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Entrepreneurial Exit:

Overview, Determinants, and Habitual Founders

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Executive Summary

The growing literature dedicated to entrepreneurship has recently highlighted the importance of considering the founded firms' exit not as an ending, negative stage in an entrepreneur's work-life experience. Instead, the decision to leave one's venture is a strategic choice undertaken for the firm's sake or as a founding entrepreneur's lifestyle choice and leading to various after-exit paths.

The thesis contributes to the stream of literature dedicated to the entrepreneurial exit and habitual entrepreneurship fields. It explores the antecedents of the cross-road choice that founding entrepreneurs take right-after an acquisition occurs using a prospect theory approach and investigates the characteristics that differentiate habitual founders from lifestyle entrepreneurs, borrowing from human capital theory and building on recent work in the field. From a methodological viewpoint, the thesis' main contributions include (i) the use of a large dataset of 14,881 founders, created on the bases of the Crunchbase database (data.crunchbase.com), (ii) the focus on the very-after acquisition step taken by the founding entrepreneur and investigated in North America, Europe, and Asia, and (iii) the introduction of a relatively new unit of analysis -- habitual founders -- when discussing the characteristics of habitual entrepreneurship.

After introducing the thesis' main concepts in Chapter 1, the various contributions are developed in the three following chapters. Chapter 2 offers a descriptive study of the current literature in the entrepreneurial exit field, with particular attention given to the individual voluntary choice of exiting the founded firm. Chapter 3 extends the previous study by focusing on the antecedents of the founder's intention to leave or remain within the firm right after encountering its acquisition from external actors, and investigating whether results hold across world regions. Chapter 4 centers the study on the differences leading entrepreneurs toward a lifestyle versus a multiple-ventures creation entrepreneurial approach. The

Appendix offers a step-by-step explanation of the procedures undertaken to create the database; it is thought to be used by other researchers as a guideline toward the creation of a similar database.

1. Introduction

Traditional entrepreneurship literature has identified the entrepreneurial process as a path starting with the creation of the venture and ending with the exit from that same business (Ardichvili et al., 2003; Korunka et al., 2003; Shane & Venkataraman, 2000). Recent work has instead recognized the importance of the exit event as an additional critical component of the process (Albert & DeTienne, 2016; DeTienne, 2010; Salvato et al., 2010; Wennberg et al., 2010). In particular, exit as a stage of the entrepreneurial process has been investigated under two main levels. The firm-level exit, indicating the exit of the firm from the market (see, for example, Balcaen et al., 2012; Parastuty, 2018), and the individual-level exit, reflecting the decision of the founder to leave the firm she helped creating (see, for example, DeTienne, 2010; DeTienne & Cardon, 2012; Wennberg et al., 2010).

Responding to the call for research on entrepreneurial exit as a voluntary decision of the entrepreneur (DeTienne et al., 2013; DeTienne & Wennberg, 2016; Wennberg & DeTienne, 2014), the thesis contributes to the understanding of such an entrepreneurial stage with a focus at the individual-level of analysis. Particularly, we firstly aim at investigating what happens to founding entrepreneurs once their firms are acquired. In fact, only a handful of studies have addressed what happens to founders following an acquisition (Cumming et al., 2016; De Hoe et al., 2018a; DeTienne, 2010; DeTienne et al., 2015; DeTienne & Cardon, 2012), and only one study, to our knowledge, has investigated this phenomenon internationally (Stam et al., 2010).

We aim to shed light on the determinants, from an international perspective, that lead founders – once their current venture has been acquired – to either leave or to maintain a role in the firm. Thus, the first part of this research addresses the knowledge gap with respect to the determinants of a 'stay or leave' decision by founding entrepreneurs residing in three different regions of the world, namely North America, Europe, and Asia.

While maintaining the focus at the founder-level, the thesis also investigates the differences between habitual founders and one-time entrepreneurs, thus, responding to the call for a more accurate definition of habitual entrepreneurs and a more proper comparison term (Kerr et al., 2018; Ucbasaran et al., 2003). Aiming to understand better which characteristics of an entrepreneur play a role in becoming a habitual founder, we identify a set of variables that promote habitual founding entrepreneurship. We investigate entrepreneurs' education, international experience, and diversity of prior experiences.

The thesis aims at contributing to the existing literature also from a methodological and empirical viewpoint, i.e., by introducing relatively new units of analysis, the habitual and the one-time founders, and by using a large dataset based on secondary data gathered from the Crunchbase database, a source often used in entrepreneurial and management studies (Alexy et al., 2012; Cumming, 2008).

Therefore, Chapter 2 presents a descriptive study on the state of the art of the entrepreneurial exit literature, with a focus at the individual level of analysis. The study proposes that, with an academic publication annual growth rate of fourteen percent and increasing attention rising from the practitioners' world, the entrepreneurial exit field is gaining popularity. We use the bibliometric methodology to describe the evolution of the publication activity, the most representative contributors and contributions, and the trending topics of the articles in the field. We also highlight the main researched themes and identify potential avenues for future research.

Since every founding entrepreneur experiences an exit from her business at some point, Chapter 3 aims at investigating the factors that influence a founder's choice to leave the entrepreneurial venture she had launched. Drawing from prospect theory, we address this question with a database of 6,372 founding entrepreneurs from North America, Europe, and Asia. The number of founders differs from our initial dataset as we cleaned it, discarding those

founders for whom we had some missing information. We contrast those founding entrepreneurs who choose to remain within the company against those that exit and move on to a different activity, following the acquisition of their enterprise. When comparing the entrepreneurial exit phenomenon across world regions, results hold with the exception of a difference in the European sample for which having a firm listed in the stock exchange market has no significance on the exit phenomenon.

Chapter 4 investigates habitual and one-time entrepreneurs' different characteristics. We differentiate from extant literature that mainly compares habitual entrepreneurs, including serial and portfolio, founders and acquirers, to novice entrepreneurs at their first venture. We argue that entrepreneurs who create multiple firms leverage on a portfolio of competencies promoted by previous entrepreneurial ventures and by international knowledge and diversified experiences in terms of industry, firm characteristics, and job positions covered. Using our database and drawing from human capital theory, we explore the specific and general features that increase the likelihood of becoming a habitual founder.

The thesis concludes with Chapter 5, dedicated to discussing the main results drawn from the presented studies.

2. Entrepreneurial Exit Literature at the Individual Level of Analysis

2.1. Introduction

The subject of entrepreneurial exit frequently appears in the practitioners' world. While searching for related terms on Google, the vast majority of results are linked to the practitioner's public, with studies from the Kauffman Foundation (Kauffman.org) and Forbes (forbes.com). In discussing the issue, these associations mainly offer hints and bits of advice on different aspects, e.g., how to exit, when it is the best time to exit, or which strategic approach to choose.

At the same time, in recent years, the academic world has started showing some interest in the topic. This increased interest is mainly related to the recent calls for papers by DeTienne and Wennberg (DeTienne et al., 2013; DeTienne & Wennberg, 2015, 2016; Wennberg & DeTienne, 2014). These authors have realized that entrepreneurial exit has been treated very differently in the academic and the practitioners' domains (DeTienne & Wennberg, 2015). Academic researchers have mostly focused on the initial phases of a new venture lifecycle, considering 'exit' as the last step of the entrepreneurship process, after a failure, acquisition, or because of entrepreneurs' retirement. Practitioners, instead, saw 'exit' as a stage (or a choice) entrepreneurs can select as part of their careers.

Overall, in recent years, the awareness on entrepreneurial exit is exponentially growing. However, as a consequence of these divergent approaches between academia and professional world, there is still some confusion on the issue: does it refer to the firm's exit from the market? Is it about going through IPOs, acquisitions, or private sales? Does it refer to the exit of the founder from the firm she established?

For now, it seems that the entrepreneurial exit definition mainly depends on the boundaries set by researchers. On the one side, firms might stop their activities, e.g. because of failure or liquidation, while founding entrepreneurs might keep on operating in a different

environment. On the other side, founders may decide to exit their firms for a variety of reasons, e.g., retirement, willingness to dedicate to philanthropic activities, desire to re-invest in a new ventures, even though their firms might keep on being active (Koladkiewicz & Wojtyra, 2016; Strese et al., 2018).

Thus, there are two main levels within the more general field of 'exit': one is the firm level (*firm exit*), and the other one is the individual level (*entrepreneurial exit*). Even if those two groups seem separated, they are often strictly interrelated, and a clear distinction between the two seems trivial. With our study, we aim at clarifying such difference, while investigating the state of the art of the topic. Specifically, we focus on the individual level of analysis. In line with DeTienne's (2010) definition, we refer to the entrepreneurial exit as the process that leads the founding entrepreneur to exit to some extent the firm she created (DeTienne, 2010).

With our systematic review carried out through a bibliometric analysis (Tranfield et al., 2003), we want to offer a description of the current state of the art of entrepreneurial exit literature, whilst trying to solve existing issues related to the separation between firm-level and individual-level exit. We seek to answer two main research questions: (i) which is the current state of the art of entrepreneurial exit, at the individual level of analysis? (ii) which are the theoretical foundations of entrepreneurial exit – again - at the individual level?

2.2. Methodology

Our study offers the state of the art of the entrepreneurial exit literature at the individual level of analysis. Since presenting a subjective literature review is not enough, we opted for a systematic approach while performing a bibliometric analysis of the current literature (Tranfield et al., 2003). Such methodological approach has been gaining attention in social sciences as it offers the possibility to map the field of study while evaluating the impact of the currently existing literature (Grégoire et al., 2006; Lampe et al., 2019; Schildt et al., 2006).

Citing the words of Okubo (1997, p.6): '*bibliometrics is a tool by which the state of science and technology can be observed through the overall production of scientific literature, at a given level of specialization.*' Bibliometric analysis can be performed to 'advance the right arguments, to be in full possession of the facts, and to back them up with "objective" figures' (Okubo, 1997, p.6).

Thus, the bibliometric methodology helps us to highlight seminal works together with the most relevant authors in the field. It also offers the possibility to study the level of co-citations, the connections among topics, as well as indicating the major journals interested in the topic. Thanks to such a methodology, we seek to clarify entrepreneurial exit at the individual level, while highlighting the main related confusion's drivers.

To perform the analysis, we use the Bibliometrix R software package and its web-based app Biblioshiny, created by Aria & Cuccurullo (2017). They aimed at offering an R-optimized tool to perform bibliometric analyses of scientific contributions. Thanks to those packages, we perform multiple bibliometric analysis starting from the descriptive statistics of the extant literature and developing more intriguing analyses of the literature at (i) the conceptual structure level - the main themes and trends; (ii) the intellectual structure level - how specific works influenced the research field; and (iii) the social structure level - how contributors interact. The conceptual structure is developed through co-occurrence networks, thematic maps, and correspondence analysis. The intellectual structure of the literature is expressed through co-citation networks, and the social structure is instead expressed through collaboration networks and maps (Aria & Cuccurullo, 2017).

We decided not to filter the documents per period. Thus, we gathered all studies published since the very first document in the field, a 1992 article by Cooper, Folta, Gimeno-Gascon, & Woo (1992) titled "*Entrepreneurs' exit decisions: The role of threshold expectations.*"

2.2.1. Sample

The search was conducted in December 2019, using Clarivate Analytics Web of Science database, coupled with Scopus, Elsevier's citation database. Together, they offer a wide-ranging source for peer-reviewed literature and an almost-complete understanding of the extant literature. To narrow the scope of the research to address entrepreneurial exit, we entered the following couples of terms: "*entrepreneur* exit*", "*found* exit*", "*self-empl* exit*", "*after exit*", "*post-exit*", "*after acquisition**", and "*post-acquisition**", with and without quotation marks. We used quotation marks to search for the exact terms, but we cross-checked the analysis, coupling search without such marks. We included the asterisk symbol to search for variants of words and not to miss out on potential key results.

Web of Science and Scopus tools automatically executed the search, gathering 653 contributions containing the specified terms in the title, abstract, or authors' keywords, and we downloaded the results on a local file. Each author then separately read through contributions' title, keywords, and abstracts, independently selecting which to include in the literature review. We then compared the selection outcome and debated single cases upon which the authors did not have an agreement on inclusion. As a result, we selected 118 manuscripts on entrepreneurial exit for the review including all the needed pieces of information (i.e., publication year, authors, and source). For quantitative works, we also recorded the reference dataset, the econometric models adopted, and the dependent, independent, and control variables used.

Since the focus of our review is at the individual level, we examined the previously selected articles and excluded all those that focus on firm-level analysis (48 out of 118). As already mentioned, we have included entrepreneurial exit, founder exit, as well as self-employment exit. This seems tricky since the main difference among entrepreneurs and self-employed individuals is that the first group faces business risk, while the latter faces firm and

income risks, which do not necessarily include innovation risks as well (Caliendo et al., 2014). We decided to maintain all three typologies, since they are often used interchangeably (Fossen, 2012), and this would have resulted in missing out potential noteworthy papers if we did not include them.

The sample includes 70 documents from 40 different sources (journals, books, and conference papers), all published in the period ranging from 1992 to 2019. As reported in

Table 1, 132 authors published studies on entrepreneurial exit at the individual level, with an average 0.5 documents per author and 1.9 authors per document. Overall, each contribution received 23.1 citations on average.

It appears that the majority of articles are co-authored since the co-authors per document ratio – authors' appearance/documents (Aria & Cuccurullo, 2017) – is 2.3. It means that there are, on average, two authors per document published in the field. Such a fragmented publication trend combined with an equally fragmented sources composition - forty outlets for just seventy articles published - may indicate that the topic is yet to reach its full potential. The relevant number of authors and co-authored contributions published in such a vast range of sources could denote that the entrepreneurial exit field is still understudied, and this might translate in a vast number of potential streams for future research.

Description	Results
Documents	70
Sources (Journals, Books, etc.)	40
Period	1992 - 2019
Average citations per documents	23.1
Authors	132
Authors of single-authored documents	20
Authors of multi-authored documents	112
Single-authored documents	22
Documents per Author	0.53
Authors per Document	1.89
Co-Authors per Documents	2.26
Collaboration Index	2.33

Table 1: Descriptive analysis (adapted from Biblioshiny)

2.3. Publication activity on Entrepreneurial Exit at the Individual level of analysis

To better describe the quantitative evolution and structure of the entrepreneurial exit literature, it is useful to examine some indicators of the publication activity.

The time distribution Figure 1 displays that more than 61 percent of total contributions (43 documents) have been published after 2015. The increasing number of papers published in highly respected and mainstream journals may suggest the rising of a stream of higher-quality articles, and it may also reveal a growing interest in the field. This is also proven by the annual growth rate of publication activities that reaches fourteen percent.

Such an increase in publication activity is probably due to the fact that authors have been responding to the calls for research in the field (DeTienne et al., 2013; DeTienne & Wennberg, 2016; Wennberg & DeTienne, 2014). Yet, the number of documents dedicated to entrepreneurial exit for the founding entrepreneur is still scarce, and it may reveal that such topic within the entrepreneurial field is still understudied.

Figure 1: Annual Scientific Production (adapted from Biblioshiny)
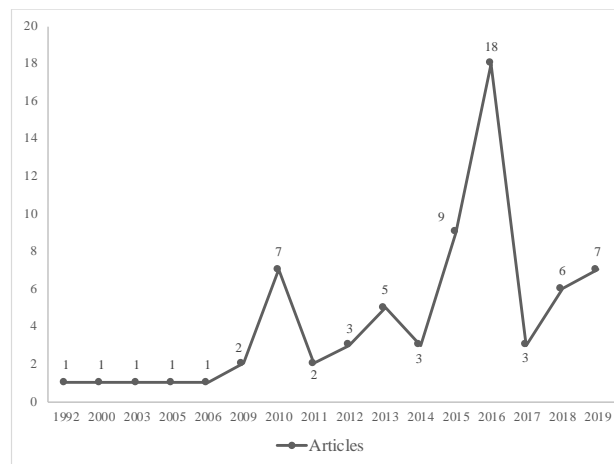
As previously underlined, while looking at Figure 1, we can see that research on entrepreneurial exit has been growing. We can clearly see a first wave of published articles (7) in 2010, among which there are the two seminal works in the field (DeTienne, 2010; Wennberg, Wiklund, DeTienne, & Cardon, 2010), followed by a burst in publications starting from 2015,

with 18 papers published, among which there is the "*Research Handbook of Entrepreneurial Exit*" (DeTienne & Wennberg, 2015) published by the two most relevant authors in the field.

When examining the publication activity, it is essential to highlight the principal contributors to the field. The top-three authors per number of documents and total citations are DeTienne, Wennberg, and Cardon with respectively, eight, six, and three studies published (Table 2). Together, they represent approximately twenty-four percent of the total publications within the entrepreneurial exit field of research. The other 129 scholars who authored - or co-authored – studies in the field, published one (119 authors), two (8 authors), or three (2 authors) articles. Such fragmented results demonstrate that the entrepreneurial exit topic, specifically at the individual level of analysis, is not merely understudied, but, as a young field, it attracts researchers from different areas, although they mainly come from within the entrepreneurship field.

Author	# Articles	H_index	Total Citations	First Publication Year
DETIENNE D.R.	8	7	500	2010
WENNBERG K.	6	5	272	2010
CARDON M.S.	3	3	227	2010
VAN DER ZWAN P.	3	3	92	2010
WIKLUND J.	3	3	207	2010
ALBERTI F.G.	2	1	3	2013
ANDERSON S.E.	2	1	15	2016
GOFEN A.	2	2	37	2012
HESSELS J.	2	2	59	2011
HSU DK	2	1	15	2016

Table 2: Top 10 Authors' production over time (adapted from Biblioshiny)

Figure 2 presents the top-authors' production over time. The red lines represent the authors' timeline, the bubble size is proportional to the number of published articles, and the color intensity relates to the total citations per year (Aria & Cuccurullo, 2017). For example, Van Der Zwan has helped improving the knowledge on the topic for the most protracted timeline (from 2010 to 2018), and DeTienne's articles in 2010 have collected an average of 26.9 citations per year.
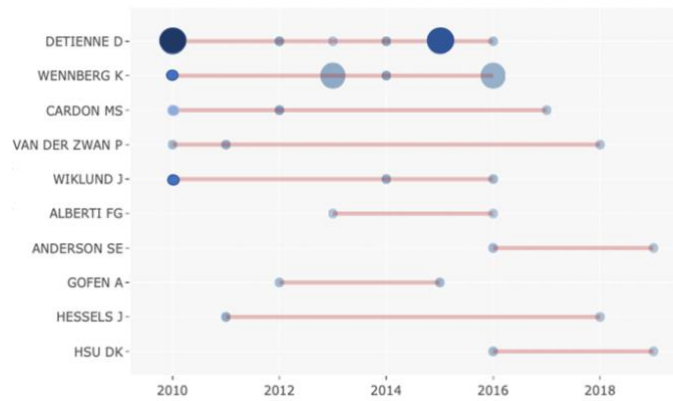
Figure 2: Top 10 authors' production over time (adapted from Biblioshiny)

As we previously highlighted, the high peaks of publication seem to follow the calls for research mainly pursued by DeTienne and Wennberg, in their critical reviews, book and seminal papers (DeTienne, 2010; DeTienne et al., 2013; DeTienne & Wennberg, 2015, 2016; Wennberg & DeTienne, 2014; Wennberg et al., 2010). As a matter of proof, their studies are among the most cited documents.

The most important source for the entrepreneurial exit topic is the Journal of Business Venturing, in which the two seminal articles have been published. For a more comprehensive view, Table 3 shows the ten most relevant sources in the field.

Sources	Articles
Journal of Business Venturing	10
Small Business Economics	9
International Small Business Journal – Researching Entrepreneurship	8
International Journal of Entrepreneurial Behavior & Research	3
Entrepreneurship and Regional Development	2
Entrepreneurship Research Journal	2
Entrepreneurship Theory and Practice	2
Journal of Labor Research	2
Journal of Small Business Management	2
Academy of Management Journal	1

Table 3: Top 10 journals (adapted from Biblioshiny)

Three journals mainly publish the current literature. As a result, entrepreneurial exit literature is pretty dispersed across the forty sources; only nine journals have published more than one article. Therefore, we have further proof on the entrepreneurial exit as a yet understudied topic. We can also see it in the number of conceptual contributions (17), versus empirical ones (53). Such distribution is not surprising since, apparently, entrepreneurial exit

research stream still needs further consolidation (Shepherd & Suddaby, 2016). Interestingly, its importance is in line with the literature (Stockemer, 2019) which argues that quantitative methods are driving research in the social sciences, specifically in those fields significant to both academics and practitioners.

However, even if research methods should be chosen accordingly to the research question and the level of analysis that scholars aim to perform, there seems to be the need for more theory-development oriented papers within the entrepreneurial exit field. In the next section we will describe the current trends which will drive us to outline potential avenues for future research.

2.4. Trends and Future Research in Entrepreneurial Exit literature

Digging into a research field means being able to analyze the current key topics and the future rising trends, the impact that specific papers have on the whole field of studies, and the existing cooperation level among authors. It translates into science mapping study which, using the words of Cobo, et al.'s, (2011) "*aims at displaying the structural and dynamic aspects of scientific research*" (2011, p. 1382).

Thanks to Biblioshiny, we can investigate the three levels and map the overall field. The conceptual structure is the first level, and it expresses the main themes and topics touched by the entrepreneurial exit. The second level is the intellectual structure, which helps us highlight the seminal articles that influenced the entrepreneurial exit as a field of study. The third level is the social structure, made of the interaction and cooperation among authors, institutions, and countries within the field.

2.4.1. Conceptual structure: Research themes and co-occurrence analysis

The conceptual structure supports us in describing key topics and emerging trends within the entrepreneurial exit field. We use the network approach to map the key themes and group the articles into categories.

2.4.1.1. Current themes

We start by identifying the main current themes studied by researchers in the field. We set *'abstracts'* as the parameter of analysis, and *word stemming* as an option, to examine the occurrence of words based on their roots within the collected papers' abstracts. Such analysis focuses on the abstracts of the selected 70 documents. Biblioshiny applies a clustering algorithm to the resulting network to identify the various themes and display them on a bivariate matrix (Aria & Cuccurullo, 2017). Such graphical representation appears to be much clearer than a network plot, especially when focusing on the current themes studied while analyzing 500 words and their occurrence.

The detected clusters are calculated using Louvain's clustering algorithm (Blondel et al., 2008), and represented using Callon's density (*x-axis)* and centrality (*y-axis)* measures (Callon et al., 1991) on a two-dimensional diagram.

