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A Career Theory Approach on Entrepreneurial Choice: The case of Italian University Graduates

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"Senza seguire un piano prestabilito, ma guidata di volta in volta dalle mie inclinazioni e dal caso, ho tentato, come risulterà dalla lettura di questo libro, che è una specie di bilancio o rapporto finale, di conciliare due aspirazioni inconciliabili, secondo il grande poeta Yeats: "Perfection of the life, or of the work". Così facendo, e secondo le sue predizioni, ho realizzato quella che si può definire "imperfection of the life and of the work". Il fatto che l'attività svolta in modo così imperfetto sia stata e sia tutt'ora per me fonte inesauribile di gioia, mi fa ritenere che l'imperfezione nell'eseguire il compito che ci siamo prefissi o ci è stato assegnato, sia più consona alla natura umana così imperfetta che non la perfezione."

Rita Levi-Montalcini, Elogio dell'imperfezione

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CHAPTER 1

Overview of the dissertation

1. Introduction

Entrepreneurship research investigates how opportunities are identified, evaluated, and exploited and by whom (Venkataraman, 1997; Venkataraman & Shane, 2000). Both individual characteristics and contextual factors are critical to understanding entrepreneurial behavior because under the same circumstances, not all individuals act the same (Davidsson, 2008; Hills & Singh, 2004; Reynolds, 1991). For these reasons, individuals and environments constitute a central part of entrepreneurship research (Frese, 2009; Hisrich, Langan-Fox, & Grant, 2007; Johnson, 1990; Stewart, Watson, Carland, & Carland, 1998).

An important stream of research draws on psychological theories to help understand entrepreneurial behavior. Specifically, intention-based models (e.g., Ajzen, 1991; Krueger, 1993) are largely applied by scholars in entrepreneurship to understand what triggers individuals to search for opportunity and how entrepreneurial opportunity is exploited to become a new venture (Krueger, Reilly, & Carsrud, 2000). However, this stream of research has limited the application of intentional theories to examine how individuals form entrepreneurial intentions, with little focus on the relationship between intentions and behavior (Schlaegel & Koeing, 2014). But entrepreneurship requires action (McMullen & Shepherd, 2006), and forming entrepreneurial intentions is only the first step in the process of creating a new venture. Starting a new venture is a long and complex process that includes different activities of varying difficulties, and in the entrepreneurship context, the intention-behavior relationship may be even weaker than in other contexts (Van Gelderen, Kautonen, & Fink, 2015). Focusing on intentional theories may be a limitation to fully explain the entrepreneurial behavior, and a broader approach is needed to advance theory in entrepreneurship.

This study adopts a career theory approach as a research lens to explain the choice to become an entrepreneur. As opposed to intentional theories, which are general psychological theories applicable to a range of human behaviors, career theories deal specifically with how individuals form career goals and convert them into action. Adopting a career perspective, we

are able to look at entrepreneurship as one of several careers individuals pursue during their lifetime. In particular, we aim to understand the conditions in which individuals enter entrepreneurship, and to what extent individuals' entrepreneurial intentions are translated into action.

2. Theoretical Framework

To answer these questions, this study extends career theory to the realm of entrepreneurship, proposing that the environment is an important explanation to illustrate why some individuals and not others engage in entrepreneurial action. We try to understand how individuals perceive the environment they are in and how these perceptions affect the enactment of their career interests. In developing the theoretical framework, we drew upon two major career theories, the Social Cognitive Career Theory (Lent, Brown, & Hackett, 1994) and Person-Environment theories (Kristof, 1996; Kristof-Brown, Zimmerman, & Johnson, 2005). Both theories acknowledge the relevance of context in the career process considering that career outcomes are determined by the interaction between persons and their environments (Osipow, 1990).

The Social Cognitive Career Theory (SCCT) aims to explain how individuals form interests, make choices, and achieve different goals in educational and occupational pursuits (Lent, Brown, & Hackett, 1994). This theory recognizes mutual interacting influences among individuals' personal attributes, external environmental characteristics (e.g., family, peers, mentors), and behaviors. In particular, the SCCT suggests that contextual factors are responsible for shaping the process that leads to the translation of career interests into career pursuits. The contextual factors represent the perceived opportunity structure in which individuals' career plans are developed and implemented. The person-environment literature asserts that individuals make choices about their careers because of the congruence (fit) that exists between themselves and the work environment (Kristof, 1996; Kristof-Brown, Zimmerman, & Johnson, 2005).

Individuals are attracted to work environments with characteristics such as culture, values, and requirements that match their personalities, needs, and skills.

Drawing on these theories, we propose that to explain the enactment of career choices, we can look at the environment using two different approaches: (1) the environment as a structure of opportunity and (2) the environment as representative of individuals' personalities and attributes. Both approaches assume the role of the environment is extremely relevant in people's career process and specifically in how individuals' career interests are forged and enacted.

3. Research Design

We conduct this research in the under-investigated context of student entrepreneurship, which considers the creation of new ventures by students and university graduates (Astebro et al., 2012; Roberts & Eesley, 2011). We developed a unique survey, the "Student Entrepreneurship Survey," in collaboration with AlmaLaurea, which is an Italian consortium that supplies data to governing bodies, assessment units, and committees that deal with teaching activities and career guidance. The survey was included as a new module in the annual survey of Italian university graduates administered by AlmaLaurea. This survey gathers detailed demographic and university career information about graduating students, with a response rate of about 90%. Respondents are surveyed again the year after graduation to monitor their employment.

Between September and December 2014, we sent out surveys to the 64,710 students graduating at the end of the year from the 64 participating (out of 95) Italian universities. We received 61,115 valid responses for a response rate of 94%. During this round, we collected data about entrepreneurial intentions and other independent and control variables. Twelve months later, these respondents were surveyed again, garnering 23,456 responses (37%). This second round of data collection focused on students' career choices one year after graduation. Thus, we

have coverage of entrepreneurial intentions and subsequent behavior for almost 1/3 of all students who graduated from 64 Italian universities in the fall of 2014. This is a truly unique dataset in its large sample size, high response rate, and that it is representative of university graduates in an entire country.

4. Research Outputs

The dissertation consists of four main research outputs. The first is a conceptual paper that explores the relationship between individuals' entrepreneurial intentions and subsequent actions. The paper focuses on the role of environment in the venture creation process to illustrate why some individuals but not others engage in entrepreneurial actions. Drawing on two major career theories, the Social Cognitive Career Theory (Lent, Brown, & Hackett, 1994) and the person-environment fit approach (Kristof, 1996; Kristof-Brown, Zimmerman, & Johnson, 2005), we look at the environment as a broad construct affecting the process that leads to entrepreneurial action. Specifically, we develop a framework proposing how the environment might affect the process of translating entrepreneurial intentions into actions in different ways. Combining insights from the career choice and career development literature, we develop specific propositions suggesting that the influence of the environment varies depending on the objective characteristics of the environment and on the individuals' interpretations and responses to these characteristics.

The second output illustrates the research design and the context in which the study was developed. We show the characteristics of the survey, the data collection, and we introduce some descriptive statistics of the sample.

The third output is an empirical paper that focuses specifically on entrepreneurship careers and explores the relationship between entrepreneurial intentions and action. This paper builds on Social Cognitive Career Theory to model the effect of contextual influences on how entrepreneurial intentions are enacted by starting a new business. Using a unique dataset of

almost the entire population of Italian university graduates, we find support for the hypothesis that family and peers positively moderate the relationship between intentions and action by providing information and resources that help individuals overcome doubts and procrastination to act upon intentions. Mentors, by contrast, do not seem to play a significant role. With this work, we aim to advance our understanding of the relationship between intentions and action by modeling the creation of a new business as a career choice. Our findings have implications for how scholars study and theorize the relationship between intended and realized behaviors in entrepreneurship.

The fourth output introduces a second empirical paper. In this paper, we build on the person–environment (P-E) approach (Kristof, 1996; Kristof-Brown, Zimmerman, & Johnson, 2005), and we explore why preferences for a certain career do not always translate into career choices. Drawing on the assumption that a gap exists between the perceived fit (individuals' preferences) and the actual fit (occupations), we explore how career preferences translate into employment outcomes. Specifically, we consider how individuals with certain career preferences sort into different types of employments, and we investigate how ex-ante career preferences explain choosing self-employment versus established firms. In this work, we adopt a career approach to explain how individuals decide to become self-employed, and we consider entrepreneurship as any other career that individuals choose during their lifetime. Moreover, we provide evidence that not all individuals who have preferences for self-employment enter into self-employment; a high percentage ends up in established firms. This is an important factor to consider with respect to recruiting and retaining entrepreneurial individuals.

5. Intended Contributions

This dissertation provides a new perspective of the phenomenon of entrepreneurship, focusing on new connections among previous concepts and exploring the practical information of these concepts. The purpose is to contribute to a current conversation that looks at

entrepreneurship as a career choice that an individual can pursue during his or her lifetime. In building on existing models of career choices, we aim to extend this growing stream of literature, and in doing so, we contribute in different ways to the entrepreneurship theory.

First, current models used to explain how individuals enter in entrepreneurship typically emphasize individuals' psychological aspects, proposing that the formation of entrepreneurial intention is the best predictor of entrepreneurial behavior (e.g., Krueger, 1993). In this study, we take a different approach, exploring the process of new venture creation by adopting a career perspective.

Second, we conceptualize the environment as representing the structure of opportunity, proposing that contextual characteristics that affect individual perceptions of opportunity structure play an important role. The environment represents the structure of opportunity and the extent to which individuals feel the environment is positively related to their final choice of acting upon opportunities. Moreover, the relationship that exists between individuals' perceptions of the environment and the actual characteristics affects the individuals' career enactment process.

Third, we consider the environment as representative of individuals' personalities and attributes. We show that individuals make choices about their careers because of the congruence (fit) that exists between themselves and the work environment, and some relevant characteristics of the environment affect the translation of preferences into choices.

Finally, we add new knowledge to the phenomenon of student entrepreneurship. By using a population-based approach, we are able to account for the magnitude, frequency, and complexity of the phenomenon. In particular, we disclose the characteristics of the students and university graduates who choose to become entrepreneurs. We provide some robust evidence about the phenomenon, which could be useful for implementing effective actions to support entrepreneurship among university students.

6. Structure of the Dissertation

The dissertation is comprised of four chapters. The first focuses on the theoretical framework that helps explore how and why individuals enter entrepreneurship. The second chapter illustrates the research design and briefly shows the nature and dynamics of the research context, which is student entrepreneurship. The third chapter consists of the first empirical paper that focuses on the relationship between the formation of entrepreneurial intentions and the subsequent creation of a new venture. The fourth chapter consists of the second empirical paper that explores how individuals' preferences are translated into career choices. Finally, a chapter related to the general conclusions is presented.

CHAPTER 2

Choosing a job to create jobs: a career based model of entrepreneurship

"In the wise choice of a vocation there are three broad factors: (1) a clear understanding of yourself, your aptitudes, abilities, interests, ambitions, resources, limitations, and knowledge of their causes; (2) a knowledge of the requirements, conditions of success, advantages and disadvantages, compensation, opportunities, and prospects in different lines of work; (3) true reasoning on the relations of these two groups of facts" (Parsons, 1909, p. 5).

1. Introduction

An important stream of research in entrepreneurship has drawn on psychological theories to understand the entrepreneurial behavior. Specifically, intention-based models (e.g., Ajzen, 1991; Krueger, 1993) have been largely applied among entrepreneurship scholars to investigate what triggers individuals in opportunity searching and how an entrepreneurial opportunity is exploited (Krueger, Reilly, & Carsrud, 2000). Entrepreneurial intention is defined as a conscious state of mind that guides action toward the creation of a new venture (Bird, 1988, 1992; Gartner, 1985; Learned, 1992). Studying entrepreneurial intention offers key insights for understanding the new venture emergence, because intentions represent the formal start of the venture creation process (Lee & Wong, 2004; Shook et al., 2003). In particular, to predict entrepreneurial behavior, researchers relied on the Ajzen's (1991; 2001) Theory of Planned Behavior (TPB) (Kolvereid, 1996; Krueger, 1993; Krueger, Reilly, & Carsrud, 2000) and the Shapero's Entrepreneurial Event Model ([SEE], Shapero, 1984). The two intentional models rely on self-efficacy (perceived behavioral control in TPB; perceived feasibility in SEE) and on entrepreneurial attitudes to predict entrepreneurship. The SEE model considers, in addition, the volitional element to predict intentions (propensity to act) (Krueger et al., 2000). The two models are approximately similar to one another in terms of predictive power and they both give equivalent interpretations of entrepreneurial intentions (Lee, Wong, Foo, & Leung, 2011).

However, Schlaegel and Koeing (2014) show that studies in entrepreneurship have limited the application of the intentional theories to examine how individuals form entrepreneurial intentions, with a little focus on the relationship among intentions and behavior. Entrepreneurship requires action (McMullen & Shepherd, 2006), and the formation of entrepreneurial intentions is only the first step toward the process of new venture creation. Starting a new venture is a long and complex process that involves different activities of varying difficulties and the intention-behavior relationship may be even weaker than in other context (Van Gelderen, Kautonen & Fink, 2015). Moreover, research in decision making also suggests an

intention-action gap, meaning that intentions are not always translated into action. For these motivations, focusing on intentional theories alone may be a limitation to fully explain the entrepreneurial behavior. The purpose of this study is to consider the choice to enter entrepreneurship from a career perspective. As opposed to intentional theories, which are general psychological theories applicable to a range of human behaviors, career theories deal specifically with how individuals form career goals and convert them into action.

Entrepreneurship has become an important component of our work and economic environment, both at national and global levels. In 2015, 23 million SMEs of the EU28 Economy generated more than €3.9 trillion in value added and employed 90 million people (European Commission, 2016). According to the Global Entrepreneurship Monitor (GEM, 2017), over 42% of working-age adults see important opportunities for starting a business in their area and 22% of the people surveyed in the 64 economies stated that they have an intention to start a business in the next three years. Moreover, the highest prevalence of entrepreneurial activity is among the 25-34 and 35-44 year olds, with an important participation among the 18-24 years old. Thus, it seems clear that entrepreneurship represents an important, viable and popular career opportunity. Moreover, environmental changes, such as increased globalization, rapid technological advancements, increased workforce diversity, have changed traditional organizational structures and the extent to which individuals choose their career. In particular, these relevant changes led to the emergence of a working force that is looking for new employment opportunities, preferring a new career route, that offers more flexibility, independence, control and challenge than what is offered by traditional careers (Nir, Watson & Hutchins, 2011).

In this study, we aim to extend career research to the realm of entrepreneurship. In particular, we focus on the role of the environment in the new venture creation process, as to illustrate why some individuals but not others engage in entrepreneurial action. Building on two major career theories, the Social Cognitive Career Theory ([SCCT], Lent, Brown & Hackett, 1994) and the person-environment fit approach (Kristof, 1996; Kristof-Brown, Zimmerman, &

Johnson, 2005), we look at the environment as a broad construct affecting the process that leads to entrepreneurial action. Specifically, we develop a framework proposing how the environment might affect in several different ways the process of translation of entrepreneurial intentions into actions. Combining insights from the literature of career choice and career development, we develop specific propositions suggesting that the influence of the environment varies depending on the objective characteristics of the environment and on the individual interpretation and response to these characteristics.

In doing so, we make the following contributions to the literature. First, current research in entrepreneurship has largely focused on intentional models, proposing that the formation of entrepreneurial intentions is the best predictor to explain entrepreneurial actions (Kolvereid, 1996; Krueger, 1993). However, the intention-action link is not straightforward as expected, and the characteristics of the environment might shape this relationship. We propose that the environment has far reaching consequences on the entrepreneurial behavior, including deterring entrepreneurial intentions in translating into actions. We suggest that the characteristics of the environment in which the individual is nested help explain why some individuals enact their entrepreneurial intentions by acting, while others do not. In particular, we consider the environment as an important element in the process of enacting career choices, by considering it (1) as a structure of opportunity (2) as representative of individual's personality and attributes.

Second, in developing the theoretical framework, we first acknowledge the relevance of the environment in the career process considering the career outcomes as determined by the interaction occurring between persons and their environments (Osipow, 1990). In particular, we draw on SCCT (Lent, Brown & Hackett's, 1994; 1996) that conceptualizes contextual factors as responsible for shaping the process that leads to the translation of career interests into career choices. SCCT recognizes the mutual interacting influences between individuals' personal attributes, external environmental characteristics and actions. In particular, the characteristics of the opportunity structure (contextual influences) moderate how goals convert into actions. These

contextual influences are represented by family, peers and financial conditions, which influence individuals' career choices.

Third, we take a step forward and we consider the environment as representative of individuals' personality and attributes. We build on the person-environment approach, which explores the antecedents and outcomes of congruence between a person and his or her work environment (Kristof, 1996; Kristof-Brown, Zimmerman, & Johnson, 2005). According to this perspective, individuals make choices about their career because of the congruence (fit) that exists between themselves and the work-environment. Consequently, individuals look out to work environments that are congruent with their personalities, attitudes, and values, and which lead them to use their skills and abilities.

Fourth, we aim to add new knowledge to the growing body of literature that adopts a career perspective to inquire how and why individuals enter entrepreneurship (Douglas & Shepherd, 2002). In particular, we contribute to the stream of research that explores the entrepreneurial career with structural approaches grounded in the organizational context and which emphasize change (e.g. Burton, Sorenson & Dobrev, 2016).

The chapter proceeds as follows. In the next section, we present a review of the intentional theories that have been widely applied in the field of entrepreneurship, highlighting the main limitations related to the application of these models. We successively introduce a career approach to explain how individuals' intentions are translated into action. Thus, we introduce our theoretical framework and we develop our propositions. Finally, the conclusions and a research agenda are presented.

2. Entrepreneurship as an Intentional and Planned Behavior

Intentions are defined as a conscious state of mind that directs attention and action toward the behavior, as the creation of a new venture (Bird, 1988; 1992; Gartner, 1985; Learned, 1992). The understanding of how intention is formed is critical across a wide variety of domains

because intentions are the best predictor of any planned behavior (Ajzen, 2011; 2014; Armitage & Conner, 2001), including the entrepreneurial behavior.

Since the late 1980's, researchers in entrepreneurship have applied theories of intentional behavior to explain why certain individuals engage in new venture creation (e.g., Bird, 1988; Krueger, 1993; Lee & Wong, 2004). The formation of entrepreneurial intentions is the formal start of the new venture creation process (Lee & Wong, 2004; Shook et al., 2003). The study of individual's entrepreneurial intentions helps researchers to comprehend what triggers individuals in opportunity searching and how this opportunity is exploited to become a new venture (Krueger, Reilly & Carsrud, 2000).

While various models examines the entrepreneurial intention development process (e.g., Bird, 1988; Boyd & Vozikis, 1994; Mazzarol et al., 1999), two models emerge as dominant in the entrepreneurship field: the first is the Theory of Planned Behavior based models (TPB; Ajzen 1985, 1988), and the second is the Shapero-Krueger model based on Shapero's conceptualization of the entrepreneurial event (SEE; Krueger, 1993; Shapero, 1984; Shapero & Sokol, 1982).

2.1. Theory of Planned Behavior

The most used theoretical framework is Theory of Planned Behavior (Kolvereid, 1996; Krueger et al., 2000). TPB asserts that an individual's behavioral intention represents the most imminent and proximal determinant of that behavior (Ajzen, 1991; Ajzen, 2011). According to TPB there are three cognitive antecedents shaping the behavioral intention: personal attitude toward outcomes of the behavior, perceived subjective norms and perceived behavioral control.

The first antecedent is the attitude toward the behavior, which refers to the individual's cognitive evaluation of the attractiveness of engaging in the behavior in question. The attitude toward the behavior represents the perceived positive or negative consequences of performing the behavior and the evaluations of these consequences (Ajzen, 1985). The second major construct is represented by the perceived expectations of important referent individuals or

groups and the extent to which the referent the person aims to comply with the referents in question. These considerations are defined as normative beliefs that produce a perceived social pressure to accomplish that behavior. The third antecedent of intention is the perceived behavior control, which concerns with the perception of how easy or difficult it would be to enact the behavior. This construct overlaps the construct of self-efficacy (Bandura, 1986) that expresses how an individual perceives its ability to execute a target behavior.

Intentions capture the motivational factors that predict behavior and they fully mediate the effects of attitude and perceived social norms on future behavior. Accordingly, the more favorable are the attitude, the subjective norm toward the behavior and the perceived behavior control, the stronger will be the individual's intention to enact the behavior under consideration. The relative contribution of these three elements in predicting individual's intentions may change across behaviors and situations, and more in general depends on the type of intention under investigation. In some situations, personal factors -the attitude and the perceived behavioral control- are more important than social norms in predicting future behaviors, while, for others, the factor reflecting social influences may prevail (Ajzen, 1991). For example, smokers develop intentions to quit smoke because they are very likely to be under social pressure (Terry & Hogg 1996). In general, social norms are less significant for those people with a high internal locus of control (Ajzen, 1987) or a strong orientation toward action (Bagozzi et al. 1992).

Beyond these three main factors that defined the theory itself, the TPB asserts the potential importance of other individuals' factors, such as demographic characteristics, as age, gender, race and education, emotions, and general attitudes. All these variables are expected to affect the formation of intentions and consequent behavior indirectly through their effect on attitude, perceived social norms and perceived behavioral control.

2.2. Shapero's Model of the entrepreneurial event

The Shapero-Krueger model is based specifically on Shapero's conceptualization of an

"intentionality-based process model" (Krueger, 1993, p.5) of the entrepreneurial event (SEE; Shapero, 1975, 1984; Shapero & Sokol, 1982). Numerous studies have applied the Shapero and Sokol's (1982) entrepreneurial event model (SEE) to predict entrepreneurial intentions (Schlaegel & Koenig, 2014). This model is implicitly an intention model: individuals form intentions to create a new venture based on their perceived desirability and feasibility and their propensity to act upon opportunities.

Entrepreneurial events can assume different forms (e.g. new venture creation), and each event is characterized by the following characteristics: initiative taking (an individual or a group of individuals who take an action), resource compilation (gathering resources), management (someone who manage the process), autonomy and risk taking (Shapero & Sokol, 1982). As that, an entrepreneurial event occurs if somebody takes the initiative, looks for resources, manage the process and engage in some form of risks (Shapero, 1984).

The SEE model asserts that individual's intention to engage in an entrepreneurial event derives from both perceptions of desirability and feasibility, and the individuals' propensity to act upon opportunities (Shapero, 1975, 1984). Perceived desirability is defined as the personal attractiveness of starting a new business and perceived feasibility is the degree to which an individual feels capable of starting a new venture (Shapero, 1984). Perceived feasibility and perceived desirability are argued to interact, meaning that if an individual perceives an action as unfeasible then he or she may perceive it undesirable (Shapero & Sokol, 1982). Perceived desirability perceptions can be affected by multiple sources, as family, peers, colleagues and mentors. These sources became important because they serve as a support and as a legitimization of the entrepreneurial action that the individual wants to take. On the other side, perceived feasibility is affected by more quantifiable factors, as for example the availability of financial resources or business partner. Finally the propensity to act is defined as the individual disposition to act upon an opportunity that has been identified, and it reflects the volitional aspect of intention. Under the Shapero model, entrepreneurial intentions results from individual's

desirability and feasibility coupled with the individual's propensity to act.

2.3. Limitations of Intentional Models in Entrepreneurship

The predictive power of intentions, as antecedent of behavior, is widely recognized in most of the research domains, and there are numerous evidences supporting the direct link existing between intention and action. Ajzen (1987) shows that intentions explain about 30% of the variance in behavior; a recent meta-analysis of Armitrage and Conner (2001) suggests that TPB explains 22% of the variance in behavior. In a meta-analysis of 10 meta analyses investigating a wide variety of human behaviors, Sheeran (2002) reported a variance of 28% in behavior that is a large effect size (Cohen, 1992). However, past research produced mixed results, especially when looking at core constructs such as the subjective norms (e.g., Krueger et al. 2000; Autio et al. 2001) and the personal behavioral control (e.g., Liñán & Chen, 2009; Kolverid & Isaksen, 2006). Moreover, these two theories are linear and unidirectional (Carsrud & Brännback, 2011), meaning that they are not able to account for the existence of reciprocal and moderating relationships (e.g., Brännback, Carsrud, Kickul & Krueger, 2007; Kelman, 1974).

The relevance of these models in predicting entrepreneurial intentions is well received in entrepreneurship literature and intentional theories have been frequently applied in the entrepreneurship context (e.g., Autio et al., 2001; Guerrero et al., 2008; Krueger & Carsrud, 1993; Krueger, Reilly, & Carsrud, 2000; Shook & Bratianu, 2010). However, few studies have examined the actual link between entrepreneurial intentions and actions. Previous studies have been mainly concerned with the formation of entrepreneurial intentions, often treating entrepreneurial intentions as a direct proxy for behavior (Schlaegel & Koenig, 2014). Given the many variables that moderate the strength between intentions and action, we believe that this is an unfortunate over-simplification. There is reason to assume that the direct relationship between individual's entrepreneurial intention and action is relatively weak because entrepreneurship represents a complex behavior (Van Hooft et al., 2005), where outcomes and how to obtain them are

uncertain. Outcomes also materialize long after behavior is initiated – the startup process takes on average around three years (Reynolds & Miller, 1992). In particular, an intention-action gap exists (Gollwitzer, 2001), i.e., many form entrepreneurial intentions but do not act on these intentions. Indeed, non-action by abstainers who have the intention is more common than action among those lacking an intention (Sheeran, 2002). The intention-action gap may be particularly substantial when the action to be pursued is novel, or can be postponed (Orbeil, Hodgldns & Sheeran, 1997), as it is often the case in the entrepreneurial context.

Given these limitations, we propose a career approach to investigate the individual choice of becoming an entrepreneur. Entrepreneurship researchers have broadly used intentional theories to understand why and how individuals start a new business. However, focusing on intentional theories may be a limitation to fully explain the entrepreneurial behavior. In particular, we aim to consider how the relationship between the formation of entrepreneurial intentions and subsequent entrepreneurial actions might be better explained by considering the choice of starting a business as one of the many other career choices that an individual may choose to pursue during his or her lifetime.

3. A career approach of entrepreneurship

Theories describing career behavior provide a representation of the reality and give researchers and practitioners directions that are useful in exploring individual's career choice and its development (Krumboltz, 1994). The root of career theory derives from Parson (1909) three steps formula that expresses "In the wise choice of a vocation there are three broad factors: (1) a clear understanding of yourself, your aptitudes, abilities, interests, ambitions, resources, limitations, and knowledge of their causes; (2) a knowledge of the requirements, conditions of success, advantages and disadvantages, compensation, opportunities, and prospects in different lines of work; (3) true reasoning on the relations of these two groups of facts" (Parsons, 1909, p. 5). The Parson model describes three main factors that affect individual's career choice; first, a

clear self understanding, second, a deep knowledge of the occupational choice and third, the ability to define the relation between them. This theory, also known as the trait-and-factor theory, has been at the core of the modern theories of career choices and development that have emerged since the fifties. Super (1953) published his theory of career choice including propositions related to trait-and-factor theory; Holland (1959) developed a comprehensive trait-oriented explanation of vocational choice, extending the trait-to-factor model from a static to a dynamic model. Few years later, Lofquist and Dawis (1969) published the work adjustment theory and in 1994, Lent, Brown and Hackett (1994) developed their model of career decision-making, which is grounded in social-cognitive theory of Bandura (1986). Almost all of these theories are psychologically based and have extensively influenced the thinking of psychologists and career counselors. However, sociologists as well have been concerned with career choice, developing theories focused more on the process that leads to the achievement of the occupation than certain aspects of practice. In particular, sociologists focused more on the antecedents that may affect individual's career choices and the subsequent occupational attainment, as the socioeconomic status of the family and the gender and race of the individual (Hollingshead, 1949; Reissman, 1953). Moreover, they started investigating the cognitive variables, as individual's abilities and social-psychological processes into the prediction of occupational achievements (Blau & Duncan, 1967).

In recent years, the field of career theory has received considerable growth, some theories have been expanded and redefined (e.g., Holland, 1992, 1997; Super, 1990, 1992) and some are still developing (e.g. Lent, 2005; Lent & Brown, 2002). In order to achieve a more integrative theoretical picture of career development, career theories have been classified in two main categories that focus on either content or process. Those theories categorized as content theories focus on how interests and values affect career development; while, those categorized as process theories, account for change over time and decision-making processes.

Theories focused on content explore the individual's and contextual influences that affect

the process of career development. These theories focus mostly on individual influences, applying psychological and trait factor theories to explain how individual make career choice (Holland, 1973, 1992, 1997; Parsons, 1909). In essence, these theories "predict career choices from individual characteristics" (Minor, 1992, p.14) and they are the work adjustment person-environment correspondence theory (Dawis, 1996, 2002, 2005; Dawis & Lofquist, 1984), and the personality based five-factor theory (McCrae & John, 1992). Theories focused on process refers to interaction and change over time and some theories describe the process as a series of stages through which individuals pass. Several theories have attempted to account for the process of career development, as the theories of Ginzberg (1972, 1984) and Super (1953, 1992). However, more recently, there is an increasing need to take in account both content -the individuals and contextual characteristics- and process -their development and the relation existing between them. Some examples are the Social Cognitive Career Theory (Lent, Brown, & Hackett, 1994, 1996, 2000) and the cognitive information processing approach (CIP; Peterson, Sampson, Reardon & Lenz, 1996).

Almost all theories of career choice have acknowledged the relevance of the environment in the career process, considering vocational outcomes as determined by the interaction occurring between persons and their environments (Osipow, 1990). In particular, the Social Cognitive Career Theory (SCCT), which is categorized as content and process theory, focuses on the relatively dynamic and situation-specific features. SCCT argues that behavior is a co-determinant of the causal exchange and that individuals' actions "influence the situations that, in turn, affect their thoughts, affect, and [subsequent] behavior" (Bandura, 1982, p.4). By contrast, the P-E theories, which can be included in the category of content theories, view the relation between person and environment with a trait or typological approach (e.g., Dawis, 1996; Holland, 1997). Trait and typology-based theories (e.g., Dawis & Loqwist, 1976; Holland, 1997) conceive person and environment affecting one another, but they express the behavior as a result of the person-environment transaction.

