158 | 0.3752 |
| | | | (0.013) | (0.142) |
| Male founder & Female dominated industry | | | 1.0987 | -0.4144 |
| | | | (0.009) | (0.548) |
| Observations | 43,345 | 42,540 | 43,345 | 42,540 |
| Log Likelihood | -2,581.3 | -955.3 | -2,577.4 | -949.9 |

Three-level mixed complementary log-logistic models. P-values in parentheses. Estimations restricted to male full-time employees joining the firm after the startup year (late joiners). The results are qualitatively similar to the broader sample of female joiners (including early joiners, and part-time employees). Male- (female) dominated workforces [industries] are defined as firms [industries] where, in each year, the [average] share of female employees in the firm [2-digit industry] is smaller (larger) than or equal to 25% (75%). Robustness checks with alternative thresholds (33.33% and 66.66%) provide similar conclusions. The baseline category in the estimations refers to joiners with a female founder. All the specifications include the same control variables as in Table SA.4, in addition to performance (a dummy variable taking the value 1 when the firm has a sales level above the median sales of the (2digit) industry in the same year).

**Table SA.12.** Heterogeneous effects of female founders depending on female joiners' time spent in the firm

| | Broader e-ship definition | | Stricter e-ship definition | |
|---|---|---|---|---|
| | Female joiners staying 1 year only | Female joiners staying 2+ years | Female joiners staying 1 year only | Female joiners staying 2+ years |
| Female founder | 0.3440 | 0.6052 | 0.3113 | 1.4307 |
| | (0.173) | (0.000) | (0.514) | (0.000) |
| Number of observations | 6,566 | 42,860 | 6,527 | 42,451 |
| Log likelihood | -431.3 | -1,747.5 | -139.6 | -576.4 |

P-values in parentheses. Control variables as in Table SA.4.

**Table SA.13.** Female joiners' performance as entrepreneurs and previous founder gender

| | Having paid employees | Hazard rate | | Log(sales) | |
|---|---|---|---|---|---|
| | | (1) | (2) | (1) | (2) |
| Previously Female Founder | 0.2936 | -0.2200 | -0.0723 | -0.1246 | 0.2635 |
| | (0.022) | (0.057) | (0.743) | (0.420) | (0.143) |
| Observations | 1,159 | 1,159 | 680 | 916 | 562 |
| Pseudo R2/R2 | 0.1621 | - | - | 0.2201 | 0.3050 |
| Log likelihood | -529.1 | -587.3 | -255.6 | - | - |

P-values in parentheses. All estimations control for year and industry fixed effects, and years elapsed since entry into entrepreneurship. (1) All female joiners entering e-ship (self-employment included). (2) Female joiners entering e-ship in the strict definition (employers). The probability of employing labor is estimated with a Probit model; hazard rate regressions are estimated with a cloglog model; sales are estimated with linear regressions. Standard errors are always clustered at the individual-level.

**Table SA.14.** Female joiners' probability of moving to the same (2d) industry, after leaving the current firm (Probit model)

| | |
|---|---|
| Joiner leaves to e-ship | 0.4145 |
| | (0.028) |
| Female Founder | 0.0276 |
| | (0.280) |
| Joiner leaves to e-ship & Female Founder | -0.1035 |
| | (0.659) |
| Observations | 13,386 |
| Pseudo R2 | 0.0971 |

P-values in parentheses. The estimation controls for the same variables as in Table SA.4, and is restricted to female full-time later joiners, in their last year in the firm.