Louvain's clustering method (Blondel et al., 2008) identifies strongly connected subgroups defined as *communities,* within large networks. It measures the density of edges inside communities to edges outside, and it maximizes a modularity score - a scalar value that stays in the range between -1 and +1 - for each community (Blondel et al., 2008). Louvain's is a two-step methodology, iteratively repeated since the maximum of modularity and network are explained. The first step aims at identifying the single communities. The second step creates the network by linking the founded communities. Blondel et al. (2008) defined it as:

$$Q = \frac{1}{2m}\Sigma_{i,j}[A_{i,j} - \frac{k_i k_j}{2m}]\delta(c_i, c_j)$$

Where, $A_{i,j}$ is "the weight of the edge between i and j, $k_i = \Sigma_j A_{i,j}$ is the sum of the weights of the edges attached to vertex i, c_i is the community to which vertex i is assigned, the δ-function $\delta(u, v)$ is 1 if $u = v$ and 0 otherwise, and $m = \frac{1}{2}\Sigma_{i,j}A_{i,j}$ "(Blondel et al., 2008, p. 2).

Louvain's algorithm translates into an evaluation of how connected the nodes within a community are, compared to the case of nodes within a random network (Blondel et al., 2008). Such a methodology has been used to identify networks in studies in different field of research, and with a vast number of nodes (Held et al., 2016; Meunier et al., 2009).

Callon's density, instead, measures the strength of the considered network and can be defined as:

$$d = 100(\Sigma \frac{e_{ij}}{w})$$

Where i and j are the theme's keywords, and w is the keyword count (Callon et al., 1991). Then, Callon's centrality measures the intensity of interaction among networks. It can be defined as:

$$c = 10(\Sigma e_{kh})$$

Where k represents a keyword from one theme, and h is the keyword from other themes (Callon et al., 1991). Those two measures, density and centrality, help in identifying the importance of the resulting themes and, together, they help mapping research themes on a two-dimensional map with four quadrants (Aria & Cuccurullo, 2017). The more central the theme is, the more critical it is to the field, and the stronger the density, the more developed it is (Callon et al., 1991).

In the upper left quadrant, there are highly developed and isolated themes, with non-important external ties, while within the upper right quadrant, there are the most developed and *motor themes* (Aria & Cuccurullo, 2017). On the lower-left quadrant, there are those themes that are weakly developed or marginal, which might translate into either emerging or declining.

The lower-right quadrant, instead, includes themes that are basic and transversal, meaning important for the field, but not well developed yet (Aria & Cuccurullo, 2017).

The use of word stemming helps us focus on the roots of the words highlighting the main clusters and limiting the risks of two words with the same roots to be included in different themes. Figure 3 highlights the five main themes within the entrepreneurial exit domain, according to Lovain's clustering and Callon's measures. Each bubble representing a cluster takes the name of the stemmed word with the higher occurrence, and the size of the bubble itself is related to the whole cluster word occurrences (Aria & Cuccurullo, 2017).
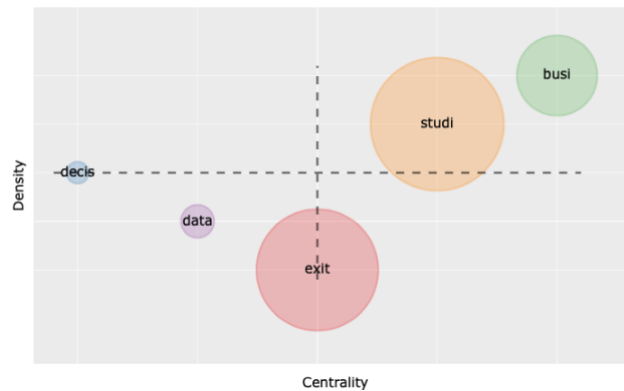
Figure 3: Thematic Map (adapted from Biblioshiny)

The central theme is the *exit* one, which is, as predictable, focal to the analysis. It represents the core of entrepreneurial exit literature as it comprises all those studies that are directly related to it. In fact, it includes papers that study founder's intents (e.g., DeTienne & Cardon, 2012), differences between failure and voluntary exit (e.g., Justo, DeTienne, & Sieger, 2015), factor's to exit (e.g., Stam, Thurik, & van der Zwany, 2010), exit strategy choices (e.g., Wennberg et al., 2010), and a more generalized 'theory' word. The latter can be a symptom of researchers trying to delineate theoretical foundations for the topic (e.g., DeTienne & Wennberg, 2016; DeTienne et al., 2013; Wennberg & DeTienne, 2014). However, if we look at the thematic network (Figure 4), we clearly see that even if the exit cluster seems the stronger

one, the components are still spread around. Another confirmation that the topic needs further consolidation.
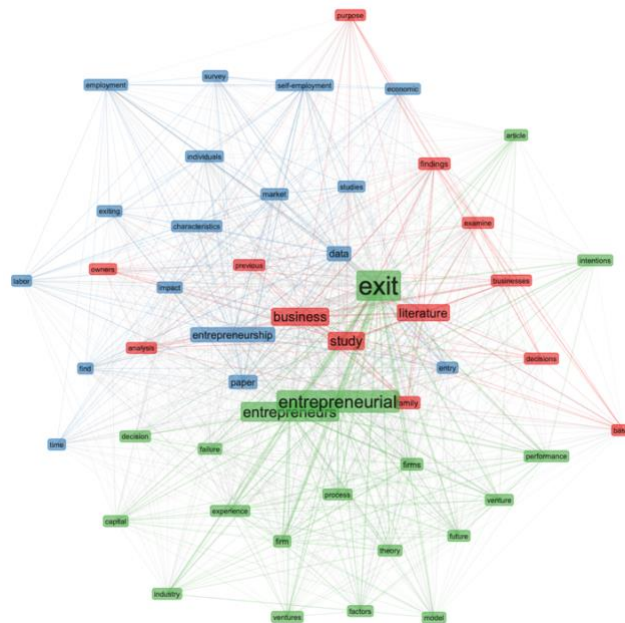
Figure 4: Thematic map network - Abstracts based (adapted from Biblioshiny)

The second theme is *business,* with *busi* as the most recurrent stemmed word, together with *literat, develop, fam,* and *process*. It is the most developed in terms of density among the five represented clusters, and it includes studies that connect the entrepreneurial exit concept within the family business field (e.g., Nordqvist & Melin, 2010; Nordqvist, Wennberg, Bau, & Hellerstedt, 2013). The importance and robustness of family business as an already well-established field of research, both at firm level as well as at the individual level of analysis, may act on the substantial development of the *business* theme as a whole, which is peripheral when compared to the other cluster within the same quadrant. The topics touched within such a cluster also covers social aspects, for example, the effects that having a family have on one's choice to exit the firm (e.g., Bird & Wennberg, 2016), or the human and social aspects related to the exit decision (e.g., De Hoe, Giacomin, & Janssen, 2018). In this cluster, the presence of conceptual studies and literature reviews in the field (e.g., Parastuty, 2018) stands out.

The third major cluster is the theme with *data* as bubble name. Figure 3 includes it within the quadrant of emerging or declining themes. Although it looks as very spread around,

and with no words that really stand out from the cluster, it is of high importance. Firstly, it is in line with empirically-based articles, the majority within the field (e.g., Beutell, Alstete, Schneer, & Hutt, 2019; Chen, Croson, Elfenbein, & Posen, 2019; Dawson & Henley, 2013). The most common variables studied refer to gender, industry experience, and education level of the entrepreneur (e.g., Dehlen, Zellweger, Kammerlander, & Halter, 2014; Espinoza-Benavides & Díaz, 2019; Justo, DeTienne, & Sieger, 2015). Second, it covers a variety of topics, including modeling entrepreneurial entry and exit (e.g., Bosma, De Wit, & Carree, 2005), studying it under behavioral lenses (e.g., Kammerlander, 2016), examining exit as a dynamic process (e.g., Nielsen & Sarasvathy, 2018) and including serial entrepreneurship too (e.g., Plehn-Dujowich, 2010). Third, it represents an emerging theme as topics touched upon are spread across the entrepreneurship field of study but still need further testing before becoming the ground for proper theory building.

Among the other two clusters highlighted in the thematic map, the more developed and important one is the *studies* one. It refers to studies with a focus on self-employment (e.g., Ahn, 2011), unemployment (e.g., Debrulle, 2016), and employment choices (e.g., Caliendo et al., 2014). In general, it includes studies on career dynamics (e.g., Cumming, Walz, & Werth, 2016). The outcome shows that entrepreneurial exit is a multi-leveled and multi-faceted stage in the entrepreneurial life. It does not merely focus on the act of leaving the firm, rather on the whole decision process, starting way before the actual exit event. Therefore, the *studies* cluster represents a well-developed and central theme, currently studied within the entrepreneurial exit topic.

The last cluster we consider embodies *decision* as the word with the highest occurrence value. It is not well developed, and it is isolated within the considered field of research and compared to the external themes. It is related to those articles that still talk about entrepreneurial

exit as a failure instead of considering it as a voluntary act of the entrepreneur or underlining the difference between the two scenarios (e.g., Espinoza-Benavides & Díaz, 2019).

The five themes seem strongly related as the network showed is very crowded. However, the themes appear loosely linked and highly spread across different branches of the entrepreneurial research field, signaling there is extensive room for further development of the theme.

2.4.1.2.   *The thematic evolution map*

The thematic evolution map aims at identifying - as the name suggests - the evolutions of the themes within the entrepreneurial exit field. By splitting the periods into different time slices, it shows the evolution of the topic over time (Aria & Cuccurullo, 2017).

We apply Louvain's clustering algorithm for the sake of coherence, and with the help of Biblioshiny, we define the '*abstracts'* keyword network as the parameter for the analysis (Cobo et al., 2011). We set two different time slices for thematic evolution map based on the distribution of publications per year previously highlighted. We set 2009 and 2014, right before the bursts in publications. Unfortunately, it is not possible to choose for word stemming when performing this analysis.
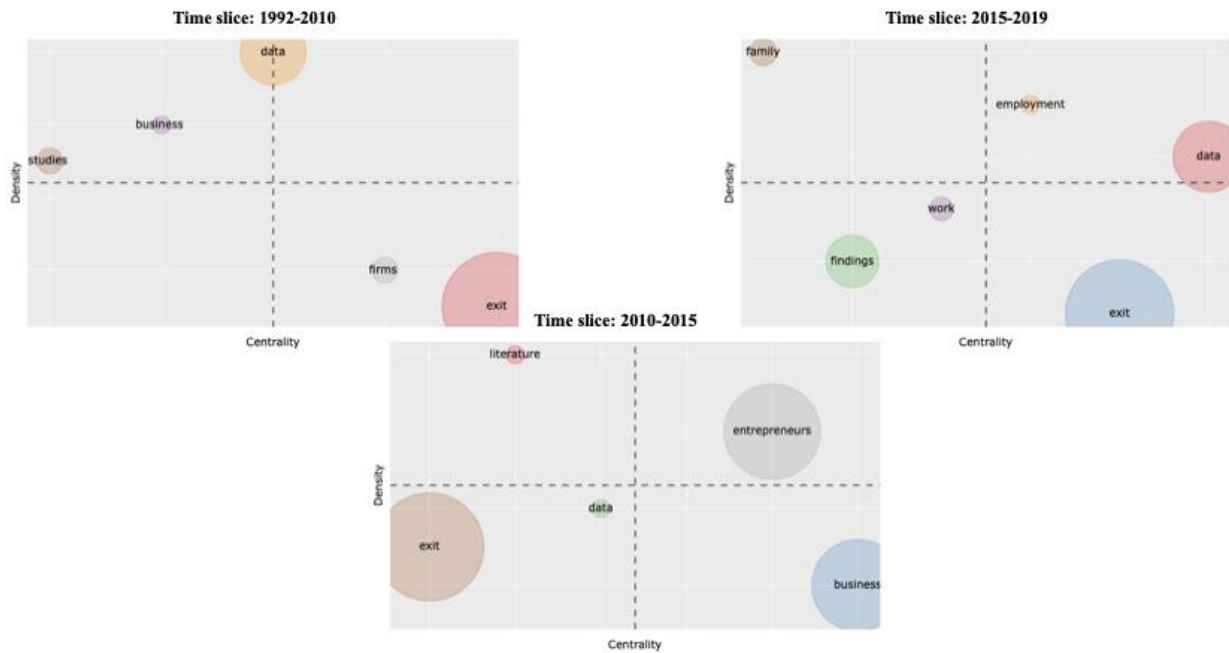
Figure 5: Thematic evolution map (adapted from Biblioshiny)

As we can clearly see, in the second time slice running from 2010 to 2015, exit has been the core emerging topic in the field. It seems that the entrepreneurial exit field is shifting from a broader and generalized concept to a deeper, more specific domain, which is coherent with the evolution of a research field.

2.4.1.3. *Emerging themes – co-occurrence analysis*

The co-occurrence analysis draws the conceptual structure of the framework. We use "*keywords plus*" as the parameter of reference to investigate the knowledge structure of the field, while highlighting the emerging themes. *Keyword plus* is an algorithm that is automatically generated by Web of Science database, and it is based on words and sentences included in articles' cited references (Aria & Cuccurullo, 2017). It helps in highlighting emerging themes and underdeveloped topics, which might translate into avenues for future research.

The outcome is shown in Figure 6, which groups the entrepreneurial exit field research into six different clusters: A) behavioral cluster, B) career dynamics, C) entrepreneurial stages, D) growth factors, E) managing transitions, and F) exit dynamics.

Among the six clusters, there are three main central groups. The most important in terms of development, and in line with the thematic map outcomes, relates to behavioral theory-based studies (A). It includes family business literature (e.g., Koladkiewicz & Wojtyra, 2016), and the use of socioemotional wealth theory (Gomez-Mejia et al., 2011) to explain the emotional attachment of the founder to the firm she helped creating (e.g., Kammerlander, 2016) and the reluctance to let go (e.g., Nordqvist & Melin, 2010). Such cluster serves at explaining the *business* theme within the thematic map that we have previously highlighted. The mostly studied aspects are performance, ownership and, as expected, the exit step. Those terms are strongly related to engagement, experience, and management, which all seem to be representative of the importance of the attachment the entrepreneur shows for the firm (e.g., DeTienne & Chirico, 2013).

The second group (B) looks at career choices and dynamics behind the exit decision. It reinforces the previously highlighted *studies* cluster while putting more emphasis on the self-employment terminology. Apparently, the main focus is on the going back and forth from self-employment (e.g., Luque & Jones, 2019), the motives behind which career path to follow (e.g., Mattes, 2016), and the factors and determinants (including family, human capital, and more in general socially-based features) behind starting a self-employed path or choosing for the paid employment (e.g., Luzzi & Sasson, 2016). The B-cluster is strongly linked to the other two central clusters.

Therefore, still strongly related is cluster C which can be defined as the entrepreneurial stages cluster. Indeed, topics touched in here explore nascent entrepreneurs (e.g., Yusuf, 2012), self-employment survival (e.g., Georgellis, Sessions, & Tsitsianis, 2007), different

entrepreneurs' engagement levels (e.g., Hessels, Grilo, Thurik, & van der Zwan, 2011), and some still refer to exit as a failure (e.g., Espinoza-Benavides & Díaz, 2019).

The exit dynamics cluster (F) is strongly connected to the core topics, especially to career dynamics (B). In fact, it seems to be an emerging topic, yet to be further developed and studied. Studies included in here mainly concern entrepreneurial exit definition, description of roots and impact on entrepreneurs' lives, as well as the models that are starting to raise related to the topic (e.g., Bosma et al., 2005; DeTienne, McKelvie, & Chandler, 2015; Wennberg & DeTienne, 2014; Wennberg et al., 2010).
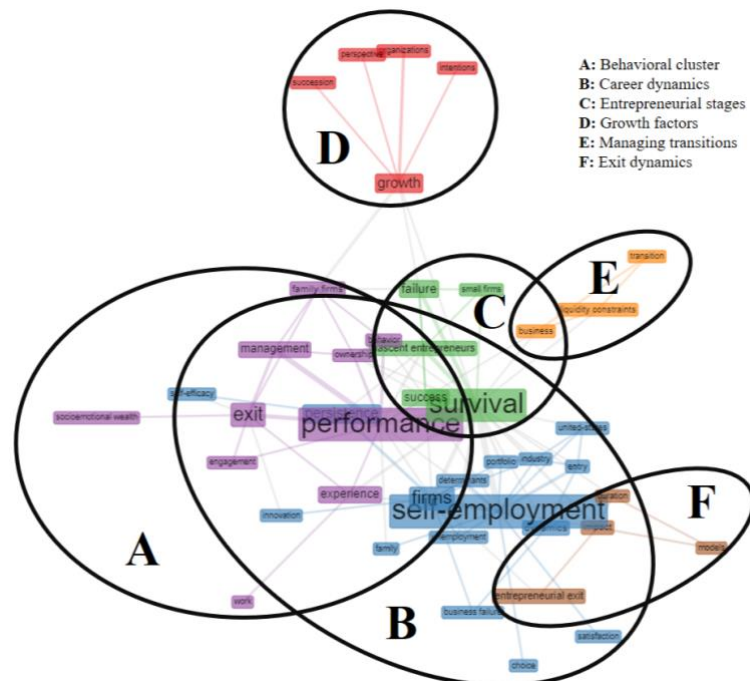
Figure 6: Co-occurrence network - Keywords Plus (adapted from Biblioshiny)

Among the two remaining clusters resulting from the co-occurrence network analysis, there is the managing transitions group (E), which appears to be loosely linked to the behavioral cluster (A), but it creates ties with the entrepreneurial stages' (C). It might indicate the rising of studies on financial and managerial motives behind the choice of exiting the firm. Amaral et al. (2011) already argued that serial entrepreneurs, which exit from one firm to later start a new one, are supposed to have strong managerial skills and market knowledge.

Because of the centrality with the core topic, and the density of the study, clusters E and F could be included in the lower-left quadrant of the centrality-density thematic map previously introduced, representing emerging streams of research in need for further development and advancements.

Cluster D is distant from the other themes, and it is solely tied to the core topics through growth (e.g., Beutell et al., 2019), mainly covering personal growth and social intents based studies (e.g., Mathias, Solomon, & Madison, 2017).

2.4.2. Intellectual structure: Seminal articles and co-citation analysis

The intellectual structure level helps in defining seminal articles and detecting theoretical grounds. It shows relationships among papers' references, represented by the nodes within the resulting network. In bibliometric studies, it is commonly described through the co-citation analysis (Small, 1973).

The co-citation analysis between two documents expresses when they are both cited by a third document (Small, 1973). It can be graphically represented through a network or a co-occurrence matrix. For the sake of coherency along with the analysis, we set Louvain's clustering method (Blondel et al., 2008). The following co-citation network for our analysis shows the existence of four main clusters represented with four colors.
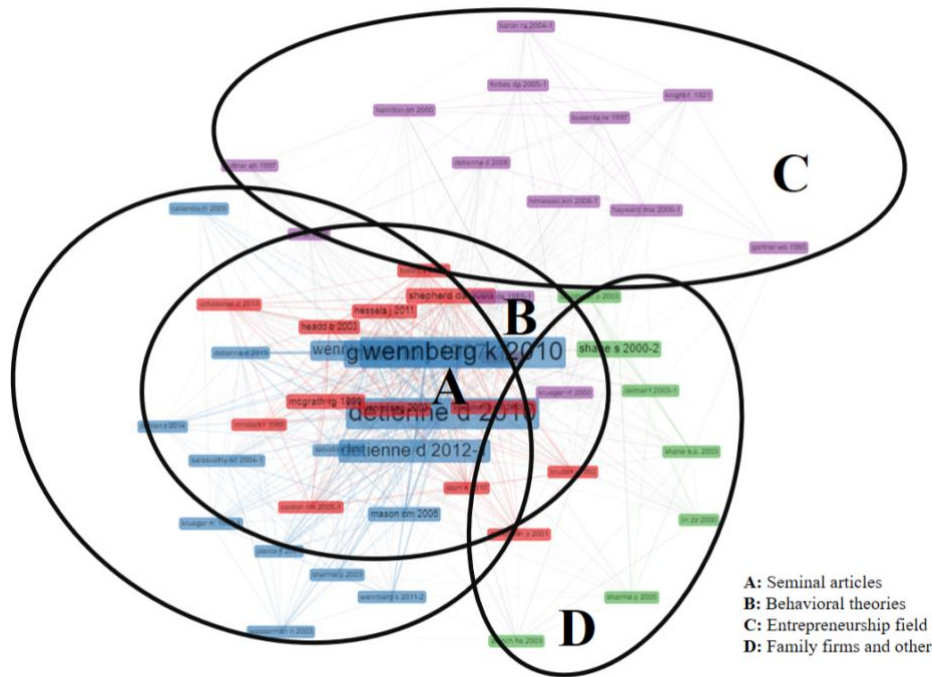
Figure 7: Co-citation network (adapted from Biblioshiny)

The center of gravity of our co-citation network is represented by those that can be considered seminal articles in the field. The two most significant and influencing articles are DeTienne's *'Entrepreneurial exit as a critical component of the entrepreneurial process: Theoretical development'* (2010) and Wennberg's et al. *'Reconceptualizing entrepreneurial exit: Divergent exit routes and their drivers'* (2010).

The first seminal article theoretically discusses the importance of the exit stage within the more general entrepreneurial process. In her study, DeTienne states the entrepreneurial exit definition that will be referred to as the baseline definition for the field. According to the author, the entrepreneurial exit is "the process by which the founders of privately held firms leave the firm they helped to create; thereby removing themselves, in varying degree, from the primary ownership and decision-making structure of the firm" (DeTienne, 2010, p. 203). The second seminal article distinguishes among four exit routes based on the financial performance of the firm from which the entrepreneur exits, through liquidation or sale of the venture. Among the most interesting results of the study, is that they empirically proved that entrepreneurs exit both from firms in financial distress as well as from firms that are profitable and well performing.

This was one of the first articles considering exit not merely as failure, but as a potential career choice. Together, they represent the basis of the research field.

Thanks to the co-citation network analysis, we can see that in the cluster with the seminal articles there is a study that is crucial to the majority of research contributions in the field. The paper titled *'Survival of the fittest? Entrepreneurial human capital and the persistence of underperforming firms'* from Gimeno et al. (1997), where authors outline the so-known threshold theory, perhaps the most used theoretical perspective in the entrepreneurial exit field as a whole. The core concept of the theory is that firms have different performance level thresholds and that surviving or exiting the firm mainly depends on whether those thresholds are met or not. Such an approach works for firms, whether they have enough profit to keep on existing, and for entrepreneurs, whose interests are strictly linked to the economic performances of the firm.

Within the same group, the most common theories used are the just mentioned threshold theory (Gimeno et al., 1997), human capital theory (Becker, 2007), and prospect theory (Kahneman & Tversky, 1979). They can all be grouped under the more comprehensive category of behavioral theories.

