

Boss experience, gender, and entrepreneurship dynamics:

New evidence based on matched employer-employee data

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Motivation and research objectives

Though most entrepreneurs are born in existing organizations, studies about the ways in which organizations shape the entrepreneurial process have been scarce until recently (Sørensen and Fassiotta, 2011). Both organizational characteristics and the organizational environment are now known to influence the decision to become an entrepreneur. Nanda and Sørensen (2010) highlight the role of peer effects within the firm, by showing that individuals are more likely to enter entrepreneurship if some of their co-workers have been entrepreneurs. Sørensen and Sharkey (2014) emphasize the possible importance of the structure of inequality inside organizations for future entrepreneurship choices of employees. Empirical evidence also shows that smaller firms spawn new entrepreneurs more often than larger firms do, possibly because the former are more effective at transmitting pro-entrepreneurial attitudes and capabilities to their employees (e.g., Hyytinen and Maliranta, 2008; Parker, 2009). Thus, role models may be key determinants of entrepreneurship choices (Lindquist et al., 2015).

Another branch of the literature we consider focuses on the observed persistent inequalities within organizations between genders. Evidence confirms that women earn lower wages and experience a lower likelihood of promotion than their male counterparts. More recent studies have been suggesting that part of the gender gaps in career success are related to the gender of the boss (Cardoso and Winter-Ebmer, 2010). However, there is no consensus on the extent to which female bosses help or hinder women's career progress (e.g., Bednar and Gicheva, 2014; Kunze and Miller, 2014). On the one hand, there might be positive gender spillovers if women at higher ranks work as mentors, role models, and advocates for their lower-ranking co-workers (e.g., Cohen and Huffman, 2007). Recent research furthermore confirms that role models are more often of the same gender (Bosma et al., 2012; Lindquist et al., 2015). On the contrary, negative spillovers may occur if top-ranked women act as "queen bees" and intentionally hinder the careers of lower-ranked females, or if they underestimate the quality of female workers (e.g., Bagues and Esteve-Volart, 2010; Maume, 2011).

Despite the growing interest in both topics, no study has combined these two lines of research. Gender gaps are also found to be significant in entrepreneurship, with women often being documented as less likely to become entrepreneurs (Langowitz and Minniti, 2007) and to have lower chances of success in entrepreneurship than men (Boden and Nucci, 2000). However, the role of particular organizational features such as the gender of the boss, which might (differently) affect female and male workers' entrepreneurial choices, has not been studied.

We could expect that female bosses may increase the likelihood of their female workers to become entrepreneurs relative to their male workers, either through peer effects and role models, or because they obstruct the progression of lower-ranked women inside the firm (Hughes, 2003). In order to disentangle these push and pull effects, or the mechanism through which female bosses may propel female workers into entrepreneurship, we should also take into account the entrepreneurial experience of the boss – namely how long, how recent, and how successful it is. On the other hand, female bosses may have relatively constructive effects on the career of their female workers, or may themselves be less open to entrepreneurship. In that case, one would expect female workers with female bosses to be less likely to become entrepreneurs.

This is the first paper studying how female versus male business leaders may 1) influence entrepreneurial propensity and entrepreneurial success among female workers, and 2) act as a moderating factor of the gaps often found between males' and females' entrepreneurial entry and post-entry performance. These two sets of differences will help us to identify effects in a dynamic dif-in-dif framework. Furthermore, taking advantage of the matched employer-employee nature of our data, we are also able to control for the unobserved quality of the worker-boss match. We contribute both to the literature on organizations as a source of entrepreneurship (Sørensen and Fassiotta, 2011) and to the emerging line of research on the value of bosses

(Lazear et al., 2015). The results of this project are believed to contribute to policy as well, given the current debate about the need to promote women in business leadership.

Data and Methods

The analysis will be conducted with a rich, longitudinal, matched employer-employee dataset from Statistics Denmark: the Integrated Database for Labour Market Research (IDA). This dataset has a number of features that makes it attractive for this research project. First, it is comprehensive, as it covers all people legally residing in Denmark, from 1980 to 2012, thus constituting an annual census of the Danish population. Second, it covers a wide range of labor market phenomena, by allowing us to track the firms, industries, and regions where each individual has worked over time, besides providing detailed information about the occupational status of each person in each year (e.g., employed, unemployed, self-employed). IDA records also include rich information at the individual-level, such as age, gender, education, annual income, marital status, number of children, parental occupation, just to name a few. Third, the fact that data are longitudinal allows us to construct individuals' career histories, which will be crucial to characterize individuals' experience in the labor market and to construct key variables related to the exposure to different bosses, both in terms of their gender and entrepreneurial experience. Finally, the fact that employees can be linked to their employers not only allows us to cover richer information at both individual and firm levels, but also to use more advanced econometric techniques in order to control for different sources of unobserved heterogeneity.

Regarding the sample design, the first step will be the identification of all new hires from 2003 onwards.¹ Data prior to 2003 will be mainly used to track and characterize the path of each individual in the labor market – such as career, entrepreneurship, and boss histories. We will then follow those individuals over time in order to analyze their subsequent career paths, inside or outside the firm, paying particular attention to transitions into higher positions in the firm hierarchy (internal promotions) and transitions into entrepreneurship.

We will analyze the role of both previous and current bosses. In this regard, there are at least two issues that we must carefully address, and that most of earlier studies have overlooked: 1) bosses may change over time, and this turnover is likely to be non-random; 2) workers may self-select into certain workplaces according to boss' characteristics, which may also result in a non-random assignment of workers to bosses. Accordingly, more than controlling for unobserved heterogeneity of workers and bosses, we must control for the unobserved match between the two groups. For that purpose, we will use a mixed-effects estimator, in order to take into account the quality of the match between each worker and his/her boss(es) at each point in time (see Abowd et al. 2008; Jackson, 2013; Lazear, 2015).

To study the particular effect of a male-female boss change, we will use propensity score matching and dif-in-dif methods. The treatment group will be composed of workers transiting from a male to a female boss, and will be compared with a control group of workers staying in a male-dominated organizational environment, with similar observed and unobserved characteristics. The effect of a male-female boss change will then be evaluated in two outcomes – the probability of an internal promotion and the probability of entering entrepreneurship, always controlling for the unobserved worker-boss match quality, as well as for the entrepreneurial experience of the boss. As an instrument, we will use a dummy variable indicating whether or not the previous boss has a daughter – which is expected to influence the probability of a male-female boss change, but not the workers' future career development. Boss changes caused by the closure of the previous employer – which are also exogenous to workers' future outcomes – will also be used as a robustness check.

¹ Since there was a major change in the DISCO codes (the Danish version of the ILO's International Standard Classification of Occupations) in 2003 – which contains relevant information to identify each individual's occupational status every year – we evaluate the career paths of new hires between 2003 and 2012.

Finally, in order to evaluate how the exposure to a female boss and the entrepreneurial experience of the boss might influence the survival prospects of those workers who transit into entrepreneurship, we will use the most recent duration models accounting for selection bias (Boehmke et al., 2006), given that those who become entrepreneurs may be a self-selected sample of the workers in the firm.

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