We build a model of entrepreneurial choice by exploring to what extent the environment influences individual's career choice and development. Being the different roles assumed by the environment, it is likely that different interpretations of the environment have important roles to play during the entrepreneurial process. Therefore, in order to achieve the definition of a new model of entrepreneurial choice, we develop several propositions based on the different functions of the environment in affecting the entrepreneurial process.

3.1. The environment as a structure of opportunities

The Social Cognitive Career Theory explains the process by which individuals form interests, make choices and achieve different goals in educational and occupational pursuits (Lent, Brown & Hackett, 1994). This theory is grounded in Bandura's (1986) socio-cognitive theory and it recognizes the mutual interacting influences among individuals' personal attributes, external environmental characteristics, and behaviors.

The personal determinants of career development within the triadic causal system are (1) self-efficacy, (2) outcome expectations, and (3) personal goals. These variables represent "building blocks" of career development and they are key mechanisms by which individuals are able to exercise personal agency. Self-efficacy is defined as "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performance" (Bandura, 1986, p.391). Outcome expectations represent individuals' beliefs about the consequences or outcomes of accomplishing particular behaviors. They involve the consequences related to the accomplishment of that behavior. Finally, goals represent the individuals' determination to engage in a particular activity (Bandura, 1986). Goal setting helps to organize, to guide and sustain individuals' own behavior and it represents a critical mechanism through which people exercise personal agency or self- empowerment. A complex interplay exists between self-efficacy, expectations and goal setting; and these aspects work together in order to lead individuals to exercise personal agency and become self-direct with their career choices and

development (Lent et al., 1994; 1996). However, there are some limits of the individuals' free agency in making career choices: the interplay among these personal determinants (self-efficacy, outcome expectation and goal setting) does not occur in vacuum nor these aspects work alone in shaping interests and career choices. SCCT recognizes the mutual interacting influences between individuals' personal attributes, external environmental characteristics and overt actions. In particular, the characteristics of the opportunity structure (contextual influences) moderate how goals convert into actions by reinforcing the relationship under favorable environmental conditions and weakening it under less favorable ones (Lent, Brown & Hackett, 2000).

The conceptualization of the environment highlights both its objective and perceived aspects. The objective features of the environment are represented by physical, cultural, material and social characteristics. For example, the quality of the educational experience to which individuals have been exposed represents an objective characteristic of the environment that can potentially affect one's career development. However, the effect of some objective characteristics often depends on the individual's perception and responses to them (Lent, Brown & Hackett, 2000). This conceptualization of the perceived aspects of the environment derives from the concept of "contextual affordance" (Vondracek, Lerner & Schulenberg, 1986) and "structure of opportunity" (Astin, 1984) constructs. In particular, these concepts highlight that individuals play an important role in making sense and evaluating what the environment provides. In essence, opportunities, resources and barriers presented by a particular environment often depend on personal evaluations and response to such factors (Astin, 1984; Vondracek et al., 1986; Lent, Brown & Hackett, 2000).

Thus, individuals do not operate as free agents in the selection and enactment of their career choices, and many career theories tend to emphasize person-psychological variables, underestimating the relevant role of contextual factors in shaping career paths (cf. Betz, 1989; Tinsley & Faunce, 1980). We can assert that contextual characteristics are able to enhance or constrain volitional control in the choice process. SCCT framework allows for the exercise of

personal agency and it also emphasizes those contextual factors that serve to facilitate, hinder or override personal volition in the choice process. In particular, SCCT argues that the characteristics of the opportunity structures (contextual influences) may moderate the relation existing between interests (intentions) and actions. Specifically, individuals are more likely to translate their interests into goals and act upon them, if they perceive the environment to support such actions (Lent, Brown & Hackett, 2000). For example, research shows how the perceived support from fathers influence the educational plans and career expectations of high school girls (McWhirtiher, Hackett et al., 1998). Faculty support and encouragement among engineer students relate to performance (Hackett, Bets et al., 1992) and persistence (Schaefers et al., 1992). Conversely, individuals are less likely to engage in career paths if they perceive their effort to be impeded by contextual factors. For example, workplace discrimination has been used to explain problems related to women career progress (Swanson et al., 1996; Richie et al.1997) or to racial-ethnic minority group member's career development (Swanson et al., 1996). This focus on the individuals' environment perception is coherent with the importance that the SCCT places on the cognitive appraisal processes in affecting behavior and it aims to highlight the individuals' interpretation of contextual inputs.

As looking at entrepreneurship as a career choice, we claim that the translation of entrepreneurial intentions into action varies across individuals depending on the objective characteristics of their environment and on the individuals' response to those factors present by the particular environment. Thus, people who develop intentions to start a new venture are more likely to act if they perceive that the environment in which they are nested is supportive. On the other side, those who do not feel supported by the environment are less likely to act upon their intentions and thus they feel more confortable in postponing their action or abandoning their intention to act. This leads to the following proposition:

Proposition 1: In the translation of entrepreneurial intentions into actions, the higher is the individual's perception of environmental support, the higher the probability that the individual will act upon his or her entrepreneurial intentions.

Based on their proximity to career choice points, environmental factors are thus classified into two main groups: distal factors and proximal factors. Distal factors (e.g. parental role models) influence the learning experience of the individual, which in turn helps shape individuals' interests and choices. Proximal factors (e.g., a particular role model during university studies, personal career network contacts) come in play during critical choice junctures, as the enactment of career preferences (Lent, Brown & Hackett, 2000). They affect the opportunity structure in which career plans are developed and implemented. However, these sets of environmental characteristics contain some overlapping elements; for example, the family can play key roles throughout the formation of career interests and in the process of career development and enactment, tough their influence change across time. Thus, the same environmental characteristics, as for example the family, might shape the process in two different points in time. First, when an individual form his or her interest for a certain career, by shaping individuals aspirations and interests, and second, when these interests should be translated into choices, by providing, for example, emotional support. The dual role played by the family has a relevant impact on the process of career enactment.

In the process of becoming an entrepreneur, there are several contextual influences that can affect the process over time, since the formation of entrepreneurial intentions to the translation of the intentions into actions. Individuals, who perceive a supportive context over time, are more likely to boost their intentions and translate them into actions, by the creation of a new venture. This leads to the following proposition:

Proposition 2: In the translation of entrepreneurial intentions into action, the more the individual's perception of environmental support occurs over time, the higher the probability that the individual will act upon his or her intentions.

3.2. Environment as a representation of individuals' aspirations

According to the person-environment fit literature (Kristof, 1996; Kristof-Brown, Zimmerman, & Johnson, 2005), individuals make choices about their career because of the congruence (fit) that exists between themselves and the work-environment. Individuals are attracted to work environments with characteristics, as culture, values, and requirements that match their personalities, needs and skills. The environment is seen as a representation of individuals' aspirations and interests, and as such individuals search for those characteristics that fit with their particular aspirations and interests.

The person-environment fit approach is characterized by two central assumptions. The first is that the congruence between a person and his or her work environment affects satisfaction, performance, productivity and turnover; and a better fit is associated with a better outcome (Rounds & Tracey, 1990). The second is the feature of dynamic reciprocity (Rounds & Tracey, 1990). This concept assumes that there is an ongoing process of adjustment between the environment and the person, because individuals influence environments, and in turn environments influence individuals. Studies on P-E approach found numerous work-related outcomes of the person-environment fit. In particular, meeting the congruence between person and environment affect job satisfaction (Holland 1997, Dawis & Lofquist, 1984) and organizational commitment (Hoffman & Woehr, 2006), on the other side the incongruence between person and environment can affect career transition (Donohue, 2006).

However, an important distinction to do is between the perceived and the actual P-E fit. The perceived fit relates to the perceptions of an individual that a particular vocation would be attractive. Specifically, the perceived fit can be seen in terms of preferences; while the actual fit

refers to the ability and motivation to actually carry out the job. An individual in the process of looking for a job will look for the best match between the perceived and the actual fit; but as Kristof-Brown and Stevens (2001) suggest, the perceived fit and the actual fit are weakly related to practice. Further, as many scholars in the P-E assert (e.g., Kristof-Brown & Stevens, 2001), the issue is that jobs are fixed and individuals have little margin in adapting the job to fit individual needs and preferences.

There are numerous theories that illustrate the person environment-fit and how it affects individuals' choice. Holland's (1997) typological theory is one of the major proponents of the person-environment fit approach. The main assumption of this theory is that vocational interests are one aspect of personality and the description of a vocational interest corresponds to a description of the individuals' personality. Consequently, individuals look out to work environments that are congruent to their personalities, attitudes, and values, and which lead them to use their skills and abilities. In particular, Holland (1997) groups the career decision maker in six categories, specifically: Realistic (R), Investigative (I), Artistic (A), Social (S), Enterprising (E), or Conventional (C). These personality types are the result of individuals' interests and competences developed from the interaction with "cultural and personal forces including peers, biological heredity, parents, social class, culture, and the physical environment" (Holland, 1992, p. 2), and they express the individual's major needs. In addition, Holland suggests that the environment can be classified in a very similar way. As that, individuals look for those work environments that are compatible with their personalities and which allow them to use their skills and abilities. For example, a "social type" who expresses good social skills, who is friendly and enjoy involvement with people and working in teams, will be more likely to search occupations that express these characteristics. These jobs can be the ones of teachers, social workers, psychologists or counselors.

Behavior is the result of the interaction between the individual and the environment and it affects those factors such as satisfaction, stability, and achievement. There is congruence

between the person and the environment, when the environment resembles individual personality, leading to satisfaction, success, persistence, and stability. Conversely, an incongruent match between personalities and work environment stimulate change in human behaviour, and a person resolves the incongruence by looking for a new and congruent environment or by changing their personal behaviour and perceptions (Holland, 1997).

In the process of becoming entrepreneur, individuals need to find the environment that is compatible with their aspirations and interests. In particular, individuals who form intentions to become entrepreneurs and start a new business are looking for those environments with certain characteristics that resemble and support their interests and aspirations. However, the fit between individuals' aspirations and interests and the environment, is not always consistent, leading individuals to abandon or postponing their idea of becoming entrepreneur. Thus, individuals become unable to translate their entrepreneurial intentions into actions. This leads to the following proposition:

> *Proposition 3*: *In the translation of entrepreneurial intentions into actions, the more the individual's fit with the environment, the higher the probability that the individual will act upon his or her intentions.*

Similar to Holland's theory, the Theory of Work Adjustment (TWA) (Dawis & Lofquist, 1976) reflects the strong links to the psychology of individual differences and provides a model for conceptualizing the interaction existing between individuals and work environments. The central construct of TWA is the correspondence between person and environment. In essence, TWA considers the existence of a dynamic relationship between the person and the environment, in which individuals make continuing adjustments in order to develop satisfactory relationships. Compared to Holland's Theory, TWA puts great emphasis on the adjustment over time and focus on the developmental aspect of career over time.

According to this theory, an individual has needs of a work environment, and in turn a work environment has needs of a worker. Dawis (1996) asserts that there is correspondence when employees meet the abilities demanded by a job and a job meets the need of employees. When correspondence happens, both sides are satisfied; and satisfaction leads to stability and tenure (Dawis & Lofquist, 1984).

TWA draws on the psychological individual differences in considering work skills and work needs. Starting by the assumption that all individuals have a range of skills and they have abilities to acquire the skills required by a task, Dawis (1994) considers skills and needs as surface traits and abilities and values as source traits. Specifically, the surface traits are those traits that define a personality and are stable over time, while source traits may change over time and situations. This aspect acknowledges the individuals capacity of changing over time and highlights the developmental aspect of the individuals' career.

Thus, a dynamic process exists between needs of the individuals and needs of the work. The correspondence happens when needs are met. However, needs are not static, and changes in person needs or in work environment needs may lead to dis-correspondence, and consequently to dissatisfaction. During these times individuals may try to change the environment or they may try to change themselves. If the adjustment fails, then the individual may leave the work environment.

In the process of becoming entrepreneurs, individuals need to adjust themselves to their environment or they will fail to reach their achievement, which is the one of becoming entrepreneurs. Individuals need to consider the dynamic relationships existing between their aspirations and the characteristics of the environment and to make continuing adjustments in order to fit with the environment. Thus, in the phase of translation of individuals' intentions into actions, individuals need to shape and adjust themselves to the main characteristics of the environment. This leads to the following proposition:

Proposition 4: In the translation of entrepreneurial intentions into actions, the more the individual's environmental fit is adjusted over time, the higher the probability that the individual will act upon his or her intentions.

4. Discussion

The focus on environment as an essential element in the entrepreneurial process provides a counterweight to existing research on entrepreneurship that has mainly focused on psychological theories to explain the individual choice of becoming entrepreneur (e.g., Lee & Wong, 2004; Shook et al., 2003). We provide a new point of view of the entrepreneurial process; in particular, we focus on new connections among previous concepts and we explore the practical information of these concepts. In building on career theories, we aim to extend the growing stream of literature that looks at entrepreneurship as a career choice that an individual can choose to pursue during his or her lifetime, and in doing so we make the following contributions.

Our theorizing suggests several elements of the environment that affect the definitive choice of becoming an entrepreneur, including the objective and perceived characteristics of the environment, and the temporal moment in which the environment affects individuals along their development career process. While our theoretical development emphasizes the overall role of the environment in explaining the entrepreneurial choice, it is important to note that we provide a framework that offers a more nuanced view distinguishing different conception of the environment and several characteristics that assume different importance in different phases of the process, from the formation of entrepreneurial intentions to the translation of these intentions into action. This is very important because it shows that there is variance concerning the importance and the conception of the environment across the entrepreneurial process.

Current models used to explain how individuals enter in entrepreneurship typically emphasize individuals' psychological aspects, proposing that the formation of entrepreneurial

intentions is the best predictor of entrepreneurial behavior (e.g., Autio et al., 2001; Guerrero et al., 2008; Krueger & Carsrud, 1993). Our theoretical model takes a step forward; we adopt a career perspective to explore the process of becoming entrepreneur. Entrepreneurship can be studied "using a perspective that explicitly conceptualizes the relationship between entrepreneurial dynamics, labor market processes, and career trajectories" (Burton, Sorenson & Dobrev, 2016, p.239). Starting from this assumption, we emphasize that the choice of becoming an entrepreneur can be analyzed and explored as any other career choices that individuals can decide to pursue during their lifetime.

Our theoretical model offers a look to the extent to which the environment affects individual's final choice of acting upon opportunities. We take in account recent insights into career theories that consider the development of career actions in the environment in which individuals are nested. In particular, building on SCCT, we consider the role played by contextual influences in the process of translating intentions into action. We show how these influences affect individual entrepreneurial intention and how jointly interact to generate entrepreneurial action. Moroever, we are able to disenatgle the effect of social influences on the individual choice to become entrepreneur, showing how these influences may change across time providing different support in the process of formation career interests and the subsequent enactment of career choices.

Further, we are able to theorize how the environment can be perceived as representative of individuals' personality and attributes. Building on the Person-Environment (P-E) fit approach (Kristof, 1996; Kristof-Brown, Zimmerman & Johnson, 2005) we provide evidence that a gap exists between the perceived fit (individual preferences) and the actual fit (occupations). Starting by the assumption that individuals form preferences for certain activities, interests, competencies, and values based on their personality, and individuals' career choice is an expression of their personality (Holland, 1997); we show that the perception of the environment and the actual occupations not always fit and the individuals' enactment career process is not straightforward.

The process by which an individual enact his or her career preferences is affected by the environment and its characteristics, and by how the individual perceives the environment and then responds to it.

Our finding that the role of the environment can help explain how individuals' entrepreneurial intentions are translated into actions informs research on the process of starting a new venture. Departing from the idea that entrepreneurship is mainly a planned behavior, and that intentions are the best predictor of this behavior, recent studies have increasingly emphasized that a gap exists between intentions and actions and that the translation if intentions to action is not always straightforward as supposed (e.g. Van Gelderen et al., 2015). This study has focused on some personality traits that may lead the individual to postpone action or to never act at all. Our theorizing suggests that entrepreneurial action is affected by the environment in which the individuals are centered, and by their perceptions of the environment. Individuals who feel supported over time in their process of becoming entrepreneurs are more likely to translate their intentions into actions, while those who feel that this support has changed over time may abandon or postpone their choice of starting a new business. Moreover, the environment is seen as representative of individual's aspirations and preferences. If the environment is representative of the individuals' aspirations and individuals are ready to adapt their aspirations to the environmental characteristics, thus the translation of intentions into actions become an easy process. On the other side, the inconsistency that may exist between individuals' aspirations and their environment may lead individuals to abandon or postpone their entrepreneurial actions.

5. Research Agenda

Based on the implications that this framework offers for various stands of the entrepreneurship literature, a number of research opportunities emerge that can further advance our understanding of the entrepreneurial process. Below, we show some of these research opportunities.

Opportunities for Testing our Conceptual Framework

The first opportunity for extending our work is to test the theoretical framework we offer. Longitudinal studies are needed in order to follow individuals during a certain period of time from their development of entrepreneurial intentions to their exploitation into entrepreneurial actions. Individuals' entrepreneurial intentions can be measured by the well-established scale of Liñán and Chen (2009). The measurement of action, as well as those related to barriers and supports, should be done several points in time. Finally, scholars have developed experimental approaches to explore entrepreneurial decision to exploit opportunities (Hyne, Shepherd & Patzelt, 2012). We invite future research to use these or other empirical approaches to test our theoretical framework.

Opportunities for Cross-Disciplinary Work

By studying the choice of becoming an entrepreneur using a career approach, we might particularly profit from cross-disciplinary research (e.g., see Ireland & Webb, 2007; Short et al., 2010). First of all, career theories offer several insights for the development of entrepreneurship research. The choice of becoming entrepreneur has widely treated entrepreneurship as a final destination of an individual's life course, focusing attention on what are those elements that lead to the choice of entering entrepreneurship and failing to look to the possibility of subsequent transitions (Burton et al., 2016). A career approach may lead to analyze the entrepreneurial choice as a transient state, by taking insights from theories of labor economics and organizational change.

Second, an economic perspective can reveal several insights related to the choice of becoming an entrepreneur compared to other employment-related choices (Douglas & Shepherd, 2002). In particular, entrepreneurship can be analyzed in terms of wage, as a driver to enter or leave entrepreneurship; in terms of skills, as individuals' ability distribution and human capital accumulation both before, during and after a period of entrepreneurship; and finally in terms of

mobility, as the causes related to enter or leave entrepreneurship.

Third, a sociological perspective might be useful to understand the role of the environment in affecting how individuals differently perceive the external barriers and supports. In particular, it would be interesting to investigate the ways in which gender, ethnicity, race, and other characteristics affect the different role that the environment may play in the process of becoming an entrepreneur.

Opportunities for Examining Barriers and Supports

While our framework provides overall insights related to the contextual influences that may influence the process of translation of entrepreneurial intentions into actions, future research can investigate specifically those contextual influences, which are perceived as barriers or as supports. For example, it would be interesting to analyze how barriers and supports may change depending on gender. In general, research shows that entrepreneurship is considered less suitable career choice women than for men (BarNir et al., 2011), which may depend on the different types of barriers and supports perceived by women and man. Further, these barriers and supports may be limited to the near context in which individuals are nested or to a larger, more general environment. For example, future research can explore variance in the impact of these barriers and supports across cultures with different values and across industries with different characteristics.

6. Practical Implications

Our research speaks to the relevance of having entrepreneurial counseling to those who have intentions to start a business but perceive barriers that feels and depicts as insurmountable and that obstacles and block their action. Moreover, individuals need to be prepared to adjust themselves in order to find a fit with the environment. Counselors may help individuals in this direction supporting them in dealing with the environment.

7. Conclusions

The environment is an essential element of the entrepreneurial process. We develop a framework exploring how different characteristics of the environment impact different phases of the entrepreneurial process, in particular from the formation of entrepreneurial intentions to the translation of these intentions into actions. Our theorizing suggests that the environment influences the formation and the exploitation of entrepreneurial intentions in different ways, such that there is both a positive or negative impact of the environment on the entrepreneurial process. Based on our theorizing, we offer a research agenda that will inspire future work on this topic.

CHAPTER 3

Research Design and Context

1. Introduction

Entrepreneurship is becoming an attractive career option for young people, like university graduates. The increasing interest in entrepreneurship is evidenced by the growing rate of new ventures created by students and by the intensifying role assumed by universities in supporting entrepreneurial activities. Universities are key contributors in nurturing entrepreneurship among students providing several support mechanisms, like the creation of entrepreneurship educational programs, such as student enterprise clubs, incubation structures and mentoring programs (OECD, 2015).

This chapter aims to illustrate the research design and explain the context in which the study has been developed. We use a population-based approach to investigate the entrepreneurial intentions and subsequent entrepreneurial actions of university graduates from 64 Italian universities during 2014 and 2015. We collect data in collaboration with AlmaLaurea, an Italian university consortium that surveys the profile and the employment status of the Italian university graduates, trough a newly developed section of the annual AlmaLaurea survey. We explore the entrepreneurial intentions of the university graduates, their demographic characteristics, their background, preferences, career aspirations, and career choices.

The chapter is organized as follows: we first introduce the features of the phenomenon of student entrepreneurship. In the second section, we illustrate the research design of the study and we successively introduce some descriptive statistics concerning the sample. In particular we focus on two main characteristics. The first is related to the students' entrepreneurial intentions at time of graduation and the second regards the graduates' career choices one year after graduation. We finally conclude the chapter with some reflections concerning the relevance of the context.

2. The phenomenon of student entrepreneurship

The number of academics engaging in entrepreneurial activities is considerably increased

in the last decades (Thursby & Thursby, 2007). This increasing rate of university spin-offs is attributed first, to the introduction of important legislative acts, second to the increased financing of research from industry and finally to the important change of the university behavior (Åstebro, Bazzazian & Braguinsky, 2012). In particular, universities started fostering the engagement in entrepreneurial activities with the introduction of different mechanisms, as technology transfer offices and dedicated policies to encourage the creation of academic spin-offs (Grimaldi et al., 2011). The increasing rate of academic spin-offs has stimulated scholars in entrepreneurship research in providing a diverse set of analyses and models to evaluate the impact of academic entrepreneurship. In particular, these studies focused on the consequences of entrepreneurship on the universities' research and teaching activities, on the role of inter-institutional differences, and on the effect of different policies and supporting mechanisms (Bolzani et al., 2014; Dahlander & McFarland, 2013; Perkmann et al., 2015).

Most of past research has investigated the creation of academic spin-offs leaving unexplored all those entrepreneurial activities that have been started by graduate students or recent graduates. This because, generally, these firms do not often use intellectual property based on university research findings and as that have not been systemically reported (Åstebro, Bazzazian & Braguinsky, 2012). In this way, a potentially important part of entrepreneurial activities arising by universities has not been accounted and rarely discussed. Indeed, only a few studies have covered start-ups by graduate students and recent graduates.

One of the first study focusing on entrepreneurial activities of university graduates is the study conducted at Massachusetts Institute of Technology (MIT) in 2001 and implemented in 2003 on a larger scale (Roberts & Eesley, 2011). The study aimed to understand the economic impact of the entrepreneurial ventures of university graduates and in particular to quantify the impact of the MIT's support ecosystem that supports firm start-ups. While MIT is a unique entrepreneurial ecosystem for the programs that it offers and the culture of the school, it provides a benchmark for other institutions that aims to explore the economic impact of their

alumni entrepreneurs. Data show that more than 25.000 active companies (as the end of 2006) have been founded by leaving alumni. These companies employ more than 3 million people and generate revenues for more than $2 trillion, which represents the equivalent of the 11th largest economy in the world. Every year the number of entrepreneurs emerging from MIT is increasing and MIT graduates are creating their first company sooner and at early stage. Moreover, the study shows that students and early graduate students are more entrepreneurial than faculty members. In particular, for any new company started by a faculty member or based on a technology licensed by the TTO, former students start more than 20 companies (Roberts & Eesley, 2011).

As a consequence of this pioneering study, several scholars started investigating the characteristics of the unexplored phenomenon of student entrepreneurship. In particular, Eesley and Miller (2012) conducted a systematic survey of Stanford alumni, faculty and selected staff in 2011. The study highlights the role of the Stanford's entrepreneurial ecosystem in fostering and supporting entrepreneurial activities among students and faculties, and it estimates that 39,000 actives firms are somehow connected with Stanford. These companies have created more than 5 million jobs and generated annual revenues of $2,7 trillion. Using a cross sectional sample based on US STEM graduates, Åstebro et al. (2012) compared startups by recent graduates with science and engineering background with those created by their faculty. They show that students in science and engineering are more likely to start a new business than their professors. In addition, the new ventures created by recent graduates are of high quality and absolutely not failures. A survey conducted at Chalmers University' entrepreneurship school, in Sweden, showed that almost 42% of alumni have started a new venture (Lindholm, Dahlstrand & Berggren, 2010); at Harvard Business School, 5% of alumni create a new venture within one year after graduation (Lerner & Malmendier, 2013). In Italy, a first study conducted at Politecnico di Milano, shows that 3% of students become entrepreneurs on the between the year of enrollment in the master degree and five years after graduation (Colombo, Piva & Rossi-Lamastra, 2015).

All these studies added new knowledge to a phenomenon that has been largely

overlooked by universities and entrepreneurship scholars. However, they focus on unique entrepreneurial environments and they lack a more widespread perspective on the overall phenomenon. "Indeed, if gathering systematical and rigorous data from a single institution over several cohorts of former students is in itself a difficult task, extending the effort to achieve a multi-campus comparison or a full-country study raises the bar considerably" (Fini, Meoli et al., 2016, p.9).

The first attempt in this direction is the GUESS project. This project launched in the Swiss Institute for Small Business and Entrepreneurship at the University of St. Gallen (KMU-HSG), focuses on graduate students entrepreneurial intentions and activities and collects data through a network of national correspondents in 34 countries (Sieger et al., 2014). The GUESS project is dedicated to explore this phenomenon since 2003 and in 2016 the survey was conducted in 50 countries, at more than 1,000 universities and reached more than 120,000 students. The project explores entrepreneurial intention across the globe, how many students are engaged in entrepreneurial activities and how many of them have already a business. Moreover, it investigates which are the drivers of entrepreneurial intentions and activities. This project is the first multi-country comparison that allows analyzing trends and changes over time but suffers from some main limitations due to the type of students profiled and the differences in the approaches and choices of the national samples.

In order to contribute to this conversation related to entrepreneurship and graduates, we conducted the first country-level analysis of entrepreneurship by university graduates in Italy.

3. The survey

Between 2014 and 2015 we developed the "Student Entrepreneurship Survey" that was included as a new module in the yearly annual survey of Italian university graduates administered by AlmaLaurea. AlmaLaurea is an Italian consortium that supplies data to governing bodies, assessment units, and committees dealing with teaching activities and career guidance. To date,

72 are those universities taking part to the consortium (out of 95 Italian universities). The survey gathers detailed demographic and university career information about students, with a response rate of about 90%. Respondents are further polled the year after graduation to monitor their employment situation.

The data were collected in two waves 12 months apart in 2014 and 2015. In the first wave, between September and December 2014, the survey was sent out reaching 64,710 students (out of almost 230,000 graduate students in 2014) who graduated from the 64 Italian universities taking part of the consortium in 2014 (Appendix 1). The AlmaLaurea consortium, in collaboration with each university, was in charge of the administration of the survey and each student was able to get access to the survey only a few weeks before the graduation date. All the universities were included in the survey; as that we reached students from STEMM (Science, Technology, Engineering, Mathematics, and Medicine), Social Science and Humanities disciplines. The valid responses were 61,115 for a response rate of 94%. In the second wave, during September and December 2015, the survey was sent to the same cohort of students, rendering 23,456 responses for a response rate of 37%.

For the first wave, we developed a specific survey organized in three main sections. The first section is administrated to the whole sample and it aims to distinguish students in two main groups, those who are entrepreneurs and those who are not. The second section focuses on the role of universities, people and institutions in fostering student's entrepreneurial skills and preferences. In the third section, we aim to understand the status of the firms, and we gather information concerning the novo and serial entrepreneurs (Appendix 2).

In addition to the "Student Entrepreneurship Survey" all the students completed the principal survey of AlmaLaurea. This survey is divided in six main sections. The first section focuses on students' personal information. The second concerns the individual's curriculum vitae and it investigates individuals' high school and university experience, the type of university, the type of courses and their skills. The third part has the aim to explore the student's university

experience. In this section there are question related to the students' abroad experiences, stage experiences, and work experiences. In the fourth section there are questions related to the quality of the overall university experience. The fifth section aims to gather information about the family, in particular the type of job and the social background of the parents. Finally in the last section there are questions related to the students' future career intentions.

In the second wave, one year after graduation, the data collection focuses on student's career choices. In particular, we collected data through the "Graduates' Employment Condition Survey" of AlmaLaurea, which aims to collect information about the employment condition of students soon after their graduation. The questions are related to the type of jobs individuals are pursuing, the type of role and the extent to which they are satisfied. Then, in order to investigate the percentage of individuals who decided to pursue an entrepreneurial career, we added to the main survey some questions related to the new venture creation process (Appendix 2).

The characteristics of this survey lead us to build a reliable and unique dataset of students and graduates' entrepreneurial activities in Italy and to our knowledge this is the first population-based study ever conducted about this phenomenon. These data are able to engage a national debate on the role of universities, institutions, context, and family in supporting entrepreneurship among students and to support the development of entrepreneurship research.