The second cluster (B) that stands out with the co-citation analysis is strongly related to, and almost hard to recognize from, the seminal articles group. Here, we highlight the common themes of *failure/survival* (Cope, 2011) and *entrepreneurial re-engagement* (Hessels et al., 2011). Both themes are important and transversal to the entrepreneurial exit literature. The theoretical grounds are behavioral theories, in line with those used within the seminal articles in the field and which links them strongly. Here, the mostly used one is the human capital theory, to which authors refer to indicate that entrepreneurs, along their careers, accumulate skills, experience, and knowledge that altogether represent their human capital (Hessels et al., 2011). We expect studies based on a mere focus on entrepreneurial exit as a

consequence of failure to be taken a step forward, as we are already witnessing, and dedicate the attention to different exit typologies, routes, and potential re-engagement in entrepreneurship as a career choice.

On the upper side of the network, there is the third cluster (C). This group comprises contributions that touch upon different entrepreneurship themes, e.g., the gender difference in entrepreneurship (Cliff, 1998), new ventures (Gartner, 1985), or entrepreneur-manager differences (Busenitz & Barney, 1997). Such a vast typology of entrepreneurial topic-related studies reflects that authors interested in the field are coming from different specialization areas from the more general field of entrepreneurship. Looking at the entrepreneurial exit from different point of views might lead to interesting implications in the field, and it might entail streams for future scholarly debate.

The fourth cluster (D) comprises all contributions that deal with intersecting themes, like nascent entrepreneurs and their survival rates in the entrepreneurship career (Davidsson & Honig, 2003), or divestments in family firms (Sharma & Manikutty, 2005).

2.4.3. *Social structure: Collaboration networks*

The social structure analysis highlights the degrees of collaboration among various authors at the individual, institution, and country level. Thanks to the social structure, we can identify the collaboration degree within the entrepreneurial exit field at the individual level of analysis. The most common and significant analysis at the social structure level is the co-authorship network. Figure 8 shows that the collaboration network among authors is not vast and only affects six percent of all authors in the field. However, existing relationships are keen.

We can distinguish three main groups of regular authors, one of which sees the most influential authors cooperating. As DeTienne and Wennberg narrate in their *Research handbook of entrepreneurial exit* (DeTienne & Wennberg, 2015), they started their collaboration after founding out, during a conference, that they were both interested in digging

deeper into the specific topic of entrepreneurial exit. Thanks to their experience with the practitioners' world, they realized that there was a significant gap in academia: no study was yet dedicated to one of the most important steps along the entrepreneurial process: the exit event. Only a handful of studies partially addressed such a stage, although defining exit very differently from practitioners. Academics mainly viewed exit from the firm as a failure, while DeTienne and Wennberg knew multiple reasons that could be addressed as the determinants of the event. Among those, the possibility to harvest the investment and redirect financial resources to re-engage in entrepreneurial activity, become a venture capitalist or a business angel while offering also know-how and knowledge gained throughout the previous experience, or simply deciding to retire when the economic thresholds are met.

Figure 8: Collaboration Network among Authors (adapted from Biblioshiny)

2.5. Discussion and Conclusions

Considering the evolution of the topic within the entrepreneurial field, and with an annual growth rate of fourteen percent, we argue that entrepreneurial exit is gaining importance within the academic world. The importance of such a topic has also been signaled by the appearance of special issues in international journals (e.g., International Small Business Journal, volume 34, issue 2), dedicated workshops, and conferences. Our study aims to shed more light on the entrepreneurial exit sub-field at the individual level of analysis. We highlight existing themes and topics, and we propose potential avenues for future research.

With an active call for research in the field, the most influential authors are Dawn DeTienne and Karl Wennberg, authors of the seminal articles in the field (DeTienne, 2010; Wennberg et al., 2010). Once realized the importance of the topic in the practitioners' world,

they explored the entrepreneurial exit with academic lenses and started building the foundations for the entrepreneurial exit topic. Their call for research received high response rates, shown in the two publication peaks of 2010 and 2015. Yet, the entrepreneurial exit field at the individual level appears unconsolidated, with seventy manuscripts published in forty different sources, and only nine journals with more than one article. As further proof, it is studied by researchers from different disciplines, e.g., finance (H. Chen et al., 2010), economics (Fossen, 2012), and public administration (Gofen, 2012), even though they all seem active within the more general field of entrepreneurship.

The co-occurrence network highlights that the body of literature dedicated to the entrepreneurial exit at the individual level of analysis is currently focusing on six main themes. Namely, behavioral theories, career dynamics, entrepreneurial stages, growth factors, managing transitions, and exit dynamics.

The first three themes are strongly linked. They mainly cover founders' intents, motives, and -more in general- behavioral approaches to the exit choice and process (e.g., Kammerlander, 2016; Nordqvist et al., 2013). They study potential career dynamics (e.g., Luque & Jones, 2019; Luzzi & Sasson, 2016; Mattes, 2016), their survival rates, and the different entrepreneurs' engagement levels (e.g., Georgellis et al., 2007; Hessels et al., 2011). Also, they cover the - still scarce - theoretical foundations of the field, explaining the difference between failure and voluntary exit, or exploring what happens to the founders' once their firms fail (e.g., Espinoza-Benavides & Díaz, 2019; Ucbasaran, Shepherd, Lockett, & Lyon, 2013).

The other clusters, strongly linked to the central themes, cover the diverse exit dynamics, routes and potential strategical approaches (e.g., DeTienne et al., 2015; Wennberg et al., 2010), and the managerial and financial characteristics behind the exit choice (e.g., Ucbasaran, Westhead, & Wright, 2009). Also, they discuss the determinants and outcomes of serial entrepreneurship and entrepreneurs' re-engagement (e.g., Amaral, Baptista, & Lima,

2011; Ucbasaran et al., 2013). The only cluster loosely related to all the others, but to some extent tied to the three most recurrent terms, is the one examining growth factors, mainly related to personal growth and social connections (e.g., Mathias et al., 2017).

We were also able to highlight that authors in the field do not have strong working ties. Even if the collaboration index shows that documents have - on average - two authors collaborating, the collaboration network represents a situation in which there are three main groups of researchers working together, with no ties among them. An increase in collaboration among authors from different specializations within the more general field of entrepreneurship may lead to further development of the entrepreneurial exit.

Our study is not free of limitations. While focusing on the individual-level phenomenon, we highlight a specific, understudied topic. Yet, the relative narrowness in terms of scientific production may exclude potential contributions that address the entrepreneurial exit phenomenon as part of more comprehensive studies in the entrepreneurial field. In addition, while Web of Science and Scopus are widely recognized as the most comprehensive databases for social science studies, their indexing accuracy is not yet perfect: hence, the use of keywords plus (which are system, and not-author generated) for co-occurrence analysis may lead to classification biases that are inherent to the instrument.

Furthermore, even though authors took extensive care in selecting wide and inclusive terms and keyword combinations for the initial search, we cannot entirely exclude that potential contributions with different indexing terms (or in different languages) may be missing from the analysis.

2.5.1.   *Future research*

Thanks to the analysis run on the conceptual structure of the field, we highlight avenues for future research within entrepreneurial exit.

2.5.1.1. Entrepreneurial exit theory

The weakest aspect appears to be a proper theoretical support to entrepreneurial exit. We have seen that besides behavioral theories, and in particular threshold theory - which appears to be the most used across all papers - the entrepreneurial exit is calling for the development of different, or complementary, theoretical perspectives. A large number of studies still seem not theoretically grounded, instead, relying on more general, conceptual grounds (e.g., Luque & Jones, 2019).

The sole use of human capital theory, threshold theory, or socioemotional wealth for those mainly related to the family business field, is not enough to capture all the different facets behind the choice of the founding entrepreneur to exit the firm she helped to create. Although behavioral theories appear to be a good fit, as highly representative of actions and actual behavior of the individual, we are still far away from a proper theory dedicated to what drives the founder to exit. Such a theory should be able to consider the emotional traits together with the financial aspects that are often considered aside.

Future research should follow the example of Wennberg et al. (2010), whose article considers financial performances of the firm while drawing upon prospect theory to include the behavioral economics aspect of the topic.

2.5.1.2. Career dynamics

We have seen that there is a stream of research dedicated to analyzing the different career dynamics (e.g., Luque & Jones, 2019; A Luzzi & Sasson, 2016) that the founder can undertake, with, for example, special attention to exiting because of the willingness to go back to paid employment, or preferring unemployment, after facing the difficulties of being self-employed (e.g., Debrulle, 2016).

Exit can be seen as just a phase in the entrepreneurial career of portfolio or serial entrepreneurs, for example. The first ones are individuals who currently have some degree of ownership in more than two firms (Westhead et al., 2003a). Serial entrepreneurs are, instead, individuals that exit a firm they founded, to later start a new one. Part of the research that we have analyzed in the current study is dedicated to how serial entrepreneurs face the exit from their firms to later engage in a new venture, and which are the determinants behind such a choice (e.g., Amaral et al., 2011; Plehn-Dujowich, 2010). However, as per our knowledge, there is not yet a study dedicated to the entrepreneurial exit of portfolio entrepreneurs. A study on the motives that drive portfolio entrepreneurs to exit their firms while still maintaining minority degrees of ownership, or an analysis of the preferred exit routes of this specific typology of founding entrepreneurs, may be of high interest also from the point of view of policy makers.

2.5.1.3. *Entrepreneurial stages and internationalization effects*

We have seen how the vast majority of articles in the field focus on understanding the stages previous to exit by investigating determinants, antecedents, and the diverse strategies that one can choose according to the specific needs (e.g., DeTienne & Cardon, 2012; Wennberg et al., 2010; Yamakawa & Cardon, 2017). However, results highlight the need of digging deeper into the after-exit choices.

We argue that examining the after-exit stage would be of high interest to better understand why some entrepreneurs decide to remain in the firm after an exit event occurs and why others decide to leave. Up to now, studies on the after-exit stage mainly focus on those individuals who re-entered entrepreneurship after an exit event (e.g., De Hoe et al., 2018), on the impact that entrepreneurs' post-acquisition attitude have on the regional development (e.g., Mason & Harrison, 2006), and on those who exit to later engage in philanthropic activities

(e.g., Mathias et al., 2017). Based on the outcomes of those previous works, it could also be intriguing to test whether there exists a common trend, or path, that founding entrepreneurs usually follow.

Indeed, a cross country analysis to highlight potential similarities or differences could attract scholars from the international entrepreneurship field too. As a matter of fact, no studies among the seventy documents analyzed touched any of the internationalization topics. Cross-cultural/country difference may be of high interest not merely from the academic point of view, but also – and maybe even more- from the practitioners' side. The peculiarities and backgrounds of founding entrepreneurs of born global firms (Knight & Cavusgil, 2004) or international firms more in general can be studied among potential determinants of the exit choice, which has not been considered yet. Looking at international features among potential actors in the entrepreneur's choice of whether exiting or remaining within the firm could open up a not yet studied stream of research.

2.5.1.4.   *Growth factors and transitions*

We support Wennberg and DeTienne (2014), who call for considering performance at all levels when examining entrepreneurial exit related aspects. The vast majority of studies entail entrepreneur's gender, education level, and industry experience while controlling for her age, ownership, and inclusion among an entrepreneurial team, but very few consider performance, deal value, or more general financial aspects.

Financial performances can be used to identify thresholds below which founding entrepreneurs decide to exit their firms to not be stuck in a situation in which they might face the risk of no further grow. It can also be used to classify different exit routes, conditions, or dynamics.

2.5.1.5. *Exit dynamics*

Among the exit dynamics cluster, that we have previously recognized as an emerging topic, we highlight those dynamics considering the exit of members of the entrepreneurial team (e.g., Piva & Rossi-Lamastra, 2017). Although it did not come up as an essential or central theme, it is capturing researchers' attention, and it should be further examined. Here, potential research questions can focus on the main reasons behind the exit of one single member, or the choice of exit of the entire entrepreneurial team. An analysis of the motives that drive to such choices, and the determinants that lead the members of an entrepreneurial team to switch to different career paths can strongly help in increasing the understanding of the entrepreneurial exit field as a whole.

3. Entrepreneurial choices determinants after firms' acquisition

3.1. Introduction

Every founding entrepreneur - sooner or later – will face the choice of leaving the enterprise she helped to create. The reasons behind such an 'exit' may include bankruptcy, harvesting the investment, passing it onto family members, retirement, or even death of the founder (DeTienne & Cardon, 2012; DeTienne & Wennberg, 2016). The phenomenon of entrepreneurial exit is of such importance that it frequently appears in the practitioner discourse. Kauffman Foundation (Kauffman.org), Forbes (forbes.com), and the U.S. Chamber of Commerce (uschamber.com) are just some of the industry-oriented associations that regularly discuss this topic – e.g., strategies, routes to follow, and ideal exit timing.

Regardless of the reasons driving the exit, entrepreneurs face the choice of whether to remain or leave the enterprise they created. Some entrepreneurs reinvest their financial resources and knowledge in starting new businesses (i.e., Elon Musk, from PayPal to Tesla), or create venture capital funds to help new companies grow (i.e., Cisco's emeritus CEO John Chambers), or even engage in philanthropic activities (i.e., Bill and Melinda Gates' 'Giving Pledge' association). Others decide to stay within the firm and act as entrepreneurs-in-residence or covering advisory roles (i.e., Blue Apron's Executive Chairman Matt Salzberg, and Advanced Diamond Technologies' former CEO Neil Kane).

Despite such an increasing interest from the perspective of business practitioners, only a handful of studies have addressed what happens to founders following an acquisition (Cumming et al., 2016; De Hoe et al., 2018a; DeTienne, 2010; DeTienne et al., 2015; DeTienne & Cardon, 2012) and none has investigated this phenomenon internationally. Extant works can be grouped into two streams, one dedicated to the 'firm exit' and the other one focused on the actual 'entrepreneurial exit.' Although the majority of studies clearly differentiate the level of

analysis (firm and individual), sometimes the two levels overlap due to their close relationship (A. C. Cooper et al., 1992; Hsu et al., 2016; Koladkiewicz & Wojtyra, 2016).

The body of literature dedicated to the individual level of analysis is mainly focused on examining: (i) the motives, factors, and antecedents of the exit choice (DeTienne, 2010; Kammerlander, 2016; Stam, Thurik, & van der Zwany, 2010), (ii) the exit paths, routes and strategical approaches chosen (DeTienne, McKelvie, & Chandler, 2015; van Teeffelen & Uhlaner, 2013; Wennberg, Wiklund, DeTienne, & Cardon, 2010), and (iii) the determinants and outcomes of serial entrepreneurship and entrepreneurs' re-engagement (Amaral, Baptista, & Lima, 2011; DeTienne & Wennberg, 2015; Hyytinen & Ilmakunnas, 2007). But what are the drivers behind the founder's decision immediately following an acquisition? Focusing on this key question, our aim with the present inquiry is to shed light on the determinants that lead the founders – once their current venture has been acquired – to either exit or maintain a role in the firm. Thus, this research addresses the knowledge gap with respect to the determinants of a 'stay or leave' decision by the founding entrepreneur in different regions in the world once an acquisition has taken place.

The present research contributes both empirically and theoretically to the current debate on the phenomenon of entrepreneurial exit. From an empirical point of view, we address the research question using an international dataset of 6,372 founding entrepreneurs secured from Crunchbase' database (data.crunchbase.com). This database has been used frequently in scholarly studies on international entrepreneurship (Cannone & Ughetto, 2014; Cumming et al., 2016, 2019; Nylund & Cohen, 2017; Tata et al., 2017).

The dataset we created is founder-based, and it comprises personal information on the founders, their firms, and acquisition -related data. To the best of our knowledge, no previous analysis has been carried out with such a comprehensive database and exploring a wide variety of founder characteristics. The study reported by Cumming, Walz, and Werth's (2016) on exit

choices employed Crunchbase for analysis, but the sample comprises a much smaller dataset – some 243 venture capital-backed entrepreneurs. Our database also allows us to investigate the exit phenomenon at international levels, thus responding to the call for more research with a comparative international approach to understand country differences and entrepreneurship (Terjesen et al., 2016). In fact, to the best of our knowledge, no prior study in the field have examined such an entrepreneurial step across different countries or regions Therefore, we contribute to the research in the field by exploring the uniformity of our findings across major world regions.

We compare the phenomenon of entrepreneurial exit across North America, Europe, and Asia. The North American database includes the U.S. and Canada; the European sample refers to European countries, not focusing only the members of the European Union; and the Asian entrepreneurs included in the database originate from India, Israel, Singapore, and China, among other countries.

Given that the entrepreneurial exit is an individual decision, it requires a theoretical framework that explains individual-level choices under different risk conditions, and the Prospect Theory (PT) provides such a perspective. Based on Simon's (1979, 1995) assumption that agents act as boundedly rational, PT explains the decision making under risk by challenging the rationality of the expected utility theory (Kahneman & Tversky, 1979, 1984; Tversky & Kahneman, 1986, 1992). Therefore, we employ the Prospect Theory as our theoretical framework to formulate our hypotheses and guide the empirical analysis. We expand the theory by proposing testable hypotheses of the principal PT's concepts relating to the entrepreneurial exit decision. By adopting and extending PT, we frame the entrepreneurial exit choice in what we claim to be an adequate theoretical context, proposing individual-level explanations of founders' options following an acquisition.

The remainder of this paper is organized as follows. First, we provide an overview of the current state of the art of entrepreneurial exit literature while introducing PT and acquisition-related studies in the field. Second, we present our hypotheses with respect to the proposed determinants. Third, we explain the methods implemented to gather the data, and we offer descriptive statistics of the dataset. Fourth, we describe the methodology and detail the results of our empirical analysis before moving onto discussion and conclusions. We conclude with suggestions for future research.

3.2. The Extant Literature on Entrepreneurial Exit

It is only in the last decade that the exit event has been recognized as a critical component of the entrepreneurial process (Albert & DeTienne, 2016; DeTienne, 2010; Salvato, Chirico, & Sharma, 2010; Wennberg & DeTienne, 2014). Previously, research on entrepreneurship was mainly focused on the antecedents of launching a new venture (Ardichvili et al., 2003), analyzing the start-up phase and the formation of the team (Choi & Shepherd, 2004; Korunka et al., 2003), investigating the financing processes those firms were exposed to (Shane & Cable, 2003), and the internationalization paths they engaged in (Cavusgil & Knight, 2015; Knight & Cavusgil, 2004; Oviatt & McDougall, 2005).

The seminal works by Dawn DeTienne (2010) and her principal co-author in the field, Karl Wennberg (Wennberg et al., 2010), gave rise to a new research stream (DeTienne & Wennberg, 2016; DeTienne & Wennberg, 2015; Wennberg & DeTienne, 2014). These studies view the entrepreneurial exit as "the process by which the founders of privately held firms leave the firm they helped to create; thereby removing themselves, in varying degree, from the primary ownership and decision-making structure of the firm" (p. 203).

At the individual level of analysis, extant literature in the entrepreneurial exit field examines founders who plan their exit strategies during the early stages of the venture's life

(Boeker, 1989) and those who are somewhat forced to exit because of different contextual factors (Wennberg et al., 2010). These studies mainly focus on: (i) the determinants of entrepreneurial exit intentions and the related strategies developed by the entrepreneurs prior to exiting their firms (Wennberg & DeTienne, 2014; Wennberg et al., 2010), (ii) the motives behind the choice of a specific strategy over another (Ahlers et al., 2014; DeTienne & Cardon, 2012), and (iii) what entrepreneurs do after they harvest their investment (Cumming et al., 2016; Rocha et al., 2015). However, considering entrepreneurial exit as defined by DeTienne (2010), there is a lack of studies on the very first crossroad that founders face when exiting their firms -- remain within the organization (with the same or a different role), or leave for something else?

Therefore, departing from this literature, we focus our analysis on a more specific question: what are the determinants of entrepreneurial exit choices immediately following an acquisition? Why do some entrepreneurs choose to remain with their venture, while others opt for leaving the enterprise? Further, we investigate the exit phenomenon in a comparative context, exploring whether the exit phenomenon exhibits variations between North American, European, and Asian entrepreneurs.

3.2.1. *Entrepreneurial Exit - Individual level of analysis*

Most studies that investigate the life of the founder after an exit event are related to serial entrepreneurs, who exit their business to start another one (Amaral et al., 2009; Ensign & Farlow, 2017; Hyytinen & Ilmakunnas, 2007). While exploring the peculiar factors of such a specific typology of entrepreneurs, Hyytinen and Ilmakunnas (2007) found out that these founders do not exit their firms merely because of wealth creation. Rather, these authors discovered that habitual entrepreneurs exit and re-engage in entrepreneurship mainly because it enhances their feelings and emotions, together with their pride and reputation within the

society (Hyytinen & Ilmakunnas, 2007). By investing, harvesting, and reinvesting - cyclically -, they are likely to acquire better managerial and technical skills and to strengthen their network of contacts (Ucbasaran et al., 2008). This might lead to easier identification of potential new business opportunities (Kor et al., 2001; Ucbasaran et al., 2009). Elon Musk is a typical example, "My proceeds from the PayPal acquisition were $180 million. I put $100 million in SpaceX, $70 million in Tesla, and $10 million in Solar City. I had to borrow money for rent" (huffpost.com, 2013).

While research on serial entrepreneurship has flourished in the last two decades (Parker, 2013; Ucbasaran et al., 2009), scant attention has been given to the question of the founding entrepreneur's tendency to quit her role. This is the focus of our research.

When exiting their firms, entrepreneurs have two principal options. Many choose to remain in the firms they founded, but with a different role -- for example, as entrepreneurs-in-residence or consultants. They might also choose to go back and forth to the company, hence seeking for a more secure paid employment or enriching their experience and getting a different perception of the outside working environment (Hsu et al., 2019; Luzzi & Sasson, 2016; Marshall, 2016).

Others, on the other hand, decide to exit. They can opt for paid employment by becoming employees in another firm or maintain the entrepreneurial engagement and launch new ventures. Many of them fund Family Offices while providing financial capital to venture capital funds or implementing family foundations (Blake D Mathias et al., 2017; Wessel et al., 2014). They can also choose to become investors in different ways (i.e., business angels), by helping young start-ups in their initial phases while offering financial aid along with know-how and experience (Cumming et al., 2016; Mason & Harrison, 2006). Others, decide to retire or to leave the firm to their heirs in the case of family-run businesses (Dehlen et al., 2014; Gagnè et al., 2011; Morris et al., 2018). Generally related to these options is the entrepreneur's choice to devote her abilities for charity support, or other philanthropic activities (Blake D

Mathias et al., 2017). The main reasons behind the willingness to volunteer are personal motives usually related to the passion to give back part of the wealth they received (Blake D Mathias et al., 2017). Gratefulness for what they achieved works together with the desire to demonstrate to the society that they are still active, even if in a different way.

