Jackeline-of-all-trades: Testing Lazear's View of Entrepreneurship for Women Graduates

Introduction

Women play an increasingly important role in entrepreneurship throughout the world. In particular, women with graduate degrees exhibit great potential for entrepreneurship based on their high levels of education. To better understand what leads women graduates into entrepreneurial activity, research is needed to characterize the backgrounds of women entrepreneurs compared to women graduates who choose other careers.

There is no entrepreneurship without entrepreneurial knowledge and skills. An entrepreneur creates and absorbs knowledge and uses intellectual skills to apply it into the business context. Knowledge and skills translate into entrepreneurial ideas, innovations, improvements, new practices or applications, all leading to new business ventures. However, there is an everlasting discussion in entrepreneurship research on the kind of knowledge and type of skills that an entrepreneur has to possess in order to successfully exploit business opportunities. One of the dimensions of this discussion runs across two polar views of the need for expert knowledge versus the need for general and balanced knowledge. The question is: should an entrepreneur be rather an individual with a broad knowledge and rich set of skills or an expert with narrow specialization and a tight focus in a particular field? Bringing answer for this question would not only help to support entrepreneurs in a more adequate and effective way, but could also substantially influence the entrepreneurship curriculum, especially the contents and the type of teaching practices used in business education.

However, entrepreneurship research in this field is divided. The supporters of the former view stress that a diversified set of skills creates a unique thus difficult to imitate combination (Lippman and Rumelt 1982) that helps to reach a company's competitive advantage and offer more solutions to the problems the company may encounter. The skills'

richness is useful when some changes occur, adaptations are needed or creative solutions are sought for (Galunic and Rodan, 1998). In contrast, the supporters of an expert knowledge highlight that to understand entrepreneurship, it is necessary to learn more on how an individual becomes an expert entrepreneur (Krueger 2007) and see the potential of knowledge structures and schemes of expert entrepreneurs (Baron 2006, Baron and Henry 2010). They also believe that a specialist knowledge equips with a unique set of tools that enables to create the best solutions if a problem occurs and in general helps to connect different dots when new ideas are needed.

In this paper, we aim to add a contribution to this discussion by examining Lazear's theory (2005) and answer whether graduate women entrepreneurs are "Jacklines-of-all-trades" entrepreneurs. Lazear's theory of occupational choice assumes that individuals with a balanced and diversified set of skills, gathered from different fields and domains, should have a higher probability of being self-employed.

This study tests Lazear's theory on a representative sample of 1,384 women graduates in Germany. Although the theory was already tested and confirmed in the German context for example by Wagner (2003, 2006), Backes-Gellner and Moog (2013) or Lechmann and Schnabel (2014), it was never related to the gender issues. Graduate women entrepreneurs are not adequately represented in other large-scale data sets about the German population or in labour statistics (e.g. German Socio-Economic Panel, German Microzensus). In consequence, Lazear's theory was never tested on women with graduate degrees who exhibit great potential for entrepreneurship based on their high levels of education.

In this paper we do not follow the discussion on declarative, procedural or conditional knowledge in entrepreneurial processes (for example Pihie et al., 2013). We also do not examine how this knowledge is generated, for example by doing, reflecting or experiencing (for example Cope 2005 or Cope and Watts 2000), but we try to research whether more or

less general knowledge is helpful in creating one's own business by German graduate women. To the set of balanced skills we assessed varied aspects of education and experience that are particularly relevant for women graduates (like: professional training or industry experience). In addition to factors that reflect an actual set of skills we included individually perceived skills using entrepreneurship-based self-efficacy as a proxy.

The paper contributes to the existing literature in at least two ways. Firstly, it applies Lazear's hypothesis for the very specific sample of graduate women with high potential for successful entrepreneurship. Secondly, this investigation adds to the literature by the operationalization of the balanced set of skills.