4. The phenomenon of student entrepreneurship: the case of Italian university graduates

In this section we illustrate some selected descriptive statistics regarding two main characteristics of the sample that are extremely relevant for the development of the entrepreneurship research and of the research in the context of student entrepreneurship. As such, we will explain and explore the concept related to students' entrepreneurial intentions (4.1), and then we will illustrate the characteristics of the students' career choices one year after graduation (4.2). These results will be the starting point for the development of the two empirical

papers that are part of the dissertation and that will be presented in the next chapters. [1]

4.1. Students' Entrepreneurial Intentions

Entrepreneurial intentions are defined as a conscious state of mind that guides action toward the creation of a venture (Bird, 1988, 1992; Gartner, 1985; Learned, 1992). Studying entrepreneurial intentions offers key insights for understanding the new venture emergence, because intentions represent the formal start of the venture creation process (Lee & Wong, 2004; Shook et al., 2003).

In order to understand the new venture emergence among graduate students, we explore their intentions to start a new business. Specifically, we ask students to express their level of agreement to a number of statements that aim to capture their intention to become an entrepreneur in the future (Liñán & Chen, 2009). In particular, we asked individuals to assess the six following items: "I am ready to do anything to be an entrepreneur", "My professional goal is to become an entrepreneur", "I will make every effort to start and run my own firm", "I am determined to create a firm in the future", "I have very seriously thought of starting a firm", "I have the strong intention to start a firm someday". We measured entrepreneurial intention by calculating the mean of the six items that were anchored from 1 (strongly disagree) to 7 (strongly agree).

First of all, we look for gender differences and we see that the aggregated entrepreneurial intention measure shows higher average values for men compared to female students (3.6 compared to 2.9). Then we find that entrepreneurial intentions differ depending on age. We see higher average values of intentions among older students compared to younger students (2.9 compared to 2.3). Interestingly, foreigner students have stronger entrepreneurial intentions than Italians students (3.7 compared to 3.1). Observing the geographic distribution, we do not find relevant differences; however, students from the south and the islands show the higher level of

[1] In the two empirical papers, presented in chapters 4 and 5, due to missing values, we lose some observations. The final sample used in the paper will be slightly different from the one used for the empirical statistics presented here.

intentions compared to students from the north of the country (3.4 compared to 3.2). Finally, we look if entrepreneurial intentions depend on the field of study. Interestingly, we do not find any difference between STEMM students and Social Science students. These results might be due to the specific job profiles in the social science field (e.g., working as an independent freelancer). Finally, those who displace the low academic performance show the highest level of entrepreneurial intentions.

4.2. Career choices one year after graduation

In this section we illustrate the students' career choices one year after graduation. In particular, we first distinguish individuals into two groups, those who are self-employed and those who work in an established firm, one year after graduation. Finally, within the group of individuals who are self-employed, we consider those who become entrepreneurs, meaning that they have created a new venture one year after graduation.

Employment choices

To measure the students' career choices, we first ask students about their employment status, controlling if they are currently working or they are engaged in other activities, as job searching or studying. We classify individuals into two main categories, those who are currently working, which represent 41.3 % of the students reached one year after graduation, and those who are not working. Within the group of students who are not working one year after graduation, 58.70% have been taking or took part to a postgraduate training activity, as a master degree, a new bachelor degree or any type of training, as internships or doctoral research.

To investigate students' employment outcome, we focus on those individuals who are currently working that correspond to 35.3% (8290) of the 23,456 students who answered the survey one year after graduation. We classify individuals in two main categories, those who are self-employed and those who are working for an established firm. To distinguish individuals who

are self-employed and those who are working in an established firm, we control for the type of job contract they have. As that, we are able to distinguish between those who are self-employed and those who work in an established firm.

Tables 1 and Table 2 report selected summary statistics related to the two groups. In particular, among self-employed individuals 60% are women and a very small percentage (roughly 2%) are foreigners. We find that 65% of those who are self-employed have a bachelor degree and 11% have a single cycle-degree (i.e. law, medicine) and the majority (65%) has a STEMM degree. Among those who have a job in an established firm, roughly 60% are women and the percentage of foreigners is about 3%. More than 50% have a bachelor degree and 41% a master degree. The majority (55,7) has a STEMM degree. Between the two groups, we find that those who have a self-employed job got better evaluation compared to those who work in an established firm.

Table 1:
Individual characteristics: Employed in Established Firm VS. Self-employed

		Employed in an Established Firm (n=6,327)		Self-employed (n=1,963)	
Variables		**n**	**%**	**n**	**%**
Gender	Male	2,618	41.4	763	38.9
	Female	3,709	58.6	1,200	61.1
Citizenship	Foreigners	165	2.6	36	1.8
	Italians	6,162	97.4	1,927	98.2
		Mean	**SD**	**Mean**	**SD**
Age at Graduation		26,6	5,8	25,6	4,6

Table 2:
University characteristics: Employed in Established Firm VS. Self-employed

	Employed in an Established Firm (n=6,327)		Self-employed (n=1,963)	
Variables	**n**	**%**	**n**	**%**
Degree Type				
Bachelor's Degree	3,223	50.9	1,279	65.2
Single-Cycle Degree	420	6.6	216	11.0
Master's Degree	2,585	40.8	466	23.7
Others	99	1.6	2	0.1
Field of Study				
STEMM	3,522	55.7	1,279	65.2
Social Science	2,442	38.6	523	26.6
Others	363	5.7	161	8.2
University Performance	**Mean**	**SD**	**Mean**	**SD**
GPA (Grade point average)	104.3	8.4	105.3	8.2
Degree Mark	26.5	2.1	26.7	2.0
Average duration of studies (years)	3.8	2.2	4.1	2.3
Delay in degree completion time (years)	0.8	1.8	0.8	1.8

Table 3 reports selected summary statistics for the individuals who are working one year after graduation: 23.7% are self-employed and 76.3% are established firm employees. Among self-employed, 83.7% are in the service sector, 10.6% in the manufacturing sector and 2% in agriculture. For those who work in established firms, we see that 76.7% work in the service sector, 18.5% in the manufacturing sector and 1.2% in the agriculture sector. We then report the geographic distribution in the country: 56% of individuals who are employed in an established firm work in the North part of the Country; 19.3% in the center and only 16.6% work in the South and in the Centre of the Country. Among self-employed individuals, 51.2% are located in the North, 23.9% in the Centre and 22.8% in the South. The remainder is working abroad.

Table 3:
Students Career Choice Characteristics

	Employed in an Established Firm		Self-employed	
Variables	**n**	**%**	**n**	**%**
Employment Outcome	6327	76.3%	1963	23.7%
Economic Sector				
Agriculture	75	1.2 %	40	2.0%
Manufacturing	1173	18.5%	208	10.6%
Services	4849	76.7%	1643	83.7%
Not Identified	230	3.6%	72	3.7%
Geographic Area				
North	3,545	56.0%	1,005	51.2%
Center	1,223	19.3%	470	23.9%
South and Islands	1,052	16.6%	447	22.8%
Abroad	507	8.1%	41	2.1%

Entrepreneurship as a career choice

In this section, we explore the characteristics of the individuals who have created a new venture one year after graduation. This group corresponds to 1.8% (425 individuals) of the sample of individuals reached one year after graduation. The results show a very interesting picture: the average age of the entrepreneurs is about 26 years old; 55.1% are women and 96.2% are Italians. Those who become entrepreneurs one year after graduation completed their studies in time and then they decided to enter entrepreneurship. The percentage of women who start a new venture one year after graduation is higher compared to the percentage of men. We can consider that women who are highly educated are more prone to start a venture and probably they got a strong social support that helped them in pursuing this career option. Finally, 3.8% of these students are foreigners.

Table 4:
Individual characteristics of Entrepreneurs one year after graduation

		Entrepreneurs (n=425)	
Variables		**n**	**%**
Gender	Male	191	44.9
	Female	234	55.1
Citizenship	Foreigners	16	3.8
	Italians	409	96.2
		Mean	**SD**
Age at Graduation		26.1	4.4

The highest percentage (about 31%) of entrepreneurs is located in the north part of Italy, followed by those from the south and the center of the country and about 27% come from the south of the country. With respect to the social class from which the entrepreneurs come from, we do not find relevant differences. We observe that individuals start their entrepreneurial journey no matter their social class.

Table 5 shows that 56% of students who become entrepreneurs have a bachelor degree, while 34% have a master degree. About 60% of those who became entrepreneurs one year after graduation completed STEMM degree. This result is in contrast to what has been found among the student entrepreneurs. Finally, data show that those who started a new venture completed their degree in about 4 years and with an average mark degree of 102.8 (Table 5).

Table 5:
University characteristics of Entrepreneurs one year after graduation

	Entrepreneurs (n=425)	
Variables	**n**	**%**
Degree Type		
Bachelor's Degree	237	55.8
Single-Cycle Degree	42	9.9
Master's Degree	145	34.2
Others	1	0.2
Field of Study		
STEMM	251	59.1
Social Science	142	33.4
Others	32	7.5
	Mean	**SD**
University Performance		
GPA (Grade point average)	26.10	2.2
Degree Mark	102.83	9.1
Average duration of studies (years)	4.1	2.3
Delay in degree completion time (years)	1.0	1.8

5. Conclusions

In this chapter we assess the entrepreneurial activities of the population of Italian university students at graduation and one year after graduation. In particular, we investigate students' future entrepreneurial intentions and, one year after graduation, we explore students' career choices. We distinguish those who became self-employed from those who started working in an established firm and we describe the two groups, in terms of demographic, socio-environmental and university characteristics. Finally, among the group of self-employed, we are able to depict the profile of those who became entrepreneurs one year after graduation.

By exploring the entrepreneurial activities of university graduates we are able to make several contributions. First, by using evidence from survey data, we explore and add new

knowledge the under discovered phenomenon of student entrepreneurship. We contribute to the nascent literature that aims to understand how and why university students and recent graduates become entrepreneurs. Second, understanding the nature, dynamics, magnitude and uniqueness of the phenomenon we are able to contribute to the advancement of the entrepreneurship research, because a rigorous attention at the context is extremely relevant for the development of new theories and the enrichment of the established ones (Zara, 2007). Finally, we are able to provide evidences that are useful for policy makers, in order to empower of the entrepreneurial university ecosystem.

CHAPTER 4

Actions speak louder than words: A social cognitive model of the entrepreneurial intention-action gap

Abstract

We build on Social Cognitive Career Theory to model the effect of contextual influences on how entrepreneurial intentions are enacted by starting a new business. Using a unique dataset of almost the entire population of Italian university graduates, we find support for the hypotheses that family and peers positively moderate the relationship between intentions and action by providing information and resources that help individuals overcome doubts and procrastination in order to act upon intentions. Mentors, by contrast, do not seem to play a significant role. Our findings have implications for how scholars study and theorize about the relationship between intended and realized behaviors in entrepreneurship.

1. Introduction

Action is the central feature of entrepreneurship (McMullen & Shepherd, 2006). The formation of an entrepreneurial intention, the cognitive commitment to starting a business, is a necessary condition for engaging in entrepreneurial action and has been examined at length by the Theory of Planned Behavior (Ajzen, 1991; 2014) and the Entrepreneurial Event Model (Shapero & Sokol, 1982). Thus, much research has focused on entrepreneurial intentions. However, while being necessary, intention is not a sufficient condition. Many individuals form entrepreneurial intentions, but only a small minority turn their intentions into actions (Van Gelderen, Kautonen, & Fink, 2015).

Intentions have proven to be strong predictors of behaviors i) associated with a single action (e.g., voting); ii) that are under strict volitional control (e.g., eating healthy); iii) that are simple as opposed to complex (e.g., choosing a healthy menu option); iv) where ultimate outcomes occur soon after the act (e.g., voting in an election); v), and where there is little uncertainty about the link between actions and outcomes (e.g., a blood donation) (see e.g., Ajzen, 1985; Gollwitzer, 2001; Sheeran, 2002 for further discussion). As an intentional action context, however, entrepreneurship fulfills neither of these criteria, and focusing on entrepreneurial

intentions only or using intentions as a proxy for action limits our insights into entrepreneurial action (Adam & Fayolle, 2015; Kautonen et al., 2015). A nascent stream of studies is trying to fill this gap by looking at the conditions under which intentions convert into entrepreneurial action (e.g., Van Gelderen et al., 2015).

In this paper, we advance our understanding of the relationship between intentions and actions by modeling the creation of a new business as a career choice. We build on social cognitive career theory (Lent & Brown, 2013; Lent, Brown, & Hackett, 1994, 2000) to analyze the role of contextual influences from family members, friends, and "mentors" in facilitating action towards career goals (Blustein et al., 1997; Richie et al., 1997). We test this model using a unique dataset of over 20,000 university students, examining their career intentions shortly before graduation and their subsequent career choices a year later. Our results show that intention predicts actions, and family and peers positively moderate this relationship. Mentors, by contrast, do not seem to play a significant role.

In developing and testing a model specifying contextual influences that facilitate the conversion of entrepreneurial intentions into action, we make several contributions. First, most prior studies assume that entrepreneurial intention is the single most important predictor of action, both in terms of new firm creation (e.g., Bird, 1988; Krueger, Reilly, & Carsrud, 2000) and in the enactment of entrepreneurial behaviors in corporate environments (Fini, Grimaldi, Marzocchi, & Sobrero, 2012). We test this assumption and provide theoretical explanations and empirical evidence as to when this assumption applies (Schlaegel & Koenig, 2014). Our results also complement those of Van Gelderen and colleagues (2015), which is, to the best of our knowledge, the only other published work on factors influencing the relationship between intentions and actions. While their focus is on factors that widened the gap, we examine factors that close this gap.

Second, research in entrepreneurship has widely shown that entrepreneurs are socially embedded (Aldrich & Ruef, 2006; Dahl & Sorenson, 2009) and the context in which

entrepreneurial action takes place influences its outcomes (Aldrich & Zimmer, 1986). By building on social cognitive career theory, we model and test how personal attributes and external environmental factors, impact the process of translation of entrepreneurial intentions into actions in a socially embedded context.

Third, we test the model on seniors in universities who are on the brink of entering the labor market for the first time. Thus, they are at a stage when they are 'forced' to make a career choice, unable to procrastinate entrepreneurial action and remain with a current employer, as many otherwise could (e.g., McMullen & Shepherd, 2006; Van Gelderen et al., 2015). Moreover, these individuals are in the most formative stage of their careers, and understanding why they choose entrepreneurship as a career path is of particular interest because initial career choices tend to have long-lasting implications.

Finally, we also contribute to the literature on academic entrepreneurship. Recent research suggests that entrepreneurial activities of students and graduates substantially outweigh those of faculty members (Astebro et al., 2012). Because faculty entrepreneurship is limited both in terms of volume and economic activity (e.g., Wennberg et al., 2011), there is increasing attention on students' entrepreneurial activities (e.g., Dahlstrand & Berggren, 2010; Fini, Meoli, Sobrero, Ghiselli, & Ferrante, 2016; Wright, Siegel, & Mustar, 2017). Understanding the factors that entice some (but not others) to become entrepreneurs is an important addition to this area of literature.

The paper is organized as follows. In section 2, we review the literature on intentional theories in entrepreneurship, focusing on the limitations of the predictive power of the intention–action relationship. In section 3, we build on Social Cognitive Career Theory to develop a model of how three specific sources of contextual influence (family, peers, and mentors) facilitate the conversion of entrepreneurial intentions into action. In section 4, we illustrate our focus on university seniors' entrepreneurial behaviors, the research design, the sample, the variables, and the empirical model chosen to test our hypotheses. In section 5, we

present and discuss the results, and we conclude in section 6 by summarizing our contributions, the limitations of our study, and opportunities for additional research in the field.

2. Entrepreneurship as an intentional and planned behavior

Entrepreneurial intentions are considered a necessary condition for both the creation of a new venture (e.g., Bird, 1988; Kolvereid, 1996; Krueger, 1993; Krueger, Reilly, & Carsrud, 2000), as well as for the enactment of entrepreneurial behaviors in corporate environments (Fini et al., 2012; Fini & Toschi, 2016; Kuratko, Hornsby, & Hayton, 2015). Theories related to intentional behaviors have long been used to explain and predict different type of actions, and a significant body of research in entrepreneurship has viewed entrepreneurship as an intentional, planned behavior. Ajzen's (1991, 2014) Theory of Planned Behavior (TPB) and Shapero and Sokol's (1982) Entrepreneurial Event Model (SEE) have emerged as the main references. They are similar in terms of predictive power and converge on the basic premise that intention to act is the best predictor of engaging in entrepreneurial behavior (Lee, Wong, Foo, & Leung, 2011).

As the recent meta-analysis by Schlaegel and Koenig (2014) shows, TPB seems to dominate recent entrepreneurial intentions research as a general psychological theory, applicable-to and validated-across a range of different behaviors. It posits that intentions capture the degree of motivation towards exerting effort for a particular act. Three key attributes predict behavioral intentions, which is then assumed to be a strong predictor of the focal behavior. First, the "attitude toward the act" captures how an individual values the performance associated with the behavior. This attitude is determined by behavioral beliefs, which include the anticipated outcomes of the behavior and the subjective evaluations of those outcomes. Second, "subjective norms" take into account the perceived social pressure to engage in a given behavior and are influenced by normative beliefs including expectations of others and the motivation to comply with these expectations. Third, "perceived behavioral control" refers to perceptions of the ability to perform a given behavior and largely overlaps with Bandura's (1982) construct of perceived

self-efficacy. Perceived control is determined by control beliefs, which are beliefs about the presence of factors that may facilitate or impede performance and the perceived power of these factors. Intentions fully mediate the effects of attitude and perceived social norms on behaviors whereas perceived behavioral control may also moderate the intention–behavior relationship (Ajzen, 1991). The relative contribution of these three attributes to intention (and ultimately behaviors) varies across situations and the specific action under investigation (Ajzen, 1991, 2014).

The SEE model is similar in its premises but more focused on the specificity of entrepreneurial choices (Shapero, 1984; Shapero & Sokol, 1982). A great dearth of studies have used the SEE to predict entrepreneurial intentions (Schlaegel & Koenig, 2014). SEE implies that individuals form intentions to create a new venture based on three factors. First, "perceived desirability," which can be affected by multiple sources like family, peers, colleagues, and mentors who legitimize the entrepreneurial action that the individual wants to take. Second, "perceived feasibility," which is affected by more quantifiable factors: for instance, the availability of financial resources or business partners. Third, the "propensity to act," which is defined as the individual disposition to act upon an opportunity that has been identified; it reflects the volitional aspect of intention (Shapero, 1984).

Both theories concur that intentions capture, to a great extent, all the motivational factors explaining the enactment of the focal behavior (i.e., a more general one in TPB and the creation of a new venture in SEE). The predictive power of intentions has been examined across a range of behavior; for instance, Ajzen (1987) showed that intentions explain, on average, 30% of observed behavior; a meta-analysis of Armitrage and Connor (2002) found that TPB explained 22% of observed behavior. Similar results are reported by Sheeran's (2002) analysis of 10 meta-analyses that collectively investigate a wide variety of human behaviors, with intentions explaining 28% of observed behavior, leaving 72% of unexplained variance.

These large, unexpected variances and inconsistent effect sizes across contexts point to the existence and relevance of additional explanatory factors (Sheeran, 2002). First, intentions better predict behaviors related to a single action (e.g., voting, exercise, or dieting) rather than those that represent the outcome of a series of actions performed over time. Second, intentions better predict behaviors that are under strict volitional control (e.g., eating healthy) rather than influenced by external conditions or the actions of others. Third, intentions better predict behaviors that are simple (e.g., choosing a healthy menu option) as opposed to complex. Fourth, intentions better predict behaviors where the ultimate outcomes occur soon after the act (e.g., voting in an election), and where there is little uncertainty about the link between actions and outcomes (e.g., making a blood donation). Finally, inter-individual differences in traits affect the strength of the relationship. The ability to exercise control over their actions, to exercise will power to attain what they desire, and the tendency to pay attention to external cues vary across individuals (Ajzen, 1985; Gollwitzer, 2001). For example, individuals with greater self-control and less sensitivity to external cues are more likely to retain their intentions and courses of action if difficulties occur (Snyder, 1974).

Although intentional theories have been frequently applied in the entrepreneurship context, few studies have examined the actual relation between entrepreneurial intentions and actions (Schlaegel & Koenig, 2014). Previous studies have been concerned mainly with the formation of entrepreneurial intentions, often treating them as a proxy for behavior (Schlaegel & Koenig, 2014). Entrepreneurship represents a complex behavior, as part of which outcomes and how to obtain them are uncertain. Moreover, outcomes usually occur long after behavior is initiated; we know, for example, that the startup process takes, on average, three years before a new company is legally incorporated (Newbert, 2005; Reynolds & Miller, 1992). The intention–action link in the entrepreneurial context may therefore be weaker than in the other contexts in which it has been explored. Indeed, non-action by abstainers who have the intention is more common than action among those lacking an intention (Sheeran, 2002). Van Gelderen et al.

(2015) found that, among those who had entrepreneurial intentions, as many as 69% actually took no action at all during the subsequent 12 months. The intention–action gap may be particularly substantial when the action to be pursued is novel, or can be postponed, which is often the case in the entrepreneurial context (Orbeil, Hodgldns, & Sheeran, 1997).

To develop a more explanatory model of the relationship between entrepreneurial intentions and action that accounts for the intention–action gap, our study draws on insights from Social Cognitive Career Theory ([SCCT] Lent & Brown, 2013; Lent, Brown, & Hackett, 1994, 2000). Whereas TPB is a general psychological theory applicable to a range of human behavior and SEE is specific to the entrepreneurship realm, SCCT focuses on how contextual support and barriers influence the extent to which career goals convert into action. Entrepreneurship is becoming a realistic career option and can be treated like any other occupation that an individual can choose during his or her lifetime (e.g., Burton et al., 2016). A career approach could therefore help clarify how entrepreneurial intentions are transformed into actions.

3. A socio-cognitive model of entrepreneurial action

SCCT focuses on the process by which individuals form interest, make choices, and achieve different goals in educational and occupational pursuits (Lent, Brown, & Hackett, 1994). This theory is grounded in Bandura's (1986) socio-cognitive theory and broadly explores how individuals form career and academic interests, develop career intentions, and act on these intentions. Consistent with Bandura's theory, SCCT recognizes the mutual interacting influences between individuals' personal attributes, external environmental characteristics, and actions. The characteristics of the opportunity structure (contextual influences) moderate how goals convert into actions by reinforcing the relationship under favorable environmental conditions, and weakening it under less favorable ones (Lent, Brown, & Hackett, 2000).

The effect of contextual factors on individual's career choice often depends on how they

assess them and respond because any opportunity, resource, or difficulty faced is affected by individual interpretation (Astin, 1984; Lent, Brown, & Hackett, 2000; Vondracek et al., 1986). We are more likely to translate our interests into goals and act upon them if we perceive the environment to support such actions (Lent, Brown, & Hackett, 2000). For example, research shows how perceived support from fathers influences the educational plans and career expectations of high school girls (McWhirtiher, Hackett et al., 1998). Faculty support and encouragement among engineering students correlates with performance (Hackett, Bets et al., 1992) and persistence (Schaefers et al., 1992). Conversely, we are less likely to engage in career paths if we perceive our effort to be impeded by contextual factors. For example, workplace discrimination has been used to explain problems related to women's career progress (Richie et al., 1997; Swanson et al., 1996) or to racial-ethnic minority group member's career development (Swanson et al., 1996).

Another relevant factor is the temporal extension of environmental influences on the career development process, from the formation of career interests to the translation of these interests into action, distinguishing between distal and proximal factors. On the one hand, distant factors (e.g., parental role models) influence the learning experience of the individual, which in turn affects how career self-efficacy and outcome expectations are developed. On the other hand, proximal factors (e.g., a particular role model during university studies) are important during the active phase of educational and career development because they affect the translation of career interests into action (Lent, Brown, & Hackett, 2000).

Following SCCT, several environmental variables can influence the relationship between entrepreneurial intentions and action. For instance, exposure to influential individuals can facilitate access to information, resources, and knowledge relevant to entrepreneurial pursuits and can boost entrepreneurial motivation and attitudes (Aldrich & Ruef, 2006; Audia & Rider, 2006; Dahl & Sorenson, 2009; Fisher & Stafford, 1999; Sørensen, 2007; Tinsley & Faunce, 1980). Entrepreneurs face challenges related to acquiring the human, financial, and physical resources

needed to build a new venture, and personal relationships can assist in resource acquisition (Schell & Davig, 1981; Sorenson & Audia, 2000). Exposure to individuals who represent relevant examples of entrepreneurial engagement provides access to valuable information, helps build relevant knowledge (Baron & Henry, 2010), and facilitates access to social resources key for the new venture (Brush, Green, & Hart, 2001; Hansen, 1995). Finally, social relationships can also facilitate the pursuit of entrepreneurial activities by providing emotional support (Aldrich et al., 1998). In our model, we build on these results and focus on the influence of family, mentors, and peers.

3.1. Family, Mentors, and Peers

3.1.1. Family

Parental background has an important impact on future educational and job choices (Falck, Heblich, & Luedemann, 2012; Halaby, 2003). Parents influence the child's self-image (Bandura, 1997) and self-employed parents affect the child's future decision to become an entrepreneur (Aldrich, Renzulli, & Langton, 1998; Falck et al., 2012; Halaby, 2003). Socialization during childhood and adolescence leads individuals to develop the attitudes and values necessary for entering entrepreneurship and to value self-employment higher compared to more conventional jobs (Aldrich et al., 1998). Parents foster children's entrepreneurship through socialization, work experience, and the development of social capital (Aldrich et al., 1998); therefore, children of self-employed parent are more likely to become entrepreneurs because they acquire stronger entrepreneurial preferences (Aldrich & Zimmer, 1986).

However, entrepreneurial action is surrounded by uncertainty, and under uncertainty, individuals typically experience anxiety and fear, which tend to block engagement in action and lead to procrastination and inaction (e.g., Paulus, 2007). Self-efficacy that is, the belief that we possess the capacity to conduct the actions needed to achieve the desired outcomes has a strong influence in overcoming such anxiety and fear (e.g., Bandura, 1997; Lent et al., 1994). Studies

have shown that the access to role models early in life can help children develop their self-efficacy through modeling (Bandura, 1986), providing them those instruments for overcoming uncertainty in order to act. Moreover, observation of self-employed parents is also associated with vicarious learning. Children of self-employed parents develop a keen understanding of the skills, values, attitudes, and emotions that are related to the new venture creation process (Aldrich et al., 1998; Aldrich & Zimmer, 1986; Giannetti & Simonov, 2009;) and which may be relevant to turn intentions into action. Finally, self-employed parents may provide social capital, personal networks, and emotional support that are critical for overcoming the doubt and fear that characterize the initial phases of the new venture creation process (Granovetter, 1993; Aldrich et al., 1998).

We therefore hypothesize the following:

Hypothesis 1*: The effect of entrepreneurial intention on taking action will be stronger when individuals have self-employed parents.*

3.1.2. Mentors

Individuals engage in different behaviors because they are affected by others' opinions and behaviors and by the examples that others provide (Ajzen, 1991; Akerolf & Kranton, 2000). This is also true for occupational choice and, in particular, for the choice to engage in entrepreneurial activities (Bosma, 2012). Mentors are a particularly relevant source of inspiration.

In an organization, a mentor is defined as a senior member who provides support, advice, and feedback to a less experienced member of the organization for his or her career and personal development (Hunt & Michael, 1983; Kram, 1985; Noe, Greenberger, & Wang, 2002). Mentoring is therefore a working relationship that contributes to personal growth (Lanaku & Scandura, 2009). Mentors share valuable knowledge and experience, and individuals exposed to mentoring engage in vicarious learning: they observe actions, retain information, assimilate ideas, and create new knowledge (Bandura, 1977; Holcomb et al., 2009; Kram, 1966; Kolb & Kolb,

2005; Lanaku & Scandura, 2002).

Mentors also act as role models. The notion of a role model draws on two constructs. One is related to the concept of role and identification with other people; the other is related to the concept of modeling, which involves the matching of skills and behaviors between a person and observing individuals (Gibson, 2004). Individuals are attracted to those perceived to be similar and from whom they are able to learn (Bosma et al., 2012). Role models exercise power on individuals because they provide evidence that certain goals are achievable, enhancing individual's self-efficacy to engage in a given occupation (Akerlof & Kranton, 2000). In addition, they legitimize and encourage engagement in certain behaviors (Bosma et al., 2012).

Because individuals who are exposed to mentors find legitimization and support to translate their entrepreneurial intentions into actions, we hypothesize the following:

> **Hypothesis 2**: *The effect of entrepreneurial intention on taking action will be stronger when individuals are exposed to entrepreneurial mentors.*

3.1.3. Peers

The role of peers in transmitting entrepreneurial attitudes and values has gained increased scholarly attention. Research shows that peers play an important role in shaping individuals' attitudes to entrepreneurship in different ways. Belonging to a social group that positively values entrepreneurial activity affects entrepreneurial entry, even if the pecuniary benefits are lower than alternative job opportunities (Giannetti & Simonov, 2009). Social interactions in the workplace support the development of individual's attitudes and values toward entrepreneurship (Bercovitz & Feldman, 2008; Lazear, 2004; Nanda & Sørensen, 2010; Sørensen, 2007). Individuals in the workplace engage in social interactions that can facilitate information exchange and new knowledge acquisition. They are influenced by their socially proximate referents, and use them as a guide for the proper course of actions (Kacperczyk, 2013). Individuals are therefore more likely to engage in entrepreneurial behaviors if their work peers have already been involved in similar

ones (Bercovitz & Feldman, 2008; Kacperczyk, 2013). Moreover, these influences become more important if individuals have not been exposed to entrepreneurship on other occasions (Nanda & Sørensen, 2010) and have been documented as early as adolescence, when having entrepreneurial peers at school affects individuals' entrepreneurial intentions (Falck et al., 2012).

The same mechanism unfolds with coworkers and university peers. Having coworkers who had prior entrepreneurial experiences increases the likelihood of becoming entrepreneurs (Kacperczyk, 2013; Nanda & Sørensen, 2010). Being connected with individuals who have already managed the entrepreneurial process reduces individuals' uncertainty about entrepreneurial action. This argument is also supported by the theory of social proximity that explains how individuals tend to imitate the behavior of social proximity actors to act appropriately (Coleman, Katz, & Menzel, 1957; Rogers, 1983). More specifically, proximal actors become a guide and a reference for individuals who are struggling with the uncertainties that normally characterize any entrepreneurial process.