3.2.2. *Entrepreneurial Exit and Acquisition*

Entrepreneurs face a wide range of options once they have decided to exit their firms. Exit can occur in various forms: IPOs, acquisition of the firm, management or institutional buyout, succession, or liquidation. DeTienne, McKelvie, and Chandler (2015) summarized those exit strategies under three main groups, namely financial harvest, stewardship, and voluntary cessation strategies. Within the first group, there are IPOs and acquisitions as they provide entrepreneurs with higher financial rewards (Cumming, 2008; Poulsen & Stegemoller, 2008). The second group includes strategies that result in 'pro-social and pro-organizational behaviors' (DeTienne et al., 2015: 257), i.e., family succession, employee's buyout, or sale to an individual. The third one, relating to voluntary cessations, comprises those strategies that permit the entrepreneurs to dissolve the firm whenever their goals are achieved, and their primary activities ended, i.e., liquidation (DeTienne et al., 2015).

DeTienne and Cardon (2012) highlight the importance of investigating the exit paths chosen since the various routes reflect different risk, complexity, and entrepreneurial engagement levels in the post-acquisition phase. Supportive to their assumptions is the stream of research showing that acquisition is, , at the same time, a profitable and lucrative exit strategy because of its high premiums paid (Haunschild, 1994), and riskier and more complex than other exit strategies (DeTienne & Cardon, 2012).

Related to this literature, a significant stream of research focuses on the entrepreneurs' effects on deal values, evaluation, and pricing (Bruton et al., 2009; Daily et al., 2003). Mason

and Harrison (2006) present five Scottish case studies in which acquisition helped them dig deeper into the understanding of 'entrepreneurial recycling.' They found a positive impact of this lucrative exit strategy on entrepreneurs' willingness to start new businesses and engage in what we previously referred to as serial entrepreneurship.

Despite the prevalence of acquisitions, most studies within the entrepreneurial exit field examine other forms of exit paths or investigate acquisition jointly with others -- i.e., IPOs (DeTienne & Cardon, 2012). Since acquisitions have been considered among the best desirable exit routes (DeTienne & Cardon, 2012), the current investigation complements the work by these researchers. Thus, we focus our study only on acquisition deals and, more specifically, on the choice that founders take following the deal.

3.2.3. *Entrepreneurial Exit and Prospect Theory*

Prospect theory was first developed within the context of economic choices focusing at the individual level (Kahneman, 2003b; Kahneman & Tversky, 1979; Tversky & Kahneman, 1992). The focus on individual level choices is coherent with the analysis of the founder's choice and allows us to frame the exit decision within a coherent theoretical framework. Kahneman and Tversky (1979; Tversky & Kahneman, 1981, 1986) challenged the expected utility theory's assumption of the rationality of agents. While they agree that the value of a particular prospect, presented among a set of possibilities, is a function of its payoff (or loss) if it occurs and the probability of its actual occurrence, they also claim that individuals exhibit risk-seeking or adverse behaviors, depending on how the problem is framed ('*framing effect*' - Kahneman & Tversky, 1979).

Consequently, it is argued that individuals perceive "the value function" as nonlinear, but "kinked at the reference point and loss averse" (Kahneman, 2003: 1457). Thus, according to PT, the value function is S-shaped, and it is concave above (for gains) and convex below

(for losses) the reference point (Kahneman & Tversky, 1979). This is because economic actors rely on heuristic shortcuts with a specific reference point; they act as rationally bounded because their motives to avoid losses are stronger than those to achieve gains (Kahneman, 2003b). The S-shaped utility function derives by the general principle of *loss aversion,* which states that choices that lead to losses appear more significant than those that lead to gains (Kahneman et al., 1991). The misalignment from the assumption of individual rational behavior translates also in the *endowment effect,* according to which people tend to value what they own more, simply because they own it (Kahneman et al., 1991).

These concepts allow PT to explain how decisions are actually made, while the expected utility theory considers how a rational individual should make decisions. By this point of view, PT offers a suitable framework to analyze the founder's choice. As a consequence, PT has been used increasingly on general entrepreneurship studies, as well as by those focused on the entrepreneurial exit. For example, Kammerlander (2016) explained the founder's emotional pricing (Kammerlander, 2016) using the concept of endowment effect. She uses PT to explain the willingness of the founder to sell the firm at a discounted price whenever the potential future owner is someone she trusts.

Wennberg et al. (2010) make some valuable additions by proposing a conceptual model that draws upon PT and human capital theory to theorize entrepreneurial exit, while demonstrating the situations that drive founders to exit their businesses and the potential exit routes they choose. They conceptualized exit routes among four main typologies: harvest sale, distress sale, liquidation, and distress liquidation, depending upon the exit routes chosen and the firm performances (Wennberg et al., 2010). However, this model still does not explain, nor aim at predicting what entrepreneurs do after exiting their firms.

Given that the exit event involves uncertainty in one-shot games (Kyle, Ou-Yang, & Xiong, 2006: 284), PT is an appropriate lens to frame our hypotheses. From the entrepreneurs'

point of view, there is no certainty of what will happen next, how the firm will perform, or what are the potential implications of choosing to exit. Therefore, our research differs from the extant literature by asking the question of why founding entrepreneurs decide to leave the firm following an acquisition, identifying key determinants of this choice, while drawing from the key concepts of the prospect theory.

There are five prospect theory concepts that we consider to be relevant in the exit decision. First, the *endowment effect* suggests a strong attachment to things owned simply because we possess them (Tversky & Kahneman, 1991). This concept is relevant because entrepreneur are typically attached to the company they created. Second is the *loss aversion* concept which reflects an individual's tendency to prefer avoiding losses to acquiring potential gains (Tversky & Kahneman, 1991). This attitude relates to the tendency of entrepreneur to focus first on firm survival rather than on firm profitability (Cacciotti et al., 2020).

Third is the concept of *experienced traders*, strictly related to the previously mentioned effects, explaining that individuals learn to value less immediate, potential losses because of longer-term goals they aim at reaching (Kahneman, 2003b). Fourth, entrepreneur, as any individual, perceive future outcome as gains and losses relative to a specific *reference point*. PT suggests that the typical reference point is the current asset position, but that this reference point is also affected by one's prospects' framing and expectations (Kahneman & Tversky, 1979). Therefore, we expect that the current situation of the founded firm will affect the expectations and behavior of the entrepreneur.

Fifth, the *framing effect* states that individual's intuitive decisions frequently depend on how the prospects are framed – positively or negatively-, and on the available aspects that help in identifying and evaluate a specific situation (Kahneman, 2003). Such a frame, in the context of our analysis, depends on the entrepreneur's characteristics and the geographic context where the firm is located.

Thus, we not merely rely on PT to investigate and explain how founding entrepreneurs behave under such risky conditions, but we expand the theory by proposing testable hypotheses applied to the entrepreneurial exit domain. Why do founding entrepreneurs decide to leave the firm they helped create once the acquisition deal is completed?

3.3. Hypothesis development

Based on the above arguments, we define and investigate the effect that several characteristics of the founding entrepreneur has on the probability that she decides to leave the firm she helped create soon after the acquisition.

The first PT concepts that we consider for our analysis are the *endowment effect* and the *loss aversion.* According to the former, individuals feel a strong attachment to something they own just because they own it, and such a feeling becomes more potent as time goes by (Kahneman, 2003; Kahneman, Knetsch, & Thaler, 1990). The latter, the *loss aversion* concept, states that options that lead to losses appear more significant than those that lead to gains (Kahneman et al., 1991).

As a result of these effects, we argue that the longer a founding entrepreneur maintains a role in the firm she created, the more she would feel emotionally attached to it and not willing to lose it. Therefore, we identify *tenure* as one of the principal determinants, and a representative characteristic of PT's *endowment effect* and *loss aversion* applied to the entrepreneurial exit decision. Defining *tenure* as the years the founding entrepreneur spends in running the business since its inception, logically drives our thoughts to link a longer tenure with an increased emotional attachment the individual has to the firm.

As scholars frequently argued that, over time, founders become strongly emotionally attached to their firms and develop non-economic interests in maintaining ownership and control roles (Dehlen et al., 2014; Gómez-Mejía et al., 2007; Zellweger & Dehlen, 2012).

Drawing upon PT, Dehlen et al. (2014) argue that biases are causing the "entrepreneurs to deviate from purely rational decision making and that this effect is stronger the older the firm is" (2014: 198).

Previous studies generally consider *tenure* among the typical human capital variables, together with the entrepreneur's age and education level (Hsu et al., 2016). Within the entrepreneurial exit field, most empirical papers consider it among the control variables (Gagnè et al., 2011; Hyytinen & Ilmakunnas, 2007). However, some (Özcan & Reichstein, 2009) analyze tenure as the ability and tendency to adapt to the organization. The longer the tenure, the stronger the fit with the organization as individuals get used to such an environment. Even if Özcan & Reichstein (2009) refer to employees switching from public sector jobs to entrepreneurship and vice versa, we contend that such a characteristic can be coupled with founding entrepreneurs. The more they stay within the firm they helped to create, the more they are attached to it, and it is probably even stronger than for paid employees since they deal with their own creation.

Relatedly, Kammerlander (2016) reasoned that longer tenure is strictly related to emotional pricing during the firm sale. In fact, the founding entrepreneur starts her business and acts toward it as it is her 'own baby' (Akhter et al., 2016), and she is willing to sell the firm at a discounted price if the successor is someone she knows and trusts (Kammerlander, 2016). Here, the non-economic aspects are valued more than the economic and financial ones, making it easier to sell the business to someone she trusts at a potentially lower price than the market price. Kammerlander (2016) refers to behavioral theory, which assumes bounded rationality and prospect theory, to explain an individual's attitude towards utility maximization, while non-economic aspects play a crucial role.

Thus, we argue that the longer the tenure, the stronger the emotional attachment the founding entrepreneur has with the firm, and the higher the reluctance to walk away from it

(Carmon & Ariely, 2002). Prolonged ownership leads to a reluctance to let go (Carmon & Ariely, 2002). Thus, we contend that:

Hypothesis 1. *The longer the founding entrepreneur's tenure, the lower the probability of exiting the firm after the acquisition event occurs.*

The third PT concept that we consider for identifying the exit choice's determinants is the specific case of 'experienced traders' proposed by Kahneman (2003) within the domain of reference-dependence and loss aversion. Even if PT suggests that individuals are less willing to trade something they own, Kahneman (2003) explains that 'experienced traders' learn to value less the immediate emotions connected with losing something while basing their choices on longer-term gains and values (Kahneman, 2003: 1457). *Experienced traders* learn from their experiences and use such learning to reach their long terms goals. Thus, such a specific case drives us to consider the founder's entrepreneurial experience as a second potential determinant of the entrepreneurial exit choice that we are considering.

Extant studies reasoned about the effects of prior experience on the entrepreneurial process (Parker, 2004, 2009; A. Shepherd & DeTienne, 2005), and the literature on the impact on entrepreneurial exit is still controversial.

Several scholars found a negative relationship between previous self-employment experience, or unemployment, and voluntary exit from self-employment (Taylor, 1999). In fact, these studies suggest that entrepreneurs may feel overconfident about their expertise and entrepreneurial abilities, which translates to the willingness to maintain their role, not accepting potential external job offers (Taylor, 1999). Millán et al. (2012) argue that both previous self-employment and paid-employment experiences have negative effects on exit probability, thus positive effects on the survival rate of the entrepreneurial career (Millán et al., 2012). In

parallel, Millán et al. (2012) argue that having had previous experience is not always a positive signal. It can entail the accumulation of critical business skills as well as a lack of those capabilities. One might quit because she learned the needed skills to move on to the next career step, or because she cannot cope with the self-employment or the overall entrepreneurial life.

As evident in the Ucbasaran et al. (2009) study, previous experience is positively related to new business opportunity identification. However, above a certain threshold, such a variable becomes negatively related to opportunity identification, confirming what Millán et al. (2012) later argued: that a high number of previous job experience is not always a good proxy for entrepreneurial abilities. It can be the sign of someone who has not been able to maintain a role for a long enough period, because she did not have the abilities and skills for the specific job positions, or worse because she has not been as reliable as needed (Millán et al., 2012).

DeTienne and Cardon (2012) highlight that entrepreneurs with previous experience strongly differ from those without as they often plan for strategic exit ahead (DeTienne & Cardon, 2012). Gimeno et al. (1997) realized that experienced entrepreneurs might also feel psychological pleasure in starting a new venture from scratch. Such a feeling becomes stale when the firm reaches a more mature stage (Gimeno et al., 1997). Thus, they would keep on searching for excitement while exiting the previously created firms to engage in new projects. Other scholars examined the existing relationship between prior experience and the chosen exit paths, finding that it 'increases the probability of exiting by harvest sale but does not affect the likelihood of any other exit path nor continuation' (Wennberg et al., 2010: 3).

Previous studies also suggest that knowledge gained through 'learning by doing' allows individuals to improve their capacity to process information (Shepherd & DeTienne, 2005)

which, coupled with prior experience, leads to an increased entrepreneurial attitude. It is one of the significant characteristics of habitual entrepreneurs (Ucbasaran et al., 2008).

In line with PT's *experienced traders'* case, we argue that founders with previous entrepreneurial experience have a higher willingness to give up the firms they helped create, using the network of contacts they have to engage in other businesses or search for new profitable projects. Therefore, they do not get too attached to their current firm or role covered, and they get used to identify potential new business opportunities. Thus, the tendency and preference for new investments and changes reduce sunk cost biases and loss aversion assumptions. Based on the above arguments, we argue that entrepreneurial experience has a positive relationship with the preference for exiting the firm following the acquisition. Therefore, we posit:

Hypothesis 2. *The higher the number of previously founded ventures, the higher the probability of exiting the firm following the acquisition.*

The fourth concept we draw from the PT as an exit choice determinant is the *reference point.* Kahneman and Tversky (1979) define the value function as *S-shaped,* resulting from changes in an individual's wealth, and made of two main arguments. The asset position as the reference point and the magnitude of the shift from it. Since "the marginal value of gains and losses generally decreases with their magnitude" (Kahneman & Tversky, 1979: 278), the value function is usually concave above (for gains) the reference point, and convex (for losses) below. Also, as a result of past and present stimuli (Kahneman & Tversky, 1979) the reference point can then be adjusted across times and during specific processes, which leads to changes in the owners' perceptions of current and future wealth (Kotlar et al., 2018). Therefore, a high-

performance exit is equivalent to exit in a gain situation, which means that it stands above the reference point (Kahneman, 2003; Kahneman & Tversky, 1979).

Drawing from these concepts, we identify the third determinant of our study -- whether the firm is publicly listed in the stock market – as the *reference point* for the founder's choice. We argue that the greater the amount of financial benefits the entrepreneur secures from the acquisition of her firm, the higher the probability that she will exit. This mainly happens because the entrepreneur receives financial resources from the firm's sale, which allows her to have the initial funding required to engage in a new business opportunity (Erik Stam et al., 2008). This, in turn, allows new adventures appear less risky and implementing philanthropic and other activities (i.e., becoming venture capitalist or business angel) becomes a more likely possibility.

When acquisition targets a listed firm, the funds received by the owner is typically very significant, and the founder's visibility greatly increases. Therefore, we assume that listing can be considered as a *reference point* for most of the founders and that, for any price above the market value, the marginal propensity of the founding entrepreneur to remain will decline for each additional unit increase in the amount received. In other words, once a company has been listed, the role of financial gain in influencing the founder's choice tends to decrease, and new opportunities and challenges are explored. On the contrary, when the deal's price is lower than the reference point, the marginal propensity to remain within the firm increases more than proportionally for each unit decrease in price.

This hypothesis is visually represented in Figure 9, where, for transaction values larger than the reference point, a high increase in the amount of money received from the acquisition has a small marginal impact on the probability of remaining within the firm. For values of the

deal lower than the origin, a small decrease in the amount of money received from the acquisition generates a large increase in the marginal propensity to remain.
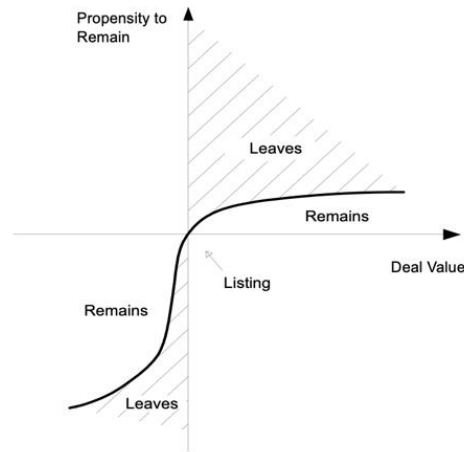
Therefore, we hypothesize that there is a positive correlation between stock listing, and the choice of leaving the firm.

Hypothesis 3. *The stock listing of the firm increases the probability of exiting the firm after the acquisition event occurs.*

The fifth and last core concept from PT that we use to identify the determinants for our study resides in the *framing effect.* According to PT, how a choice is framed, or coded and edited using Kahneman and Tversky (1979) vocabulary, appears to be a critical factor in the analysis of decisions and the following upcoming choices. In fact, in a situation in which there is no "system that reliably generates appropriate canonical representations, intuitive decisions are shaped by the factors that determine the accessibility of different features of the situation. Highly accessible features influence decisions, whereas features of low accessibility are largely ignored." (Kahneman, 2003a, p. 703)

In line with the above concept, we identify the fourth and last variable for our study as the education level of the founding entrepreneur. We argue that individuals with higher

education level should be, at the same time, less influenceable and more able to access reliable information to overcome the framing effect's issues. Framing a potential choice as loss or gain may change the final decision. Thus, we argue that founders with higher level of educational attainment are likely better aware of potential biases and are, therefore, better prepared to make thoughtful and calculated choices.

Relatedly, research outcomes show that education level is strongly related to the entrepreneurial activity (P. H. Kim et al., 2006) and success (Arenius & De Clercq, 2005; Robinson & Sexton, 1994) and that higher education levels are positively correlated with an increase in firms' goal achievements (Sapienza & Grimm, 1997) and success (Gimeno et al., 1997).

However, studies on the effects of education levels on entrepreneurial exit are still scarce. Among the few, De Hoe et al. (2018), for example, found no significant effect of the education level on the probability of exiting to engage in new ventures creation, and Arum & Müller (2009) found insignificant relation between the education level and the exit from the firm. DeTienne & Cardon (2012), instead, found that exiting entrepreneurs with high education levels have greater expectations for higher payoffs. Linked to those findings is the positive relationship between education and the probability to engage in harvest strategies -mainly IPOs and acquisitions-, resulting from DeTienne et al.'s (2015) study.

Concerning this last strand of research, we would expect individuals with higher education levels to engage in their firms' acquisition deals because they have reached their goals and want to move on to the next challenge (Arenius & De Clercq, 2005). In a similar vein, Taylor's (1999) findings highlight that individuals with higher education levels have a high probability of "moving to alternative employment" (Taylor, 1999: C152). Accordingly, we argue that a high education level favors the willingness to engage in challenges of a different nature because they want to test their abilities in different areas. For example, to become

business angels, venture capitalists, educators, or even to engage in philanthropic activities to give back part of what they have received.

PT's core concept helps us in supporting such a hypothesis. As a matter of fact, PT aims at explaining the actual behavior of individuals while arguing that such an attitude differs from the perfectly rational agent analyzed by the prevailing expected utility theory (Kahneman, 2003b; Kahneman & Tversky, 1979). Relatedly, we argue that people that had the chance to go on with higher education may value some experiences more than those who did not get such an opportunity. For example, they might greatly appreciate the possibility to share their knowledge and expertise with nascent entrepreneurs. Therefore, our fourth and last hypothesis argues that there is a relationship between the founding entrepreneur's education level and her propensity to leave the firm after the acquisition of the firm occurs. Thus:

Hypothesis 4. *The higher the founding entrepreneur's education level, the higher the probability of exiting the firm following the acquisition.*

3.4. Data, Measures, and Sample

3.4.1. *Data collection and sample*

In order to test our hypotheses, we use data retrieved from Crunchbase (data.crunchbase.com) database. Crunchbase is an online platform in which users can find data about public and private companies around the world, with information that includes business and financial data, founders' details, mergers and acquisition specifics, and sector trends. This source has already been used in entrepreneurial and management studies, e.g., to investigate investment behaviors and existing relationships between different typologies of investors and startups (Alexy et al., 2012; Cannone & Ughetto, 2014; Cumming, 2008), and to explore potential career paths of entrepreneurs after exiting their firms (Cumming et al., 2016). The database also allows us to

identify the country of origin of the entrepreneur, enabling us to explore potential differences in the exit decisions of founders.

We collected data on acquisitions from 1967 to 2019, reflecting information on the acquired firms and founding entrepreneurs. We collect data from 1967, the first year available in the dataset, to have an empirical base with a deep longitudinal structure that allows us to follow the entrepreneurial process development along time.

The final dataset is made of 6,372 observations about founders, with variables related to the founding entrepreneur's characteristics, region, and features regarding job positions held by the founding entrepreneur with firms, and acquisition related data.

Due to our interest in investigating whether the study's findings hold across North America, Europe, and Asia, we create three further subsamples. The first one includes 4,437 North American founders, the second one 1,367 European founders, and within the third subgroup, there are 568 Asian founders.

3.4.2. *Measures*

Our dependent variable, *choice,* is a dummy variable of value one when the founding entrepreneur exits her business for other activities (e.g., founding a new business, becoming a business angel, venture capitalist, or getting involved in philanthropic events), and zero if she decides to maintain a position within the firm (e.g., as an employee, entrepreneur-in-residence, or a consultant).

Four independent variables are employed to test our hypotheses. First, we consider the founding entrepreneur's *tenure.* This is calculated as the difference between the acquisition year and the year in which the founding entrepreneur started the job which equals the enterprise's foundation year. We expect *tenure* to not have a linear effect. Thus, for the purpose

of our analysis and in line with our reasoning, we use the natural logarithm of *tenure,* expressed by the number of years spent by the founder in covering central roles in the firm she created.

Second, we use the previous entrepreneurial experience of the founding entrepreneur. We measure this variable as the total number of firms founded; this information is reported by the Crunchbase. Third, we look at the potential value of the firm at the time of the acquisition deal. We use the listing in the stock market of the last sold firm as a proxy for the firm value at the time of the deal. The variable is named *listed*, and it is a dummy variable that takes the value of one if the firm is listed in the stock exchange market, and zero otherwise. The information is taken from the Crunchbase database.

