

# **SELECTION EFFECTS IN ENTREPRENEURSHIP**

## **Dissertation Proposal Summary**

Francesca Melillo  
Ph.D. Student  
Strategic Management Area  
LUISS Guido Carli University

Under the supervision of Dr. Timothy B. Folta and Dr. Raffaele Oriani

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## 1. The Overall Aim of the Dissertation

Entry, exit, and initial size are fundamental notions in entrepreneurship. A common theme is that individual – level characteristics play a central role in determining these phases of the entrepreneurial process. In particular, prior research has separately considered how founders background characteristics, such as job history and education, impact: entry (Elfenbein, Hamilton, & Zenger, 2010; Folta, Delmar, & Wennberg, 2010; Gompers, Lerner, & Scharfstein, 2005; Sørensen, 2007), initial size (Colombo, Delmastro, & Grilli, 2004; Cooper, Woo, & Dunkelberg, 1989; J Mata, 1993; Roberts, Klepper, & Hayward, 2011), and exit (Brüderl, Preisendörfer, & Ziegler, 1992; Geroski, José Mata, & Portugal, 2010; Gimeno, Folta, Cooper, & Woo, 1997; Phillips, 2002). The preponderance of research in this area has explained such relationships in terms of skills and knowledge that the entrepreneur has accumulated in his past experiences. The higher the founders' human capital (skills and knowledge) the higher the entrepreneurial outcomes. For example, founders with generic work experience are more likely to entry, to start their venture at a greater scale, and are less likely to exit.

It's important to give a closer scrutiny to those findings because prior work has implicitly assumed that initial size, performance, and exit are *independent* of the entry stage. This treatment is paradoxical since the same individual-level determinants of initial size, performance and exit are likely to bear upon the entry decision. A fundamental reason why prior research has ignored these interdependences is that it has largely relied upon samples of new ventures or new entrepreneurs. Those samples suffer from selection bias since we can only observe those firms that were actually founded (Sorensen and Phillips, 2011), and we can only observe initial size when entry occurs (Mata, 1993). In other words, prior studies lack access to information on those individuals who are at risk of switching to entrepreneurship but *don't*. Therefore, empirical findings from these studies may be called into questions if selection processes that generate the sample of entrepreneurs cause endogeneity in the model (Heckman, 1979). More importantly, if these selection processes at entry influence initial size, performance, and exit, then the above mentioned independence assumption results violated. Consequently, our understanding of the key issues in entrepreneurship may be erroneous. “In general, failure to statistically correct for endogeneity can lead not only to biased coefficient estimates but, more importantly, to faulty conclusions about theoretical propositions” (Hamilton & Nickerson, 2003: 52).

The aim of my dissertation is to revisit prior work fundamental findings as well as theoretical arguments regarding the influence of individual-level characteristics on initial size, performance, and exit, by investigating the nature, the extent, and the origins of selection effects. I suspect that much of the emphasis on treatment (experience)-based explanations is the results of spurious associations, driven by selection effects. Next paragraph clarifies the notion of selection effects.

## **2. The Notion of Selection Effects**

Although research in management is becoming more and more concerned with self-selection and endogeneity issues, research in entrepreneurship falls behind. This concern takes on a greater relevance, if the most important notion in entrepreneurship is a choice, i.e. the entry choice. I posit that individuals choose to entry entrepreneurship, as opposed to stay in paid employment, according to their characteristics as well as to industry conditions. Therefore, on the footsteps of Shaver (1998: 572)'s seminal work, an individual's entry decision is endogenous and self-selected. A few recent works have suggested that some detected relationships between prior workplace characteristics and entrepreneurial entry might be the spurious result of selection effects.

A selection effect occurs if individuals self-select into entrepreneurship or into organizations with certain entrepreneurial attitudes and abilities (Campbell, Ganco, Franco, & Agarwal, 2010; Elfenbein, Hamilton, & Zenger, 2010; Klepper, 2009; Ozcan & Reichstein, 2009; Sørensen, 2007; Sørensen & Fassiotto, 2011). Individuals might self-select in entrepreneurship or in certain employers before entrepreneurship, according to entrepreneurial attitudes, such as preference for autonomy (Halaby, 2003). Elfenbein et al. (2010) label this mechanism as preference sorting. Other individuals might self-select according to their entrepreneurial abilities (Campbell et al., 2010; Jovanovic, 1982). Elfenbein et al. (2010) label this mechanism as ability sorting. Moreover, Sørensen (2007) highlights the process of *strategic* sorting, for which individuals might self-select into firms that they believe will provide relevant experience (in terms of human and social capital) to achieve their final goal of becoming a successful entrepreneur. Finally,

Sorensen and Fassiotto (2011: 1330) hypothesize that the relationship between individuals' background characteristics and entrepreneurship might not only be the result of selection processes at the point of entry (hire) into an organization, but also at the point of exit from an organization. Employers and, in general work experience, shape an individual' structure of career incentives, and in particular incentives to entrepreneurship. In other words, they set an individual's entry threshold.