Because peers act as social referent actors by providing support to individuals who face difficulties and doubt in the process of venture creation, we hypothesize the following:

Hypothesis 3*: The effect of entrepreneurial intention on taking action will be stronger when individuals have entrepreneurial peers.*

4. Research Design

4.1. Research Design and Sample

This paper examines how contextual influences affect the intention–action relation. To test our hypotheses on how family, mentors, and peers affect the translation of entrepreneurial intentions into future behaviours, we need data on individuals who are in a particular career stage, and exposed to a context in which the role of family, mentors, and peers is relevant. We also need to control for the confounding effects of environmental characteristics, as well as to observe individuals over time. We therefore built a unique dataset specifically for these purposes.

Over the last 30 years, scholars have extensively studied universities, acknowledging their relevance in creating the right context for entrepreneurship (Grimaldi et al., 2011) with a particular focus on entrepreneurial activities by academics (e.g., Fini & Grimaldi, 2017). More recently, some scholars have started to investigate entrepreneurship by university graduates (Astebro et al., 2012; Roberts & Eesley, 2011; Souitaris, Zerbinati, & Laham, 2007; Wright et al., 2017). They document how a growing number of students are looking at entrepreneurship as a realistic career option, with numerous examples of new business ventures founded during their studies or soon after graduation (Dahlstrand & Berggren, 2010). These companies have been documented as a direct opportunity to transfer knowledge to society, to create highly skilled jobs and to foster local ecosystems. Hence, among the various forms of entrepreneurship, we believe that it is particularly relevant and interesting to focus on university students who have formed intentions to start a new business.

Our data were collected as part of the annual survey of Italian university seniors administered by AlmaLaurea, an inter-university consortium including, as of 2015, 64 of the 95 Italian universities. Taken together, the students enrolled at the 64 AlmaLaurea universities account for 90% of students enrolled in the Italian university system. Since early 2000, the survey has been sent to students shortly before graduation, typically a month before their graduation date, with an average yearly response rate of around 94%. The survey gathers detailed demographic and personal information. Respondents are further polled the year after graduation to monitor their employment situation.

Between September and December 2014, we sent out surveys to the 64,710 students graduating at the end of the year from the 64 participating universities. We received 61,115 valid responses (94% response rate). Data collection during Round 1 focused on entrepreneurial intentions variables, and most other independent and control ones. Twelve months later, between September and December 2015, the 61,115 Round 1 respondents were surveyed again; we received 23,456 questionnaires (totaling a 37% response rate). Round 2 of data collection

focused on our dependent variable, entrepreneurial behaviour. After checking for missing values, the final set of usable responses was 20,503, which covers entrepreneurial intentions and behaviour of about 1/3 of all students graduating from 64 Italian universities in fall 2014. The mean age of the respondents was 25 years and 60% were female. Almost all respondents were born in Italy (98%). Of the respondents, 62% completed a Bachelor's degree, and 38% a Master's degree or above. About 52% are in STEMM (Science, Technology, Engineering, Math and Medicine), 40% in Social Science with the remaining 8% in Humanities or Physical Education.

Data on mentors were retrieved from the TASTE (TAking STock: External engagement by academics) database (reference withheld), which includes repeated annual information on the population of 55,000 academics who were employed by the 2,400 departments of the 95 Italian universities between 2000 and 2014. In addition to other information, the database tracks those who started an academic spinout throughout their careers. We used this information to identify faculty mentors with previous entrepreneurial experience. Please refer to the following section for detailed information on this topic.

4.2. Variables and Measures

4.2.1. Dependent Variable: Entrepreneurial Action

The dependent variable captures entrepreneurial action one year after graduation. During Round 2 of data collection, we asked respondents "*Have you started a new business over the last year?*" We then coded a dummy variable that is equal to 1 if the student has established a venture during the year following graduation and 0 otherwise. As of December 2015, 352 students had started a new business within one year of their graduation.

4.2.2. Independent Variable: Entrepreneurial Intentions

Individuals' entrepreneurial intention is the key variable of our model. During Round 1, students were administered the Liñán and Chen (2009) scale, which consists of the following 6 items assessed on a 7-point Likert scale: "*I am ready to do anything to be an entrepreneur," "My professional goal is to become an entrepreneur," "I will make every effort to start and run my own firm," "I am determined to create a firm in the future," "I have very seriously thought of starting a firm," "I have a strong intention to start a firm someday."* Based on the collected responses, the Cronbach's Alpha is 0.95.

4.2.3. Moderators

Our conceptual model includes the following three moderators all assessed in Round 1.

***Self-Employed Parents*.** Respondents were provided with eight alternatives classifying the most recent professional positions of both parents. If the respondent answered that either mother or father were entrepreneurs or self-employed, we coded this variable equal to 1 and 0 otherwise. With 4,144 positive responses, approximately one student out of five came from a family with at least one self-employed parent.

Entrepreneurial Mentor: In order to graduate, all Italian seniors must write a thesis under the supervision of a faculty member, who can have profound influence on the student. AlmaLaurea records the name and last-name of the mentor and their department's affiliation. We matched the names, last-names, and departmental affiliations of the academics included in TASTE with the contact details of the students' thesis mentors. Of about 14,000 academic mentors, almost 6% of them were involved in entrepreneurial activities. This figure is consistent with the percentage of academic entrepreneurs in Italy, which is equal to 3% of the population of about 55,000 academics employed in the Italian university system between 2000 and 2014.

In our case, if the student was supervised by a faculty member who had an academic spin-out, we coded the variable entrepreneurial mentor equal to 1, and 0 otherwise. In our sample, 876 respondents were supervised by mentors with previous entrepreneurial experience.

Entrepreneurial Peers: to capture the influence of peers, we looked at whether the students graduating from the same degree program had also started a business any time before graduation. This variable was coded 1 if a student had at least one peer from the same degree program who started a business and 0 otherwise. Among our respondents, 382 students established a business before graduation. Thus, 382 of the 1,364 degree programs had at least one student entrepreneur enrolled. This variable ranges between 0 and 1 with a mean of 0.28.

4.2.4. Control Variables

Based on previous studies suggesting a gender bias in new business creation (e.g., Xavier et al., 2012) and entrepreneurial intentions (Schlaegel & Koenig, 2014), we set a dummy *Gender* equal to 1 for men and 0 for women. We also control for *Age,* operationalized as number of years, which potentially influences both the likelihood of starting a business (Kolvereid & Moen, 1997; Lévesque & Minniti, 2006) and entrepreneurial intentions (Schlaegel & Koenig, 2014). Previous work experience may also affect individual entry into entrepreneurship (Kolvereid & Moen, 1997), and we set a dummy, *work experience,* to 1 if respondents indicated having prior work experience and 0 otherwise. We finally control for whether the student is working at the time of graduation, including another dummy variable, *work currently*, set to 1 if the respondent was working at the time of graduation, and 0 otherwise.

Another set of control variables is related to an individual's preferences. Specifically, we control for an individual's preferences for *autonomy* (McClelland, 1961), *income* (Evans & Leighton, 1989), the importance of *career* development, the importance of job *stability,* and the importance of a job's *prestige*. We measure all variables using a 1 to 4 Likert-like scale.

We also control for *academic performance* by using the student's final mark (ranging from 66 to 110 with honors), *educational background* (i.e., Social Sciences, STEMM, and other), *type of degree* (Bachelor's, Master's, single cycle, and other type of degree), and *social class* based on the parents' socioeconomic status (i.e., upper, middle, clerical middle, and lower middle class). This

operationalization is coherent with the local socio-economic context and follows the one proposed by Cobalti and Schizzerotto (1994). Finally, to control for possible university effects, we included 63 university dummies.

4.3. Analyses

To test our hypotheses, we use different data-analysis techniques. Because our dependent variable is a dummy variable, we specify a logit model to analyze the likelihood of a senior setting up a new venture within one year after graduation. Furthermore, given the non-linear nature of the selected technique, the interaction coefficient is not sufficient to draw conclusions about the effect of the interaction on the dependent variable. We therefore assess both the magnitude and the statistical significance of the interaction terms using the partial derivative of the interaction term (Ai & Norton, 2003; Gruber, MacMillan, & Thompson, 2013).

Furthermore, given the fact that our response rate in Round 2 was around 37%, which is similar to or better than response rates in other entrepreneurship studies (e.g., Kautonen et al., 2015; van Gelderen et al., 2015), some attrition may be at place, biasing our results. To address this issue, we use a two-step Heckman procedure (Certo et al., 2016; Heckman, 1976). In the first step, we predict the likelihood that a student would respond to the Round 2 of the survey. As an exclusionary restriction (i.e., a variable that predicts the probability of answering the Round 2 questionnaire without affecting the probability of starting a new venture) we used the level of individual's computer web skills. We advance that those students who declare in Round 1 to have higher computer and web skills are those who would most likely answer Round 2 (the rationale for this being that these individuals will more likely stay connected to the web, checking their emails more often and thus increasing their likelihood of answering the second wave of the survey). We then re-specified the second stage model, in which we predict entrepreneurial action, including the inverse Mills ratio calculated from the first stage model, bootstrapping the standard errors 500 times.

Finally, to control for the extent to which the three selected moderators may affect both entrepreneurial intention and behavior at the same time, we specify a set of moderated-mediation models (Preacher, Rucker, & Hayes, 2007) in which the three boundary conditions (self-employed parents, entrepreneurial mentors, and entrepreneurial peers) simultaneously predict entrepreneurial intention and moderate the relationship between entrepreneurial intention and behavior. In the following section, we describe the obtained results.

5. Results

Table 1 reports the descriptive statistics and pairwise correlations of the variables included in the model. The mean for entrepreneurial action is 0.017, suggesting that only 1.7% of all graduating students actually starts a business within the first year after graduation. Notably, the intention to start a business is positively correlated to action (0.07). All remaining correlations are generally low, suggesting that multicollinearity should not be considered an issue.

Table 2 presents the results of our logit model. The coefficients reported in the table are log odds ratio. In Model 1, we first test the baseline model, which includes the control variables only. In Model 2, we add the 63 university dummies, and in Model 3 we add the intention to start a business variable. In model 4, we add the three moderators: family background, mentors and entrepreneurial peers. In Models 5, 6, and 7, we then test the hypotheses, interacting entrepreneurial intentions with the moderators, one at a time, while Model 8 tests the fully specified model.

The results support Hypothesis 1, which states that coming from a family with entrepreneurial background increases the likelihood that entrepreneurial intentions would turn into actual behavior. The interaction effect between intentions and family background is positive and significant in both Model 5 (0.178, $p<0.05$) and Model 8 (0.177, $p<0.05$). As for the role of mentors, we find no support for Hypothesis 2; the interaction effect between individuals and mentors is not statistically significant in both Models 6 and 8.

Table 1:
Descriptive Statistics and Correlations

		Mean	SD	Min	Max	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Entrepreneurial Action	0.02	0.12	0	1	1												
2	Entrepreneurial Intention	3.01	1.60	1	7	0.07*	1											
3	Gender	0.39	0.48	0	1	0.01	0.19*	1										
4	Age	25.24	4.14	21	64	0.01	0.03*	0.04*	1									
5	Nationality (Foreigners)	0.02	.13	0	1	0.01	0.05*	-0.02	0.06*	1								
6	Work experience	0.61	0.48	0	1	0.02*	0.10*	0.02*	0.15*	0.02*	1							
7	Work currently	1.79	0.40	0	2	-0.01	-0.06*	0.00	-0.24*	-0.01	-0.37*	1						
8	Job Preference: income	4.43	0.81	0	5	0.01	0.14*	0.00	-0.03*	0.01	-0.02*	0.01	1					
9	Job Preference: prestige	3.74	1.25	0	5	0.02*	0.20*	0.01	0.01	0.01	-0.04*	0.01	0.34*	1				
10	Job Preference: career	4.46	0.88	0	5	0.01	0.21*	0.06*	-0.07*	0.03*	-0.01	0.02*	0.56*	0.42*	1			
11	Job Preference: stability	4.53	0.84	0	5	-0.02	-0.02	-0.11*	-0.07*	-0.01	-0.06*	0.04*	0.43*	0.24*	0.32*	1		
12	Job Preference: autonomy	4.17	1.02	0	5	0.01	0.14*	-0.06*	0.03*	-0.01	0.00	-0.02	0.24*	0.31*	0.23*	0.22*	1	
13	Academic performance	104.06	8.44	74	113	-0.02	-0.15*	-0.13*	-0.04*	-0.07*	-0.13*	0.07*	-0.06*	-0.04*	-0.05*	-0.05*	-0.03*	1
14	Class: Middle	0.22	0.41	0	1	0.01	0.04*	0.03*	-0.04*	0.00	-0.03*	0.03*	0.00	0.01	0.03*	-0.04*	0.03*	0.01
15	Class: Clerical middle	0.29	0.45	0	1	-0.01	-0.05*	0.02*	-0.01	-0.03*	-0.02*	0.02*	-0.02*	-0.01	-0.02*	0.00	-0.03*	0.02*
16	Class: Lower middle	0.21	0.41	0	1	0.01	0.08*	-0.04*	0.02	0.00	0.06*	-0.05*	0.00	0.00	0.00	-0.01	0.00	-0.02*
17	Class: Working	0.27	0.45	0	1	-0.001	-0.06*	-0.01	0.03*	0.04*	0.00	0.00	0.02	0.00	-0.01	0.05*	0.00	-0.01
18	Field: STEMM	0.52	0.50	0	1	0.02	0.02*	0.18*	-0.02	0.00	-0.14*	0.11*	0.02*	0.02*	0.00	0.03*	-0.02	0.09*
19	Field: Social Science	0.39	0.48	0	1	-0.01	0.01	-0.16*	0.02*	0.01	0.12*	-0.08*	0.01	0.00	0.04*	-0.02*	0.00	-0.14*
20	Field: Other	0.08	0.27	0	1	-0.01	-0.06*	-0.05*	0.00	-0.02*	0.05*	-0.05*	-0.06*	-0.03*	-0.06*	0.00	0.02*	0.08*
21	Degree: Other	0.01	0.09	0	1	-0.01	-0.06*	-0.07*	0.04*	-0.01	0.03*	-0.03*	-0.04*	-0.02	-0.09*	0.01	0.01	0.02*
22	Degree: Bachelor	0.61	0.49	0	1	-0.01	0.02	0.00	-0.27*	0.00	-0.01	0.03*	0.01	0.01	-0.01	0.06*	0.02	-0.35*
23	Degree: Master	0.10	0.30	0	1	-0.001	-0.02*	-0.04*	0.09*	-0.02*	-0.05*	0.08*	0.00	0.04*	0.01	0.02*	0.04*	0.06*
24	Degree: Single Cycle	0.28	0.45	0	1	0.02	0.01	0.04*	0.22*	0.02*	0.03*	-0.08*	-0.01	-0.03*	0.02*	-0.08*	-0.04*	0.34*
25	Entrepreneurial Peers	0.28	0.45	0	1	0.02	0.03*	-0.01	-0.05*	0.02*	0.01	-0.01	0.03*	0.03*	0.03*	0.00	0.02*	-0.11*
26	Entrepreneurial Mentor	0.04	0.20	0	1	-0.01	0.00	0.00	0.01	0.02*	0.00	0.00	-0.01	-0.01	-0.01	-0.01	-0.01	0.00
27	Entrepreneurial Family	0.20	0.40	0	1	0.01*	0.08*	0.01	-0.03*	-0.01	0.00	-0.01	0.02*	0.02	0.03*	-0.04*	0.04*	-0.01

Table 1 (continued):

	14	15	16	17	18	19	20	21	22	23	24	25	26	27
14	1													
15	-0.34*	1												
16	-0.27*	-0.33*	1											
17	-0.33*	-0.40*	-0.32*	1										
18	-0.01	0.03*	-0.03*	0.01	1									
19	0.01	-0.03*	0.03*	0.00	-0.84*	1								
20	0.00	0.01	0.00	0.00	-0.32*	-0.24*	1							
21	-0.01	0.00	0.01	0.00	-0.09*	0.11*	-0.03*	1						
22	-0.07*	-0.02	0.01	0.06*	0.01	-0.06*	0.07*	-0.11*	1					
23	0.11*	0.01	-0.03*	-0.08*	0.06*	0.00	-0.09*	-0.03*	-0.42*	1				
24	0.00	0.01	0.00	-0.02*	-0.03*	0.04*	-0.01	-0.06*	-0.78*	-0.21*	1			
25	0.01	-0.01	0.00	0.00	-0.06*	0.11*	-0.09*	0.00	0.09*	0.00	-0.09*	1		
26	0.00	0.00	0.01	0.00	-0.02*	0.01	0.01	0.02*	-0.03*	0.01	0.02	-0.01	1	
27	0.66*	-0.31*	0.02*	-0.31*	-0.02	0.01	0.01	-0.01	-0.04*	0.07*	0.00	0.01	0.01	1

N: 20,503 ; * p < .01

Finally, we found support for Hypothesis 3. The interaction term between intentions and university peers is positive and statistically significant in both Model 7 (0.156, $p<0.05$) and Model 8 (0.154, $p<0.05$).

Finally, to determine the nature and magnitude of the effects, we plot the conditional marginal effect of entrepreneurial intentions interacted with entrepreneurial parents (Figure 1) and entrepreneurial peers (Figure 2). The marginal effects presented were estimated by keeping the other covariates at their means. The graphs report 95% confidence intervals. Figure 1 shows that, for those with self-employed parents, as intention increases, the probability of engaging in action increases much faster than for those who don't have self-employed parents. For example, among students with the highest entrepreneurial intentions (scoring 7), those with self-employed parents are twice as likely to start a business than those who don't have self-employed parents. The same pattern emerges with peers. Indeed, students with entrepreneurial peers and with the strongest entrepreneurial intentions are almost twice as likely to engage in entrepreneurial action than their counterparts.

Looking at controls, consistently across all model specifications and with prior work (Kolvereid & Moen, 1997), work experience positively affects the likelihood of taking entrepreneurial action. Our results also show that job prestige positively affects entrepreneurial action; in other words, individuals who start a new business attribute high value to this career option. Job stability, as expected, is negatively correlated to entrepreneurial action, confirming that those who are looking for a stable position do not consider becoming an entrepreneur.

Table 2:
Logit Results: Entrepreneurial Action

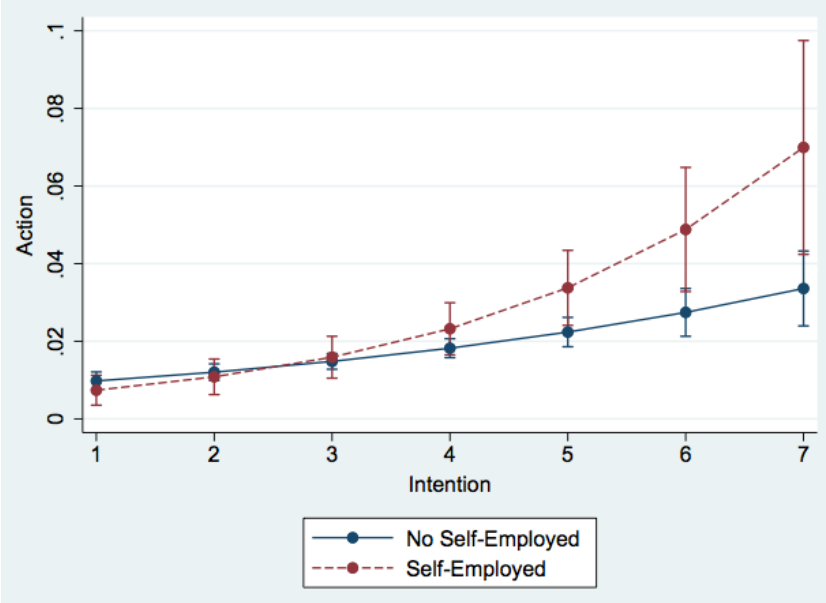
Variables	Model 1 Entrepreneurial Action	Model 2 Entrepreneurial Action	Model 3 Entrepreneurial Action	Model 4 Entrepreneurial Action	Model 5 Entrepreneurial Action	Model 6 Entrepreneurial Action	Model 7 Entrepreneurial Action	Model 8 Entrepreneurial Action
Gender	-0.0377	-0.0195	-0.151	-0.147	-0.144	-0.147	-0.153	-0.150
	(0.115)	(0.116)	(0.117)	(0.117)	(0.118)	(0.118)	(0.118)	(0.118)
Age	0.00466	-0.000259	0.000878	0.00280	0.00378	0.00281	0.00347	0.00445
	(0.0133)	(0.0139)	(0.0140)	(0.0140)	(0.0140)	(0.0140)	(0.0139)	(0.0139)
Nationality	0.190	0.385	0.243	0.262	0.280	0.262	0.252	0.270
	(0.329)	(0.333)	(0.335)	(0.336)	(0.336)	(0.336)	(0.336)	(0.336)
Work experience	0.366***	0.399***	0.316**	0.318**	0.318**	0.318**	0.322**	0.323**
	(0.125)	(0.126)	(0.127)	(0.127)	(0.127)	(0.127)	(0.127)	(0.127)
Work currently	0.149	0.147	0.178	0.187	0.194	0.186	0.192	0.199
	(0.144)	(0.145)	(0.146)	(0.146)	(0.146)	(0.146)	(0.146)	(0.146)
Job Preference: income	0.0102	-0.00309	-0.0258	-0.0313	-0.0352	-0.0315	-0.0331	-0.0373
	(0.0877)	(0.0874)	(0.0877)	(0.0879)	(0.0879)	(0.0879)	(0.0878)	(0.0879)
Job Preference: prestige	0.170***	0.149***	0.104*	0.102*	0.103*	0.102*	0.103*	0.104*
	(0.0547)	(0.0550)	(0.0552)	(0.0552)	(0.0552)	(0.0552)	(0.0552)	(0.0552)
Job Preference: career	0.0338	0.0197	-0.0326	-0.0278	-0.0248	-0.0276	-0.0247	-0.0219
	(0.0845)	(0.0841)	(0.0833)	(0.0832)	(0.0835)	(0.0833)	(0.0833)	(0.0835)
Job Preference: stability	-0.211***	-0.226***	-0.175***	-0.170***	-0.167***	-0.170***	-0.167***	-0.164***
	(0.0623)	(0.0624)	(0.0634)	(0.0635)	(0.0636)	(0.0635)	(0.0635)	(0.0636)
Job Preference: autonomy	0.0832	0.0811	0.0404	0.0376	0.0355	0.0375	0.0353	0.0337
	(0.0630)	(0.0628)	(0.0632)	(0.0633)	(0.0633)	(0.0633)	(0.0633)	(0.0632)
Academic performance	-0.0192***	-0.0204***	-0.0148**	-0.0145**	-0.0142*	-0.0145**	-0.0142*	-0.0139*
	(0.00703)	(0.00723)	(0.00728)	(0.00729)	(0.00729)	(0.00729)	(0.00730)	(0.00729)
Class: Middle	0.0920	0.174	0.0914	-0.120	-0.0867	-0.120	-0.121	-0.0871
	(0.151)	(0.153)	(0.154)	(0.206)	(0.205)	(0.206)	(0.206)	(0.205)
Class: Clerical middle	-0.182	-0.123	-0.140	-0.141	-0.139	-0.142	-0.151	-0.148
	(0.150)	(0.151)	(0.151)	(0.151)	(0.151)	(0.151)	(0.151)	(0.151)
Class: Lower middle	0.0628	0.0886	-0.0265	-0.0999	-0.0881	-0.100	-0.106	-0.0942
	(0.152)	(0.153)	(0.155)	(0.163)	(0.163)	(0.163)	(0.163)	(0.163)
Field: STEMM	0.343	0.550**	0.476*	0.453*	0.446*	0.454*	0.467*	0.462*
	(0.225)	(0.244)	(0.245)	(0.245)	(0.245)	(0.245)	(0.245)	(0.245)
Field: Social Science	0.0191	0.149	0.0750	0.0248	0.0187	0.0251	0.0303	0.0242
	(0.233)	(0.250)	(0.250)	(0.252)	(0.252)	(0.252)	(0.252)	(0.252)
Degree: Other	-1.039	-1.057	-0.797	-0.787	-0.806	-0.788	-0.782	-0.802

	(1.014)	(1.018)	(1.018)	(1.019)	(1.019)	(1.019)	(1.019)	(1.018)
Degree: Bachelor	-0.371***	-0.407***	-0.379***	-0.401***	-0.398***	-0.401***	-0.387***	-0.384***
	(0.136)	(0.142)	(0.141)	(0.142)	(0.142)	(0.142)	(0.142)	(0.142)
Degree: Single Cycle	-0.373*	-0.445**	-0.412*	-0.433**	-0.433**	-0.433**	-0.433**	-0.433**
	(0.207)	(0.212)	(0.213)	(0.214)	(0.214)	(0.214)	(0.214)	(0.214)
Entrepreneurial Intention			0.261***	0.259***	0.211***	0.260***	0.212***	0.165***
			(0.0346)	(0.0346)	(0.0399)	(0.0351)	(0.0406)	(0.0452)
Self-Employed Parent				0.242*	0.241*	0.242*	-0.369	-0.362
				(0.127)	(0.127)	(0.127)	(0.305)	(0.303)
Entrepreneurial Mentor				-0.482	-0.481	-0.369	-0.495	-0.371
				(0.325)	(0.325)	(0.781)	(0.326)	(0.768)
Entrepreneurial Peers				0.292	-0.463	0.292	0.289	-0.463
				(0.178)	(0.367)	(0.178)	(0.178)	(0.366)
Entrepreneurial Intention * Self-Employed Parents					0.178**			0.177**
					(0.0735)			(0.0733)
Entrepreneurial Intention * Entrepreneurial Mentor						-0.0292		-0.0319
						(0.186)		(0.182)
Entrepreneurial Intention * Entrepreneurial Peers							0.156**	0.154**
							(0.0695)	(0.0688)
Constant	-2.851***	-2.971**	-3.838***	-3.901***	-3.809***	-3.905***	-3.802***	-3.719***
	(1.103)	(1.232)	(1.231)	(1.230)	(1.231)	(1.230)	(1.232)	(1.233)
University dummies		Included	Included	Included	Included	Included	Included	Included
Observations	20.503	20.503	20.503	20.503	20.503	20.503	20.503	20.503
Log likelihood	-1748.73	-1714.57	-1742.22	-1681.66	-1678.66	-1681.65	-1679.11	-1676.10
Chi2	62.11***	130.43***	190.84***	196.15***	201.15**	196.17***	201.25***	207.22***

Standard errors in parentheses; *** p<0.01. ** p<0.05. * p<0.1

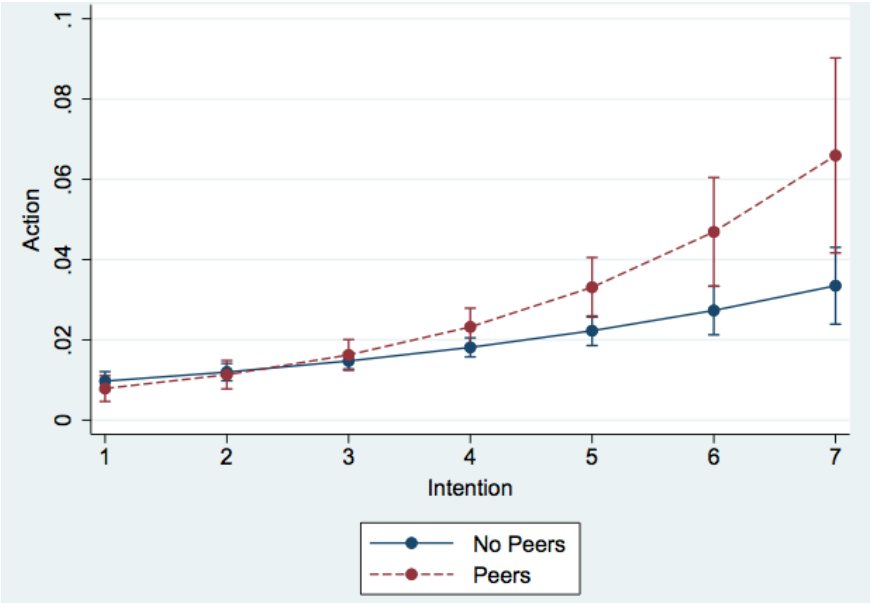
Note. For the variable "Social Class" the omitted variable is the category *working class*. For the variable educational background we omitted the category *other*. For the variable "Type of degree" we omitted the category *single cycle degree*

Figure 1:
Entrepreneurial Parents and Action



Note: Plots of the marginal effects from Model 5

Figure 2:
Entrepreneurial Peers and Action



Note: Plots of the marginal effects from Model 7

Robustness checks

To assess the robustness of the results, we follow Ai and Norton (2003) and calculate the magnitude and standard errors of both the secondary moderating effect (i.e., the true moderation), as well as the structural moderating effect. Our analysis indicates that the secondary moderating effect is positive and significant (Z-score >1.96) for the self-employed parents in more than 70% and for entrepreneurial peers in almost 80% of the cases. These results further corroborated to our primary findings and are available upon request from the authors.

Then, to correct for possible non-response bias, we use a two-step Heckman estimation. In the first step, we employ a probit specification to estimate the likelihood that a student would answer in Round 2, calculating the corresponding inverse Mills ratio. We then re-estimate the logit model, linking Round 1 to Round 2, thus predicting entrepreneurial action, including the inverse Mills ratio among the covariates, bootstrapping standard errors 500 times. The results included in Table 3 provide strong support to our primary findings.

Finally, the moderated-mediation analysis further supports our results. Figure 3 shows the moderated-mediation models for each of the three identified moderators: namely family, mentor, and peers. The models were specified adding one moderated-mediator at a time. We also run a fully specified model, including all the moderated-mediators and controls, finding no discrepancy in the results (not reported in the figure and available upon request from the authors). We can therefore conclude that our primary results exhibited in Table 2 are robust to different models and specifications.