Lastly, we include in our model a measure of the education level of the founding entrepreneur. Following Lee & Lee's (2014), we measure education level using a continuous variable, that takes the value of 0 if the entrepreneur has no university degree, 1 if she has a bachelor's degree, 2 if she has a master's degree, and 3 if she has earned a doctoral degree.

We also included in our model a series of control variables. *Gender* is a dummy variable which takes the value of 1 if the founding entrepreneur is male, and equal to 0 if female. We then divide the industry sectors categories into two main groups: *Information*, which includes all those firms active within the information and communication sector, and *Other services*, including firms working in all other service sectors (e.g., accommodation and food service activities; agriculture, forestry and fishing; transporting and storage) that are not included within the information and communication specific field. We use the *Other Service* as the reference sector in the models.

For subsample creation purposes, we have defined a dummy variable per continent of interest following Crunchbase's continent classification (data.crunchbase.com). *North America* variable takes the value of one if the founder country of origin is the USA or Canada, and zero otherwise. *Europe* variable takes the value of one if the founder's continent of origin is within

Greater Europe, and zero otherwise. *Asia* variable takes the value of one if the founding

entrepreneur's country of origin and zero otherwise.

Table 4 displays a summary of the variables construct and measurement.

Variable	Description	Measures
Choice	**Dependent variable** **Remain vs Leave**	Dummy variable: Remain=0; Leave=1
Tenure	Tenure time	Natural logarithm of tenure years
Entrepreneurial experience	Number of founded firms	Natural logarithm of number of founded firms
Listed	Listed in the stock exchange	Dummy variable: non-listed=0; listed=1
Education level	Founder's education level	Categorical variable: no university degree=0; bachelor or similar=1; master or similar=2; Ph.D. or similar=3
Gender	Founder's gender	Dummy variable: female=0; male=1
Information & Communication Sector	Firm's sector	Dummy variable: Information sector = 1; Others=0
North America	Founder's country of origin	Dummy variable: USA+Canada=1; Others=0
Europe	Founder's country of origin	Dummy variable: Greater Europe=1; Others=0
Asia	Founder's country of origin	

Table 4: Variables construct and measurement

3.4.3. Descriptive statistics

In our sample, 70 percent of founders originate from North America, 21 percent from Europe,

and the remaining 9 percent from Asia. Table 5 presents the descriptive statistics for the whole

sample, while Table 6 shows those related to the three subsamples.

Our dependent variable, *choice*, indicates that 43 percent of our sample is represented

by individuals who decided to leave. Fifty-seven percent is instead characterized by those who

maintained a role within their firms even after the acquisition occurred. Our subsamples show

slightly different statistics, but with a similar pattern of the vast majority of founding

entrepreneurs remaining within their firms after the acquisition occurred.

Male entrepreneurs represent the vast majority (93 percent) of our sample, showing a

still persistent gender gap in founding propensity and entrepreneurial opportunities. It is in line

with previous findings that highlight how female founders are still under-represented within

the entrepreneurial world (Bönte & Piegeler, 2013), especially when it comes to serial

entrepreneurship -founding a second firm after exiting the first one- (Kuppuswamy & Mollick,

2016). Results are also consistent across the three subsamples.

Regarding educational background of founding entrepreneurs, 25 percent have earned a bachelor's degree, 21 percent master's degree, and 6 percent have earned a doctoral degree. Results from the subsamples show slight differences across countries. The country with the highest percentage of founders with only a bachelor's degree is North America (28 percent), followed by Asia (27 percent), and Europe (15 percent). Among the founders with at least a master's degree, the highest statistics is still in North America with 23, followed by Asia with 20, and Europe with 15 percent. Founders who own doctoral degrees are 6 percent in North America, followed by 5 percent in Europe, and 3 percent in Asia.

Remarkably, 59 percent of the entrepreneurs in the sample founded just one company at the time of the data gathering. However, as Table 5 shows, individuals in our sample founded, on average, two firms reaching up to a maximum of twenty firms. Twenty-two percent of the database firms are active in the information and communication sector, while the vast majority (78) is spread across other sectors. Overall, four percent of the considered firms are listed in the stock exchange market.

	Total Sample					
	Mean	*Std. Dev*	*Min*	*Max*	*Observations*	*VIF*
Choice	.4297	.4951	0	1	6,372	
Tenure	9.29	7.6	0	70	6,372	1.06
Entrepreneurial experience	1.72	1.18	1	20	6,372	1.11
Listed	.0406	.1975	0	1	6,372	1.01
Education level	.8487	.9467	0	3	6,372	1.04
Gender	.9337	.2487	0	1	6,372	1.01
Sector	.2214	.4152	0	1	6,372	1.06

Table 5: Descriptive Statistics (Total sample)

The picture appears similar across the three countries of our subsamples but with few significant differences. Differences can be found in the maximum number of ventures created, which drops from 20 in North America to 12 in Europe, and 9 in Asia, and in the percentage of firms listed in the Stock Exchange market, which drops down to two in Asia and Europe. Clearly, in the US, founders tend to promote a larger number of start-ups than in Asia and

Europe, and listing is a more frequent and common option in the US than in other parts of the world.

Table 5 also highlights that the average tenure lasts for nine years, but it can last for a lifetime (70 years of maximum tenure). This is typically the case with those firms defined in the literature as family firms, companies in which founders maintain the same role for almost a lifetime, passing it to their heirs with the willingness to maintain the ownership and control within the family across future generations (Majocchi et al., 2018). Results are consistent across countries in our subsamples too (Table 6).

	North America				Europe				Asia			
	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max	Mean	Std. Dev	Min	Max
Choice	.4701	.4991	0	1	.3438	.47515	0	1	.3204	.4670	0	1
Tenure	9.23	7.5	0	69	10.03	8.33	0	70	7.94	6.14	0	67
Entrepreneurial experience	1.79	1.24	1	20	1.5	1.01	0	12	1.56	1.02	1	9
Listed	.0485	.2147	0	1	.02194	.1466	0	1	.0246	.1552	0	1
Education level	.9263	.9492	0	3	.6342	.9354	0	3	.7588	.8647	0	3
Gender	.9290	.2568	0	1	.9429	.2320	0	1	.9489	.2203	0	1
Sector	.2035	.4026	0	1	.2479	.4320	0	1	.2975	.4576	0	1

Table 6: Descriptive statistics (subsamples)

Table 7 presents the correlation matrix. The generally low values reported suggest that multicollinearity is not a problem. Such a conclusion is validated by the low values of the variance inflation factors (VIF) reported in Table 5. The VIF values of all independent and control variables range between 1.01 and 1.11, which suggests once again that multicollinearity is not likely a concern in the present study (Greene, 2012).

	Choice	Tenure	Entrepreneurial experience	Listed	Education level	Gender	Sector
Choice	1						
Tenure	-0.3591 (0.000)	1					
Entrepreneurial experience	0.4154 (0.0000)	-0.1961 (0.0000)	1				
Listed	-0.0300 (0.0165)	0.0966 (0.0000)	-0.0191 (0.1266)	1			
Education level	0.1612 (0.0000)	-0.1074 (0.0000)	0.1562 (0.0000)	0.0304 (0.0153)	1		
Gender	0.0744 (0.0000)	-0.0184 (0.1428)	0.0887 (0.0000)	-0.0027 (0.8289)	-0.0172 (0.1691)	1	
Sector	-0.3369 (0.000)	0.1214 (0.0000)	-0.2181 (0.0000)	0.0083 (0.5061)	-0.0729 (0.0000)	-0.0054 (0.6664)	1

Table 7: Correlation Matrix

3.5. Methods and Results

3.5.1. The models

Given the dichotomous nature of our dependent variable, *choice,* which takes the value of 1 whenever the founding entrepreneur exits her firm, and 0 otherwise, we use logit regression methodology to test our hypotheses.

The results of our main regressions are reported in Table 8.

Variables	Choice (Model 1)	Choice (Model 2)	Choice (Model 3)	Choice (Model 4)	Choice (Model 5)
Tenure -ln (H1)		-1.366*** (0.0545)	-1.264*** (0.0575)	-1.307*** (0.0584)	-1.293*** (0.0587)
Entrepreneurial Experience -ln (H2)			2.456*** (0.104)	2.476*** (0.104)	2.407*** (0.104)
Listed (H3)				0.937*** (0.156)	0.900*** (0.157)
Education Level (H4)					0.203*** (0.0324)
Gender (CV)	0.698*** (0.115)	0.714*** (0.123)	0.470*** (0.128)	0.472*** (0.128)	0.503*** (0.129)
Information (CV)	-2.104*** (0.0877)	-2.050*** (0.0905)	-1.809*** (0.0943)	-1.810*** (0.0945)	-1.805*** (0.0947)
Constant	-0.578*** (0.112)	-2.265*** (0.162)	-0.0722 (0.191)	-0.0428 (0.192)	-0.217 (0.194)
Observations	6,372	6,372	6,372	6,372	6,372
LR chi2	857.37	1626.96	2300.50	2336.63	2375.84
Prob > chi2	0.0000	0.0000	0.0000	0.0000	0.0000
Pseudo R2	0.0985	0.1869	0.2642	0.2683	0.2729

Table 8: Logistic regression results (Standard errors in parenthesis; *** p<0.01, ** p<0.05; * p<0.1)

In the first model (Model 1), we only include control variables. In the remaining four models, we add our independent variables to test the four hypotheses. Overall, our results are very stable across models and all models produce a high explanatory power. Our full model

(Model 5), reports a significant Pseudo R-squared of 27 percent. We refer to this full model in interpreting the results.

Our first hypothesis posits that the higher the founding entrepreneur's tenure, the lower the probability of exiting the firm after the acquisition event occurs. The negative and strongly significant (with a p-value way lower than 0.001) coefficient of the variable tenure suggests that we can accept the first hypothesis. According to our results, for a one unit increase in tenure, the log-odds of exiting the firm decreases by 1.29, on average, holding all else constant. In other words, for a one-year increase in firm's tenure, the odds of exiting the firm decreases by 72.6 percent, on average, ceteris paribus. These results, once again, strongly support our hypothesis.

Similarly, our second hypothesis which postulates that the higher the number of firms founded, the higher the probability of exiting the firm following the acquisition, is also substantiated. The positive and significant (with a p-value much lower than 0.001) coefficient suggests that a unit increase in the entrepreneurial experience variable translates to an increase in the probability of exiting the firm. The effect of the entrepreneurial experience expressed as the number of founded firms strongly impacts (the coefficient equals 2.41) her choice to exit the firm right after the acquisition occurs. Thus, the higher the number of firms founded, the higher is the probability of leaving the firm after the acquisition deal.

Our predictions for the firm's presence in the stock exchange market (Hypothesis 3) are also validated. The positive and strongly significant coefficient (with a p-value lower than 0.001) confirms our hypothesis. The listing of the firm has a significant and relevant positive impact on the probability for the founding entrepreneur to exit the firm she helped create.

The last hypothesis (Hypothesis 4) is accepted as well. With a significance level much lower than 0.0001, and a positive coefficient of 0.203, the education level influences the exit

choice. More precisely, the higher the level of education of the founding entrepreneur, the higher the probability to exit.

In summary, the logit model on the entire sample and considering all variables suggest that the founding entrepreneur's tenure, previous work experience, and education level, together with the firm's presence in the stock exchange, market are statistically significant determinants of the exit choice.

3.5.1.1. An International comparison

Given our interest in exploring whether our findings hold across major world regions, we re-run our models on the three countries we have identified as subsamples. Results are shown in Table 9.

	Total Sample	North America	Europe	Asia
	Model	*Model*	*Model*	*Model*
Tenure (H1)	-1.293***	-1.378***	-1.171***	-1.067***
	(0.0587)	(0.0702)	(0.129)	(0.213)
Entrepreneurial Experience (H2)	2.407***	2.245***	2.699***	2.569***
	(0.104)	(0.121)	(0.254)	(0.373)
Listed (H3)	0.900***	0.872***	0.292	1.418**
	(0.157)	(0.172)	(0.466)	(0.707)
Edulevel (H4)	0.203***	0.187***	0.144**	0.332***
	(0.0324)	(0.0384)	(0.0724)	(0.126)
Gender (CV)	0.503***	0.499***	0.451	2.256**
	(0.129)	(0.144)	(0.337)	-1.042
Sector (CV)	-1.805***	-1.630***	-2.456***	-2.261***
	(0.0947)	(0.107)	(0.276)	(0.375)
Constant	-0.217	0.226	-0.762	-3.073***
	(0.194)	(0.226)	(0.477)	-1.138
Observations	6,372	4,437	1,367	568

Table 9: Logistic regression (subsamples). Standard errors in parenthesis. ***p<0.01,**p<0.05,*p<0.1

The four hypotheses are fully supported for the North American and Asian subsamples, with nearly at the same significance level than in the overall sample. However, the third hypothesis -- which states that the firm's presence in the stock exchange market increases the founder's probability to exit the firm after the acquisition-- is not supported in the European subsample. Interestingly, also the *gender* variable we have controlled for loses its significance when studied within the European subsample model.

3.5.1.2.   Robustness checks

To assess the robustness of our findings, we carried out several robustness checks. First, we employed different methodologies. We rerun our regressions using the probit methodology. Results remain mostly unchanged. Additionally, since we have an important time-related variable in the model that measure the time to the event (the exit), we also run a survival analysis. We use *tenure* as our reference survival-time data and keep *choice* as the event variable (dependent variable). Again, the estimates resulting from the survival analysis are very similar with those previously found with the logistic regression; thus, confirming the robustness of our results across different econometric methodologies.

Finally, we employed a different measurement for the founding entrepreneur's education level: a categorical variable, following the study by Justo et al. (2015), in lieu of the continuous variable we used. Once again, results remained unchanged.

Consequently, all robustness checks confirmed our results since coefficient signs did not change, their significance levels were almost unchanged, and the only aspect that was slightly affected was the magnitude of the coefficients.

3.6. Discussion and Conclusions

Our study falls within the entrepreneurial exit research specific domain. While aiming at addressing to the query of what happens to the entrepreneurs once the firm they founded has been acquired, we use PT's concepts to identify the potential antecedents of the first crossroad choice they face (remain vs. exit the firm). We then contribute to comparative studies of entrepreneurial exit by comparing our results across three major world regions.

First, we consider the PT's *endowment effect,* which states that individuals value what is in their possession more simply because they own it (Kahneman, 2003b), and *loss aversion,* which identifies the tendency of the individual to prefer avoiding losses to acquiring potential

gains (Tversky & Kahneman, 1991). These concepts, considered together with prior literature (Kammerlander, 2016), led us to identify *tenure* as a reasonable proxy. Longer tenure is typically associated with stronger emotional attachment and an increase in non-economic related interests in maintaining a role within the firm (Hambrick, 2007; Kammerlander, 2016). Thus, results confirm our hypothesis that the founding entrepreneurs with longer tenure tend to remain in the firms they founded, even if such an effect gets reduced at a certain point in time due to life and aging-related considerations.

Second, even if PT's *endowment effect* and *loss aversion* suggest that individuals are less willing to give up something because of the emotional attachment they feel and the aversion to potential losses they might face (Kahneman, 2003b), '*experienced traders'* represent a case. They learned to value less their emotions connected with losing something, while trading what they own for the sake of longer-term gains and values (Kahneman, 2003: 1457). Similarly, founding entrepreneurs with previous entrepreneurial experience display greater willingness to exit the firms they helped create for many different reasons. For example, it might be because their network of contacts informs them about the existence of new potential investments and includes them in outside projects, or because they want to engage in a diversification of their economic activities (Ucbasaran et al., 2008).

Third, PT led us in defining the value of the firm at the time of the acquisition as the potential *reference point* for the founding entrepreneur, and we identified in the firm's presence in the stock exchange a reliable proxy. Even if the reference point for founders is not known a priori and may be adjusted along time, it is the result of present and past stimuli (Kahneman & Tversky, 1979; Kotlar et al., 2018; Werner & Zank, 2018). Exiting a firm registered in the stock exchange market would most likely leave the entrepreneur with a financial gain which, translated under PT's terms, implies that such a situation stands above the reference point.

Thus, if the firm is listed in the stock exchange, the probability that the founding entrepreneur chooses to exit from the firm she created is higher.

Finally, applying the *framing effect* core concept to the entrepreneurial exit, we identified the education level of the founding entrepreneur as one of the main determinants influencing the choice of leaving the firm after an acquisition. Indeed, the results confirm a positive statistical relationship between the founder's decision to leave the firm and her education level. Here, we can say that higher education level entails a higher probability for the founding entrepreneur to exit once the acquisition deal occurs.

In sum, in harmony with our hypotheses, the empirical analysis demonstrated that the founding entrepreneur's tenure negatively impacts the after-acquisition choice, and that the other three considered variables – entrepreneurial experience, firm's stock market presence, and founder's education level- are positively related to the exit choice. Thus, an increase in tenure leads to lower exit probabilities. An increase in the number of founded firms, level of education, or the firm's presence in the stock exchange market, increase the likelihood to exit after the acquisition occurs.

Moreover, to our knowledge, this study is among the first to investigate the entrepreneurial exit phenomenon at the international level. Given the established importance of international comparison when exploring a relatively new topic (De Clercq et al., 2012; J. B. Kim & Kim, 2000), we compare three major world regions to examine whether our key findings hold at across major regions of the world. Indeed, we find that our hypotheses are generally supported across North America, Europe, and Asia.

Across all three major regions, the probability that the founder opts for exiting the firm right after acquisition (H1) is lower, the longer is her tenure within her venture. This probability is then higher (H2) the more firms she founded along her entrepreneurial life and (H4) the higher educational achievement. However, there is a slight difference between the North

American and Asian samples in comparison to the European entrepreneurs. In the first two samples, the firm's presence within the stock exchange market increases the probability that the founder chooses for an exit once her firm has been acquired. In Europe, however, the variable loses its significance; the sign of the value is still positive, but significance levels are not enough to be identified as exit choice antecedents.

We argue that such a difference in results might be the reflection of the number of listed firms in the three markets as reported by the OECD (oecd.org[1]). Indeed, the vast majority of listed firms are in North American and Asian countries. Thus, the lower amount of European ventures listed in the stock exchange market offers a potential explanation for the low significance level of the impact of owning a firm listed on the founding entrepreneur's choice of exiting the firm.

Overall, the present study provides a more nuanced understanding of entrepreneurial choices after an acquisition event. We contribute to the entrepreneurial exit literature by applying PT's concepts to identify the specific antecedents to the choice founders take right-after the acquisition deal is completed. Specifically, we shed light upon the relationships behind potential determinants of the founding entrepreneurs' decisions once the firm they helped create has been acquired. Results of our analysis show that tenure, entrepreneurial experience, the firm's presence in the stock exchange market, and the founder's education level are among the antecedents of the post-acquisition choice made by the founding entrepreneur to either remain or exit the firm she helped create. Importantly, this finding holds across the three major regions that we have investigated.

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[1] For further information, see: https://www.oecd.org/corporate/who-are-the-owners-of-the-worlds-listed-companies-and-why-should-we-care.htm

3.7. Limitations and future research

To the best of our knowledge, the present work is the first comparative study to investigate the relationship between the founding entrepreneur's characteristics and her probability of choosing to leave the firm once the acquisition occurs. Comprehensive nature of the dataset with 6,372 observations makes it a significant empirical investigation that allows us to examine the entrepreneurial behavior right after acquisition deals.

Yet, the study is not free of limitations. For example, the sole focus on acquisition deals does not cover the whole range of entrepreneurial exit strategies. Also, while we argue for a positive effect of the firm being listed on the probability to exit, we did not consider the possibility of specific requirements that the listing procedure imposes upon founding entrepreneurs. Moreover, the deepening of the reasons behind the individuals' decision to leave might be better interpreted by a qualitative study based on interviews directly addressed to the founding entrepreneurs. Surely, these research directions deserve further analysis.

We decided to focus on acquisitions because it is considered the most desirable exit strategy as it involves high financial returns (Haunschild, 1994). Yet, such a strategy may lead to biased results in the post-exit choice determinants if we do not also consider the difference with other exit strategies. DeTienne et al. (2015), for example, include acquisition deals together with IPOs among the financial harvesting strategies, as they provide the founders with the highest financial rewards. It might signify that founders who engage in such a deal want to maintain roles within the firm but need financial aid from outsiders. Thus, a further step for our analysis could be to compare if the determinants of the post-acquisition choice hold for the other exit strategies as well.

Future research efforts could further improve the contribution to the literature by going beyond the first crossroad that exiting entrepreneurs face. We stressed that entrepreneurs

mainly have two choices: staying within the firm after the acquisition or leaving it. However, it would be interesting to take a step forward and investigate the determinants under the other paths entrepreneurs can pursue. If they stay within the firm, they can either: (i) maintain the same role, or (ii) assume a different position within the firm. If they leave, they can: (iii) retire from doing business altogether, (iv) work for an already existing company, (v) start new businesses becoming serial entrepreneurs, or (vi) get engaged in investing in other firms and start-ups. Conceiving the entrepreneurial exit choice as a two-stage gamble approach, as Kotlar et al. (2018) did for the specific situation of IPO underpricing in family businesses, can advance our understanding of this specific step in an entrepreneur's life a step further.

It is hoped the present investigation inspires scholars to pursue this important stream of research which should serve to validate the findings reported here and potentially delineate other drivers of entrepreneurial exit following an acquisition.

4. Habitual founders..Who?

4.1. Introduction

What distinguishes habitual founders from one-time entrepreneurs? In responding to this question, most existing literature has focused on the psychological processes behind entrepreneurial re-engagement and the different motives and behaviors toward opportunity identification (Hsu et al., 2016; Thorgren & Wincent, 2015; Van Praag, 2003), in particular dedicating much attention to the differences between serial, portfolio, and novice entrepreneurs (Westhead et al., 2003b; Westhead, Ucbasaran, Wright, et al., 2005; Wiklund & Shepherd, 2008). While this classification of entrepreneurs is certainly important, recent work has suggested that other typologies and characteristics of individuals engaged in entrepreneurial activity should be considered.

In particular, habitual or experienced entrepreneurs are usually defined as those "individuals who hold or have held a minority or majority ownership stake in two or more businesses, at least one of which was established or purchased" (Ucbasaran et al., 2008, p.323). We draw from this definition to identify two main groups of habitual entrepreneurs: those experienced in creating more than one business, the so-called habitual *founders,* and those who instead prefer to acquire rather than founding, the so-called habitual *acquirers* (Ucbasaran et al., 2003). We argue that the difference between the two groups is important, and we focus the study on habitual founders. Our reasoning supporting such a choice is to highlight individuals' entrepreneurial capabilities and risk-taking attitudes, which we assume to be better displayed in those entrepreneurs who create something from scratches, rather than in those who acquire already functioning firms.