Theoretical Background and Hypotheses

To examine whether more or less general knowledge is helpful in creating own business by German graduate women and answer whether graduate women entrepreneurs are "Jacklines-of-all-trades" entrepreneurs, we test Lazear's theory (2005). The theory assumes that entrepreneurs need to be competent in many, and balanced, skills and have at least basic knowledge in numerous areas (Lazear 2005). This "Jack-of-all-trades" hypothesis presumes that entrepreneurs need sufficient skills and knowledge in a variety of areas to succeed, while paid employees benefit from being specialists in a certain area demanded by the labour market. Thus the theory posits that entrepreneurs have very broad number of skills ("Jack-of-all-trades") which are often complimentary to expert knowledge of their employees. In practice it means that entrepreneurs with different backgrounds, both in education and work experience, playing different roles during their careers have more chance to become entrepreneurs than individuals following one and predefined path.

The theory was checked on different populations. Lazear tested the theory on Stanford alumni. The results confirmed the hypothesis. Individuals who have more varied careers (performed more roles) are more likely to become entrepreneurs. Lazear provided two interpretations of his results, however both supporting the jack-of-all-trades perspective. The first interpretation says that the correlation between number of roles and entrepreneurship is a result of endowed differences in skills across populations, as individuals with more general skills are able to perform more roles. The second interpretation states that this correlation is a result of conscious investment, as individuals aspiring to become entrepreneurs try many roles in order to possess knowledge and skills necessary to start a business venture. The theory was also confirmed in studies conducted by Wagner (2003, 2006), Backes-Gellner and Moog (2013) and to some extent by Lechmann and Schnabel (2014) who supported the view of a multiskilled entrepreneur but did not support Lazear's idea on human capital investment patterns differing between entrepreneurs and paid employees.

Like most of the literature, we use the occupational status of being self-employed as a proxy for entrepreneurship, the theoretical concept applied by Lazear (2005). To operationalize Lazear's balanced set of skills, we assessed aspects of education and experience particularly relevant for women graduates. Besides factors that reflect an actual set of skills, we included perceived skills using entrepreneurship-based self-efficacy (ESE).

The construct of self-efficacy stems from social cognitive theory where psychosocial functioning is explained as triadic reciprocal causation of behavior, personal factors (e.g., cognitions), and environmental events (Wood and Bandura, 1989). Bandura (1978) describes self-efficacy as the perception of a successful execution of behaviour for a specific outcome. ESE represents an individual's perception that she is able to successfully perform the tasks and roles of an entrepreneur (Chen et al., 1998).

We tested the following hypotheses: the probability of being self-employed increases with a) professional training, b) broad industry experience, c) broad management experience, and d) well-balanced ESE.

Methodology

The sample

Data was collected by TNS Emnid, a leading market and opinion research institute, to allow for a Germany-wide representative study. Respondents were screened through random digit dialing by means of the German ADM sampling system and through consulting the Hoppenstedt company sample and the German yellow pages (excluding companies that are typically led by non-graduates, e.g. hairdressers). In the screening calls, those contacted were asked if they were a self-employed woman graduate, or non-self-employed woman graduate. Respondents who fell into any of these categories were then interviewed exclusively by telephone (with CATI) for 22 minutes on average.

The following independent variables were considered:

a) “Professional Training”: The German Chamber of Industry and Commerce offers a combination of a traineeship at a company and schooling, after which students often enter university. Completion of such a program was included as an indicator based on the assumption that this training yields a broader set of skills than a regular course of study alone.

b) “Broad Industry Experience”: This measure was included because it reflects the variety of skills gained through work experience. Participants were asked how many industries they had worked in over their careers. Those who had worked in more than three industries were flagged as having broad industry experience.

c) “Broad Management Experience”: A balanced set of skills was also indicated through participants’ involvement in diverse fields of management activities, such as marketing or accounting, before launching a business. We took the number of applicable fields as a measure of broad management experience.

d) “Well-balanced ESE”: ESE represents an individual’s perception that she is able to successfully perform the tasks of an entrepreneur. In this study, we used a measure validated by McGee et al. (2009). Women were asked to indicate on five-point-likert scales how much confidence they had in their ability to engage in 19 entrepreneurship-related tasks, such as identifying the need for a new product or interpreting financial statements. We then applied McGee et al.’s sub-scales determined through factor analysis, namely, searching, planning, marshaling, implementing-people, and implementing-financial. We calculated the mean for each sub-scale and took the standard deviation of the sub-constructs as a measure for the balance of ESE. For example, a woman may indicate a high level of self-efficacy in searching and planning, but a low level in marshaling, implementing-people and implementing-financial. This would be an unbalanced ESE with regard to the five areas of entrepreneurial tasks. An equal level of ESE in all five areas would indicate a balanced ESE.