6. Discussion and conclusions

It has been highlighted that research in entrepreneurship has not paid sufficient attention to the relationship between entrepreneurial intentions and action (Schlaegel & Koeing, 2014). In this paper, we examine the extent to which students who form intentions to start a new business act upon these intentions.

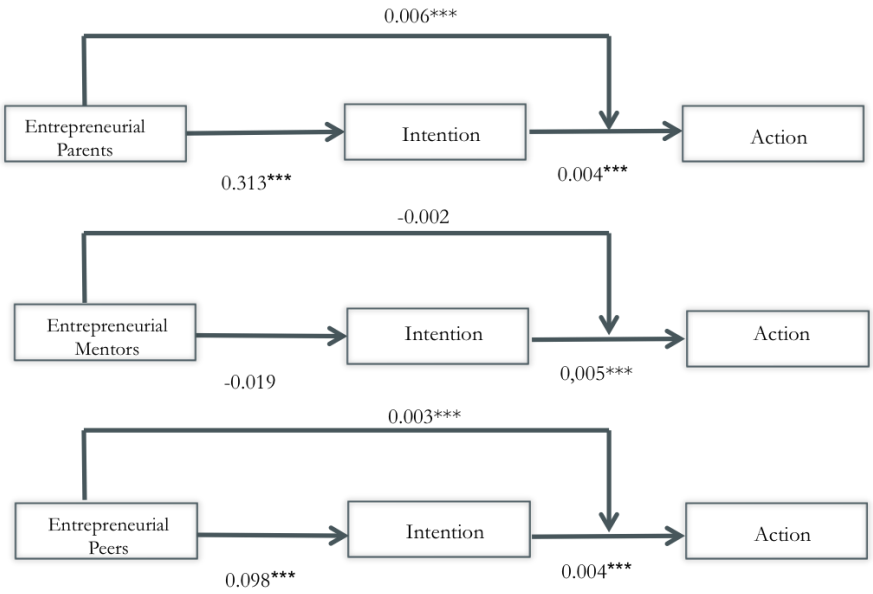
Table 3:
Robustness Check (Inverse mills ratio - standard errors bootstrapped)

Variables	Model 9 Probability of answering to Round 2	Model 10 Entrepreneurial Action	Model 11 Entrepreneurial Action	Model 12 Entrepreneurial Action	Model 13 Entrepreneurial Action	Model 14 Entrepreneurial Action	Model 15 Entrepreneurial Action	Model 16 Entrepreneurial Action	Model 17 Entrepreneurial Action
	Probit First Stage	Logit Second Stage	Logit Second Stage	Logit Second Stage	Logit Second Stage	Logit Second Stage	Logit Second Stage	Logit Second Stage	Logit Second Stage
Gender	-0.00698	-0.0535	-0.0535	-0.182	-0.180	-0.178*	-0.181	-0.185	-0.183
	(0.0118)	(0.119)	(0.117)	(0.115)	(0.110)	(0.108)	(0.112)	(0.118)	(0.112)
Age	-0.0139***	-0.0157	-0.0157	0.0104	0.0263*	0.0276*	0.0263*	0.0270*	0.0282*
	(0.00150)	(0.0157)	(0.0154)	(0.0157)	(0.0149)	(0.0155)	(0.0153)	(0.0163)	(0.0149)
Nationality	-0.226***	-0.141	-0.141	0.148	0.378	0.399	0.379	0.368	0.389
	(0.0357)	(0.383)	(0.525)	(0.447)	(0.465)	(0.460)	(0.471)	(0.466)	(0.475)
Work experience	-0.0294**	0.324***	0.324**	0.301**	0.323**	0.323**	0.323**	0.327**	0.328**
	(0.0123)	(0.114)	(0.135)	(0.145)	(0.145)	(0.139)	(0.146)	(0.142)	(0.142)
Work currently	0.0510***	0.231	0.231*	0.152	0.109	0.117	0.109	0.113	0.121
	(0.0145)	(0.148)	(0.133)	(0.142)	(0.146)	(0.153)	(0.147)	(0.137)	(0.130)
Job Preference: income	-0.00435	0.000918	0.000918	-0.0132	-0.0155	-0.0183	-0.0157	-0.0175	-0.0204
	(0.00868)	(0.0881)	(0.112)	(0.0932)	(0.102)	(0.1000)	(0.0985)	(0.102)	(0.0986)
Job Preference: prestige	-0.0365***	0.112*	0.112*	0.134**	0.167***	0.168***	0.167***	0.168***	0.169***
	(0.00518)	(0.0623)	(0.0625)	(0.0615)	(0.0579)	(0.0624)	(0.0617)	(0.0636)	(0.0615)
Job Preference: career	-0.0190***	0.0446	0.0446	-0.0345	-0.0446	-0.0415	-0.0445	-0.0417	-0.0388
	(0.00514)	(0.0866)	(0.126)	(0.105)	(0.103)	(0.0998)	(0.0954)	(0.101)	(0.102)
Job Preference: stability	0.00941	-0.188***	-0.188***	-0.164***	-0.169***	-0.166***	-0.169***	-0.167***	-0.164***
	(0.00803)	(0.0606)	(0.0590)	(0.0584)	(0.0596)	(0.0619)	(0.0625)	(0.0629)	(0.0604)
Job Preference: autonomy	0.0105	0.0383	0.0383	0.0491	0.0726	0.0715	0.0726	0.0708	0.0699
	(0.00737)	(0.0712)	(0.0737)	(0.0702)	(0.0683)	(0.0702)	(0.0716)	(0.0645)	(0.0700)
Academic performance	-0.0282***	0.508**	0.508**	0.230	0.0917	0.0797	0.0921	0.102	0.0916
	(0.00600)	(0.247)	(0.241)	(0.235)	(0.232)	(0.262)	(0.254)	(0.271)	(0.273)
Class: Middle	0.00745***	0.136	0.136	-0.0727	-0.199	-0.210	-0.198	-0.196	-0.208
	(0.000721)	(0.253)	(0.251)	(0.259)	(0.255)	(0.278)	(0.288)	(0.287)	(0.291)
Class: Clerical middle	0.0107	-1.911***	-1.911**	-0.565	0.0790	0.0774	0.0787	0.0803	0.0766
	(0.0205)	(0.597)	(0.836)	(0.772)	(0.781)	(0.758)	(0.678)	(0.741)	(0.694)
Class: Lower middle	-0.00551	-0.479***	-0.479**	-0.310*	-0.256	-0.251	-0.255	-0.246	-0.242
	(0.0146)	(0.156)	(0.214)	(0.170)	(0.163)	(0.170)	(0.167)	(0.178)	(0.157)
Field: STEMM	-0.0249	-0.507**	-0.507**	-0.295	-0.210	-0.207	-0.210	-0.208	-0.205
	(0.0163)	(0.232)	(0.242)	(0.285)	(0.268)	(0.257)	(0.236)	(0.260)	(0.257)

Field: Social Science	0.123***	-0.00775	-0.00775	-0.0162*	-0.0228**	-0.0228**	-0.0228**	-0.0226**	-0.0226**
	(0.0203)	(0.00818)	(0.00912)	(0.00917)	(0.00910)	(0.00958)	(0.00942)	(0.00932)	(0.00894)
Degree: Other	0.105***	0.0528	0.0528	0.0287	-0.225	-0.194	-0.226	-0.229	-0.198
	(0.0209)	(0.159)	(0.190)	(0.166)	(0.247)	(0.256)	(0.282)	(0.273)	(0.270)
Degree: Bachelor	-0.592***	-0.186	-0.186	-0.192	-0.195	-0.193	-0.196	-0.204*	-0.202*
	(0.0491)	(0.156)	(0.146)	(0.120)	(0.119)	(0.124)	(0.125)	(0.123)	(0.122)
Degree: Single Cycle	-0.0610***	0.00340	0.00340	-0.0370	-0.0998	-0.0879	-0.100	-0.105	-0.0932
	(0.0145)	(0.151)	(0.167)	(0.149)	(0.152)	(0.155)	(0.160)	(0.157)	(0.149)
Inverse mills		1.951**	1.951*	-0.558	-1.884*	-1.908*	-1.885**	-1.894*	-1.917**
		(0.853)	(1.113)	(1.020)	(0.968)	(1.004)	(0.927)	(1.015)	(0.973)
Entrepreneurial Intention	-0.0253***			0.282***	0.301***	0.253***	0.302***	0.256***	0.209***
	(0.00350)			(0.0381)	(0.0394)	(0.0389)	(0.0396)	(0.0526)	(0.0552)
Self-Employed Parent	-0.120***				0.237	0.240	0.238	-0.352	-0.343
	(0.0111)				(0.162)	(0.154)	(0.165)	(0.414)	(0.388)
Entrepreneurial Mentor	0.0739***				-0.546	-0.547	-0.432	-0.554*	-0.432
	(0.0275)				(0.340)	(0.340)	(0.727)	(0.325)	(0.680)
Entrepreneurial Peers	-0.0472**				0.371**	-0.403	0.371*	0.371**	-0.401
	(0.0186)				(0.173)	(0.375)	(0.192)	(0.186)	(0.368)
Entrepreneurial Intention * Self-Employed Parents						0.183***			0.182**
						(0.0707)			(0.0733)
Entrepreneurial Intention * Entrepreneurial Mentor							-0.0296		-0.0321
							(0.162)		(0.161)
Entrepreneurial Intention * Entrepreneurial Peers								0.150*	0.148*
								(0.0875)	(0.0807)
IT Knowledge	0.0700***								
	(0.00586)								
Constant	-0.741***	-5.218***	-5.218***	-3.058**	-1.647	-1.511	-1.649	-1.534	-1.408
	(0.115)	(1.471)	(1.550)	(1.524)	(1.542)	(1.602)	(1.465)	(1.560)	(1.475)
University dummies		Included	Included	Included	Included	Included	Included	Included	Included
Observations	56.100	20.503	20.503	20.503	20.503	20.503	20.503	20.503	20.503
Log likelihood	-36.432763	-1.745.43	-1.745.43	-1.716.89	-1.712.23	-1.709.06	-1.712.22	-1709.87	-1.706.69
Chi2	1316.17***	62.43***	124.37***	294.48***	284.22***	298.03***	315.56***	408.97	544.13***

Standard errors in parentheses and bootstrapped 500 times (Models 10 – 17); *** p<0.01. ** p<0.05. * p<0.1;
Note. For the variable "Social Class" the omitted variable is the category *working class*. For the variable educational background we omitted the category *other*. For the variable "Type of degree" we omitted the category *single cycle degree*

Figure 3:
Mediation – Moderation Model



Note: Coefficients obtained by bootstrapping the standard errors 5.000 times. In the generalized structure equation models. we control for entrepreneurial parents. entrepreneurial mentors and entrepreneurial peers.

Extending Social Cognitive Career Theory into entrepreneurship, we focus on the role of contextual factors in translating intentions into action. Our analysis on over twenty thousand university graduates indicates that whether family and peers engage in entrepreneurship are key factors for transforming intentions into action whereas mentors do not seem to play a significant role.

6.1. Family, Peers, and Mentors

Prior research has established that those with self-employed parents are more likely to enter into entrepreneurship and that self-employed parents enhances entrepreneurial intentions (Aldrich & Zimmer, 1986). It has also found that intentions typically do not convert into action (van Gelderen et al., 2015). In this research, we hypothesize and find that those with self-employed parents are more likely to convert their entrepreneurial intentions into action. Among university students with the highest entrepreneurial intentions, those with self-employed parents were twice as likely to act and start a new business. That is a large effect size and our evidence

provides an important contribution to the literature interested in the role of how social support influences entrepreneurship. It also contributes to the literature on entrepreneurial intentions because most theories of entrepreneurial intentions and actions take an atomistic psychological approach (e.g., TPB or EMM). Our research suggests that this is insufficient. Because there are so many factors that can stand in the way of converting entrepreneurial intentions into action, self-employed parents can provide moral support, enhance entrepreneurial self-efficacy, and provide important resources and contacts that help their children to actually act on their intentions.

Our results document a similarly relevant role of peers. They represent a guide, and social interaction with peers facilitates exchange of information and the acquisition of knowledge that may help in the new venture creation. Entrepreneurial peers provide evidence that the entrepreneurial goal is achievable, enhancing individuals' self-efficacy. These results are consistent with a large body of research that consider as extremely relevant to entrepreneurial pursuits the connection to influential individuals, which lead the access to information, resources, and knowledge (Aldrich & Ruef, 2006; Audia & Rider, 2006; Dahl & Sorenson, 2009; Fisher & Stafford, 1999; Tinsley & Faunce, 1980; Sørensen, 2007).

Social Cognitive Career Theory (Lent, Brown, & Hackett, 1994) distinguishes two categories of environmental influences according to their relative proximity to the career choice-making process. The first category is characterized by *distant environmental factors* that can affect attitude and preferences; examples include the type of career role model to which an individual is exposed during childhood and adolescence and how they affect the formation of distinct career interests. Having self-employed parents might positively affect the formation of entrepreneurial intensions, while the exposure to other role models might discourage the formation of these intentions. The second category is characterized by *proximal influences* that can assume a significant role during the active phase of career decision-making. In this case, we see how proximity with entrepreneurial peers during university is particularly relevant in the process of

making entrepreneurial actions. As our results show, distal and proximal factors are jointly relevant to translate entrepreneurial intentions into action.

6.2. Implications for theory and future research directions

Our results hold several implications for theory. They confirm the importance of accounting for the temporal phase between the formation of entrepreneurial intentions and the subsequent action and the fact that action taken by individuals does not occur in vacuum. In particular, these results have important implications for the use of the theory of planned behavior (Ajzen, 1991, 2011/2014). Ajzen's theory has been extensively applied in entrepreneurship to predict how individuals form entrepreneurial intentions and has been used to infer behaviors from intentions. However, as others have documented (e.g., Van Gelderen et al., 2015) and our results confirm, there are many individuals who form intentions but do not translate these intentions into actions. We model how some contextual influences, such as family, mentors, and peers, affect the enactment of entrepreneurial behaviors. Other factors could be added to this list. For example, the effect of the larger societal context (e.g., macroeconomic conditions) in which the individual is embedded (Lent & Brown, 1994) could lead to interesting considerations.

In this study, we build on the SCCT to explore the role of family, peers, and mentors in providing support for the translation of entrepreneurial intentions into action. However, several studies have revealed that a consistent percentage of high school and college students perceive several barriers to career goal achievement (e.g., Luzzo, 1993). Lent et al. (1994; 1996) suggests that contextual factors directly influence the formation of career interests and subsequent actions. In particular, we can argue that even if individuals possess high levels of entrepreneurial intentions, they may avoid acting upon these intentions because they perceive insurmountable barriers to entry. The perception of critical barriers and the degree to which individuals have confidence in the ability to overcome these barriers may affect the intention–action relationship.

In particular, it may be relevant to understand how coping efficacy, which is the ability to manage and overcome complex situations (Bandura, 1997), affects the perception of external barriers. One could argue that individuals who have high levels of coping efficacy are more likely to engage in efforts to overcome difficulties that are associated with a particular goal or objective. In the translation of intention into action, individuals encounter different barriers that can prevent engagement in an entrepreneurial activity and it would be interesting to understand how different levels of coping efficacy might affect this relation.

Finally, we conceptually model and empirically test whether it is important to focus on two complementary levels of theoretical analysis in order to understand how individuals form entrepreneurial intentions and then translate them into actions. According to SCCT (Lent et al., 1994), the first level of analysis focuses on those cognitive-person variables that lead individuals to exercise personal agency in the career development process. The second level adds choice behaviors. Starting a new venture is one of the occupational choices that individuals can make during their lifetime (Burton et. al, 2016). Individual cognitive factors together with contextual factors influence the development of career interests, plans, and actions. In particular, contextual factors affect the translation of interests into actions (Lent et al., 2000). Knowing and controlling these factors is important to properly support entrepreneurship or selecting among unripe projects.

6.3. Practical Implications

We investigate entrepreneurial intentions among university seniors who are on the brink of entering the labor market for the first time. There is evidence that a growing number of young men and women consider entrepreneurship as a realistic career option, with numerous examples of students who founded their new business ventures during university studies or soon after graduation (Lindholm & Berggren, 2010). However, few studies in entrepreneurship have investigated how and why some students choose to become entrepreneurs rather than seeking

more traditional employment. By exploring students' entrepreneurial intentions and their subsequent action, we contribute to the understanding of how the process of new venture creation occurs and which contextual influences help explain why some individuals are able to translate their entrepreneurial intentions into actions while others do not.

In particular, our results should be of great interest for universities and policymakers. Universities are organizations highly institutionalized and resistant to change, and over the last twenty years, they have been encouraged to foster entrepreneurial activities through the introduction of several mechanisms, such as professionalized technology transfer offices or dedicated policies supporting academic spin-offs (Grimaldi et al., 2011). However, the introduction of these mechanisms needs to find an organization that is able and ready to receive these norms and going through a process of change from an institutional organization to an entrepreneurial one. Our study shows the importance of creating favorable conditions within universities to support entrepreneurial intentions through social interactions and to consider the relevance of family background in the entrepreneurial process as a possible criterion to anticipate students' actions. Supporting interactions among students with entrepreneurial intentions, their peers who are engaged in entrepreneurship, and academic entrepreneurs may support and strengthen the venture creation process. Students with entrepreneurial intentions could benefit from universities' structures that connect all individuals engaged in entrepreneurial activities. We show that contextual influences are strategic in the translation of entrepreneurial intentions into actions. Our findings can help to explain the marginal success of many universities in promoting entrepreneurship by mainly focusing on providing professional services and dedicated infrastructure and suggest studying the role, if any, of socializing policies.

6.4. Limitations and future research

Our data were collected in two time intervals with one-year between. It would be useful to collect data on several waves in order to fully understand the length of the time span between

intentions and actions and to distinguish between reasoned procrastination dedicated to proper planning from inaction. Moreover, it can be interesting to understand which type of occupations are chosen by the entrepreneurs-to-be who fail to start their own venture and if these experiences are further leveraged in later stages of life.

Many of our variables are operationalized as dummies. However, the corresponding effects can be expressed as a continuum. The entrepreneurial background of the family might be differently relevant depending upon the specific type of experience, the extent to which individuals come from first-generation entrepreneurs or belong to an entrepreneurial dynasty. Future research could focus on a more detailed modeling of these different effects, disentangling their different components and their marginal contribution.

Our starting base included almost the entire population of Italian seniors, which allowed us to focus on a specific institutional environment; the high number of respondents offered a robust base to estimate our model. Interinstitutional differences have emerged as relevant in understanding the pace and attitude of universities around the globe in supporting their students to engage in entrepreneurial activities (Foss & Gibson, 2015; Van Loy et al., 2011). Similar conclusions are also reached by general surveys on the distribution of entrepreneurial activities in different countries such as the Global Entrepreneurship Model[2] (GEM) or the Global University Entrepreneurial Spirit Survey[3] (GUESS), as well as by studies using a multi-country comparative perspective (e.g., Autio, Pathak, & Wennberg, 2013). Future studies using a comparative perspective could investigate the moderating role, if any, of institutional differences in translating intentions into actions and in affecting the importance of family, peers and mentors.

2 The Global Entrepreneurship Monitor is the world's foremost study of entrepreneurship. See www.gemconsortium.org

3 Global University Entrepreneurial Spirit Students' Survey (GUESSS) investigates students' career-choice intentions across the globe. See www.guesssurvey.org.

Despite these limitations, we show that the definitive choice to start a business does not occur in a vacuum. Individuals' intentions to start a new business are affected by environmental characteristics, such as proximal social influences. Entrepreneurial intentions are not always translated into entrepreneurial actions, and we must account for this pattern when we study the intentions–action relationship: individuals need to perceive external support that can help them in the execution of their intentions and the creation of a new business. We therefore recommend future studies use measures of external support as an additional construct that influences whether intentions are translated into actions or not.

CHAPTER 5

The imperfect career sorting: a person-environment fit approach

Abstract

Preferences for entrepreneurial activities may help explain why individuals sort into entrepreneurship. However, numerous are those cases in which individuals with certain preferences end up sorting in different job activities. In this paper, we account for individuals' preferences and job attributes to explore individual entrance in entrepreneurship versus the employment in an established firm. We use a unique longitudinal dataset of more than 7,400 university graduates from 64 Italian universities with waves at two points in time: the first at the time of graduation and the second one-year after graduation. We find evidence that preferences affect the sorting, but a gap exists between individual career preferences and career sorting. We explore the potential reasons affecting the imperfect sort and we find that there are some individual characteristics and some preferences for particular job attributes that can help explain the imperfect job sorting. We discuss implications for entrepreneurship research as well as for educators and policymakers.

1. Introduction

How and why individuals sort into entrepreneurship are central questions to entrepreneurship (e.g. Hamilton, 2000; Gompers et al., 2005; Lazear, 2005; Stuart & Ding, 2006; Sørensen, 2007; Elfenbein et al., 2010). Relevant research has focused attention on how individuals' form entrepreneurial preferences and how these preferences relate to the choice of becoming entrepreneur (e.g. Roach & Sauermann, 2015). However, less attention has been devoted to the mismatch existing between individual preferences and employment outcomes.

Drawing on the assumption that a gap exists between the perceived fit (individual preferences) and the actual fit (occupations), we explore why individuals with preferences for entrepreneurial activities then sort into other kind of jobs. In particular, in this study we consider individuals career preferences and we investigate how ex-ante career preferences explain

individuals' sorting into self-employment versus established firm.

We build on the person-environment (P-E) fit approach (Kristof, 1996; Kristof-Brown, Zimmerman & Johnson, 2005) to investigate the reasons that explain the inconsistency between individual preferences and career outcomes. According to the P-E fit approach, individuals form preferences for certain activities, interests, competencies, and values based on their personality, and individuals' career choice is an expression of their personality (Holland, 1997). Individuals are attracted to those careers that express who they are and who they want to be. However, the fit between the person and the environment is a dynamic process of adjustment between the two parts, because individuals influence the environment, and in turn, the environment influences the individuals (Rounds & Tracey, 1990).

Our empirical analysis draws on a unique longitudinal dataset of more than 7,400 graduate students from 64 Italian universities with waves at two points in time: first at the time of graduation and the second one-year after graduation. We group individuals along their career preferences and we distinguish individuals with preferences for a self-employed job, those with preferences for working in an established firm and those who do not have career preferences. We find that prior to graduation approximately 42.99% of students have preferences for a job in an established firm, in the public or private sector, and 7.83% have preferences for working as self-employed, the remainder do not have any preferences. One year after, we observe that 24% of individuals with preferences for working in an established firm sort into a self-employment job; and roughly 51% of individuals who have preferences for being self-employed end-up into a job in an established firm. This shifting illustrates the existence of an imperfect employment sorting. We then perform a series of regression analysis to compare the profile of individuals with self-employment preferences relative to individuals with other career preference, with two key findings. First, as expected, there is strong evidence of sorting into a job by ex-ante career preferences. Compared to individuals with preferences for a job in an established firm, those with preferences for a self-employed job and those who do not have career preferences are

significantly more likely to get into self-employment. Second, after accounting for career preferences, we find evidence that there are some individual's characteristics and some preferences for particular job attributes that can help explain the incomplete job sorting. For example, our results suggest that having work-experience can explain why some individuals with preferences for working in established firm sort into self-employment.

This study has several implications for research. First, we adopt a career approach to explain how preferences are translated into employment choices. A career approach on entrepreneurship emphasizes how entrepreneurship compares with other employment related choices and how entering into self-employment can be treated as any other career choice and analyzed in terms of skills, wage and mobility (Burton, Sorenson & Dobrev, 2016; Douglas & Shepherd, 2002). Second, we provide novel empirical evidence that preferences affect employment sorting, but sorting is not always perfect. Thus, we explore which are those reasons that can help explain the imperfect sorting, and we find evidence that individuals' characteristics and preferences for some job attributes may help make sense of the imperfect sorting. Third, by examining career preferences prior and separate from realized career choices, we are able to explore why individuals engage in self-employed activities that were previously unintended and which are those reasons that may prevent individuals from sorting into self-employment.

The paper is organized as follows. In section 2 we present the theoretical framework: we first introduce the person-environment fit approach and then we explore those reasons that may help explain the imperfect sorting. In section 3 we illustrate our research design describing the sample, the measures, and the procedures. In section 4 we present and discusses the results, and we conclude in section 5 summarizing our contributions, the limitation of our study and opportunities for additional research in the field.

2. Theoretical Framework

2.1. Person-Environment Fit Approach

The person-environment fit literature explicates which are the antecedents and the outcomes of congruence between a person and his or her work environment (Kristof, 1996; Kristof-Brown, Zimmerman & Johnson, 2005). According to this perspective, individuals make choices about their career by assessing the congruence (fit) that exists between themselves and the work-environment. In particular, individuals are attracted to work environments with characteristics, as culture, values, and requirements that match their personalities, needs and skills.

There are several levels of person-environment fit that can be analyzed (Judge & Ferris, 1992; Kristof, 1996). The person-environment fit can be analyzed at the organization level (P-O fit), at the job-level (P-J level), at the work group level (P-G fit) or at the work-supervisor level (Werbel & Gilliland, 1999). Specifically, person-job fit looks at the congruence between the demands of the job and the skills, knowledge, and abilities of job candidate; it predicts candidates' job proficiency, technical understanding, and work innovations. In contrast, the person-organization fit looks to the compatibility of individuals' needs, goals, and values with the organizational system and it predicts organizational commitment and retention. The person-group fit draws on the basic notion that work requires interaction with other employees, and highlights those aspects of the fit that are necessary for working with co-workers in a team. Finally, the person-supervisor fit interests the match between the persons' and supervisors' attributes, as values, personality, and behavioral styles (Werbel & Gilliland, 1999).

The person-environment fit approach is characterized by two central assumptions. The first is that the congruence between a person and his or her work environment affects satisfaction, performance, productivity and turnover; and a better fit is associated with better outcomes (Rounds & Tracey, 1990). The second assumption regards the dynamic reciprocity (Rounds & Tracey, 1990). This concept assumes that there is an ongoing process of adjustment between the environment and the person because environments influence individuals and, in turn, individuals influence the environments.

There are numerous theories that illustrate the person environment-fit and how it affects individuals' choice and subsequent performance. In particular, Holland's (1997) vocational choice theory and Dawis and Lofquist' s theory (1984) of work adjustment are extensively used for studying the P-E fit. Holland's (1997) assumption is that vocational interests are an aspect of individual's personality and the description of a vocational interest corresponds to a description of the individuals' personality. Consequently, individuals search for work environments that are congruent to their personalities, attitudes, and values, and which lead them to use their skills and abilities. For example, those who are "enterprising types" have interests in persuading and leading and they will look for a work environment that lead them to express these interests. The higher the match between personalities and work environment, the higher job satisfaction, success and persistence is experienced. An incongruent match between personalities and work environment stimulates change in human behaviour and to resolve the incongruence individuals need to seek a new and congruent environment or they need to change their personal behaviour and perceptions (Holland, 1997). The theory of work adjustment (TWA; Dawis & Lofquist, 1984) claims that individuals and work environments reciprocally affect each other and the evolution of the relationship. According to TWA, an individual has needs of a work environment, and in turn, a work environment has needs of a worker. For example, an individual needs a high salary, whereas a work environment needs qualified job skills. There is correspondence when an employee meets the abilities demanded by a job and a job meets the need of a given employee. A satisfactory correspondence between individual's work values and workplace requirements results in satisfaction from both sides (Dawis & Lofquist, 1984).

Both theories assert that there are numerous work related outcomes of the person-environment fit: first, meeting the congruence between person and environment affects job satisfaction (Holland, 1997; Dawis & Lofquist, 1984) and organizational commitment (Hoffman & Woehr, 2006); second, the incongruence between person and environment can affect career transition (Donohue, 2006).

An important distinction between the perceived and the actual fit is noteworthy. The perceived fit relates to the perception that a particular job vocation would be attractive. Specifically, the perceived fit can be seen in terms of preferences; while the actual fit refers to the ability and motivation to actually carry out the job. An individual in the process of looking for a job will search for the best match between the perceived and the actual fit. However, in practice, the perceived fit and the actual fit are weakly related, because generally the jobs are fixed and individuals have little margin in adapting the job to fit individual needs and preferences (Kristof-Brown & Stevens, 2001). This mismatch existing between individuals' perceived fit and the actual fit leads individuals to choose to pursue a career that does not fully express their preferences.

2.2. The imperfect career sorting

Individuals search jobs that fit their preferences (Kristof, 1996; Kristof-Brown, Zimmerman, & Johnson, 2005). Preferences express individuals' personalities, values, and attitudes (e.g. Holland, 1997), and they are used to assess among several job alternatives and to evaluate job attributes. Drawing on the main assumption that a gap exists between the perceived fit (individuals' preferences) and the actual fit (jobs), the question that we want to explore is how career preferences translate into employment outcomes. In particular, we look at those reasons that can explain the inconsistency existing between individuals' ex-ante career preferences and employment sorting.

Katz (1992, p. 30) defines occupational status choice as "the vocational decision process in terms of the individual's decision to enter an occupation as a wage-or-salaried individual or as a self-employed one." In this study, we group individuals along their career preferences, and we distinguish individuals who have preferences for a self-employed job, those who have preferences for a job in an established firm and those who do not have career preferences. Being self-employed involves working independently and setting up a business or any activity that implicates working alone. Working as self-employed involves high levels of risk and it requires numerous

technical and managerial tasks (Lazear, 2005). Moreover, it generally means more autonomy for the individuals and flexibility (McClelland, 1961; Evans & Leighton, 1989). On the other side, working in an established firm means having more occupational safety and higher wages, but less autonomy and very specialized work activities (Oi & Idson, 1999; Sørensen, 2007).

In the next section we provide explanations to discuss the potential sorting of individuals with established firm preferences, self-employed preference and those who do not have career preferences into self-employment versus established firms.

Sorting into self-employment

Building on the person-environment fit theory, we expect that individuals search for those jobs that fit their preferences. For this reason, we expect that individuals with a preference for a self-employed job will actively look for a self-employed job and will be less likely to search for a job in an established firm.