Which other groups of entrepreneurs are better suited for comparison versus habitual founders? While the vast majority of extant literature compares *habituals*, who have prior entrepreneurial experience per definition, to *novice* entrepreneurs, who instead face their very

first entrepreneurial challenges (Westhead, Ucbasaran, Wright, et al., 2005), we argue that one-time entrepreneurs represent a much better unit of comparison. The one-time entrepreneurs' group (Sarasvathy et al., 2013) refers to those individuals engaged in the entrepreneurial activities they founded. It includes both *novice* entrepreneurs and *lifestyle* entrepreneurs, individuals who choose to grow their business, making it a lifestyle choice (G. Kerr et al., 2017).

Therefore, we argue that habitual founders and one-time founders are proper units of comparison. Both entrepreneurs are individuals who have founded at least one firm in their entrepreneurial life. Both are experienced entrepreneurs who have chosen to grow their businesses, but which differ in terms of characteristics, preferences, and future goals. Therefore, and in line with Kerr et al. (2017), we argue that previous founding experience offers a unique portfolio of knowledge that put habitual founders, to some extent, on the same ground as one-time entrepreneurs (Sarasvathy et al., 2013).

However, traditional habitual entrepreneurship studies have not yet adequately targeted these groups. As a result, questions on the differences between launching and sticking with one firm versus having multiple-firms' founding experiences have been relatively unexplored. Given these assumptions, which characteristics of an entrepreneur play a role in becoming a habitual founder?

Focusing on this key question and borrowing from human capital theory, we identify a set of variables that promote habitual founding entrepreneurship in terms of education, international experience, and diversity of prior experiences. We follow previous studies in considering human capital in terms of general and specific factors (Amaral et al., 2009; Arnold C. Cooper et al., 1994; Wiklund & Shepherd, 2003), but we differentiate from previous literature both for the operationalization of these factors, as well as for the unit of analysis used.

We argue that referring to habitual founders and one-time entrepreneurs should reduce the risks of comparing diverse analysis levels, thus leading to more robust results.

In the following section, we frame our study on existing literature on habitual entrepreneurship and human capital theory to develop our hypotheses. We then test our hypotheses using a database on 8,587 founders and their firms, which was created from scratches based on Crunchbase data and information. The sample, data collection, and measurements are presented in section three, while the analysis and results are to be found in section four. We dedicate the final part of the manuscript to discussion, limitations, and hints for future related research.

4.2. Theory and Hypotheses Development

4.2.1. Habitual Entrepreneurship

Research on entrepreneurship has deeply recognized the importance of the "habitual entrepreneurship" phenomenon (MacMillan, 1986). However, the difficulties in defining such a particular typology of entrepreneurs did not help with a smooth development of proper theory, which led to controversial results and hard-to-compare analyses (Ucbasaran et al., 2008; Westhead & Wright, 1998a).

Habitual or experienced entrepreneurs can be classified as habitual *founders* and habitual *acquirers* (Ucbasaran et al., 2003). However, the few studies that we are aware of and which touch upon this specific differentiation, mainly focus on highlighting differences during business opportunity identification and exploitation processes (Ucbasaran et al., 2003, 2008). With a case studies approach and applying human capital theory, Ucbasaran et al. (2003) found that habitual starters' primary motivations for launching the businesses are independence and autonomy, compared to acquirers' willingness to create wealth and experience the feeling of a challenge for owning a business. They found that starters (*founders)* are more proactive in

searching for information and focus on industry-specific knowledge, while acquirers show a preference for working in teams (Ucbasaran et al., 2003). Interestingly, they found no differences in the learning experience of the two types of habitual entrepreneurs. In line with Rosa's (1998) previous findings, they further argued that the reasons behind engaging in subsequent business ownership, or re-entry, vary across individuals and are often not even related.

However, the larger slice of research in the habitual entrepreneurship field is dedicated to serial, portfolio, or novice entrepreneurs. Serial and portfolio entrepreneurs are two types of habitual entrepreneurs. Serials are individuals who founded more than one venture sequentially, so those who have sold or closed at least one business before founding or acquiring a minority or majority ownership stake in another business (Westhead & Wright, 1998a; Wright et al., 1997). Portfolio entrepreneurs are, instead, individuals who have founded, or acquired, more than one business and currently own minority or majority ownership stakes in more than one of those ventures (Scott & Rosa, 1996; Ucbasaran et al., 2008). The third group that is usually compared to serial and portfolio, or habitual entrepreneurs more in general, is represented by the novice entrepreneurs. They are individuals who have no prior start-up or entrepreneurial experience, and they are at their first venture (Westhead, Ucbasaran, Wright, et al., 2005; Westhead & Wright, 1998a), as the term *novice* suggests. They differ from the *lifestyle* entrepreneurs, those individuals who have founded or acquired only one firm in their entrepreneurial life. These are experienced entrepreneurs (G. Kerr et al., 2017), often strongly emotionally attached to their creation. Novice and lifestyle entrepreneurs are considered together under the same umbrella definition of the one-time founders.

Thus, the current study discards habitual acquirers to focus on habitual founders and compares them to the one-time founders' group.

The stream of literature dedicated to entrepreneurial types mainly focuses on the core characteristics that distinguish them. For example, some scholars study the psychological processes that may act on the choice of re-engaging–in entrepreneurship (Hsu et al., 2017), leading, in some cases, to a sort of addiction to entrepreneurship (Spivack et al., 2014; Thorgren & Wincent, 2015) or, differently, to choosing for alternative career paths (Marshall, 2016). Instead, others focus on entrepreneurs' demographics and personal backgrounds, together with their acquired human capital and different behaviors toward new opportunities identification (Westhead et al., 2003a; Westhead, Ucbasaran, Wright, et al., 2005; Westhead & Wright, 1998a). Other studies investigate whether being a serial, portfolio, or a novice entrepreneur affect firm performances (Westhead et al., 2003a; Westhead, Ucbasaran, & Wright, 2005a; Westhead, Ucbasaran, Wright, et al., 2005), but related results on performance tend to be mixed (Ucbasaran et al., 2008).

We argue that one possible reason behind these contradictory results on performance is the nomological and operational definition of the unit of analysis. The vast majority of studies consider habitual entrepreneurs a homogeneous category, not distinguishing between founders and acquirers. However, as underlined in Ucbasaran et al.'s (2003) study, these two categories differ in their motives for engaging in entrepreneurship (i.e., starters' autonomy driven versus acquirers' wealth creation driven motives) and in their approaches toward entrepreneurship (i.e., starters' proactive search for specific industry information and individualistic work versus acquirers' team-working preferences). Therefore, not considering such a difference may lead to having different measures for the same variable, which may bias the outcome if results are compared as if they were representing the same.

Moreover, linking habitual, who have prior entrepreneurial experience but different business ownership preferences, only to novice entrepreneurs, who instead face their first entrepreneurial challenges, may hide another potential issue. Therefore, and in line with Kerr

et al. (2017), we argue that previous entrepreneurial experiences offer a unique portfolio of knowledge that to some extent is shared between habitual and one-time founders (Sarasvathy et al., 2013).

In conclusion, we have decided to follow Ucbasaran et al. (2003) approach and focus on habitual founders, not considering habitual acquirers. In this way we could properly evaluate the role of previous entrepreneurial experiences in promoting habitual entrepreneurship comparing entrepreneurs with a portfolio of founding experiences versus entrepreneurs who does not have this specific asset. Similarly, we have built upon Kerr et al.'s (2017) reasoning by identifying in the one-time founders group, the unit of comparison to which juxtapose the habitual founders investigated group.

Defining a narrower unit of analysis is fundamental to reach results that can be compared with other future studies. It gives us the possibility to not merely target the correct group, thus, leading our search for data more directly and correctly, but it also offers us the chance to take a further step in studying habitual entrepreneurship in its most in-depth terms.

4.2.2. *Human Capital*

Human capital theory suggests that individuals may have innate and acquired characteristics that build up their human capital, a robust resource that acts on their aptitude and capability to achieve good results for specific tasks (Becker, 1975). In the entrepreneurship specific context, human capital theory helps to investigate which type of knowledge and skills promote firm founding activities and firm growth and success.

When referred to habitual entrepreneurship, researchers have often borrowed from human capital theory to explain the accumulation of experience, expertise, and learning across the entrepreneurs' lives and choices (Amaral et al., 2009; Mosey & Wright, 2007; Ucbasaran et al., 2003, 2010; Westhead, Ucbasaran, & Wright, 2005a, 2005b). Studies have shown that

habitual entrepreneurs accumulate great entrepreneurial experience, knowledge of the market and the environment as a whole, and a vast network of contacts (Cope, 2005; Ucbasaran et al., 2003, 2008; Zhang, 2011). According to Headd (2003), previous firm ownership leads to better survival rates. Cope & Watts (2000), among others, have recognized that experiential learning helps with the resource-acquisition process. Ucbasaran et al. (2003), among others, have argued that prior experience in entrepreneurship helps in developing critical assets, like reputation or a more substantial business network, which increases the possibilities to further engage in business ownership.

Thus, habitual entrepreneurs' knowledge, skills, and behaviors are, in part, shaped by their innate or acquired human capital (Sarasvathy et al., 2013; Ucbasaran et al., 2008). In fact, the studies on habitual founders and acquirers suggest that entrepreneurial experience provides a stock of human capital that helps to "identify and exploit business opportunities" (Ucbasaran et al., 2003, p.225). Consequently, these studies argue that habitual entrepreneurs face more opportunities for developing human capital than novice entrepreneurs, thanks to the challenges they handled and the more substantial entrepreneurial experience they had (Ucbasaran et al., 2008). While focusing on habitual founders (excluding acquirer) and one-time entrepreneurs (who have experience related to just one business), we think that such a difference still holds.

A second distinction in literature draws a line between general and specific human capital (Amaral et al., 2009; Becker, 1975, 1993). The general human capital is, as the word suggests, more generic to different types of -economic- activities (Castanias & Helfat, 2001) and generalizable across contexts (Wiklund & Shepherd, 2008, p. 704). The specific human capital is, instead, peculiar to a precise and definite domain (Gimeno et al., 1997) and, in the context of entrepreneurship, it influences how individuals seek information (Arnold C. Cooper et al., 1995)or discover and exploit entrepreneurial opportunities (Shane & Venkataraman, 2000)

General human capital is identified with demographic characteristics -i.e., age, gender, and family background (Becker, 1975; Arnold C. Cooper et al., 1994)- which are innate in one's life and often influence individual's behaviors and attitudes (Ucbasaran et al., 2008). General human capital is then measured by the individual's education level (Becker, 1975; Wiklund & Shepherd, 2008), which offers a more specific and rational measure. Cooper et al. (1994) underlined that education represents a good source of knowledge, skills enhancement, motivation, and even self-confidence awareness. Wiklund & Shepherd (2008) then add that the value of education is easily transferable across contexts.

Specific human capital within the habitual entrepreneurship literature is often operationalized as experience (Ucbasaran et al., 2008) – i.e., in terms of prior entrepreneurial, managerial, or founding experience (Amaral et al., 2009). Having had previous experiences in specific fields or job roles provide entrepreneurs with "specific knowledge of business dynamics" (Amaral et al., 2009, p.3) that help them in the identification and exploitation of alternative business opportunities (Robson et al., 2012; Ucbasaran et al., 2008).

The main conclusions of the literature on habitual entrepreneurs, and their differences with novice entrepreneurs, is that habitual entrepreneurs tend to be more successful. This because habituals, thanks to their prior experiences, develop resource-acquisition skills, enhance their reputation, increase the probability of their firms' survival, and have better contacts with financial institutions compared to those novice entrepreneurs (Arnold C. Cooper et al., 1994; Turcan & Fraser, 2018; Wiklund & Shepherd, 2003; Wright et al., 1997). Does it hold for one-time entrepreneurs too?

4.3. Hypotheses Development

4.3.1. General Human Capital

Previous findings show that higher education, either in years of schooling or levels of education (Eggers & Song, 2015; Thorgren & Wincent, 2015; Toft-Kehler et al., 2014), helps individuals to develop skills, knowledge, and a sense of self-confidence and accomplishment (Arnold C. Cooper et al., 1994). Also, it seems clear from the literature that these characteristics gained thanks to increased education, support the entrepreneur in better coping with various problems.

The vast majority of studies that analyze education when comparing habitual entrepreneurs to novice entrepreneurs found no substantial differences (Westhead, Ucbasaran, & Wright, 2005b; Westhead & Wright, 1998a). The only slight difference across the three main types of entrepreneurs – serial and portfolio (habitual), and novice – is found between the portfolio and the serial and novice. Wiklund & Shepherd (2008), following the logic of a resource-based perspective, argue that higher educated entrepreneurs are positively related to increased ability and tendency to become portfolio entrepreneurs. By identifying education as a reflection of general human capital, it appears that having higher education levels offers stronger abilities in recognizing and assimilating "new information and thus expand the universe of possible new entries and enhance one's ability to pursue them" (Wiklund & Shepherd, 2008, p.716).

While we agree that education plays an important role, we claim that higher educational levels also allow entrepreneurs to tap on different capabilities and promote their ability to create new ventures over the years and in various contexts. Higher education levels help develop a strong motivation to reach successful positions, the willingness to engage in new challenges to enhance one's reputation, and provide a strong network of contacts that can help with future business opportunities identification. On her side, the one-time founder may have a strong

entrepreneurial attitude (Keat et al., 2011) but does not necessarily have the differentiated portfolio of skills and abilities that are required to create different ventures across years.

Thus, we state that:

Hypothesis 1. The higher the founder's education level, the higher the probability of being a habitual founder compared to a one-time founder.

Although several international entrepreneurship researchers have widely examined the founder's prior international experience effects (Kuemmerle, 2002; McDougall et al., 2003; Zucchella et al., 2007), no study on habitual entrepreneurship has, to our knowledge, included such a variable among the human capital factors. Indeed, international experience can substantially impact the development of general human capital (Ahmed & Brennan, 2019).

Prior international entrepreneurship literature (Ahmed & Brennan, 2019; Kuemmerle, 2002; McDougall et al., 2003) shows that international exposure while working, studying, or more generally living abroad, can enhance an entrepreneur's knowledge about cultures, foreign markets, and differences in doing business. It also helps develop a more extensive network of contacts (McDougall et al., 2003). As we have seen, a wider network of contacts can help identify new business opportunities (Ucbasaran et al., 2003). Following this strand of the literature, and in line with Ahmed & Brennan (2019) study, we include the founder's prior international experience, whether at education or work levels, as a direct measure of general human capital.

We argue that, since international experience has such a proven impact on the development of the entrepreneur's human capital, it would also have a significant, positive impact on the ability to found new firms. Therefore, we argue the following:

Hypothesis 2. The higher the founder's international experience, the higher the probability of being a habitual founder compared to a one-time founder.

4.3.2. *Specific Human Capital*

We have previously discussed that entrepreneurs can develop knowledge, acquire skills, and enhance their abilities thanks to their prior business experiences (Westhead & Wright, 1998a). The conceptual difference between one-time and habitual founders is that the first typology of entrepreneurs uses such a specific human capital to reach success and performance levels within their one firm; the second group, instead, exploit it for business opportunities identification. We have then seen that specific human capital is often operationalized as experience and that direct entrepreneurial experience gained by business ownership experience can impact on its development (Ucbasaran et al., 2008; Wiklund & Shepherd, 2003).

Education represents only one part of an individual's portfolio of knowledge. In fact, knowledge can be experiential. Prior experiences in various industries, sectors, job positions, and with firms with different characteristics can create the basis for a portfolio of competences that might lead toward multiple entrepreneurial experiences. Therefore, we argue that at the habitual founders' level, experience should be seen as the diverse experiences the entrepreneur has with respect to the different industries she worked in, the different job positions she engaged in, and the diverse sizes of the firms owned. In line with our thinking, we divide specific human capital into three main categories.

First, the diverse industries experience. Prior literature states that habitual entrepreneurs, in general, can develop and gain more specific human capital than novice entrepreneurs by owning more businesses in the same sector. In line with prior literature, in their study about habitual starters and acquirers, Ucbasaran et al. (2003, p. 222) found that "industry-specific know-how was an important element of a habitual entrepreneur's human capital, particularly for the habitual starter entrepreneurs."

In contrast, while targeting the habitual founders' group ouselves, and looking as a reference to one-time entrepreneurs, we argue that habitual founders will have a more intense

specific human capital than the reference group. In fact, different sectors may influence the decision of an individual to transit into entrepreneurship (Hyytinen & Ilmakunnas, 2007), the ability to recognize new business opportunities (Shane, 2003), but also the founders' decision to exit, and later re-enter or not, entrepreneurship (Westhead & Wright, 1998a). Also, different industries can play an important role in shaping an entrepreneur's behavior (Gimeno et al., 1997).

By owning businesses in different industries and sectors, habitual founders may develop new, broader tasks to overcome the liability of newness in the different markets, and increase their social networks, which can increase the likelihood of knowing about new business opportunities. At the same time, engaging in something different can help with the feeling of accomplishment and reputation enhancement that is often coupled with successful entrepreneurs. Therefore, an entrepreneur with experience in different sectors may have learned resource-acquisition skills across contexts, and have a better understanding of the requirements needed to attract also financial institutions than one-time entrepreneurs.

Thus, we argue that:

Hypothesis 3. The more diverse the founder's industry sector experience, the higher the probability of being a habitual founder compared to a one-time founder.

Second, the different job positions covered. According to the extant literature, prior working experience related results are still controversial. Some found no statistically relevant differences across the three typologies of entrepreneurs – serial, portfolio, and novice - (Westhead & Wright, 1998b), others show that serial founders seem to have more experience in covering different roles specifically managerial roles, in various organizations before engaging themselves in entrepreneurship (Ucbasaran et al., 2008).

There is not much literature on habitual entrepreneurship dedicated to such a factor that might enhance specific human capital. However, according to our reasoning and in line with (the few) prior findings, habitual founders should have higher diversity in job positions covered. Having such a differentiated work experience helps them enhance their knowledge and skills related to different positions in the firms and thus boost their specific human capital. For example, having the possibility to switch from a consultant job, or a specialized job (i.e., as an IT specialist), to a managerial position give them the problem-solving attitude typical of those who had more, differentiated, experiences.

Thus, we argue that:

Hypothesis 4. The more diverse the past job positions covered, the higher the probability of being a habitual founder compared to a one-time founder.

Third, the different sizes of firms owned. As with the previous experience measures that we have presented, prior literature mainly found no statistically significant differences in the firm sizes owned by serial, portfolio, or novice entrepreneurs (Ucbasaran et al., 2008; Westhead, Ucbasaran, Wright, et al., 2005; Westhead & Wright, 1998a). Once again, the only different results can be found in comparing portfolio entrepreneurs to the other typologies, as their firms are usually larger in terms of the number of employees (Ucbasaran et al., 2008; Westhead, Ucbasaran, Wright, et al., 2005).

However, the specific human capital is supposed to be enhanced with experience and the more diverse, even in the number of employees, the firms they manage, the higher will be the entrepreneurial experience gained. Thus, we argue:

Hypothesis 5. The more diverse the size of the founded firms, the higher the probability of being a habitual founder compared to a one-time founder.

The next section looks at the methodology chosen for this study and the description of the variables we used.

4.4. Methods

4.4.1. Data

Despite the established importance of habitual founders, secondary-related data is not easily accessible. For this reason, the vast majority of existing studies use surveys, questionnaires, or qualitative interviews (Ucbasaran et al., 2003; Westhead, Ucbasaran, & Wright, 2005a, 2005b; Westhead & Wright, 1998a). In fact, among the reasons behind the choice for a more qualitative approach lies the researcher's ability in drafting the collection of observations while gathering data in line with what is needed for the specific study. However, once again, we face the risk of measuring different units of analysis, which makes it hard(er) to compare results.

To overcome such a potential data-limitation issue and to accomplish our study objectives, we have created a database based on Crunchbase available information, following the example of other entrepreneurship scholars (Cumming et al., 2016; Nylund & Cohen, 2017). Crunchbase online database (www.crunchbase.com), developed and launched in 2007 by TechCrunch (www.techcrunch.com), gathers its data from different sources, and all information passes through an approval process before becoming available online. Thus, data is reliable and comprises both founders' personal information and their firms' related specificities. In order to be sure to focus only on successful venture, avoiding failures, we selected founders whose firms have been acquired (Amaral et al., 2009; Erik Stam et al., 2008; Ucbasaran et al., 2003). Using the Crunchbase dataset, we started with 14,881 founders and, after dropping observations with missing data, we ended up with 8,587 cases.

For each founder, we collected personal information about gender, country of residence, educational level, tenure, the different job positions covered, and whether they had

an international experience during either their studies or with their firms. We also included information on the firms they founded, such as the founding year, the size, industry sectors, team composition (if any), and the presence in the stock exchange market.

4.4.1.1. *Dependent variable*

The dependent variable of our study is *habitual founders*. It is a dummy variable that takes the value of one if the founder is habitual; for instance, if the founder has founded more than one company either sequentially (serial) or at the same time (portfolio entrepreneur) at the time of the data collection (June 2019). If the founder only founded one company, our dependent variable takes the value of zero, representing the reference group of one-time founders. These individuals founded one firm in their entrepreneurial life, but they are not necessarily novice entrepreneurs; i.e., they cover leading managerial roles for a period longer that three years. They have an average tenure of eleven years with a maximum value of sixty-five. Overall founders in our sample created, on average, 1,6 firms, with a minimum of one and a maximum of twenty-two ventures founded.

4.4.1.2. *Independent variables*

In line with our hypotheses, we define five main independent variables in our analysis.

The first one is *education*. Following prior literature, we decided to measure general human capital in terms of the number of years of education (Amaral et al., 2009; Baù et al., 2017; Parker, 2013; Toft-Kehler et al., 2014; Wiklund & Shepherd, 2008).

The second independent variable is *international experience*. In the international entrepreneurship field, it is often seen as a human capital characteristic of the entrepreneur (Ahmed & Brennan, 2019). Yet, no previous studies within the habitual entrepreneurship stream of research focused on whether the founder's previous international experience may be

one of the peculiarities of such a group of entrepreneurs. Thus, we decided to include international experience as a second measure of general human capital. Therefore, *International experience*, a dummy variable in our study, takes the value of one if the founder studied in a country different from the one she currently resides in, or if the firms founded are located in a different country compared to the one she currently resides in. Otherwise, the variable equals zero.