In synthesis, very recent studies on entry suspect that many empirical associations between founders' background characteristics or prior employers and entrepreneurial outcomes may arise through selection processes (Elfenbein et al., 2010; Nanda & Sørensen, 2010; Ozcan & Reichstein, 2009; Sørensen, 2007). This suggests that prior findings on entrepreneurial outcomes might be called into question if selection effects produce substantial bias. Despite the importance of this phenomenon and the potential impact on how we interpret prior research, systematic theoretical and empirical examination of the consequences of selection processes on entrepreneurial outcomes is lacking. In light of these insights, and motivated by the pursue of a truthful understanding of the micro-level determinants of entrepreneurship, my dissertation investigates the following research questions:

- *Do selection effects at entry impact entrepreneurial outcomes?*
- *Why do selection effects occur?*
- *How do selection effects influence entrepreneurial outcomes?*
- *What are the consequences of ignoring selection effects?*

### 3. The theoretical Contribution

The contribution of my dissertation goes beyond proposing a better empirical specification to consider selection effects. It opens the way for improved theorizing around the determinants of initial size, performance, and exit. Overall, my dissertation reveals that ignoring selection effects causes one to overemphasize the role of prior experience as fonts of skills and knowledge. At the same time, it underrepresents the role of entrepreneurial incentives and opportunity costs in determining the individual's threshold not only to entry, but also to initial size, and exit. Our theoretical model blends upon the idea that different incentive structures produce heterogeneous impacts on entry and initial size decisions, which, in turn, affect entrepreneurial performance and exit. This idea is consistent with an emerging view of prior employers as contexts that shape individuals' career opportunities, as opposed to the current view of employers as contexts that induce changes in individuals' characteristics (Sørensen & Fassiotta, 2011).

In detail, my dissertation offers a theory-based structure to reexamine the theoretical explanations that prior research has provided to three fundamental issues in entrepreneurship:

- *The Individual –Level Determinants of Initial Size.* Their role is downplayed. What matters in determining initial size, above and beyond industry conditions, is the way entrepreneurs enter the market, i.e. types of entrants (Helfat & Lieberman, 2002:731), such as spinout or de novo. This type of entrant effect is a selection effect, because founders of different types of entrants have different thresholds to both entry and size.
- *The Individual / Firm –Level Determinants of Entrepreneurial Performance.* The role of initial size is downplayed. Population–level explanations referring to the liability of smallness give way to micro-level explanations. In particular, the previously detected relationship between initial size and performance suffers from endogeneity in start-up size and is actually driven by group-level selection effects (types of entrants).
- *The Interplay between Performance and Exit.* In contrast to the previous Darwinian idea, for which firms that do not fit the competitive environment (low economic

performances) are selected out of the market, I consider exit as an individual's strategic choice where income from entrepreneurship represents only a halved explanation of the phenomenon. Equally central is the role of other sources of income (i.e. those from simultaneous wage work). This contribution signals endogeneity in exit decision (entry in wage work might *precede* and not *follow* exit).

Transversally, I believe my dissertation is the first study that *jointly* consider the fundamental phases of a new venture lifecycle, in contrast to previous effort which has traditionally treated them as independent of each other's. This contribution is not only curious but fundamental since the individual-level determinants of entrepreneurial entry influence also the post-entry processes. My dissertation ultimately cautions against investigating these processes separately as it results in a myopic understanding of the whole entrepreneurial process.

#### **4. The Structure of the Dissertation**

My dissertation is organized as a collection of three quantitative research papers, each sequentially addressing a key stage of the entrepreneurial process. All together the three essays aim at providing a sophisticated picture on how selection effects influence these different phases as well as the interplay among them.

Conceptually, each research paper revises a fundamental finding in entrepreneurship by showing the theoretical and empirical implications of selection processes at entry. Specifically, the first essay examines the determinant of initial size, the second essay pursues a better understanding of the implications of initial size on performance (the liability of smallness), and the third essay investigates the determinants of exit and its interplay with performance.

The relationships between the essays in the dissertation are illustrated in Figure 1. The next paragraph introduces to each research paper by providing a short summary.