Although individuals with a preference for an established firm would prefer working in an established firm, it may happen that these individuals become self-employed. Sorting into self-employment may be first of all related to the identification of some opportunities to exploit (Eckhardt & Shane, 2003). An entrepreneur is defined as an individual who acts on an opportunity that has been identified and the identification of entrepreneurial opportunities lies at the core of entrepreneurship (McMullen & Shepherd, 2006). In particular, individual's contextual influences, as the organization characteristics (Audia & Rider, 2006; Dobrev & Barnett, 2005; Freeman, 1986; Sørensen, 2007), and the entrepreneurial activities of peers (Stuart & Ding, 2006; Nanda & Sørensen, 2010; Azoulay et al. 2014) may affect individual entrance into self-employment.

Second, individuals may found that a gap exists between the perceived and the actual attributes of the job in an established firm. Each occupational choice is characterized by a set of attributes, which include, for example, earning, the possibility of making a career, the degree of

autonomy, the importance of creativity, and the social status of the career (Sauermann, 2005). Each occupation can have unlimited attributes that affect the vocational decision, making it potentially complex. Moreover, as P-E theory suggests (e.g. Kristof-Brown and Stevens, 2001), the individual has little leeway in adapting the job to fit his or her needs and preferences. This environmental rigidity is a proper characteristic of the wage work; conversely, self-employed jobs are generally more flexible. Individuals who are unable to adapt their behavior to the environment may decide to seek a new and congruent environment, looking for another job (Holland, 1997).

For those individuals who do not have career preferences at the time of graduation, sorting into a self-employed job can be related to several reasons. First, sorting can be associated with the opportunities or absence of opportunities in the market. Individuals may enter self-employed jobs because they take advantage of an opportunity that they have identified or because they are driven by necessity, meaning that entrepreneurship is the best or the only option to enter the job market (e.g. Davidsson, 2006). A second reason may be related to job attributes. Individuals, who do not have career preferences, may investigate the environment driven only by the value they posit on certain attributes. For example, those who have working experience may be attracted to the self-employed job because they value as important some job attributes that are specific to self-employed jobs, as for example, independence and freedom.

Sorting into established firm

As for those with self-employed preferences, we expect that individuals with a preference for working in an established firm will actively look for that kind of job and will be less likely to search a self-employed job.

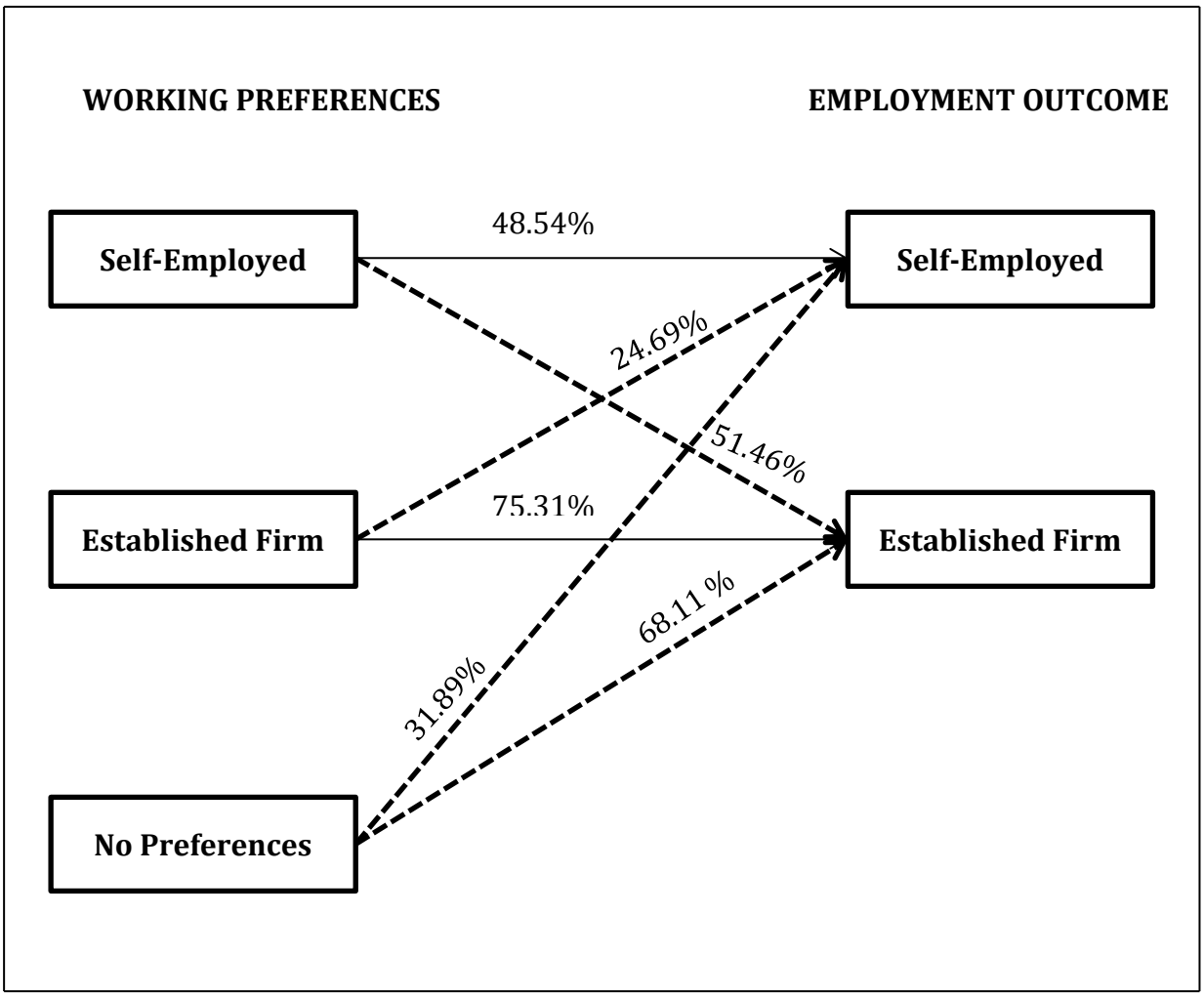
However, some individuals with self-employment preferences can also start a career in established firms. Several are the reasons that can explain why preferences for a career are not translated into an equivalent career choice. The first is related to the system of opportunities. In

order to become self-employed, individuals have to identify an opportunity to exploit and to act upon this opportunity (Eckhardt & Shane, 2003). However, this is not always the case; and the absence of opportunity to exploit can lead individuals to join an established firm rather than start a self-employed job. Another reason can be related to the acquisition of more experience. Individuals who have preferences for self-employed jobs and who do not have working experience may choose to start working in an established firm in order gain experience and acquire resources. Individuals in organizations are exposed to a high amount of information (e.g., Aldrich & Ruef, 2006; Saxenian, 1994), they develop social capital (e.g., Burton et al., 2002; Romanelli & Schoonhoven, 2001) and they acquire skills and knowledge (e.g., Lazear 2004; Shane 2000) that are relevant for starting, for example, an own business. Moreover, organisations foster creativity and innovation at large (Lazear, 2004; Aldrich & Ruef, 2006; Sorenson & Audia, 2000) supporting individuals in the identification of new job opportunities.

Individuals who do not have career preferences may sort into an established firm first of all because of the structure of opportunities, meaning that they are attracted by a particular job offer that fit their preferences for some job attributes or because they have developed, during the time, a stable career preference for a job in an established firm. Finally, for those individuals with preferences for studying, sorting into an established firm can be related again to the presence of an opportunity, like for example a job offer.

With this study we explore why some individuals diverge from their career preferences and which are those drivers that affect this divergence, disclosing the differences existing between the different sorting patterns (Figure 1).

FIGURE 1:
Working Preferences and Job Sorting



3. Method

3.1. Data

The data of this study are drawn from a longitudinal survey of students at 64 Italian universities (out of 95 Italian universities) administrated in collaboration with AlmaLaurea, which is an Italian interuniversity consortium. The consortium supplies data to governing bodies, assessment units, and committees dealing with teaching activities and career guidance. The survey gathers detailed demographic and university career information about students at time of their graduation, with a response rate of about 90%. Respondents are further polled one year after graduation to monitor their employment situation. We included all the type of universities in the

survey; as that we were able to reach students from STEMM (Science, Technology, Engineering, Mathematics, and Medicine), Social Science and Humanities disciplines.

The first wave of the survey was administrated between September and December 2014, and it reached 64,710 students (out of almost 230.000 graduate students in 2014) who graduated from the 64 Italian universities taking part of the consortium in 2014. The AlmaLaurea consortium, in collaboration with each university, was in charge of the administration of the survey; students were contacted through their university email and they were able to get access to the survey only a few weeks before the graduation date. The valid responses were 61,115 for a response rate of 94%. During the first wave we collected data concerning entrepreneurial activities and interests, the students' demographic data, universities' attributes and experiences, family background, and students' career preferences. In the second wave, during September and December 2015, the survey we sent the survey to the same cohort of students, rendering 23.456 responses (37%). The data collection focused on student's employment status and in particular, we investigated their career choices.

In this study, we restrict the sample to students who are employed one year after graduation. This is done to obtain a sample of individuals who made their initial career choice and who are currently working, excluding from the sample those who are engaged in other activities, as job searching (52%) or studying (49%) or other training activities, as for example stages, MBA, Ph.D. (89%). By using data from graduate students, we complement a nascent body of research that examines the entrepreneurial activities made by Ph.D. candidates and recent graduates (Hsu et al., 2007; Boh et al., 2012). Moreover, our data provide unique and recent insights into the entrepreneurial career of the current generation of graduate students.

After checking for missing values, we obtain a final sample of 7,422 students, 30.1% is self-employed and 69.9% is working in an established firm. We observe (Table 1) that among self-employed 82.9% are in the service sector and 11.8% in the manufacturing sector, the remainder is in agriculture or it has not been identified. For those who work in established firms,

76.2% works in the service sector and 19% in the manufacturing sector, the remainder in the agriculture sector or it has not been identified. 56.5% of individuals who are employed in an established firm work in the North part of the Country, 19% in the center and only 15.6% work in the South and in the Centre of the Country, 8.8% in a foreigner country. Roughly 52.3% of self-employed individuals are located in the North, 22% in the Centre and 22% in the South, the remainder is working abroad. Table 2 reports the main variables and summary statistics and Table 3 the correlation matrix.

Table 1:
Selected Summary Statistics

	Employed in an Established Firm		**Self-employed**		**Total**	
Variables	**n**	**%**	**n**	**%**	**n**	**%**
Employment Outcome	5,188	69.90	2,234	30.10	7,422	100
Economic Sector						
Agriculture	61	1.18	40	1.79	101	1.36
Manufacturing	987	19.02	264	11.81	1.251	16.86
Services	3.951	76.16	1.853	82.95	5.804	78.20
Not Identified	189	3.64	77	3.45	266	3.58
Total	5,188	100.00	2,234	100.00	7,422	100.00
Geographic Area						
North	2,930	56.48	1,168	52.28	4,098	55.21
Center	988	19.04	508	22.74	1,496	20.16
South and Islands	814	15.69	506	22.65	1,320	17.78
Abroad	456	8.79	52	2.33	508	6.85
Total	5,188	100.00	2,234	100.00	7,422	100.00

Table 2:
Descriptive Statistics

Variable	Observations	Mean	Std. Deviation	Min	Max
Male	7,422	0.41	0.49	0	1
Age	7,422	26	5	21	71
Work experience	7,422	0.74	0.44	0.00	1.00
Work-at-time-graduation	7,422	0.36	0.48	0.00	1.00
Foreign Nationality	7,422	0.02	0.15	0.00	1.00
Final Mark[4]	7,422	104.64	83.92	74.00	113.00
Self- Employed Parents	7,422	0.19	0.39	0.00	1.00
Intention to continue studying	7,422	0.53	0.50	0.00	1.00
Job Attributes					
Earnings	7,422	3.50	0.60	1.00	4.00
Prestige	7,422	3.03	0.81	1.00	4.00
Involvement	7,422	3.38	0.64	1.00	4.00
Flexibility	7,422	2.97	0.75	1.00	4.00
Work Environment	7,422	3.42	0.64	1.00	4.00
Workplace	7,422	3.11	0.78	1.00	4.00
Career	7,422	3.52	0.64	1.00	4.00
Stability	7,422	3.58	0.61	1.00	4.00
Professionalism	7,422	3.78	0.44	1.00	4.00
Coherence with study	7,422	3.43	0.67	1.00	4.00
Cultural Aspect	7,422	3.21	0.73	1.00	4.00
Independence	7,422	3.31	0.70	1.00	4.00
Free Time	7,422	2.94	0.78	1.00	4.00
Social Aspect	7,422	3.18	0.80	1.00	4.00

4 In University Italian system the final exam is deemed to be passed with a minimum grade of 66/110. In the case of granting a maximum grade (110/110), the Board may also grant honours (lode).

Table 3:
Correlation Matrix

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	Gender	1.00																					
2	Age	0.07	1																				
3	Work experience	0.01	0	1																			
4	Work-at-time-graduation	0.01	0.28	0.40	1																		
5	Nationality	-0.02	0.05	0.00	0.00	1																	
6	Final Mark	-0.12	-0.05	-0.17	-0.15	-0.07	1																
7	Self- Employed Parents	0.01	-0.03	0.02	0.01	0.00	0.00	1															
8	Intention to studying	-0.09	-0.07	0.04	0.03	0.02	0.00	0.01	1														
9	Earnings	0.03	-0.01	-0.03	-0.02	0.00	-0.04	0.03	-0.02	1													
10	Prestige	0.03	0.04	-0.02	0.02	0.02	-0.05	0.02	0.07	0.34	1												
11	Involvement	0.00	0.05	0.02	0.04	0.02	-0.03	0.01	0.07	0.23	0.50	1											
12	Flexibility	-0.04	0.12	0.01	0.04	0.02	-0.04	0.00	0.02	0.26	0.33	0.31	1										
13	Work Environment	-0.08	0.02	0.01	0.00	0.04	-0.02	-0.01	0.02	0.16	0.27	0.37	0.39	1									
14	Workplace	-0.08	0.07	-0.04	0.01	0.03	-0.01	-0.03	0.00	0.25	0.30	0.27	0.47	0.45	1								
15	Career	0.11	-0.03	0.00	0.00	0.02	-0.04	0.04	0.02	0.55	0.42	0.35	0.16	0.14	0.12	1							
16	Stability	-0.12	-0.08	-0.06	-0.04	-0.02	-0.05	-0.04	0.02	0.38	0.24	0.16	0.20	0.22	0.29	0.27	1						
17	Professionalism	-0.04	0.00	-0.02	-0.02	-0.01	0.02	0.00	0.04	0.26	0.26	0.35	0.15	0.26	0.16	0.34	0.30	1					
18	Coherence with study	-0.13	0.03	-0.07	-0.04	0.00	0.11	-0.03	0.12	0.09	0.21	0.22	0.14	0.21	0.20	0.08	0.21	0.30	1				
19	Cultural Aspect	-0.13	0.08	0.01	0.01	0.00	0.08	0.02	0.15	0.06	0.21	0.26	0.24	0.25	0.25	0.06	0.12	0.23	0.40	1			
20	Independence	-0.05	0.09	0.01	0.05	0.00	-0.05	0.03	0.07	0.21	0.32	0.35	0.36	0.27	0.28	0.19	0.18	0.23	0.23	0.35	1		
21	Free Time	-0.02	0.08	0.00	0.02	0.01	-0.03	0.00	0.01	0.28	0.29	0.22	0.57	0.32	0.44	0.12	0.25	0.11	0.17	0.30	0.40	1	
22	Social Aspect	-0.20	0.05	-0.03	-0.03	0.03	0.05	-0.04	0.18	0.01	0.26	0.31	0.29	0.34	0.29	-0.03	0.20	0.19	0.34	0.43	0.33	0.35	1

N=7422 Pairwise correlation above |0.0209| are significant at 0.05

3.2. Dependent Variable (Employment outcome)

The purpose of the empirical analysis is to compare individuals who started a job in an established firm to those who choose to become self-employed. To achieve this result, we utilize the survey question regarding the type of employment contract that individuals hold in their job. A contract is an agreement specifying terms and conditions under which a person consents to perform certain activities as directed and controlled by an employer in return for an agreed upon wage or salary. We grouped the contracts into two categories, the independent contract, which represents the self-employed job, and all the other types of contracts that define a job in an established firm. We observe that 30.10% are self-employed and 69.90% are working in an established firm.

3.3. Independent Variables

Ex-ante career preferences

To measure individuals career preferences, we use a question that was part of a set of questions regarding future employment after graduation. More precisely we asked individuals to indicate one job preference between a set of preferences that were: preference for a job in a public sector, preference for a job in a private sector, preference for a self-employed job or no preference.

We then coded ex-ante career preferences into three main categories. The first category represents the preference for a job in an *established firm*. In order to capture this preference, we took together individuals' preferences for working in the public or in the private sector. A public sector consists of any organizations ran by the government and funded by taxpayer money; the private sector encompasses all for-profit businesses controlled and managed by private individuals or enterprises. We coded these preferences as a preference for a career in an established firm. The second category is the preference for a *self-employed job*. An individual who is self-employed works for himself instead of working for an employer that pays a salary or a wage. Self-employed individuals earn their income through conducting profitable operations from a

trade or business that they operate directly. Finally, the third category gathers those individuals who do not have any specific career interest at the time of graduation; these individuals did not express any preference for the type of career they want to pursue in their near future.

We find that prior to graduation 42.99% of students have preferences for a job in an established firm; 7.83% has preferences for working as self-employed and 49.18% does not have any ex-ante career preferences.

Ex-ante students' job attributes preferences

Each alternative in the set of career choices set is characterized by a set of attributes, which include, for example, earning, the possibility of making a career, the degree of autonomy, the importance of creativity, and the social status of the career (Sauermann, 2005). Each occupation can have unlimited attributes that affect the vocational decision, making it potentially complex. Research conducted on which types of attributes are considered by the individuals in their vocational choices reveals that attributes are not only numerous but also very heterogeneous (e.g., Cable & Judge, 1996; Holland, 1997). The heterogeneity of the attributes is linked to the variety of rewards an occupation can entail. A first distinction can be made between the source of reward (Ryan & Deci, 2000), which can be intrinsic or extrinsic. A second distinction is expressed by the extent to which individuals evaluate different rewards (Elizur et al., 1991). The three ways are instrumental (e.g. pay), affective (e.g. peer recognition) and cognitive (e.g. job interest). However, individuals' vocational choices involve uncertainty about attributes. Individuals, for example, look for information about attributes concerning a certain career but this information is only a crude proxy of the real attribute (Sauermann, 2005).

In this study, we look at individual‘s preferences for autonomy (McClelland 1961, Evans and Leighton 1989, Roach and Sauermann 2015), income (Evans and Leighton 1989, Roach and Sauermann 2015), the possibility of making a career, the importance of creativity and social status of the career (Sauermann, 2005). Moreover, we account for *stability, professionalism, coherence with*

studies, cultural interests, free time, social aspects, prestige, involvement in the job, flexibility, work environment and characteristics of the workplace. We measure preferences asking respondents to rate the importance of these job attributes on a 4-point scale from "not at all important" to "extremely important."

3.4. Control Variables

We include several variables to control for the source of individual heterogeneity that may affect final results. The first set of controls concerns individuals' characteristics that may affect individuals sorting into a certain career, and can help explain the imperfect sorting from career interests to career choice. We first look at gender. Studies show that a gender gap exists for entering self-employment jobs (e.g. Xavier et al., 2012; Gupta, Turban, Wasti & Sikdar, 2009). Nationality, on the other side, can negatively affect individual sorting into self-employment jobs because of all those barriers related to the bureaucracy of becoming self-employed. Moreover we control for age, which potentially influences business start-up (Kolvereid & Moen, 1997; Lévesque & Minniti, 2006). Among the students' characteristics, we find relevant controlling for the individuals' academic performance. As we are exploring graduate students career choices, we see if individual's academic performance affects his or her employment sorting. Then, we control for prior work experience. We build two different variables, the first accounts for students' past work experience during their university studies (*work experience*), the second accounts for if they were working at the time of graduation (*work-at-time of graduation*). We include a control variable that is likely related to individuals' preexisting interest in entrepreneurship and we control if parents are self-employed, and we include a binary variable that equals 1 if at least one parent is self-employed.

The second set of controls is related to the characteristics of the context in which the students are nested. First, we account for those university characteristics' that can affect the final

choice of the individual. As that we examine the role played by some infrastructures and facilities that universities create in order to support entrepreneurial activities by individuals. These include the presence of a TTO (Technology Transfer Office), of an Incubator or the organization of Business Plan Competition. Numerous studies find evidence of a positive correlation between TTO and rate of spin-off creation (Powers & McDougall, 2005; Lockett & Wright, 2005).

Finally, career choice maybe shaped by perceived labor market conditions (Roach & Sauermann, 2015). As that, we control for the characteristics of the labor market of each region in which universities are established. In particular, we account for: the total intramural R&D expenditure, the total R&D expenditure on percentage of GDP (Gross Domestic Product), the business expenditure on percentage of GDP, the total employment rate and the employment rate among young people (15-34 years old).

4. Analysis

We focus on graduate students and we look at students' career preferences at the time of graduation and at their employment outcomes one year after graduation. In particular, we examine the individuals' sorting into self-employment or established firms based on their ex-ante career preferences (4.1); we explore the reasons that could explain the individual's employment sorting (4.2); we look at the extent to which job attributes may affect individuals' employment sorting (4.3). Finally, we replicate the same analysis on the sub sample of entrepreneurs, to see if some differences exist between becoming self-employed versus becoming an entrepreneur (4.4).

4.1. Career preferences at graduation and employment outcomes one year after graduation

We begin our analysis with a contingency table (Table 4) that compares ex-ante individuals' preferences with employment outcomes. Examining the table, we note that if individuals entered different employment types randomly, then we should observe that the

percentage for each row is similar to the sample average (7.83% preferences for self-employment and 42.99% preferences for established firms). The extent to which the observed percentage of individuals with a certain career preference who are self-employed is greater (lesser) than 7.83% provides evidence of sorting into (away from) self-employment. Table 4 shows that nearly 25% of individuals with preferences for working in an established firm sort into a self-employed job. Among those who do not express any preference at time of graduation, about 32% are self-employed one year after graduation and roughly 51% of individuals who have preferences for being self-employed then sort into a job in an established firm.

Table 4:
Contingency table relating ex-ante career preferences to employment outcomes

	Employment outcomes		
Ex-ante preferences	*Employed in an Established Firm*	*Self-employed*	*Baseline*
Established Firm Preferences			
Frequency	2,403.00	788.00	3,191.00
Expected Frequency	2,230.50	960.50	3,191.00
Row percentage	75.31	24.69	100.00
Column Percentage	46.32	35.27	42.99
Cell Percentage	32.38	10.62	42.99
Self-employment Preferences			
Frequency	299.00	282.00	581.00
Expected Frequency	406.10	174.90	581.00
Row percentage	51.46	48.54	100.00
Column Percentage	5.76	12.62	7.83
Cell Percentage	4.03	3.80	7.83
No Preferences			
Frequency	2,486.00	1,164.00	3,650.00
Expected Frequency	2,551.40	1,098.60	3,650.00
Row percentage	68.11	31.89	100.00
Column Percentage	47.92	52.10	49.18
Cell Percentage	33.50	15.68	49.18
Total			
Frequency	5,188.00	2,234.00	7,422.00
Expected Frequency	5,188.00	2,234.00	7,422.00
Row percentage	69.90	30.10	100.00
Column Percentage	100.00	100.00	100.00
Cell Percentage	69.90	30.10	100.00

Table 5 presents logistic regression results that predict the likelihood of being self-employed relative to the likelihood of sorting in a job in an established firm. In these models we control for factors as gender, age, work-experience and nationality. Moreover, models 1 and 2 account for university fixed effects and Model 3 for regional characteristics fixed effects. Model 1, Table 5, includes the ex-ante career preferences. Compared to individuals with preferences for a job in an established firm, those with preferences for a self-employed job are significantly more likely to get into self-employment. Individuals who do not have ex-ante career preferences are significantly more likely to sort in a self-employed job compared to those with preferences for working in an established firm. Model 2 omits individuals who do not have career preferences at the time of graduation and it shows that individuals with preferences for self-employed jobs are more likely to sort into a self-employed job relative to those who had not preferences, while individuals with preferences for working in an established firm are more likely to sort in a job in an established firm. Models 1-3 show a positive and significant effect of work-experience (0.112, $p<0.05$) on the likelihood of become self-employed and a negative and significant effect (-0.184, $p<0.01$) on working at time of graduation on self-employment. Age lowers the likelihood of become self-employed; while having self-employed parents increase the probability of being self-employed. In Model 4 we unpacked the university and regional fixed effects and we account for the characteristics of the universities and the region in which the individuals are nested.

4.2. Reasons for the sorting pattern

As the P-E theory suggests, there is not a perfect fit between career preferences and employment outcomes, and several can be the reasons that can help explain the inconsistency between preferences and employment outcomes. Models 5-7 (Table 5) estimate logit regressions separately for the subsamples of individuals with preferences for working in an established firm, having no preferences and having preferences for sorting into self-employment, respectively.

Table 5:
Sorting into self-employed vs. established firm

Variables	Model 1 **Full Sample**	Model 2 **Full Sample**	Model 3 **Full Sample**	Model 4 **Full Sample**	Model 5 **Preference for Established Firm only**	Model 6 **No Preferences only**	Model 7 **Preference for Self-Employed only**
No-Preferences	0.313***		0.314***	0.314***			
	(0.056)		(0.055)	(0.055)			
Preferences for Self-Employed	1.077***	0.763***	1.070***	1.063***			
	(0.097)	(0.095)	(0.096)	(0.096)			
Preferences for Established-Firm		-0.313***					
		(0.056)					
Gender	-0.103*	-0.103*	-0.101*	-0.0924*	-0.179**	-0.0400	-0.0505
	(0.055)	(0.055)	(0.055)	(0.054)	(0.088)	(0.076)	(0.177)
Age	-0.0295***	-0.0295***	-0.0291***	-0.0294***	-0.0508***	-0.0347***	0.0131
	(0.006)	(0.006)	(0.006)	(0.006)	(0.011)	(0.009)	(0.012)
Work experience	0.112*	0.112*	0.102	0.103	0.215**	0.0901	-0.287
	(0.066)	(0.066)	(0.065)	(0.065)	(0.107)	(0.087)	(0.253)
Work-at-time-graduation	-0.184***	-0.184***	-0.184***	-0.183***	-0.226**	-0.142	-0.106
	(0.062)	(0.062)	(0.062)	(0.062)	(0.099)	(0.087)	(0.194)
Nationality	-0.287	-0.287	-0.290	-0.287	-0.431	-0.0862	-1.214*
	(0.192)	(0.192)	(0.191)	(0.191)	(0.330)	(0.251)	(0.695)
Final Mark	0.0129***	0.0129***	0.0134***	0.0137***	0.0126**	0.0122***	0.0239**
	(0.003)	(0.003)	(0.003)	(0.003)	(0.005)	(0.005)	(0.010)
Self- Employed Parents	0.230***	0.230***	0.233***	0.234***	0.144	0.288***	0.309*
	(0.065)	(0.065)	(0.065)	(0.065)	(0.108)	(0.092)	(0.182)
Intention to studying	0.533***	0.533***	0.546***	0.543***	0.745***	0.492***	-0.0469
	(0.055)	(0.055)	(0.054)	(0.054)	(0.088)	(0.075)	(0.180)
University Characteristics							
Incubator				0.0860	0.0445	0.0901	0.312
				(0.069)	(0.110)	(0.096)	(0.235)
TTO				-0.150*	-0.0887	-0.185*	-0.0735
				(0.078)	(0.129)	(0.109)	(0.254)
Business Plan-Competition				-0.0110	-0.111	0.0783	-0.259
				(0.068)	(0.111)	(0.093)	(0.233)
Contextual Characteristics							
R&D-Exp				-0.000242	0.000646	-0.000462	-0.00123
				(0.001)	(0.001)	(0.001)	(0.004)
R&D- Exp/Gdp				0.545	0.279	0.674	0.582
				(0.462)	(0.791)	(0.621)	(1.545)
R&D-Exp/ Business				-0.364	-0.201	-0.607*	0.313
				(0.231)	(0.394)	(0.313)	(0.756)
Employ-Rate				0.00221	-0.0379	0.0214	0.0356
				(0.021)	(0.036)	(0.029)	(0.069)
Employ-Rate (15-34 years old)				-0.00549	0.0199	-0.0179	-0.0286
				(0.015)	(0.026)	(0.021)	(0.047)
Constant	-2.217***	-1.904***	-2.015***	-2.179***	-0.998	-1.839*	-3.429
	(0.444)	(0.442)	(0.397)	(0.740)	(1.254)	(0.997)	(2.534)
Observations	7,421	7,421	7,422	7,422	3,191	3,650	581
University FE	YES	YES	NO	NO	NO	NO	NO
Regional FE	NO	NO	YES	NO	NO	NO	NO

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Individual's ability (measured as the individual's academic performance) affects the employment sorting for all the subsamples examined. Results show that students' academic performance is significantly and positively associated with the likelihood of sorting into self-employment. For individuals with preferences for working in an established firm and for those who have no preferences, academic performance positively affects their chance to sort into self-employment. We suppose that those students who excel during their studies are more able to find out and look for opportunities, which are then translated into real jobs.

Results show that working during university studies, positively affect the likelihood of sorting into a self-employed job. Looking at each group, we see that individuals with preferences for working in an established firm are more likely to end up in self-employment if they had some working experiences during their studies. Working at time of graduation has a negative and significant effect on sorting into self-employment for those individuals who have preferences for working in an established firm. We can suppose that these individuals have already found their job at the time of graduation, and for this reason are not likely to sort into self-employment.

Having parents who are self-employed affects the individual's sorting in entrepreneurship. We observe that having self-employed parents, is positively and significantly related to the likelihood of being self-employed. However, we do not find any evidence of the positive effect of the family for the individuals who have preferences for sorting into an established firm.