The third independent variable is *sector diversity*. It looks at the sector in which the firms operate, and it refers to the diversity of sectors in which the founders have invested in. Thus, we coded the sector of each firm based on the standard European Union NACE sectorial classification (see Appendix* for details), and we calculated the sector diversity in terms of the Blau's (1977) diversity index $(1 - \Sigma x_{i^2})$ where *x* represents the proportion of each sector on the total sectors in which the founder have worked.

$$1 - \Sigma x_{i^2}$$

The fourth independent variable considered is *job position diversity*. Using Blau's (1977) diversity index, we measure the diversity of job positions the founders covered in their lifetime. We calculated the job positions diversity index $(1 - \Sigma x_{i^2})$ with *x* representing the number of each job position on the total number of jobs positions the founder covered.

The fifth and last independent variable considered is *firm size diversity*. Once again, we use Blau's (1977) diversity index to identify the effects that having experience in managing firms of different dimensions has on the individuals' specific human capital. The number of employees measures the firm size, and firms are categorized following prior literature (van Teeffelen & Uhlaner, 2013) and the European Commission's[2] main guidelines. Therefore, we have categorized the firms as micro (1-10 employees), small (11-50 employees), medium (51-249 employees), large (250-500 employees), and x-large (>500 employees). The firm size

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[2] https://ec.europa.eu/eurostat/web/structural-business-statistics/structural-business-statistics/sme

diversity index is then calculated as $(1 - \Sigma x_{i^2})$, with *x* representing the size of each firm on the total firm sizes.

4.4.1.3.   Control Variables

As common in similar researches, we included several control variables that might capture any potential variance in our analysis.

Following, among others, Wiklund & Shepherd (2008) we included the demographic characteristics of the founder's *gender*. Gender is a dummy variable that takes the value of one if the founding entrepreneur is male, and zero if female. Then, we included a categorical variable with the *continent of residence*. Because the vast majority of our sample comes from the United States, we created a variable that takes the value of one, if the founding entrepreneur resides in the United States or Canada, and zero otherwise.

Concerning the control variables related to organizations characteristics, we have included *firm's age* and the *presence on the Stock Exchange Market.* Firm's age has been calculated as the average age of the firms owned by the founder, and *Stock* presence is a dummy variable that takes the value of one, if one of the founder's firm is listed in the stock exchange market, and zero otherwise.

We also included among our control variables, the natural logarithm of *tenure* (Gagnè et al., 2011; Hsu et al., 2016; Hyytinen & Ilmakunnas, 2007). *Tenure* is calculated as the average number of years spent by the founder in the firms she created. We calculated a *tenure* variable for each firm founded, measured as the difference between the year in which the founder ended working for her firm, and the year in which she started the job which equals the enterprise's foundation year. We then calculated the average and its natural logarithm.

Finally, we control for the number of team members (Ucbasaran et al., 2003, 2008). Having gathered data on each firm's amount of founding team members, we were able to use the *max number of team members* with whom the founder created the venture.

The summary of the variables constructs and measurements is presented in Table 10.

Variable	Description	Measures
Habitual Founder	**Dependent variable**	Habitual=0 if Firms founded=1 Habitual=1 if Firms founded>1
Education	General Human Capital – Education years	Number of years to get the degree (diploma, bachelor, master, EMBA, PhD)
International experience	General Human Capital – International experience	International experience = 1 if international experience at education level=1 or international experience at work level=1; International experience=0 otherwise
Sector Diversity	Specific Human Capital – Sector Diversity	Blau's diversity index
Job Position Diversity	Specific Human Capital – Job Position Diversity	Blau's diversity index
Firm Size Diversity	Specific Human Capital – Firm Size Diversity	Blau's diversity index
Gender	Gender	Female=0; Male=1
Continent of Residence	Continent of Residence	(USA+Canada)=1; Others=0
Firm age	Firm age	Average age of the firms founded
Stock	Presence in the Stock Exchange Market	
ln Tenure	Founder's average tenure	Natural logarithm of the average tenure years
Team members	Team members	Max number of team members

Table 10: Variables constructs and measures

4.4.2. Descriptive Statistics

The thirty-six percent (3,102) of our sample falls within the habitual founder's group, the other sixty-four (5,485) is a one-time founder. Previous research, including both founders and acquirers, found a slightly different percentage of habitual entrepreneurs. For example, Westhead, Ucbasaran, Wright, et al. 's (2005) study on a Scotland sample reported that habitual entrepreneurs owned approximately forty-three percent of firms. The percentage difference may be due to the different definitions of the investigated sample.

The vast majority (94 percent) of our sample comprises male entrepreneurs, showing a still persistent gender gap in founding propensity and entrepreneurial opportunities. It is in line with previous findings in the serial entrepreneurship field (Kuppuswamy & Mollick, 2016), which show a lower presence of females in entrepreneurship and their preference for sticking with their first founded venture.

Forty-eight percent of our sample comes from North America. The average age of the firms in the sample is thirteen years, and the thirteen percent is listed in the stock exchange market. Interestingly, forty percent of the founders included in the database are solo founders,

and only ten percent started with a team made of more than three people. Tenure lasted, on average, nine years.

Approximately fifty-one percent of the considered entrepreneurs have an education level higher or equal than the bachelor's degree. The fourteen percent was engaged with international experience, either at the education or the work level.

The diversity measures highlight a wider variety for the job position and firm size indexes than the sector diversity one. In fact, it appears that, with an average of 0.09, individuals are pretty much specialized in one sector. In contrast, the 0.1 and 0.25 average of, respectively, the firm size and job position diversity indexes, we can see how our sample is diversified in terms of experience both at the job, as well as the firm size, levels.

Table 11 shows descriptive statistics and VIF values.

Variable	Min	Max	Mean	Std. Dev.	VIF
Habitual (Founder)	0	1	.3612437	.480389	
Gender	0	1	.9382788	.2406625	1.01
Continent of Residence	0	1	.481076	.4996709	1.06
Firm age	1	101	13.17646	8.438422	1.5
Stock	0	1	.1298474	.3361551	1.25
ln Tenure	-.6931472	4.174387	1.967134	.6906484	1.48
Team members	0	9	2.021078	1.141267	1.15
Education	0	23	8.377664	8.336828	1.21
International experience	0	1	.1423081	. 3493862	1.06
Sector Diversity	0	.75	.0865018	.1872539	1.46
Job Position Diversity	0	.8333	.2558435	.2701452	1.33
Firm Size Diversity	0	.75	.1056995	.2085028	1.52

Table 11: Descriptive Statistics

The following table (Table 12) reports the correlation among the included variables. The matrix shows low values, suggesting that multicollinearity is not an issue. We can then reinforce such a conclusion as the average variance inflation factors (VIF) values (reported in Table 11) value is 1.28, with a maximum of 1.52, which stands well below the conventional threshold of 5 (Yandell & Ryan, 1998).

	1	2	3	4	5	6	7	8	9	10	11	12
1.Habitual (Founder)	1											
2. Gender	0.0713***	1										
3.Continent of Residence	0.1524***	-0.0270***	1									
4. Firm age	-0.0878***	0.0130	-0.0124	1								
5. Stock	0.0856***	0.025***	0.0765***	0.2520***	1							
6. ln Tenure	-0.2298***	-0.0144	0.1366***	0.4630***	-0.0323***	1						
7.Team members	0.1095***	0.0270***	0.0291	-0.1470***	0.0916***	-0.2313***	1					
8. Education	0.1950***	-0.0470***	0.2161***	0.0137	0.1401***	-0.2034****	0.0803***	1				
9. International experience	0.1112***	0.0032	0.0446**	-0.0326***	0.0229***	-0.0846***	0.0271***	0.2434***	1			
10.Sector Diversity	0.2187***	0.0390***	0.0956***	0.1148***	0.2531***	-0.1769***	0.2059***	0.1855***	0.0410***	1		
11.Job Position Diversity	0.2922***	0.0486***	0.1641***	0.0837**	0.2131***	-0.2700***	0.2469***	0.2971***	0.0893***	0.3108***	1	
12.Firm Size Diversity	0.2284***	0.0388***	0.1001***	0.0859***	0.3076***	-0.2082***	0.2780***	0.1937***	0.5233***	0.5233***	0.3343***	1

Table 12: Correlation matrix

4.5. Results

4.5.1. The model

Given the dichotomous form of our dependent variable, *habitual*, we use logistic regression to test our hypotheses. Table 13 shows the results of the analysis:

Variables	Habitual (Model 1)	Habitual (Model 2)	Habitual (Model 3)	Habitual (Model 4)	Habitual (Model 5)	Habitual (Model 6)
Gender	0.706***	0.753***	0.750***	0.718***	0.645***	0.640***
	(0.109)	(0.109)	(0.109)	(0.110)	(0.111)	(0.111)
Continent of Residence	0.476***	0.412***	0.420***	0.408***	0.342***	0.340***
	(0.0469)	(0.0477)	(0.0478)	(0.0483)	(0.0493)	(0.0493)
Firm age	-0.00277	-0.00575*	-0.00528	-0.0154***	-0.0237***	-0.0245***
	(0.00329)	(0.00334)	(0.00334)	(0.00355)	(0.00375)	(0.00378)
Stock	0.354***	0.308***	0.313***	0.207***	0.100	0.0402
	(0.0733)	(0.0737)	(0.0739)	(0.0758)	(0.0769)	(0.0780)
lnTenure	-0.565***	-0.517***	-0.513***	-0.430***	-0.282***	-0.269***
	(0.0384)	(0.0389)	(0.0390)	(0.0401)	(0.0419)	(0.0421)
Team members	0.118***	0.114***	0.114***	0.0643***	0.0528**	0.0346
	(0.0206)	(0.0207)	(0.0207)	(0.0214)	(0.0218)	(0.0222)
Education (H1)		0.0238***	0.0202***	0.0173***	0.00810***	0.00781**
		(0.00292)	(0.00300)	(0.00304)	(0.00314)	(0.00315)
International experience (H2)			0.356***	0.370***	0.356***	0.365***
			(0.0663)	(0.0671)	(0.0684)	(0.0685)
Sector Diversity (H3)				1.664***	1.282***	1.014***
				(0.133)	(0.136)	(0.147)
Job Position Diversity (H4)					1.664***	1.603***
					(0.0987)	(0.0996)
Firm Size Diversity (H5)						0.647***
						(0.134)
Constant	-0.643***	-0.902***	-0.938***	-0.946***	-1.328***	-1.324***
	(0.140)	(0.144)	(0.144)	(0.145)	(0.150)	(0.150)
Observations	8,587	8,587	8,587	8,587	8,587	8,587
LR chi2	610.52	676.8	705.46	864.62	1152.71	1175.93
Prob > chi2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Pseudo R2	0.0543	0.0602	0.0628	0.0770	0.1026	0.1047

Table 13: Logistic regression results (Standard errors in parenthesis; *** p<0.01, ** p<0.05; * p<0.1)

Model 1 is the baseline model in which we include only control variables; in the following models, we include the independent variables to test the previously introduced hypotheses. Since all models show good explanatory power and results look stable across almost every model, we refer to model 6, our full model, which includes all variables, to comment on our analysis results.

In our first hypothesis, we argue that individuals with a higher education level have a higher probability of becoming habitual founders. With a positive and significant coefficient (with a p-value much lower than 0.001), the logistic regression confirms hypothesis 1 in that higher education levels increase individuals' likelihood of becoming habitual founders.

Turning to our second hypothesis, the international experience, with a significance level much lower than 0.0001 and a positive coefficient of 0.365, affects individuals' tendency to become habitual founders. The higher the international experience, both at the education and the work levels, the higher the probability that the entrepreneur found more than one firm in her entrepreneurial life.

We then introduce the three diversity indexes. Sector diversity, job position diversity, and firm size all show a positive correlation with the likelihood of becoming habitual founders. Thus, the more diverse experience, in terms of sectors in which their firms operate, in terms of job position covered along their lifetimes, and the diverse firm sizes managed, all increase the probability of an entrepreneur becoming habitual in founding firms. The positive and very significant coefficients, which all have a p-value way below the 0.001 value, confirms the three related hypotheses.

Therefore, the logit model that we run confirms our five hypotheses, with very high significance.

4.5.1.1. *The robustness tests*

We conducted a series of robustness tests. Specifically, we considered alternative measures for education, and we used probit as a different methodology.

For education, we followed Thorgren & Wincent's (2015) article by using a binary variable coded one if the individual had a university education and 0 otherwise. Results remained mostly unchanged.

We then rerun our analysis using the probit methodology instead of the logit regression model. Results remained mostly unchanged; there are only slightly different coefficient values, confirming our results' robustness.

4.6. Discussion

Our study is among the firsts to compare two different typologies of entrepreneurs: habitual founders, who choose to launch more than one firm, and one-time entrepreneurs, those who instead stick with the first firm they founded. Both groups represent individuals who decided to establish at least one firm. The difference comes later on when one group, the habitual, decides to move on and initiate at least a second venture leveraging on their previous experience, while the other, the one-time founders, remains in the firm they helped to create. Thus, we differentiate from extant literature that mainly compares habitual entrepreneurs, including serial and portfolio, founders and acquirers, to novice entrepreneurs at their first venture.

We then follow the vast majority of current literature borrowing from human capital theory to identify the main characteristics that might act on the likelihood to become a habitual founder. Once again, we do not merely borrow from this theory, but we aim at taking the extant literature on human capital in habitual entrepreneurship a step forward. We argue that entrepreneurs who create multiple firms leverage on a portfolio of competencies promoted by

previous entrepreneurial ventures but also by international knowledge and diversified experiences in terms of industry, firm characteristics, and job positions covered.

We claim that our contribution is threefold. First, from the methodological point of view, we focus on a narrower well-defined group of alternative habitual entrepreneurs: the habitual founders. Following on Ucbasaran et al.'s (2003) distinction between habitual starters and acquires, we empirically investigate on this first group to contribute to the field's understanding of those entrepreneurs who found, sequentially or simultaneously, more than one firm in their entrepreneurial life.

Second, we also consider international variables into the picture. Following international entrepreneurship literature (Ahmed & Brennan, 2019; Kuemmerle, 2002), we show that international experience is a significant variable that promote entrepreneurial attitude leading to multiple firm creations.

Finally, based on the literature on diversity in entrepreneurial teams (Bouncken, 2004; Zhou & Rosini, 2015), we also show the relevant role played by diversity of experience in the training of the entrepreneur.

The first two hypotheses test education and international experience as characteristics that enhance one's general human capital. Both variables are positively related to the likelihood of becoming habitual founders; thus, individuals with high education and international experience have higher probabilities of becoming habitual founders.

Therefore, in terms of education and individuals' internationalization, general human capital has a strong effect on the probability of becoming habitual entrepreneurs. Such a result can be of high interest to entrepreneurship scholars as studies, up to now, mainly found no significant differences among the different typologies of entrepreneurs in terms of education level effects (Westhead, Ucbasaran, & Wright, 2005b; Westhead & Wright, 1998a). Also, to our knowledge, no study has yet considered international experience as a potential active

characteristic of these groups of individuals, despite its recognized importance (Kuemmerle, 2002; McDougall et al., 2003; Zucchella et al., 2007),.

Policymakers and researchers in the education field can find our contribution useful, too; the outcome shows how investments in individuals' literacy and personal experiences can enhance the habitual entrepreneurship trend/path.

The last three hypotheses show how specific human capital can strongly impact the probability of becoming habitual founders. The more diverse the individual's experience in managing firms that operate in different sectors, the more she will be prone to founding a new venture once selling her first one. Different sectors and industry environments may strongly differ, and increasing one's experience in various settings may increase the entrepreneur's ability to cope with diverse situations and learn how to react to external stimuli. Similarly, having covered different roles in her job journey increases the probability for the individual to get involved in establishing more businesses. The higher the experience in managing firms of diverse size, the higher the likelihood of becoming habitual in founding firms. These three diversity indexes better explain the job market experience, seen as an enhanced specific experience at the human capital level.

While experience has already been studied as a specific human capital variable in habitual entrepreneurship, it is usually divided among entrepreneurial, managerial and technical experience (Gimeno et al., 1997; Erik Stam et al., 2008; Ucbasaran et al., 2008; Wright et al., 1997). We stress to identify the role of diverse experiences to enrich the human capital of the entrepreneur and in turn, to boosts an entrepreneur's capacity to found multiple firms.

Once again, these results can be of high interest not merely to academics in the entrepreneurship field, but also to policymakers aiming to increase investments in entrepreneurship.

Our study is not free of limitations. First, by mainly focusing on acquisitions, we do not have a complete picture of the environment. We do not consider those who chose other exit strategies or decided to keep going and not selling their firms. Second, due to our data's origin, the vast majority of the sample comes from the United States. Third, we did not include habitual acquirers in our analysis.

Our analysis's logic follow-up could include studying the differences among habitual founders, acquirers, and one-time entrepreneurs. Further developing the study targeting serial founders, serial acquirers, portfolio founders, and portfolio acquirers could help take an additional step to understand better this specific group of individuals -the habitual entrepreneurs.

Another interesting study on the topic could dig more into the effects of the founder's international experience on the different choices within the habitual entrepreneur's group and lead towards an analysis that targets a better understanding of similarities and dissimilarities across countries.

5. Concluding Remarks

The motivation of the thesis is grounded on the growing interest that the entrepreneurial exit, investigated at the individual level, is rising both at the academic and the practitioners' sides. As shown in the descriptive literature study, the topic is witnessing an academic publication annual growth rate of fourteen percent. This highlights not only increased interest, but also a need for a better understanding of the peculiarities of this specific stage in an entrepreneur's work life as underlined by the various call for papers by the leading scholars in the field (DeTienne et al., 2013; DeTienne & Wennberg, 2016; Wennberg & DeTienne, 2014).

The study in Chapter 2 describes the evolution of the literature on the entrepreneurial exit at the individual level. Among the findings, we identify Dawn De Tienne and Karl Wennberg as the main contributors in the field. Not only they recognized that the entrepreneurial exit stage was perceived differently by practitioners' and academicians (DeTienne & Wennberg, 2015), they also provided seminal articles from which the topic has built upon (DeTienne, 2010; Wennberg et al., 2010), and proposed call for papers, researches, and attention in this specific field (DeTienne et al., 2013; DeTienne & Wennberg, 2015, 2016; Wennberg & DeTienne, 2014). We have also seen how the other contributors in the field come from different fields within the broader entrepreneurial field of research. Then, the journals that publish related research are mainly three, although the vast majority is dispersed across forty sources.

Moreover, we have highlighted how the body of literature dedicated to the entrepreneurial exit at the individual level of analysis focuses on six main themes: behavioral theories, career dynamics, entrepreneurial stages, growth factors, managing transitions, and exit dynamics. Furthermore, we were able to identify potential future streams of research. Among which there is the need for a more comprehensive theoretical perspective, a rising interest in seeing entrepreneurial exit as a fundamental career stage in entrepreneurs' work

lives, deepening the potential exit dynamics topic. Also, we call for research and attention on cross-cultural similarities and differences, and for the use of proper financial indicators to better identify potential thresholds driving entrepreneurs' choices to exit or remain within their firms. These results altogether highlight how the entrepreneurial exit field, at the individual level, is still an understudied topic that needs further development and attention.

Chapter 3 uses prospect theory concepts to identify the potential antecedents of the first crossroad choice that entrepreneurs face (remain versus exit the firm) after the firm they founded has been acquired. The study results show that tenure, entrepreneurial experience, education level, and the firm's stock exchange presence act as significant antecedents of the founding entrepreneur's choice to exit the firm after the acquisition occurs. Interestingly, findings are supported across three major regions of the world, North America, Europe, and Asia. Chapter 3 opens the routes for investigating the entrepreneurial exit phenomenon at the international level.

Chapter 4 clarifies the difference between habitual and one-time founders by identifying entrepreneurs' characteristics that would likely lead the individual to become a habitual founder. Results show that more educated and internationally experienced entrepreneurs have a higher likelihood of becoming habitual founders. Similarly, we report the positive effects that diversity measures, in terms of industry sector, job positions, and firm size, have on the founders' likelihood to choose for multiple-ventures creation.

The studies here developed do only partially cover the underlined need for further research in the field. Future research will be a fundamental step in extending and improving the field, from theoretical, methodological, and empirical points of view.

Finally, among the most important contributions of the thesis is the database created to respond to the need for these studies. We are well aware of the different purposes that qualitative and quantitative studies offer to the development of a promising field. We hope that

by providing *guidelines* (see the Appendix) on approaching secondary data gathering while studying entrepreneurial exit, we will offer useful bases for other scholars in the field.

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A. Appendix

Data Collection

Our study uses secondary data retrieved from Crunchbase (data.crunchbase.com) database. Crunchbase is an online platform in which users can find data about public and private companies, with information that include business and financial data, founders' details, mergers and acquisition specifics, and sector trends.

We asked Crunchbase access to their data. On May 21st, 2019 we have received the approval for our specific academic research project, with six months-free access.

After analyzing their APIs and key nodes, we used Python to download the information we wanted to study. We started by retrieving all data related to acquisitions using the following script:

```python
import csv
import json
with open('acqu¬isitions.csv', 'r') as csvFile:
    reader = csv.reader(csvFile)
    for row in reader:
¬¬     print(row[0])
        url = "https://api.crunchbase.com/v3.1/acquisitions/" + row[0] + "?user_key=XXX"
        response = requests.request("GET", url)
        json_data = json.loads(response.text)
        print(json_data)
        with open ( './acquisitions/' + row[0]+'.json', 'w') as outfile:
            json.dump(json_data, outfile)
```

Figure 10: Python script-1

We have downloaded 89.758 *JavaScript Object Notation (JSON)* [3] files related to acquisitions, dating back 1970s. Each file represented a different acquisition, and the information included was the following: price, price in USD, payment type, acquisition type, acquisition status, announced on, completed -Y/N-, date of completion, acquirer data (identification number, name, still operating -Y/N-, closed -Y/N-) , acquiree data (identification number, name, still operating -Y/N-, closed -Y/N-), and acquisition-related news.