In our models, we controlled for age of the participant, the existence of children, and a life partner, parental role models, whether the participant’s former course of study was related to management and whether she completed a university degree. We also controlled for whether the participant had ever been unemployed, for years of work experience, and for overall ESE.

Analysis and Results

The hypotheses above were tested by means of logit regression with STATA version 11.0. A dichotomized measure indicated whether a woman graduate was self-employed (n=706) or not (n=678) as the dependent variable. To control for non-linearity, we estimated a second model that adds quadratic terms of age, work experience, and the number of fields of management experience.

Given that the quadratic term of age added in the second model was highly significant, we focused on these results. The estimated model had a Pseudo *R* squared of 0.2813. The probability of being self-employed increased with age, parental self-employment, overall ESE, additional professional training, broad industry experience and well-balanced ESE. In contrast, the existence of a life partner, work experience in years and broad management experience correlated with a lower probability. Furthermore, the participant's age squared correlated with a decrease in the probability of being self-employed, indicating that the probability increases with age at a decreasing rate. The existence of children did not show any significant effect.

Hence three of four proxies to measure a balanced set of skills confirm that graduate women entrepreneurs are "Jackelines-of-all-trades". The probability of being self-employed increased with a professional training and with broad industry experience. Likewise, more balanced ESE correlated with higher probability of being self-employed. However, the probability of being self-employed did not increase with broad management experience.

Discussion

The results predominantly support the "Jack-of-all-trades" hypothesis for our sample of graduate women entrepreneurs. They additionally deliver insights about the types of skill-sets that lead to a higher probability of self-employment. A broader set of skills derived from professional training increases the probability of self-employment. That special combination

of practical oriented traineeship at a company and theoretical oriented schooling therefore seems to be an interesting education concept for fostering entrepreneurial intention. The impact of broad industry experience on the probability of self-employment can show that observing the business world from different perspectives and gaining experiences in a variety of trade branches is more important for tendencies towards developing entrepreneurial activities than experiences in different management areas. Interestingly, the analysis did not show a positive impact of a broad management experience on the probability of self-employment. Nevertheless, even though it was not possible to see a connection to entrepreneurial intentions, the management experience could have a positive impact on the final descision to really start a business or the success of a start-up.

Amongst others we additionally controlled for age as a factor influencing self-employment and found a positive impact. On the one hand this could be explained by a changing risk perception. Even though studies have not yielded consistent evidence, it can be argued that after the adolescence period risk aversion is decreasing with growing age. Assuming that risk perception is an influence factor on entrepreneurial intention, this can explain the above mentioned result. On the other hand it could as well support the “Jack-of-all-trades” hypothesis since it takes time to gain broader skills in different areas. However, it has to be mentioned that this accounts for life-experience in general since we have also shown that surprisingly years of work experience is not positively related to the probability of self-employment.

There are some limitations of our study to be mentioned. First, it is a retrospective approach measuring only a snapshot of the lifetime of the surveyed women. Examining changes over time would improve the explanatory power of the results. Second, since the data is cross-sectional unobserved heterogeneity and potential problems of endogeneity cannot be

taken into account. Third, this study is focusing on the probability of self-employment only. We cannot draw any conclusion regarding the success of the founded businesses.

Nevertheless several implications can be derived from our work. When it comes to entrepreneurship education our results suggest focusing on collecting experiences in diverse fields. This should especially include practical oriented experiences in diverse industries rather than concentrating on (various) management skills only. The results also indicate a need for promoting the diffusion of the professional training as a dual concept of school based theoretical education in combination with company based traineeship.

For future research we recommend analyzing nascent instead of established entrepreneurs. A panel approach goes along with an increasing number of observations that amongst others allow integrating changes in skills and experiences as well as ESE. We also suggest expanding the analysis by including additional control variables and success measures in future studies.

This study has yet to be published or presented. We are currently refining the analysis to include a robustness check and a discussion of results.

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