Finally, individual's sorting can be affected by contextual characteristics, such as universities and regions. We account for the characteristics of the universities and regions in which individuals are nested. First of all, we examine the role played by some infrastructures and facilities that universities create in order to support entrepreneurial activities by individuals. The presence of a TTO (Technology Transfer Office) of an Incubator or the organization of Business Plan Competition may foster individuals in starting a self-employment career. In model 5-7 we unpack the university fixed effects with three dummy variables that express the presence of an incubator, the presence of a TTO and the presence of business plan competition. We coded this

information for all the universities in which the students are graduated. Results show that universities facilities do not have a strong effect on the choice to become self-employed. An interesting result shows that the TTO has a negative effect on the likelihood of becoming self-employed. TTO might be perceived as an obstacle more than as a support, especially among graduate students. Second, we explore the regional characteristics that can have an impact on the probability of becoming self-employed. In particular, we unpack the regional fixed effect and we include five variables that represent the labor market characteristics of the region in which the individuals are nested. We do not find any strong effect on the probability of becoming self-employed. However, we see that higher is the expenditure in R&D lower is the probability of sorting into self-employment. This explains that the environment absorbs the workforce and individuals are not going to self-employment for necessity reasons.

4.3. Students' job attributes preferences and employment outcomes

Another explanation regarding the imperfect sorting from career interests to career choice may be associated with the individual's job attributes preferences. Individuals have a preference for a certain career, but then they also have preferences for some job attributes. A certain career can capture only some of the relevant attributes that an individual see as important for his or her future job. So it is possible that there is heterogeneity among the individuals who have the same career preference, and this heterogeneity can drive the sorting patterns. For example among individuals with preferences for an established job, some of them may care more about the social and cultural attributes of a job compared to others, and the former may be more likely to sort into a self-employed job while the latter may end sorting into established firms.

We perform the same analysis, as those shown in Table 5, including a number of individual-level measures that express job attributes preferences (Table 6). Model 1 in Table 6 shows the full sample and includes individual characteristics, job attributes and universities fixed characteristics. Model 2 includes regional fixed characteristics. In Model 3 we included university

and regional characteristics. In model 4, we added ex-ante preferences (we omitted the group of individuals with no preferences). Model 5-7 present split-sample regressions for those who have preferences for working in an established firm, those who do not have preferences and those with self-employment preferences, respectively.

Models 1-3 show that independence at work, flexibility, coherence with study, cultural and social aspects affect the probability to sort in a self-employed job. Job attributes as work environment, stability and professionalism are negatively and significantly related to the likelihood of sorting into self-employment. In Model 3, we unpack universities and regional fixed effects. We still find evidence of a negative and significant effect of stability, work environment and professionalism; and a positive and significant effect of independence, social and cultural aspects on the probability of sorting into self-employment.

In Model 4 we include ex-ante preferences and we find that several attributes as independence and stability are no longer significant, because they are reflected in career ex-ante preferences. However, we still find that social and cultural aspects, flexibility and coherence with study are positively and significantly related to the likelihood of becoming self-employed. Moreover, professionalism still has a negative and significant impact on self-employment.

Models 5-7 show that within each category there is some evidence of sorting with respect to some job attributes. Among those who have preferences for working in an established firm, the attributes of prestige and professionalism are negatively and significantly related to the likelihood of becoming self-employed. Individuals, who do not have career preferences, sort into self-employment because of some job attributes as cultural and social aspects that have a positive effect on the likelihood of becoming self-employed. Independence is positively and significantly related to the likelihood of sorting into self-employment. For those who have ex-ante preferences of becoming self-employed, the coherence with study is positively and significantly related to their sorting into self-employment.

Table 6:
Sorting based on job attributes preferences

Variables	Model 1 **Full Sample**	Model 2 **Full Sample**	Model 3 **Full Sample**	Model 4 **Full Sample**	Model 5 **Preference for Established Firm only**	Model 6 **No Preferences only**	Model 7 **Preference for Self-Employed only**
Preference for Established-Firm				-0.303***			
				(0.0559)			
Preference for Self-Employed				0.718***			
				(0.0961)			
Individual Characteristics							
Gender	-0.0225	-0.0233	-0.0140	-0.0444	-0.119	0.00360	0.0125
	(0.057)	(0.056)	(0.056)	(0.056)	(0.092)	(0.079)	(0.190)
Age	-0.0343***	-0.0339***	-0.0341***	-0.0345***	-0.0537***	-0.0415***	0.00819
	(0.006)	(0.006)	(0.006)	(0.006)	(0.011)	(0.009)	(0.013)
Work experience	0.122*	0.112*	0.114*	0.110*	0.219**	0.0944	-0.281
	(0.066)	(0.065)	(0.065)	(0.065)	(0.108)	(0.088)	(0.261)
Work-at-time-graduation	-0.160***	-0.159***	-0.159***	-0.176***	-0.221**	-0.137	-0.0878
	(0.061)	(0.061)	(0.061)	(0.062)	(0.099)	(0.088)	(0.201)
Nationality	-0.279	-0.283	-0.277	-0.277	-0.415	-0.0538	-1.150
	(0.192)	(0.191)	(0.190)	(0.191)	(0.333)	(0.252)	(0.728)
Final Mark	0.00916***	0.00960***	0.0100***	0.0114***	0.0118**	0.00984**	0.0142
	(0.003)	(0.003)	(0.003)	(0.003)	(0.005)	(0.005)	(0.011)
Self- Employed Parents	0.299***	0.303***	0.302***	0.243***	0.158	0.289***	0.345*
	(0.065)	(0.064)	(0.064)	(0.065)	(0.109)	(0.093)	(0.189)
Intention to studying	0.494***	0.507***	0.504***	0.487***	0.701***	0.418***	-0.0538
	(0.056)	(0.055)	(0.055)	(0.055)	(0.091)	(0.077)	(0.190)
Job Attributes							
Earnings	0.0536	0.0548	0.0547	0.0405	-0.00218	0.0579	0.0837
	(0.057)	(0.057)	(0.057)	(0.057)	(0.093)	(0.080)	(0.196)
Prestige	-0.0727*	-0.0708*	-0.0671	-0.0715*	-0.150**	-0.0166	-0.113
	(0.041)	(0.041)	(0.041)	(0.041)	(0.067)	(0.058)	(0.138)
Involvement	0.0235	0.0262	0.0256	0.0451	0.124	0.0408	-0.0988
	(0.052)	(0.052)	(0.052)	(0.052)	(0.086)	(0.073)	(0.176)
Flexibility	0.115**	0.108**	0.110**	0.0827*	0.109	0.0707	-0.0107
	(0.046)	(0.046)	(0.046)	(0.046)	(0.075)	(0.065)	(0.159)
Work Environment	-0.151***	-0.155***	-0.157***	-0.142***	-0.124	-0.144**	-0.0341
	(0.050)	(0.050)	(0.049)	(0.050)	(0.080)	(0.072)	(0.15)
Work Place	-0.0213	-0.0215	-0.0212	-0.0109	-0.0103	-0.0277	0.0428
	(0.042)	(0.042)	(0.042)	(0.043)	(0.069)	(0.060)	(0.138)
Career	-0.0657	-0.0600	-0.0595	-0.0412	-0.0198	-0.0659	0.157
	(0.055)	(0.054)	(0.054)	(0.055)	(0.091)	(0.076)	(0.182)
Stability	-0.120**	-0.116**	-0.113**	-0.0778	0.0699	-0.178**	-0.244
	(0.050)	(0.050)	(0.050)	(0.050)	(0.084)	(0.072)	(0.154)
Professionalism	-0.176**	-0.177**	-0.181***	-0.182***	-0.243**	-0.111	-0.374
	(0.070)	(0.069)	(0.069)	(0.070)	(0.116)	(0.097)	(0.231)
Coherence with study	0.100**	0.104**	0.102**	0.125***	0.0769	0.0915	0.504***
	(0.046)	(0.046)	(0.046)	(0.046)	(0.077)	(0.064)	(0.154)
Cultural Aspect	0.0978**	0.0990**	0.0992**	0.0954**	0.0491	0.112*	0.168
	(0.044)	(0.044)	(0.044)	(0.044)	(0.070)	(0.063)	(0.148)
Independence	0.0890**	0.0913**	0.0927**	0.0427	0.0256	0.119*	-0.676***
	(0.045)	(0.045)	(0.045)	(0.046)	(0.071)	(0.064)	(0.202)
Free Time	-0.0588	-0.0607	-0.0618	-0.0676	-0.0472	-0.111*	0.175
	(0.045)	(0.045)	(0.045)	(0.045)	(0.074)	(0.063)	(0.152)
Social Aspect	0.129***	0.126***	0.124***	0.116***	0.0951	0.132**	0.00645
	(0.042)	(0.042)	(0.042)	(0.042)	(0.068)	(0.060)	(0.140)

University Characteristics							
Incubator			0.0862	0.0844	0.0474	0.0881	0.261
			(0.069)	(0.069)	(0.111)	(0.097)	(0.245)
TTO			-0.151*	-0.140*	-0.0773	-0.169	-0.159
			(0.078)	(0.079)	(0.130)	(0.109)	(0.264)
Business Plan-Competition			-0.0382	-0.0186	-0.119	0.0664	-0.243
			(0.068)	(0.068)	(0.111)	(0.094)	(0.242)
Regional Characteristics							
R&D-Exp			-2.62e-05	-0.000150	0.000600	-0.000316	-0.00101
			(0.001)	(0.001)	(0.002)	(0.001)	(0.003)
R&D- Exp/GDP			0.466	0.513	0.322	0.623	0.475
			(0.462)	(0.465)	(0.795)	(0.626)	(1.604)
R&D-Exp/Business			-0.351	-0.344	-0.209	-0.587*	0.498
			(0.231)	(0.232)	(0.396)	(0.315)	(0.786)
Employ-Rate			0.000768	-0.000359	-0.0421	0.0182	0.0154
			(0.021)	(0.021)	(0.036)	(0.029)	(0.073)
Employ-Rate (15-34 years old)			-0.00578	-0.00468	0.0228	-0.0175	-0.0148
			(0.015)	(0.015)	(0.026)	(0.021)	(0.049)
Constant	-1.135**	-1.000**	-1.023	-1.154	-0.587	-1.048	-0.321
	(0.527)	(0.485)	(0.804)	(0.810)	(1.373)	(1.099)	(2.847)
Observations	7,421	7,422	7,422	7,422	3,191	3,650	581
University FE	YES	NO	NO	NO	NO	NO	NO
Regional FE	NO	YES	NO	NO	NO	NO	NO

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Overall, results show that some job attributes can explain the imperfect sorting of individuals. In particular, there are some characteristics that better explain the imperfect match between the perceived and the actual environment fit. Individuals who cannot fit with the environment look for other job opportunities that can better fit with who they are and who to be.

4.4. Sorting into a Startup

The general definition of self-employed states that "*self-employed* are defined as those who own and work in their own business, including unincorporated businesses and own-account workers" (OECD, 2016, p.22). As that, being self-employed means being an individual who declares to be a self-employed may work as a freelancer, a consultant or may be an owner of

small business. On the other side, an entrepreneur is an individual who organizes and operates a proper venture, taking on greater than normal financial risks in order to do so.

In this section, we aim to focus on the university graduate who became entrepreneurs one year after graduation by creating a new venture. In order to focus on this particular group, we asked individuals if they have created a business one year after graduation. We create a new dependent variable that takes 1 if the individual has created a new venture, and 0 if they entered in an established firm. In order to compare those who became entrepreneurs and those who started a job in an established firm, we take out from the sample the individuals who are self-employed. We finally got a new sample of 5,388 individuals: 94.42% (5,040) are employed in an established firm and 5.58% (298) are entrepreneurs.

We then perform the same analysis conducted for the likelihood of becoming self-employed. In this case, we use the new dependent variable, and we account for the likelihood of becoming an entrepreneur. Table 7 presents logistic regression results that predict the likelihood of starting a new venture relative to the likelihood of sorting in a job in an established firm. We control for factors Models 1-3 include ex-ante career preferences, individual characteristics, as gender, age, work experience and nationality; university fixed effects (Model 1-2) and regional fixed effects (Model 3). In model 4 we unpack both regional and university fixed effects. We observe that individuals with self-employment preferences are more likely to start a new venture compared to individuals with preferences for working in an established firm and individuals who do not have career preferences. Overall, there is a strong evidence of sorting in entrepreneurship by ex-ante self-employed preferences.

Models 5-7 estimate the same regression separately for the subsamples of individuals with preferences for working in an established firm; individuals who do not have career preferences and those with self-employed preferences. We first look at individual's ability, measured as the individual academic performance.

Table 7:
Sorting into entrepreneurship vs. established firm

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
	Full sample	**Full sample**	**Full sample**	**Full sample**	**Preference for Established Firm only**	**No Preferences only**	**Preference for Self-Employed only**
No-Preferences	0.0890		0.104	0.102			
	(0.139)		(0.137)	(0.137)			
Preferences for Self-Employed	1.552***	1.463***	1.572***	1.530***			
	(0.188)	(0.183)	(0.185)	(0.184)			
Preferences for Established Firm		-0.0890					
		(0.139)					
Individual Characteristics							
Gender	-0.0789	-0.0789	-0.113	-0.0836	-0.103	-0.227	0.307
	(0.131)	(0.131)	(0.128)	(0.128)	(0.214)	(0.195)	(0.312)
Age	-0.00351	-0.00351	-0.000813	-0.00110	-0.00411	0.0170	-0.0292
	(0.0133)	(0.0133)	(0.0132)	(0.0132)	(0.0227)	(0.0194)	(0.0318)
Work experience	-0.192	-0.192	-0.196	-0.192	-0.138	-0.424**	0.816*
	(0.146)	(0.146)	(0.144)	(0.143)	(0.230)	(0.204)	(0.488)
Work-at-time-graduation	-0.952***	-0.952***	-0.907***	-0.891***	-1.251***	-0.814***	-0.568*
	(0.168)	(0.168)	(0.165)	(0.164)	(0.298)	(0.263)	(0.321)
Nationality	0.319	0.319	0.245	0.281	0.105	0.324	0.437
	(0.390)	(0.390)	(0.387)	(0.386)	(0.746)	(0.548)	(0.869)
Final Mark	-0.0252***	-0.0252***	-0.0252***	-0.0243***	-0.0303**	-0.0324***	0.00763
	(0.00727)	(0.00727)	(0.00713)	(0.00707)	(0.0120)	(0.0106)	(0.0165)
Self- Employed Parents	0.421***	0.421***	0.437***	0.446***	0.461*	0.550**	0.407
	(0.145)	(0.145)	(0.143)	(0.143)	(0.246)	(0.216)	(0.308)
Intention to studying	0.235*	0.235*	0.222*	0.218*	0.360*	0.261	-0.256
	(0.131)	(0.131)	(0.129)	(0.129)	(0.217)	(0.191)	(0.309)
University Characteristics							
Incubator				0.242	0.0746	0.385	0.340
				(0.179)	(0.300)	(0.265)	(0.444)
TTO				-0.356**	-0.121	-0.506**	-0.423
				(0.167)	(0.283)	(0.255)	(0.404)
Business Plan-Competition				-0.122	-0.426*	0.115	-0.0750
				(0.155)	(0.250)	(0.233)	(0.396)
Regional Characteristics							
R&D-Exp				-5.01e-05	-0.00328	0.00128	0.00252
				(0.00273)	(0.00458)	(0.00396)	(0.00712)
R&D- ExpGdp				0.311	1.409	0.378	-0.920
				(1.136)	(1.956)	(1.625)	(2.930)
R&D-ExpBusiness				-0.482	-0.888	-1.295	1.259
				(0.565)	(0.972)	(0.819)	(1.438)
Employ-Rate				-0.0566	-0.0374	-0.0717	-0.128
				(0.0500)	(0.0809)	(0.0729)	(0.135)
Employ-Rate (15-34 years old)				0.0132	0.0189	0.0241	0.0282
				(0.0344)	(0.0566)	(0.0504)	(0.0888)
Constant	-0.643	-0.554	-0.693	2.302	1.557	3.029	2.919
	(1.022)	(1.018)	(0.873)	(1.755)	(2.938)	(2.474)	(4.743)
Observations	5,338	5,338	5,338	5,338	2,449	2,540	349
University FE	YES	YES	NO	NO	NO	NO	NO
Regional FE	NO	NO	YES	NO	NO	NO	NO

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Results show that academic performance is negatively and significantly related to the likelihood of starting a new venture, meaning that individuals who do not perform very well at graduation are more likely to create a new venture. This result is opposite from what we have found for the likelihood of becoming self-employed. We suppose that those individuals who create a new venture one year after graduation have been involved in entrepreneurial activities during the university studies, affecting their academic performance. Moreover, starting a new venture is a very complex and full-time activity that takes time and energy and can affect individual performance during studies. Second, we find that having self-employed parents positively and significantly affect the likelihood of starting a new venture. Third, working at graduation has a negative and statistically significant impact on the likelihood of creating a new venture. This evidence is true for all the subsamples, and it helps explain the sorting pattern. Finally, we look at the context and we observe that university support does not work as expected. We observe that the TTO (Technology Transfer Office) has a negative impact on the likelihood of starting a new venture. We can associate, the TTO with a high amount of bureaucracy that can negatively influence the entrance into entrepreneurship. Concerning the regional characteristics, we do not find any significant impact of these factors on the likelihood of becoming an entrepreneur. We find that there is a negative and significant relationship between the percentage of R&D expenditure in the business enterprise sector and the likelihood of becoming an entrepreneur. This means that in those regions where there is a high expenditure on R&D in the business sector, individuals are less likely to start a new venture because they are attracted by innovative ventures.

In Table 8 we perform a logistic regression that includes a number of individual-level measures that express job attributes preferences, as we have done in Table 4 for the likelihood of becoming self-employed. Model 1 in Table 8 shows the full sample and includes individual characteristics job attributes and the universities fixed characteristics. In Model 2 we add regional fixed characteristics and in Model 3 we unpack both the university and regional characteristics. In

model 4 we add the ex-ante preferences. Models 5-7 present regressions for the three split-samples: preferences for working in an established firm, no preferences and preferences for self-employment.

Results show that there are two main differences between the likelihood of becoming self-employed and that of becoming an entrepreneur. The first is that lots of the attributes as independence, cultural and social aspect and coherence study, which affect the likelihood of becoming self-employed, do not any impact on the likelihood of becoming an entrepreneur. However, we find that the job attribute of involvement is positively and significantly related to the probability of becoming an entrepreneur. This result can lead to some considerations regarding how individuals perceive the figure of an entrepreneur. Job involvement is defined as the degree to which employees are engaged and enthusiastic about performing their work. Engagement for a work activity and enthusiasm are those characteristics that explain in this setting the sorting pattern in entrepreneurship. University graduates who become entrepreneurs one year after graduation have aspirations for a job with these characteristics.

5. Discussion

In this explorative study, we set out to examine how career preferences translate into employment outcomes; in particular, we are interested in exploring those reasons that can explain the inconsistent sorting. We built on the P-E fit approach, separating perceived fit from the actual fit. Individuals form career preferences (perceived fit) and then explore the environment looking for jobs that fit their personalities, attitudes, and values. However, the perceived fit and the actual fit do not always match.

We use unique longitudinal data from over 7,400 Italian graduate students who were interviewed at graduation and at their first job, one year after graduation. We first show that graduate students with preferences for self-employed jobs are more likely to start a self-employed job one year later, while those with preferences for working in an established firm are more likely

to subsequently join one. Among those individuals who do not have career preferences, the majority part sort into an established firm. At the same time, we find that a gap exists between career preferences and employment outcomes: the sorting is not perfect. Almost 18% of individuals with preferences for a job in an established firm sorts into self-employment one year after graduation and more than 50% of individuals with preferences for sorting into self-employment sort into an established firm.

We then perform a series of regression analysis to compare how individuals with different career preferences sort into self-employment. Our results show that academic performance positively affects the probability of entering self-employment; specifically, among those with preferences for a job in an established firm and those who do not have career preferences, the individual academic performance can partially explain the imperfect sorting. Moreover, work experience is a good predictor of sorting into self-employment. Contextual characteristics, as universities and regional characteristics, do not help explain the inconsistent pattern and the exit in self-employment. Our results show that three main job attributes can help explain the imperfect sorting among those who do not have ex-ante interests in entering self-employment but become self-employed one year after graduation. These attributes are related to the social and cultural aspects and to the coherence with study. We finally acknowledge a number of differences between the likelihood of becoming self-employed and that of becoming an entrepreneur. We aim to understand if there are some differences between the likelihood of becoming self-employed and that of starting and managing a new venture. The most relevant one is related to the concept of being entrepreneurs versus self-employed. Individuals who become entrepreneurs put a great emphasis on the job involvement, on the importance of doing an activity with enthusiasm and engagement. Becoming an entrepreneur is perceived as a career that leads individuals to express who they are and to enjoy the job that are doing. Our results hold several implications for theory.

Table 8:
Sorting into entrepreneurship based on job attributes preferences

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Variables	**Full Sample**	**Full Sample**	**Full Sample**	**Full Sample**	**Preference for Established Firm only**	**No Preferences only**	**Preference for Self-Employed only**
Preferences for Established-firm				-0.108			
				(0.138)			
Preferences for Self-employed				1.343***			
				(0.186)			
Gender	-0.00458	-0.0274	-0.00616	-0.0956	-0.106	-0.237	0.306
	(0.134)	(0.131)	(0.131)	(0.133)	(0.225)	(0.202)	(0.341)
Age	-0.0117	-0.00948	-0.00990	-0.00578	-0.00875	0.0133	-0.0343
	(0.0135)	(0.0135)	(0.0135)	(0.0135)	(0.0231)	(0.0199)	(0.0324)
Work experience	-0.148	-0.152	-0.150	-0.208	-0.130	-0.454**	0.851*
	(0.146)	(0.144)	(0.143)	(0.145)	(0.235)	(0.207)	(0.507)
Work-at-time-graduation	-0.884***	-0.834***	-0.823***	-0.907***	-1.276***	-0.806***	-0.649*
	(0.165)	(0.162)	(0.162)	(0.166)	(0.300)	(0.264)	(0.339)
Nationality	0.288	0.221	0.248	0.203	-0.0707	0.388	-0.0639
	(0.389)	(0.386)	(0.385)	(0.391)	(0.755)	(0.551)	(0.995)
Final Mark	-0.0285***	-0.0285***	-0.0278***	-0.0245***	-0.0268**	-0.0343***	0.00575
	(0.00731)	(0.00716)	(0.00712)	(0.00720)	(0.0124)	(0.0107)	(0.0181)
Self- Employed Parents	0.510***	0.531***	0.538***	0.414***	0.456*	0.487**	0.454
	(0.143)	(0.141)	(0.141)	(0.144)	(0.250)	(0.220)	(0.327)
Intention to studying	0.219	0.212	0.202	0.146	0.275	0.201	-0.347
	(0.133)	(0.131)	(0.130)	(0.131)	(0.224)	(0.196)	(0.334)
Job Attributes							
Earnings	-0.0623	-0.0627	-0.0461	-0.0837	-0.233	-0.0637	0.238
	(0.136)	(0.135)	(0.135)	(0.135)	(0.238)	(0.196)	(0.351)
Prestige	0.110	0.122	0.128	0.131	0.195	0.203	-0.130
	(0.101)	(0.0999)	(0.0997)	(0.0998)	(0.178)	(0.153)	(0.235)
Involvement	0.280**	0.284**	0.276**	0.278**	0.435*	0.0884	0.503
	(0.134)	(0.133)	(0.133)	(0.133)	(0.238)	(0.195)	(0.349)
Flexibility	-0.00255	0.00831	0.0108	-0.0380	0.0177	0.00822	-0.413
	(0.109)	(0.108)	(0.107)	(0.108)	(0.184)	(0.166)	(0.272)
Work Environment	-0.104	-0.116	-0.124	-0.0874	-0.127	-0.160	0.213
	(0.121)	(0.120)	(0.120)	(0.121)	(0.207)	(0.185)	(0.306)
Work Place	0.0553	0.0679	0.0660	0.0718	0.193	-0.0514	0.128
	(0.100)	(0.0993)	(0.0990)	(0.0997)	(0.172)	(0.152)	(0.241)
Career	0.0927	0.0985	0.0953	0.131	0.376	0.0755	-0.0655
	(0.143)	(0.142)	(0.141)	(0.142)	(0.261)	(0.210)	(0.318)
Stability	-0.336***	-0.320***	-0.317***	-0.246**	-0.0784	-0.229	-0.735***
	(0.115)	(0.114)	(0.114)	(0.116)	(0.208)	(0.183)	(0.273)
Professionalism	-0.136	-0.142	-0.134	-0.136	-0.515*	0.164	-0.223
	(0.176)	(0.175)	(0.174)	(0.177)	(0.289)	(0.278)	(0.434)
Coherence with study	-0.181*	-0.190*	-0.178*	-0.139	-0.181	-0.205	0.333
	(0.105)	(0.104)	(0.104)	(0.105)	(0.185)	(0.156)	(0.259)
Cultural Aspect	0.0238	0.0266	0.0313	0.0424	-0.122	0.219	0.0248
	(0.105)	(0.104)	(0.103)	(0.104)	(0.171)	(0.165)	(0.238)
Independence	0.163	0.172	0.155	0.0260	0.197	0.0368	-0.707*
	(0.113)	(0.112)	(0.111)	(0.114)	(0.186)	(0.163)	(0.374)

Free Time	0.0488	0.0216	0.0315	0.0343	-0.0481	-0.0630	0.544**
	(0.108)	(0.106)	(0.106)	(0.106)	(0.188)	(0.159)	(0.265)
Social Aspect	0.219**	0.202*	0.203*	0.198*	0.222	0.112	0.165
	(0.105)	(0.104)	(0.104)	(0.104)	(0.179)	(0.156)	(0.252)
University Characteristics							
Incubator			0.254	0.243	0.126	0.403	0.295
			(0.179)	(0.181)	(0.304)	(0.269)	(0.468)
TTO			-0.321*	-0.334**	-0.145	-0.443*	-0.559
			(0.167)	(0.168)	(0.288)	(0.259)	(0.425)
Business Plan-Competition			-0.106	-0.0835	-0.372	0.131	0.0601
			(0.154)	(0.156)	(0.255)	(0.236)	(0.424)
Regional Characteristics							
R&D-Exp			0.000337	-4.69e-05	-0.00360	0.00150	0.00284
			(0.00273)	(0.00276)	(0.00464)	(0.00400)	(0.00780)
R&D- ExpGdp			0.164	0.306	1.610	0.203	-0.741
			(1.138)	(1.148)	(1.983)	(1.641)	(3.237)
R&D-ExpBusiness			-0.500	-0.510	-0.991	-1.210	1.082
			(0.563)	(0.568)	(0.980)	(0.822)	(1.579)
Employ-Rate			-0.0566	-0.0574	-0.0470	-0.0681	-0.188
			(0.0498)	(0.0503)	(0.0832)	(0.0728)	(0.143)
Employ-Rate (15-34 years old)			0.0119	0.0147	0.0299	0.0200	0.0692
			(0.0341)	(0.0344)	(0.0579)	(0.0502)	(0.0942)
Constant	-0.319	-0.441	2.677	2.118	0.221	3.070	4.700
	(1.233)	(1.101)	(1.904)	(1.929)	(3.229)	(2.775)	(5.475)
Observations	5,338	5,338	5,338	5,338	2,449	2,540	349
University FE	YES	NO	NO	NO	NO	NO	NO
Regional FE	NO	YES	NO	NO	NO	NO	NO

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

First, in this study we adopt a career approach to explain how individuals sort into self-employment. To date research in entrepreneurship has rarely looked at entrepreneurship as a career that individuals can choose during their lifetime and little research has adopted a career perspective. Entrepreneurship can be studied "using a perspective that explicitly conceptualizes the relationship between entrepreneurial dynamics, labor market processes, and career trajectories" (Burton, Sorenson & Dobrev, 2016, p.239). In this study, we look at entrepreneurship and more in general at self-employment as a career choice that students can consider to pursue one year after graduation. In particular, we adopt the P-E environment

approach to explain why individuals engage in self-employed activities that were previously unintended and those reasons that may prevent individuals in sorting into self-employment.

Second, we provide evidence that not all individuals who have preferences for self-employment then enter into self-employment. A high percentage ends up in established firms. This is an important factor to consider with respect to recruiting and retaining entrepreneurial individuals. There is a growing body of research that suggests how entrepreneurs emanate from established organizations (Sørensen, 2007; Sorenson & Fasiotto, 2011). In particular, there are some organizations that are more entrepreneurial than others, and some individual can be attracted to these organizations to learn about becoming a founder or because of the more entrepreneurial environment offered by the organization. As that, it is important to understand interests and preferences of individuals that an organization is going to hire. Holland (1997) suggested that six type of personality exists (realistic, investigative, artistic, social, enterprising, or conventional) and that the nature of the work environments can be classified in a similar way. Employers have to better understand individuals' preferences and trying to match individuals and job position in the possible best way.

Finally, these results can have an important impact on educators and policymaker. Our results suggest that simply exposing individuals to entrepreneurial courses or activities does not result in desired outcomes. We suggest that educators and policymakers have to consider carefully the type of instruments and supports accordingly to the individuals and their interests.

Limitations and Future Research

There are several limitations of our research that also provide opportunities for the future. First, our analysis draws on a longitudinal dataset with waves at two points in time, the first at graduation and the second one-year after graduation. Individuals who enter the job market for the first time, and especially students, are still building their preferences and their employment status one year after graduation could not express a definitive career choice. Future research has to follow individuals for a longer period of time, in order to analyze how time

affects career changes. A second limitation concerns the information that we have about the job that individuals are doing one year after graduation. We do not have information about the dimension of the enterprise, their job position or their wages, which could be helpful to understand the reasons related to the imperfect match. Moreover, to set out individuals' career preferences, we use dummy variables that can be a limitation in the expression of the value that individuals give to their career preference.