---

[3] JSON: JavaScript Object Notation. It is a "lightweight data-interchange format" (JSON.org, July 2019)

Then, we used the R program to create a *Comma-Separated Values (CSV)*[4] file made

of a list of acquired firms' identification numbers grasped from the acquisition data files we

previously downloaded through Python. Here follows an example of the script we used:

```r
library(tidyverse)
library(fs)
library(jsonlite)

paths <- dir_ls(path = here::here('/Dropbox/fra/acquisitions/'), glob = '*.json')

extract_uuid_org <- function(jsonpath) {
    cat(paste(jsonpath, '\n'))
    json <- fromJSON(jsonpath, simplifyVector=TRUE)

    uuid <- json$data$relationships$acquiree$item$uuid

    df <- tibble(uuid)

    return(df)
}

uuid <- map_dfr(paths, extract_uuid_org)

write_csv(uuid, path = 'Dropbox/fra/uuid_organizations_acquisitions.csv', col_names = FALSE)
```

Figure 11: R script -1

At this point, we had a CSV file with the identification numbers of the firms that have

been acquired, and we used it to download information about those organization through

Python. The script we used is the following:

```python
import requests

import csv
import json

with open('Dropbox/fra/uuid_organizations_acquisitions.csv', 'r') as csvFile:
    reader = csv.reader(csvFile)

    for row in reader:
        print(row[0])
        url = "https://api.crunchbase.com/v3.1/organizations/" + row[0] + "?user_key=XXX"

        response = requests.request("GET", url)

        json_data = json.loads(response.text)


        with open( './Dropbox/fra/organizations/' + row[0]+'.json', 'w') as outfile:
            json.dump(json_data, outfile)


csvFile.close()
```

Figure 12: Python script-2

We had a second folder with 89.727 JSON files with data on the acquired organizations.

Each file represented a different organization, and the information included was the following:

---

[4] CSV: Comma-Separated Values. It is a text file, whose values are delimited and separated through commas.

identification number, name, short description, description, primary role, founded on, closed -Y/N-, closure date (if closed), number of employees (range), stock exchange presence -Y/N-, founders, board members and advisors, investors, owned by, headquarters, acquired by, website, and firm-related news.

We then repeated the previous steps to grasp data related to founders' identification numbers and the pieces of information concerning those individuals. Once again, we used R to create the CSV file with the list of the founders' identification numbers through the following script:

```
library(tidyverse)
library(fs)
library(jsonlite)

paths <- dir_ls(path = here::here('/Dropbox/fra/founders_prova/'), glob = '*.json')

extract_uuid_founder <- function(jsonpath) {
    cat(paste(jsonpath, '\n'))
    json <- fromJSON(jsonpath, simplifyVector=TRUE)

    uuid_founder <- ifelse(is.null(json$data$relationships$founders$items$uuid), yes = NA, no =
        json$data$relationships$founders$items$uuid)

    df1<- tibble(uuid_founder)

    return(df)
}

founders <- map_dfr(paths, extract_uuid_founder)


write_csv(founders, path = 'Dropbox/fra/uuid_founder_organizations.csv', col_names = FALSE)
```

Figure 13: R script -2

The CSV file creation was followed by the Python script to download the JSON files. This time, each file represented a person, the founder of each acquired organization. We used the following script:

```
import requests
import csv
import json

with open('Dropbox/fra/uuid_founder_organizations1.csv', 'r') as csvFile:
    reader = csv.reader(csvFile)
    for row in reader:
        print(row[0])
        url = "https://api.crunchbase.com/v3.1/people/" + row[0] +
            "?user_key=f2471c3af0629b32a3fba90b5ba97c23"
        response = requests.request("GET", url)
        json_data = json.loads(response.text)

        with open( 'Dropbox/fra/founders/' + row[0]+'.json', 'w') as outfile:
            json.dump(json_data, outfile)

csvFile.close()
```

Figure 14: Python script -3

We ended up with a third folder made of 14.882 files on founders. Each file included the following information: identification number, first name, last name, bio, date of birth, date

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of decease (if deceased), gender, primary affiliation, primary location, degrees (related information on the school), jobs (with started and ended date, position covered, and organization details), and details on the founded companies.

We retrieved those data in June 2019. We ended up with 89.758 files on acquisitions (from 1967 to 2019); 89.727 items on the acquired firms; and 14.882 files on founders' information.

As expectable, we faced situations in which there were more than one founders per company. Therefore, we grasped all the available information regarding every founder. Similarly, an individual might have had more than one job, altogether or in different periods, or founded more than one company. We have reported all the job-related pieces of information that were available through Crunchbase.

Before building up the final worksheet, we created three different databases (acquisitions, acquired organizations, and founders) in which we have inserted the data included in the related *JSON* files. We have created the databases using the R program. Here follows an example of a script we used to build them up.

```
library(jsonlite)
library(stringr)
library(fs)
paths <- dir_ls(path = here::here('/Dropbox/fra/organizations/'), glob = '*.json')
for(z in 1:length(paths)){
    json_data <- fromJSON(paths[z])
    cat("Company",file="/Users/francescasanguineti/Dropbox/fra/organization_data.txt",sep="\n",append=TRUE)
    cat(json_data$data$uuid,file="/Users/francescasanguineti/Dropbox/fra/organization_data.txt",sep="\n",append=TRUE)
    for (i in 1:length(json_data$data$properties))
    {
        if(i!=9)
        cat(paste("",json_data$data$properties[i][1],"\t"),file="/Users/francescasanguineti/Dropbox/fra/organization_data.txt",sep="\t",append=TRUE)
    }
    cat("----",file="/Users/francescasanguineti/Dropbox/fra/organization_data.txt",sep="\n",append=TRUE)
    cat("----",file="/Users/francescasanguineti/Dropbox/fra/organization_data.txt",sep="\n",append=TRUE)
    cat("Founders",file="/Users/francescasanguineti/Dropbox/fra/organization_data.txt",sep="\n",append=TRUE)
    if(length(json_data$data$relationships$founders$items)!=0){
        for (j in 1:length(json_data$data$relationships$founders$items))
        {
            cat(paste("",json_data$data$relationships$founders$items[j,2],"\t"),file="/Users/francescasanguineti/Dropbox/fra/organization_data.txt",sep="\t",append=TRUE)
            cat(paste("",json_data$data$relationships$founders$items[j,3],"\t"),file="/Users/francescasanguineti/Dropbox/fra/organization_data.txt",sep="\t",append=TRUE)
            cat("---",file="/Users/francescasanguineti/Dropbox/fra/organization_data.txt",sep="\n",append=TRUE)
        }
    }
    cat("---",file="/Users/francescasanguineti/Dropbox/fra/organization_data.txt",sep="\n",append=TRUE)
}
```

Figure 15: R script-3

We firstly created the databases in a text format, then we converted them to excel.
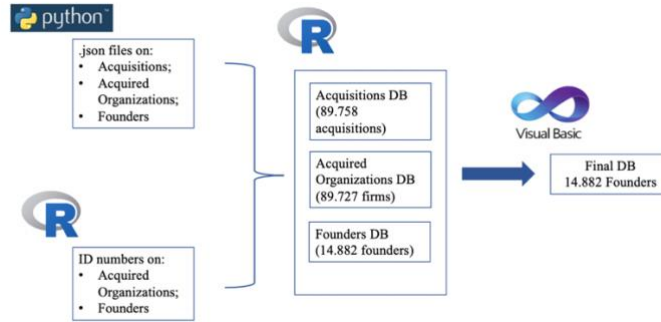
Figure 16: Data gathering process

We have finally created the database using Visual Basic. The variables included in the

final database are specified in the following table.

Variable	Variable type	Description	Formulae
FounderID	string	Founder Identification number	As from Crunchbase
Name_founder	string	Founder first name	As from Crunchbase
Surname_founder	string	Founder last name	As from Crunchbase
gender	dummy 0/1	Founder's gender	female=0; male=1
Birth_year	numerical (4 digits)	Founder's birth year	Birth_year=substr(Birth_date,2,4) **->** to extract a subset of bytes from a string, n1 is the starting character; n2 the length of the string in characters.
Death_Year	numerical (4 digits)	Founder's departure year (if dead)	substr
Founder_age	numerical	Founder age	Founder age= (Death_year-Birth_year); replace Founder_age= (2019-Birth_year) if Founder_age==.; replace Founder_age=((2019-bachelor_year)+22) if Founder_age==.[as we hypothesize bachelor average age=22]; replace Founder_age=((2019-master_year)+24) if Founder_age==.; replace Founder_age=((2019-phd_year)+30) if Founder_age==.;replace Founder_age=((2019-exe_year)+40) if Founder_age==.
City_founder	string	Founder city of residence	As from Crunchbase
Region_founder	string	Founder region of residence	As from Crunchbase
Country_founder	string	Founder country of residence	As from Crunchbase
Country_founder2	numerical	Founder country of residence (grouped)	egen Country_founder2=group(Country_founder),label **->** It creates one variable taking on values 1,2,.. For the groups formed by varlist. The label option returns integers from 1 up according to the groups of varlist in sorted order.
Countryresidence	string	Founder country of residence	strtrim -> returns the string with leading and trailing blanks removed; gen Countryresidence=strtrim(Country_founder)
Continent_founder	string	Founder continent of residence	As from Crunchbase
Continent_founder 2	numerical	Founder continent of residence (grouped)	egen Continent_founder2=group(Continent_founder),label -> It creates one variable taking on values 1,2,.. For the groups formed by varlist. The label option returns integers from 1 up according to the groups of varlist in sorted order.
diploma	dummy 0/1	Diploma owner	no=0; yes=1; Diploma: certificate awarded to have completed a course -not specified if high school
diploma_year	numerical (4 digits)	Year of the diploma	substr
Diplomasubj	numerical	Subject of the Diploma	egen group
diploma_school	numerical	School in which the founder earned the Diploma	egen group
DiplomaSubCat	numerical	Field of the Diploma	egen group

DiplomaCountry	numerical	Country of the school	egen group
bachelor	dummy 0/1	Bachelor owner	no=0; yes=1
bachelor_year	numerical (4 digits)	Bachelor's degree year	substr
BachelorSubj	numerical	Subject	egen group
BachelorSubjCat	numerical	Field	egen group
bachelor_school	numerical	School in which the founder graduated	egen group
BachelorCountry	numerical	Country of the school	egen group
bachelorcountry	string	Country of the school	strtrim
master	dummy 0/1	Master owner	no=0; yes=1
master_year	numerical (4 digits)	Master's degree year	substr
MasterSubj	numerical	Subject	egen group
MasterSubjCat	numerical	Field	egen group
Master_school	numerical	School in which the founder earned the Master's degree	egen group
MasterCountry	numerical	Country of the school	egen group
mastercountry	string	Country of the school	strtrim
cert	dummy 0/1	Professional certificate owner	no=0; yes=1 (professional certificate)
cert_year	numerical (4 digits)	Professional certificate year	substr
CertSubj	numerical	Subject	egen group
CertSubjCat	numerical	Field	egen group
Cert_school	numerical	School	egen group
CertCountry	numerical	Country of the school	egen group
phd	dummy 0/1	Ph.D. owner	no=0; yes=1
phd_year	numerical (4 digits)	Ph.D. year	egen group
PhDsubj	numerical	Subject	egen group
PhDsubjcat	numerical	Field	egen group
Phd_school	numerical	School	egen group
PhDcountry	numerical	Country of the school	egen group
phdcountry	string	Country of the school	strtrim
executive	dummy 0/1	EMBA owner	no=0; yes=1 (executive program)
exe_year	numerical (4 digits)	Executive program certificate year	egen group
ExecutivesSubj	numerical	Subject	egen group
ExecutivesSubjCat	numerical	Field	egen group
Executive_school	numerical	School	egen group
ExecutiveCountry	numerical	Country of the school	egen group
edulevel	numerical	Founder's education level	gen edulevel=0; replace edulevel=1 if bachelor==1; replace edulevel=2 if master==1; replace edulevel=3 if phd==1

intexp	dummy 0/1	Founder's international experience (University level)	International experience no=0; yes=1; gen intexp=0 if (Countryresidence!="" & (bachelorcountry!="" | mastercountry!="" | phdcountry!="")); replace intexp=1 if (Countryresidence!=bachelorcountry) & (bachelorcountry!="" & Countryresidence!=""); replace intexp=1 if (Countryresidence!=mastercountry) & (mastercountry!="" & Countryresidence!=""); replace intexp=1 if (Countryresidence!=phdcountry) & (phdcountry!="" & Countryresidence!="")
intexp_f	dummy 0/1	Founder's international experience (firm level)	International experience no=0; yes=1; gen intexp_f=0 if (Countryresidence!="" & (PJF_country!=""|J1country!=""|J2country!=""|J3country!=""|J4country!=""|J5country!=""|J6country!=""|J7country!=""));replace intexp_f=1 if (Countryresidence!=PJF_country) & (PJF_country!="" & Countryresidence!="") & (Pjfounder!=0); replace intexp_f=1 if (Countryresidence!=J1country) & (J1country!="" & Countryresidence!="") & (J1founder!=0); replace intexp_f=1 if (Countryresidence!=J2country) & (J2country!="" & Countryresidence!="") & (J2founder!=0); replace intexp_f=1 if (Countryresidence!=J3country) & (J3country!="" & Countryresidence!="") & (J3founder!=0); replace intexp_f=1 if (Countryresidence!=J4country) & (J4country!="" & Countryresidence!="") & (J4founder!=0); replace intexp_f=1 if (Countryresidence!=J5country) & (J5country!="" & Countryresidence!="") & (J5founder!=0); replace intexp_f=1 if (Countryresidence!=J6country) & (J6country!="" & Countryresidence!="") & (J6founder!=0); replace intexp_f=1 if (Countryresidence!=J7country) & (J7country!="" & Countryresidence!="") & (J7founder!=0)
intexp1	dummy 0/1	Founder's international experience (university & firm levels)	International experience no=0; yes=1; gen intexp_f=0 if (Countryresidence!="" & (PJF_country!=""|J1country!=""|J2country!=""|J3country!=""|J4country!=""|J5country!=""|J6country!=""|J7country!=""));replace intexp_f=1 if (Countryresidence!=PJF_country) & (
tot_DV	numerical	Total Deal Value	egen rowtotal-> creates the row sum of the variables in varlist; egen tot_DV= rowtotal (Acquisition1_priceInUSD Acquisition2_priceInUSD Acquisition3_priceInUSD Acquisition4_priceInUSD Acquisition5_priceInUSD Acquisition6_priceInUSD Acquisition7_priceInUSD), missing
last_DV	numerical	Last Deal Value	gen last_DV= Acquisition7_priceInUSD if J7Current==0; replace last_DV = Acquisition6_priceInUSD if J6Current==0; replace last_DV = Acquisition5_priceInUSD if J5Current==0; replace last_DV = Acquisition4_priceInUSD if J4Current==0; replace last_DV = Acquisition3_priceInUSD if J3Current==0; replace last_DV = Acquisition2_priceInUSD if J2Current==0; replace last_DV = Acquisition1_priceInUSD if J1Current==0
DV_avg	numerical	Average Deal Value	egen rowmean ->it creates the row means of the variables in varlist, ignoring missing values ; egen DV_avg= rowmean(Acquisition_priceInUSD Acquisition1_priceInUSD Acquisition2_priceInUSD Acquisition3_priceInUSD Acquisition4_priceInUSD Acquisition5_priceInUSD Acquisition6_priceInUSD Acquisition7_priceInUSD)
RL_tot	numerical	Remain (0) vs Leave(1) all	egen rowtotal; egen RL_tot=rowtotal(RL_fJ1 RL_fJ2 RL_fJ3 RL_fJ4 RL_fJ5 RL_fJ6 RL_fJ7), missing
RL	dummy 0/1	Remain (0) vs Leave (1)	0= left & 1= remained in the job they founded/cofounded; gen RL=0 if RL_tot==0; replace RL=1 if (RL_tot!=0 & RL_tot!=.)
RLreverse	dummy 0/1	Remain (1) vs Leave (0)	**Dependent Variable** (leave=0; remain=1); gen RLreverse=0; replace RLreverse=1 if RL==0
Exit_tot	numerical	How many times the founder exited	egen rowtotal; egen Exit_tot=rowtotal(Exit_fJ1 Exit_fJ2 Exit_fJ3 Exit_fJ4 Exit_fJ5 Exit_fJ6 Exit_fJ7), missing
PE	dummy 0/1	Portfolio entrepreneurs (no role or 1 role=0; more than one role in a founded or cofounded firm=1)	gen PE=0 if RL_tot==0; replace PE=0 if RL_tot==1; replace PE=1 if (RL_tot!=1 & RL_tot!=0 & RL_tot!=.)
FoundedFirms	numerical	Number of founded firms	As from Crunchbase
tenure	numerical	Tenure time	gen J1tenure= (2019 - J1_startedyear) if J1Current==1; replace J1tenure= (J1_endedon - J1_startedyear) if (J1_endedon!=. & J1_startedyear!=.)

Var_name	Var_type	Var_description	Formulae
Jobs	numerical	number of jobs/role covered	As from Crunchbase
Job title	string	Role covered	As from Crunchbase
Jn founder	numerical	Is founder, co-founder? (per job)	founder=1; cofounder=2; no founder nor cofounder or non specified=0; gen J1founder=1 if Job1_title1_Founder=="FOUNDER"; replace J1founder=2 if Job1_title1_Founder=="CO-FOUNDER"; replace J1founder=0 if Job1_title1_Founder==""
Jn _startedyear	numerical (4 digits)	In which year she started the job	substr
Jn _endedon	numerical (4 digits)	In which year she ended the job (if ended)	substr
Jn Current	dummy 0/1	Is she still covering this role? (false=0; true=1)	gen J1Current=1 if Job1_IsCurrent==" TRUE "; replace J1Current=0 if Job1_IsCurrent==" FALSE "
Jn tenure	numerical	Years of tenure (year of acquisition - year in which the founder started this specific job)	gen J1tenure= (2019 - J1_startedyear) if J1Current==1; replace J1tenure= (J1_endedon - J1_startedyear) if (J1_endedon!=. & J1_startedyear!=.)
RL_fJn	dummy 0/1	Does she remains after the acquisition? (leave=0; remain=1)	gen RL_fJ1=0 if ((J1founder==1|J1founder==2)&J1Current==0); replace RL_fJ1=1 if ((J1founder==1|J1founder==2)&J1Current==1)
Job _Firm_ID	string	Firm in which she is covering the role (ID)	As from Crunchbase
Job _Firm_Name	string	Firm in which she is covering the role (name)	As from Crunchbase
Jn Frole	numerical	Firm role (company, investor, school)	gen J1Frole=1 if Job1Firm_Role==" company "; replace J1Frole=2 if Job1Firm_Role==" investor "; replace J1Frole=3 if Job1Firm_Role==" school "; replace J1Frole=0 if Job1Firm_Role==""
Jn F_foundedon	numerical (4 digits)	Firm foundation year	substr
Jn F_closed	dummy 0/1	Is the firm closed? (closed=1; not closed=0)	gen J1F_closed=1 if Job1Firm_IsClosed==" TRUE "; replace J1F_closed=0 if Job1Firm_IsClosed==" FALSE "
Jn F_closedon	numerical (4 digits)	If closed, year of closure	substr
Jn _empl	range	number of employees	gen J1_empl="1-10" if Job1Firm_MinEmpl=="1" & Job1Firm_MaxEmpl=="10"; replace J1_empl="11-50" if Job1Firm_MinEmpl=="11" & Job1Firm_MaxEmpl=="50"; replace J1_empl="51-100" if Job1Firm_MinEmpl=="51" & Job1Firm_MaxEmpl=="100"; replace J1_empl="101-250" if Job1Firm_MinEmpl=="101" & Job1Firm_MaxEmpl=="250"; replace J1_empl="251-500" if Job1Firm_MinEmpl=="251" & Job1Firm_MaxEmpl=="500"; replace J1_empl="501-1000" if Job1Firm_MinEmpl=="501" & Job1Firm_MaxEmpl=="1000"; replace J1_empl="1001-5000" if Job1Firm_MinEmpl=="1001" & Job1Firm_MaxEmpl=="5000"; replace J1_empl=">5000" if Job1Firm_MinEmpl== "5001" & Job1Firm_MaxEmpl=="10000"; replace J1_empl=">5000" if Job1Firm_MinEmpl== "10001" & Job1Firm_MaxEmpl=="100000"; replace J1_empl="" if Job1Firm_MinEmpl== " NULL " & Job1Firm_MaxEmpl==" NULL "
Jn_SE	dummy 0/1	stock exchange=1; no=0	gen PJFSE=0 if (PrimaryFirm_StockExchange== " NULL " | PrimaryFirm_StockExchange== "") ; replace PJFSE=1 if PJFSE==.
Jn F_age	numerical (4 digits)	Firm age	substr
Jn country	string	Firm country	strtrim
JobFirm_Description	string	Firm description	As from Crunchbase
JobFirm_Totalfunding	numerical	Total Funding received	As from Crunchbase

JobFirm_Number ofrounds	numerical	Total number of funding rounds received	As from Crunchbase
JobFirm_Homepa ge	string	Firm homepage	As from Crunchbase
JobFirm_Contacte mail	string	Firm contact email	As from Crunchbase
JobNumberofFou nders	numerical	Firm's number of founders (founder included)	As from Crunchbase
JobFirm_HQcount ry	string	Headquarter country	As from Crunchbase
JobFirm_Category 1	string	NACE categories	As from Crunchbase
JobFirm_Category 2	string	NACE categories	As from Crunchbase
Information	dummy 0/1	Information and communication - category	1 if category=Information and communication; 0 otherwise
Manufacturing	dummy 0/1	Manufacturing - category	1 if category= manufacturing; 0 otherwise
OtherServ	dummy 0/1	OtherServices - category	1 if category != from manufacturing & != from information and communication
FirmID_Acquisitio n	string	**Firm**	As from Crunchbase
JnFall_acquired	dummy 0/1	Acquisition occurred=1; Acquisition did not occurr=0	gen J1Fall_acquired=0 if FirmID_Acquisition1==""; replace J1Fall_acquired=1 if J1Fall_acquired==.
Jn _acquired	dummy 0/1	If Founder/Cofounder & Acquisition occurred=1; If Founder/Cofounder & Acquisition did not occurr=0	gen J1F_acquired=0 if (J1Fall_acquired==0 & J1founder!=0); replace J1F_acquired=1 if (J1Fall_acquired==1 & J1founder!=0)
Acquisition_Anno uncedOn	numerical (4 digits)	Year of the announcement of the acquisition	substr
Jn_acqyear	numerical (4 digits)	Acquisition year	substr
Age_Jacqyear	numerical	Founder's age at year of acquisition	gen Age_J1acqyear= (J1_acqyear - Birth_year)
Acquisition_price	numerical	Price of acquisition	As from Crunchbase
Acquisition_Curre ncy	string	Currency of acquisition	As from Crunchbase
Acquisitionpricein USD	numerical	Acquisition price in USD	As from Crunchbase
Acquisition_Type	numerical	Acquisition type (acquisition, buyout)	1 if acquisition; 2 if buyout (leverage buy out; management; merge); 0 if null
Acquisition_status	string	Acquisition status (complete, pending)	As from Crunchbase
Acquisition_Dispo sitionOfAcquiree	string	Acquiree role after acquisition (combined, division,product,separa te_entity,subsidiary)	As from Crunchbase

Table 14: List of variables included in the Dataset