### ***I. Endogeneity in Start-up Size. Selection Effects among Types of Entrants.***

This paper investigates the determinants of start-up initial size, a fundamental issue in entrepreneurial research (initial size is critical because it bears upon future success). Prior research examining initial size suffers from a number of biases, which may undermine confidence in one of the recurrent findings in the literature - that an entrepreneur's human capital and individual characteristics influence initial size. In contrast to previous efforts to model start-up size, this work views initial size as an entrepreneur's strategic choice rather than an outcome of the entrepreneurial process. As such, initial size may be endogenous and self-selected. This essay shows that the way entrepreneurs enter markets, i.e. types of entrepreneurial entry (e.g., spinout or denovo) condition individuals' initial size choices. Such influence is not just straightforward, but as well occurs through selection processes by individuals into these types of entry categories. We demonstrate that prior research overemphasizes the individual-level determinants of start-up size if types of entrants are treated as an all-in-one category. Using matched employee–employer data over eight years, we test the model on a population of Swedish ventures in the knowledge-intensive sector.

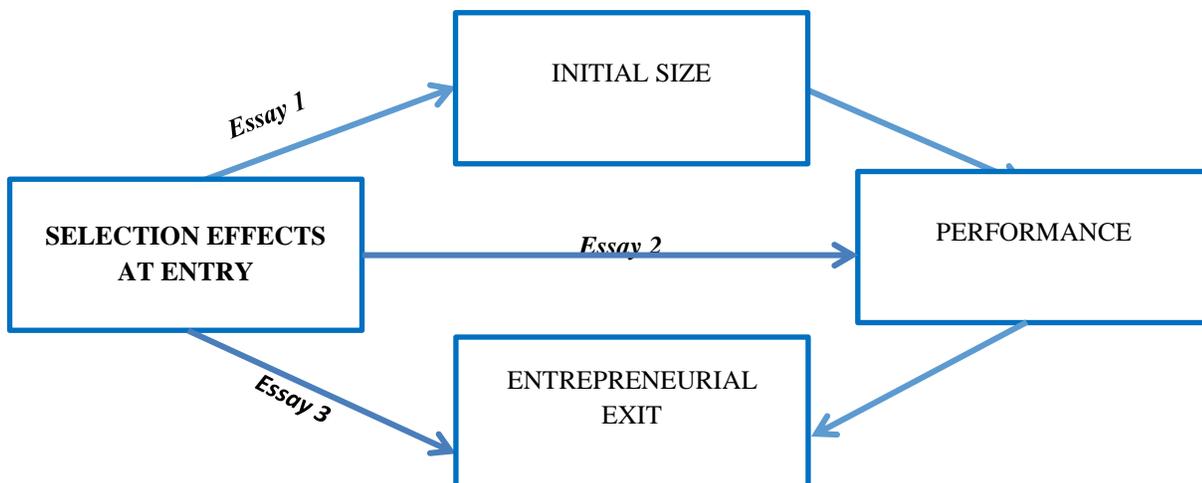
### ***II. In & Out. A Selection – Based View of the Liability of Smallness***

This second essay represents the logical follow-up of the first essay since it considers the performance implications of endogeneity in start-up size. In particular, this work revisits a pillar of entrepreneurial research: the liability of smallness, i.e. the positive relationship between initial size and entrepreneurial performance, to account for selection effects. One of the key finding from the empirical analysis is that selections effects occurs, and they occur at group level rather than individual level, i.e. at the level of types of entrants. The theoretical model blends upon the idea that founders of different types of entrants might have different incentives to entrepreneurship, as well as different risk propensities. This implies that types of entrants alter two central individuals' decisions: entry and start-up size. Ignoring these selection effects causes one to overemphasize the role of initial size as predictor of performance, in lieu of types of entrants. Using matched employee–employer data over eight years, the model is tested on a population of Swedish wage earners in the knowledge-intensive sector.

### ***III. The Endogeneity of the Entrepreneurial Exit Decision. An Occupational Choice Study***

This third essay investigates the last phase of the entrepreneurial process: exit. In contrast to previous work that cast entrepreneurial exit as a dichotomous decision (e.g., exit or not; paid-employment or self-employment), my access to Swedish data suggests that such dichotomies are false. By tracking every occupation of an individual over time, the data reveal that many individuals persist in entrepreneurship even though it may not be their primary source of income. Moreover, this work diagnoses spillover effects between simultaneous instances of wage work and self-employment, which might be referred to as hybrid exit. Conceptually, this essay models entrepreneurial exit as a strategic choice among multiple options: stay in the business, exit out to wage work, exit out to self-employment, and exit out to unemployment. The key finding reveals that a fundamental predictor of entrepreneurial exit is the weight of entrepreneurial earnings *relative* to the other contemporaneous source of income: wage work. This result has profound implications for the study of entrepreneurial exit, and highlights that prior research has provided only a halved view of the phenomenon. Using matched employee–employer data over eight years, I test the model on a population of new Swedish entrepreneurs.

**Figure 1.** *The Relationship Among The Three Dissertation Essays*



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