In spite of all these limitations, we show that the job sorting is not always perfect and there are several reasons that can help better explain why this happens. In particular, we were able to disentangle those main drivers that lead individuals with preferences for working in an established firm to become self-employed. We therefore recommend future studies to explore more in details the relation existing between individual preferences and subsequent employment.

CHAPTER 6

Conclusion

This dissertation aims at shedding light on the process by which individuals choose to enter entrepreneurship. We adopted a career theory approach as a research lens to explain the choice of becoming entrepreneur. As opposed to intentional theories, which are general psychological theories applicable to a range of human behaviors, career theories deal specifically with how individuals' form career goals and convert them into action. Adopting a career perspective, we were able to look at entrepreneurship as one of the several career choices that individuals can choose to pursue during their lifetime. In particular, we extended career research to the realm of entrepreneurship, showing that the environment is an important explanation as to illustrate why some individuals but not others engage in entrepreneurial action.

We conduct this research in the under-investigated context of student entrepreneurship that consider the creation of new ventures by students and university graduates (Roberts & Eesley, 2011; Astebro et al., 2012). We developed a unique survey, the "Student Entrepreneurship Survey", in collaboration with AlmaLaurea, an Italian consortium. The survey was included as a new module in the yearly annual survey of Italian university graduates administered by AlmaLaurea. Between September and December 2014, we reached 61,115 university graduates from the participating 64 universities (out of 95 Italian universities) and we collected data concerning entrepreneurial intentions and most other independent and control variables. Twelve months later, in 2015, these respondents were surveyed again rendering 23,456 responses (37%).

We developed the follow research outputs. The first is a conceptual paper that explores the relationship between individual's entrepreneurial intentions and subsequent actions. The focus of the paper is on the role of the environment in the venture creation process, as to illustrate why some individuals but not others engage in entrepreneurial action.

Second we were able to explore some characteristics of the under-explored context of student entrepreneurship. We highlighted its newness, uniqueness, magnitude, frequency, and complexity. In doing so, we outline the characteristics of university graduates who enter

entrepreneurship and we provide a unique research context for the advancement of entrepreneurship research.

The third output is an empirical paper that focuses on the entrepreneurship career; it looks at the intentions-action relationship and it focuses on those environmental factors that trigger and support the translation of intentions into actions. In particular, we developed and tested a model specifying contextual influences facilitating the conversion of entrepreneurial intentions into action. We recognized that personal attributes, external environmental factors and overt actions, all operate as mechanisms that affect one another and that the process of translation of entrepreneurial intentions into actions does not occur in a vacuum.

Finally we developed a study that explores how individuals' preferences fit with the environment, leading individuals to enact their preferences into career choices. In particular, we analyzed the reasons that explain the inconsistency between individual preferences and career outcomes. First we provided evidence that not all individuals who have preferences for self-employment then enter into self-employment, because a high percentage ends up into established firms. Second, we were able to show how the environment and its characteristics affect the individual's enactment career process.

BIBLIOGRAPHY

Adam, A., & Fayolle, A. 2015. Bridging the entrepreneurial intention–behavior gap: the role of commitment and implementation intention. ***International Journal of Entrepreneurship and Small Business,*** 25(1): 36-54.

Ai, C., & Norton, E. 2003. Interaction terms in logit and probit models. ***Economics Letters***, 80(1): 123-129.

Ajzen, I. 1985. From intentions to actions: A theory of planned behavior. In J. Kuhl & J. Beckmann (Eds.), ***Action-control: From cognition to behavior***, 1-39. Heidelberg: Springer.

Ajzen, I. 1987. Attitudes, Traits, and Actions: Dispositional Prediction of Behavior in Personality and Social Psychology. ***Advances in Experimental Social Psychology***, 20: 1-63.

Ajzen, I. 1991. The theory of planned behavior. ***Organizational Behavior and Human Decision Processes***, 50: 179-211.

Ajzen, I. 2001. Nature and operation of attitudes. ***Annual Review of Psychology****, 52*, 27-58.

Ajzen, I. 2011/2014. Theory of planned behavior. Retrieved from http://people.umass.edu/ajzen/tpb.html

Akerlof, G.A., & Kranton, R.E. 2000. Economics and Identity. ***Quarterly Journal of Economics***, 115(3): 715-753.

Aldrich, H. E., & Ruef, M. 2006. ***Organizations Evolving***. Second Edition. London: Sage.

Aldrich, H. E., & Zimmer, C. 1986. Entrepreneurship Through Social Networks, in D. L. Sexton and R. W. Smilor (Eds.), ***The Art And Science of Entrepreneurship***, 3-23. Cambridge, MA: Ballinger.

Aldrich, H.E., Renzulli, L.A., & Langton, N. 1998. Passing on Privilege: Resources Provided by Self-Employed Parents to Their Self-Employed Children. ***Research in Social Stratification and Mobility*****,** 16: 291-317.

Armitage, C. J., & Conner, M. 2001. Efficacy of the theory of planned behavior: A meta-analytic review. ***British Journal of Social Psychology***, 40: 471-499.

Astebro, T., Bazzazian, N., & Braguinsky, S. 2012. Startups by recent university graduates and their faculty: Implications for university entrepreneurship policy. ***Research Policy***, 41: 663-667.

Astin, H. S. 1984. The meaning of work in women's lives: A sociopsychological model of career choice and work behavior. ***The Counseling Psychologist****,* 12: 117-126.

Audia, P. G., & Rider, C. I. 2006. Entrepreneurs as organizational products: Revisited. ***The Psychology of Entrepreneurship***. J.R. Baum, R.A. Baron & M. Frese (Eds.). Hillsdale, NJ: Lawrence Erlbaum Associates.

Autio, E., Keeley, R. H., Klofsten, M., Parker, G. G. C., & Hay, M. 2001. Entrepreneurial intent among students in Scandinavia and in the USA***. Enterprise and Innovation Management Studies,*** 2(2): 145-160.

Azoulay, P., Liu, C.C., & Stuart, T. E. 2014. Social influence given (partially) deliberate matching: Career imprints in the creation of academic entrepreneurs. Working paper, Harvard Business School, Boston.

Bagozzi, R. P. 1992. The Self-regulation of Attitudes, Intentions, and Behavior. ***Social Psychology Quarterly,*** 55: 178-204.

Bandura, A. 1977. ***Social learning theory*****.** New York: General Learning Press.

Bandura, A. 1986. ***Social foundations of thought and action: A social cognitive theory***. Englewood Cliffs, NJ: Prentice Hall.

Bandura, A., Reese, L., & Adams, N. E. 1982. Microanalysis of action and fear arousal as a function of differential levels of perceived self- efficacy. ***Journal of Personality and Social Psychology***, 43: 5-21.

Bar Nir, A., Watson, W., & Hutchins, H. 2011. Mediation and Moderated Mediation in the

Relationship Among Role Models, Self-Efficacy, Entrepreneurial Career Intention, and Gender. ***Journal of Applied Social Psychology***, 41(2): 270-297.

Baron, R.A., & Henry, R.A. 2010. How entrepreneurs acquire the capacity to excel: insights from research on expert performance. ***Strategic Entrepreneurial Journal,*** 4(1): 49- 65.

Bercovitz, J. & Feldman, M., 2008. Academic Entrepreneurs: Organizational Change at the Individual Level. ***Organization Scienc****e*, 19(1): 69-89.

Betz, N. E. 1989. Implications of the null environment hypothesis for women's career development and for counseling psychology. ***The Counseling Psychologist,*** 17: 136-144.

Bird, B. 1988. Implementing Entrepreneurial Ideas: The Case for Intention. ***Academy of Management Review***, 13(3): 442-453.

Bird, B. 1992. The operation of intentions in time: The emergence of the new venture. ***Entrepreneurship Theory & Practice,*** 17(1): 11-20.

Blau, P. M., & Duncan, O. D. 1967. ***The American occupational structure***. New York: Wiley.

Blustein, D. L., Phillips, S. D., Jobin-Davis, K., Finkelberg, S. L., & Roarke, A. E. 1997. A theory-building investigation of the school-to-work transition. ***Counseling Psychologist***, 25: 364-402.

Boh, W.F., De-Haan, U., Strom, R.J. 2016. University technology transfer through entrepreneurship: faculty and students in spin-offs. ***The Technology Transfer Journal***, 41(4): 661-669.

Bolzani, D., Fini, R., Grimaldi, R., & Sobrero, M. 2014. University spin-offs and their impact: longitudinal evidence from Italy. ***Journal of Industrial and Business Economics,*** 41(1): 181-205.

Boyd, N. G., & Vozikis, G. S. 1994. The influence of self-efficacy on the development of entrepreneurial intentions and actions. ***Entrepreneurship Theory and Practice,*** 18(4): 63-77.

Bosma, N., Hesselsb, J., Schutjensa, V., VanPraagc, M., Verheuld, I. 2012. Entrepreneurship and role models. ***Journal of Economic Psychology,*** 33(2): 410-424.

Brännback, M., Carsrud, A. L., Kickul, J., & Krueger, N. 2007. "Watch out, Issac!!" - Re-constructing entrepreneurial intentions. ***Regional Frontiers of Entrepreneurship Research***, 106-120.

Brush, C.G., Greene, P.G., & Hart, M.M., 2001. From initial idea to unique advantange: The entrepreneurial challenge of constructing a resource base. ***Academy of Management Executive***, 15(1): 64-80.

Burton, M.D., Sorensen, J.B., & Dobrev, S.D. 2016. A Careers Perspective on Entrepreneurship. ***Entrepreneurship: Theory and Practice,*** 40(2): 237-247.

Burton, M.D., Sørensen, J.B., & Beckman C.M. 2002. Coming from good stock: Career histories and new venture formation***.*** In Lounsbury M, Ventresca MJ, (Eds.), ***Research in the Sociology of Organizations,*** 19: 29-262.

Burton, M.D., Sorensen, J.B., & Dobrev, S.D. 2016. A Careers Perspective on Entrepreneurship. ***Entrepreneurship: Theory and Practice,*** 40(2): 237-247.

Cable, D. M., & Judge, T. A. 1996. Person-organization fit, job choice decisions, and organizational entry. ***Organizational Behavior and Human Decision Processes***, 67(3): 294-311.

Carsrud, A., & Brännback, M. 2011. Entrepreneurial motivations: What do we still need to know? ***Journal of Small Business Management,*** 49(1): 9-26.

Certo, S.T., Busenbark, J.R., Woo, H., & Semadeni, M. 2016. Sample selection bias and Heckman models in strategic management research. ***Strategic Management Journal,*** 37 (11): 2639-2657.

Chatman, J. A. 1989. Improving interactional organizational research: A model of person-organization fi.t. ***Academy of Management Review***, 14: 333-349.

Chatman, J. A. 1991. Matching people and organizations: Selection and socialization in public accounting firms. ***Administrative Science Quarterly***, 36: 459-484.

Cobalti, A., & Schizzerotto A. 1994. *La mobilità sociale in Italia*. Bologna: Il Mulino.
Coleman, J., Katz, E., & Menzel, H. 1957. The Diffusion of an Innovation among Physicians. ***American Sociological Association***, 20(4): 253–270.
Cohen, J. 1992. A power primer. ***Psychological Bulletin***, 112:155-159.
Colombo, M., Piva E., & Rossi-Lamastra, C. 2015. Student entrepreneurs from technology-based universities: the impact of course curriculum on entrepreneurial entry. Imperial Innovation and Entrepreneurship Conference, 18-19 June 2015, Royal Society London.
Dahl, M.S., & Sorenson, O. 2009. The embedded entrepreneur. ***European Management Review***, 6(3): 172-181.
Dahlander, L., & McFarland, D.A. 2013. Ties that last tie formation and persistence in research collaborations over time. ***Administrative Science Quarterly***, 58(1): 69-110.
Dahlstrand, Å. L., & Berggren, E. 2010. Linking innovation and entrepreneurship in higher education: a study of Swedish schools of entrepreneurship. In: R., Oakey, A., Groen, G., Cook, & P., Van der Sijde, (Eds.), ***New Technology-Based Firms in the New Millennium***: 35-50. Emerald Group Publishing.
Davidsson, P. 2008. ***The Entrepreneurship Research Challenge.*** Northampton, MA: Edward Elgar Publishing.
Dawis, R. V., & Lofquist, L. H. 1976. Personality style and the process of work adjustment. ***Journal of Counseling Psychology*****,** 23: 55-59.
Dawis, R. V., & Lofquist, L. H. 1984. ***A psychological theory of work adjustment***. Minneapolis: University of Minnesota Press.
Dawis, R. V. 1994. The theory of work adjustment as a convergent theory. In M. L. Savickas & R. W. Lent (Eds.), *Convergence in career development theory,* 9-32. Palo Alto, CA: CPP Books.
Dawis, R.V. 1996. The Theory of Work Adjustment and Person-Environment correspondence Counseling. In D. Brown & L. Brooks (Eds.), *Career Choice and Development,* San Francisco: Jossey-Bass,
Dobrev, S. D. & Barnett, W. P. 2005. Organizational roles and transition to entrepreneurship. ***Academy of Management Journal***, 48(3): 433-449.
Donohue, R. 2006. Person-environment congruence in relation to career change and career persistence. ***Journal of Vocational Behavior***, 68(3): 504-515.
Douglas, E. J., & Shepherd, D.A. 2002. Self-employment as a career choice: Attitudes, entrepreneurial intentions, and utility maximization***. Entrepreneurship: Theory & Practice***, 26(3): 81-90.
Eesley, C. E. & Miller, W. F. 2012. Impact: Stanford University's Economic Impact via Innovation and Entrepreneurship. Working paper. Available at SSRN: https://ssrn.com/abstract=2227460
Elfenbein, D.W., Hamilton, B.H., Zenger, T.R. 2010. The small firm effect and the entrepreneurial spawning of scientists and engineers. ***Management Science***, 56(4): 659-681.
European Commission. 2016. *Annual Reports on European SMEs 2015/2016*.
Evans, D. S., & Leighton, L. S. 1989. Some empirical aspects of entrepreneurship. ***American Economic Review,*** 79: 519-535.
Falck, O., Heblich, S. & Luedemann, E., 2012. Identity and entrepreneurship: Do school peers shape entrepreneurial intentions? ***Small Business Economics***, 39(1): 39-59.
Fini, R., & Grimaldi, R., 2017. Process approach to academic entrepreneurship: evidence from the globe, World Scientific Publishing Singapore.
Fini, R., Grimaldi, R., Marzocchi, G. L., & Sobrero, M. 2012. The determinants of corporate entrepreneurial intention within small and newly established firms. ***Entrepreneurship Theory and Practice***, 36(2): 387-414.
Fini, R., Meoli, A., Sobrero, M., Ghiselli, S. & Ferrante, F. 2016. Student Entrepreneurship: Demographics, Competences and Obstacles. Bologna: ***Consorzio Interuniversitario AlmaLaurea.***

Fini, R., & Toschi, L. 2016. Academic logic and corporate entrepreneurial intentions: A study of the interaction between cognitive and institutional factors in new firms. ***International Small Business Journal***, 34(5): 637-659.

Fisher, T. A., & Stafford, M. E. 1999. Reliability and validity of the Career Influence Inventory: A pilot study. ***Journal of Career Assessment***, 7: 187-202.

Foss, L., & Gibson, D. V. 2015. ***The entrepreneurial university: context and institutional change***. London: Routledge.

Freeman, J. H. 1986. Entrepreneurs as organizational products: Semiconductor firms and venture capital firms. ***Advances in the Study of Entrepreneurship, Innovation, and Economic Growth,*** 1: 33-52.

Frese, M. 2009. Toward a psychology of entrepreneurship - An action theory perspective. ***Foundations and Trends in Entrepreneurship,*** 5(6): 435-494.

Gartner, W. B. 1985. A conceptual framework for describing the phenomenon of new venture creation. ***Academy of Management Review,*** 10: 696-706.

Giannetti, M. & Simonov, A. 2009. Social Interactions and Entrepreneurial Activity. ***Journal of Economics & Management Strategy***, 18(3): 665-709.

Gibson, D.E. 2004. Role Models in Career Development: New Directions for Theory and Research. ***Journal of Vocational Behavior***, 64:134-156.

Ginzberg, E. 1972. Toward a theory of occupational choice: A restatement. ***Vocational Guidance Quarterly,*** 20:169-176.

Ginzberg, E. 1984. Career development. In D. Brown, L. Brooks, & Associates. ***Career choice and development*****,** 169-191. San Francisco: Jossey-Bass.

Global Entrepreneurship Monitor (GEM). Global Report 2016/2017. <www.gemconsortium.org/about/news >.

Gollwitzer, P.M. 2001. Volition. ***Encyclopedia of Psychology***, 210-214.

Gompers P., Lerner J., Scharfstein, D. 2005. Entrepreneurial spawning: Public corporations and the genesis of new ventures, 1986 to 1999. ***Journal of Finance,*** 60(2): 577-614.

Granovetter, M. 1993. The Nature of Economic Relationships. In *Richard Swedberg (Eds.), Explorations in Economic Sociology*: 3-41. New York: Russell Sage Foundation.

Grimaldi, R., Kenney, M., Siegel, D.S., & Wright, M. 2011. 30 years after Bayh-Dole: Reassessing academic entrepreneurship. ***Research Policy*****,** 40(8): 1045-1057.

Gruber, M., MacMillan, I. C., & Thompson, J. D. 2013. Escaping the prior knowledge corridor: What shapes the number and variety of market opportunities identified before market entry of technology start-ups? ***Organization Science***, 24(1), 280-300.

Guerrero, M., Rialp, J., & Urbano, D. 2008. The impact of desirability and feasibility on entrepreneurial intentions: A structural equation model. ***International Entrepreneurship and Management Journal,*** 4: 35-50.

Gupta, V. K., Turban, D. B., Wasti, S. A., & Sikdar, A. 2009. The role of gender stereotypes in perceptions of entrepreneurs and intentions to become an entrepreneur. ***Entrepreneurship Theory and Practice,*** 33(2): 397-417.

Hackett, G., Betz, N. E., Casas, J. M., & Rocha-Singh, I. A. 1992. Gender, ethnicity, and social cognitive factors predicting the academic achievement of students in engineering. ***Journal of Counseling Psychology***, 39: 527-538.

Halaby, C. N. 2003. Where Job Values Come from: Family and Schooling Background, Cognitive Ability, and Gender. ***American Sociological Review***, 68(2): 251-278.

Hamilton, B. H. 2000. Does entrepreneurship pay? An empirical analysis of the returns to self-employment. ***Journal of Political Economy***, 108(3): 604-631.

Hansen, E. L. 1995. Entrepreneurial networks and new organization growth. ***Entrepreneurship:Theory and Practice,*** 19(4): 7-19.

Hills, G. E., & Singh, R. P. 2004. Opportunity recognition**.** In W. B. Gartner, K. G. Shaver, N. M. Carter & P. D. Reynolds (Eds.), ***Handbook of Entrepreneurial Dynamics***, 259-272.

Thousand Oaks, CA: Sage.
Hisrich R., Langan-Fox J., Grant S. 2007. Entrepreneurship Research and Practice: A Call to Action for Psychology. ***American Psychologist,*** 62(6): 575-89
Hoffman, B. J., & Woehr, D. J. 2006. A quantitative review of the relationship between person-organization fit and behavioral outcomes. ***Journal of Vocational Behavior***, 68(3): 389-399.
Holcomb, T.R. et al., 2009. Architecture of Entrepreneurial Learning: Exploring the Link Among Heuristics, Knowledge, and Action. ***Entrepreneurship Theory and Practice***, 33(1): 167-192.
Holland, J. L. 1959. A theory of vocational choice. *Journal of Counseling Psychology,* 6: 35-45.
Holland, J. L. 1992. *Vocational exploration and insight kit*. Odessa, FL: Psychological Assessment Resources.
Holland, J. L. 1997. ***Making vocational choices: A theory of vocational personalities and work environments*** (Third Eds.). Odessa, FL: Psychological Assessment Resources.
Hollingshead, A. B. 1949. *Elmtown's youth*. New York: Wiley.
Hsu, D.H., Roberts, E.B., & Eesley, C.E. 2007. Entrepreneurs from technology-based universities: Evidence from MIT. ***Research Policy***, 36(5): 768–788.
Hunt, D. M., & Michael, C. 1983. Mentorship: A career development training tool. ***Academy of Management Review***, 8: 475-485.
Johnson, B. 1990. Toward a multidimensional model of entrepreneurship: The case of achievement motivation and the entrepreneur. ***Entrepreneurship Theory & Practice***, 14:39-54.
Jovanovic, B. 1979. Job matching and the theory of turnover. ***Journal of Political Economy***, 87(5): 972-991.
Judge, T. A., & Ferris, G. R. 1992. The elusive criterion of fit in human resource staffing decisions. ***Human Resource Planning***, 15(4): 47-67.
Kacperczyk, A.J. 2013. Social Influence and Entrepreneurship: The Effect of University Peers on Entrepreneurial Entry. ***Organization Science*****,** 24(3): 664-683.
Kautonen, T., van Gelderen, M., & Fink, M. 2015. Robustness of the theory of planned behavior in predicting entrepreneurial intentions and actions. ***Entrepreneurship: Theory and Practice***, 39(3): 655-674.
Kelman, H. C. 1974. Attitudes are alive and well and gainfully employed in the sphere of action. ***American Psychologist,*** 29(5): 310-324.
Kihlstrom, R., & Laffont, J. 1979. A general equilibrium entrepreneurial theory of firm formation based on risk aversion. ***Journal of Political Economy***, 87(4): 719-748.
Kolb, A.Y., & Kolb, D.A. 2005. Learning Styles and Learning Spaces: Enhancing Experiential Learning in Higher Education. ***Academy of Management Learning & Education***, 4(2): 193-212.
Kolvereid, L. 1996. Prediction of employment status choice intentions. ***Entrepreneurship Theory and Practice***, 21(1): 47–57.
Kolvereid, L., & Isaksen, E. 2006. New business start-up and subsequent entry into self-employment. ***Journal of Business Venturing,*** 21: 866-885.
Kolvereid, L., & Moen, O. 1997. "Entrepre-neurship among Business Graduates: Does a Major in Entrepreneurship Make a Difference?," ***Journal of European Industrial Training,*** 21(4): 154-160.
Kram, K. E. 1985. *Mentoring at work: Developmental relationships in organizational life*. Glenview, IL: Scott, Foresman.
Kram, K. E. 1996. A relational approach to career development. In D. Hall & Associates (Eds.), ***The career is dead-Long live the career***. 132-157. San Francisco: Jossey-Bass.
Kristof, A. L. 1996. Person-organization fit: An integrative review of its conceptualizations, measurement, and implications. ***Personnel Psychology,*** 49:1-49.
Kristof-Brown, A. L., & Stevens, C. K. 2001. Goal congruence in project teams: Does the fit between members' personal mastery and performance goals matter? ***Journal of Applied***

Psychology, 86(6): 1083-1095.
Kristof-Brown, A. L., Zimmerman, R. D., & Johnson, E. C. 2005. Consequences of individuals' fit at work: A meta-analysis of person–job, person–organization, person–group, and person–supervisor fit***. Personnel Psychology***, 58: 281-342.
Krueger, N. F. 1993. The Impact of Prior Entrepreneurial Exposure on Perceptions of New Venture Feasibility and Desirability. ***Entrepreneurship and Regional Development***, 5: 5-21.
Krueger, N., & Carsrud, A. 1993. Entrepreneurial intentions: Applying the theory of planned behavior. ***Entrepreneurship & Regional Development,*** 5:315-330.
Krueger, N.F., Reilly, M. D., & Carsrud, A. L., 2000. Competing models of entrepreneurial intentions. ***Journal of Business Venturing***, 15: 411-432.
Krumboltz, J. D. 1994. Improving career development theory from a social learning theory perspective. In M. L. Savickas & R. W. 1 (Eds.), ***Convergence in career development theory,*** 9-32. Palo Alto, CA: CPP Books.
Kuratko, D. F., Hornsby, J. S., & Hayton, J. 2015. Corporate entrepreneurship: the innovative challenge for a new global economic reality. ***Small Business Economics***, 45(2), 245-253.
Lankau, M. J., & Scandura, T. A. 2002. An investigation of personal learning in mentoring relationships: content, antecedents, and consequences. ***Academy of Management,*** 45(4): 779-790.
Lazear, E. P. 2004. Balanced skills and entrepreneurship. ***American Economic Review***, 94(2): 208-211.
Learned, K. E. 1992. What happened before the organization? A model of organization formation. ***Entrepreneurship Theory & Practice,*** 17(1): 39-48.
Lee, S. H., & Wong, P. K. 2004. An exploratory study of technopreneurial intentions: A career anchor perspective. ***Journal of Business Venturing,*** 19:7-28.
Lee, L., Wong, P. K., Foo, M. D., & Leung, A. 2011. Entrepreneurial intentions: The influence of organizational and individual factors***. Journal of Business Venturing***, 26(1): 124-136.
Lent, R. W., & Brown, S. D. 2013. Social cognitive model of career self-management: Toward a unifying view of adaptive career behavior across the life span. ***Journal of counseling psychology***, 60(4): 557-568.
Lent, R. W., Brown, S. D., & Hackett, G. 1994. Toward a unifying social cognitive theory of career and academic interest, choice, and performance [Monograph]. ***Journal of Vocational Behavior,*** 45: 79-122.
Lent, R. W., Brown, S. D., & Hackett, G. 1996. Career development from a social-cognitive perspective. In D. Brown, L. Brooks, & Associates, *Career choice and development* (Third Eds). San Francisco: Jossey-Bass.
Lent, R. W., Brown, S. D., & Hackett, G. 2000. Contextual supports and barriers to career choice: A social cognitive analysis. ***Journal of Counseling Psychology,*** 47: 36-49.
Lerner, J., & Malmendier, U. 2013. With a little Help from My (random) Friends: Success and Failure in Post-business School Entrepreneurship. ***Review of Financial Studies***, 26: 2411-2452.
Levesque, M., Minniti, M., 2006. The effect of aging on entrepreneurial behavior. ***Journal of Business Venturing***, 21(2): 177-194.
Liñán, F., & Chen, Y. W. 2009. Development and cross-cultural application of a specific instrument to measure entrepreneurial intentions. ***Entrepreneurship Theory and Practice***, 33(3): 593-617.
Lockett, A., & Wright, M. 2005. Resources, capabilities, risk capital and the creation of university spin-out companies. ***Research Policy,*** 34: 1043-1057.
Lofquist, L., & Dawis, R. V. 1969. ***Adjustment to work.*** East Norwich, CT: Appleton-Century-Crofts.
Luzzo, D. A. 1993. Ethnic differences in college students' perceptions of barriers to career

development. ***Journal of Multicultural Counseling and Development***, 21: 227-236.
Mazzarol, T., Volery, T., Doss, N., & Thein, V. 1999. Factors influencing small business start-ups. *International Journal of Entrepreneurial Behaviour & Research,* 5(2): 48-65.
McClelland, D. 1961. ***The Achieving Society***. Princeton, NJ: Van Nostrand.
McCrae, R. R., & John, O. P. 1992. An introduction to the five-factor model and its applications. ***Journal of Personality***, 60: 1-26.
McMullen, J. S., & Shepherd, A. 2006. Entrepreneurial action and the role of uncertainty in the theory of the entrepreneur. ***Academy of Management Review***, 31: 132-152.
McWhirter, E. H., Hackett, G. & Bandalos, D. L. 1988. A causal model of the educational and career expectations of Mexican-American high school girls. ***Journal of Counseling Psychology,*** 45(2): 166-181.
Minor, C. W. 1992. Career development theories and models. In D. Montross & C. Shinkman (Eds.), ***Career development: Theory and practice*** , 7-34. Springfield, IL: Charles C Thomas.
Nanda, R., & Sørensen, J.B. 2010. Workplace Peers and Entrepreneurship. ***Management Science*****,** 56(7): 1116–1126.
Newbert, S. L. 2005. New Firm Formation: A Dynamic Capability Perspective. ***Journal of Small Business Management,*** 43: 55-77.
Noe, R. A., Greenberger, D. B., & Wang, S. 2002. Mentoring: What we know and where we might go. ***Research in Personnel and Human Resources Management****,* 21: 129 -173.
OECD. 2015. Education at a Glance 2015: OECD Indicators. OECD Publishing, Paris.
Orbeil, S., Hodgldns, S., & Sheeran, P. 1997. Implementations Intentions and the Theory of Planned Behavior***. Personality and Social Psychology Bulletin,*** 23(9): 945-954.
Osipow, S. 1990. Convergence in theories of career choice and development: Review and prospect. ***Journal of Vocational Behavior***, 36(2): 122-131.
Parsons, F. 1909. ***Choosing a vocation***. New York: Agathon Press.
Paulus, M. P. 2007. Decision-making dysfunctions in psychiatry-altered homeostatic processing? ***Science,*** 318(5850): 602-606.
Perkmann, M., Fini, R., Ross, J. M., Salter, A., Silvestri, C., & Tartari, V. 2015. Accounting for universities' impact: using augmented data to measure academic engagement and commercialization by academic scientists. ***Research Evaluation***, 24(4): 380-391.
Peterson, G. W., Sampson, J. P., Jr., Reardon, R. C., & Lenz, J. G. 1996. Becoming career problem solvers and decision makers: A cognitive information processing approach. In D. Brown & L. Brooks (Eds.), *Career choice and development* ,423-475. San Francisco: Jossey-Bass.
Powers, J.B., McDougall, P.P. 2005. University start-up formation and technology licensing with firms that go public: a resource-based view of academic entrepreneurship. Journal of Business Venturing 20: 291-311.
Preacher, K. J., Rucker, D. D., & Hayes, A. F. 2007. Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. ***Multivariate Behavioral Research***, 42(1): 185-227.
Reissman, L. 1953. Levels of aspiration and social class. *American Sociological Review,* 18*:* 233-242.
Reynolds, P. D. 1991. Sociology and entrepreneurship: Concepts and contributions. ***Entrepreneurship Theory & Practice***, 16: 47-70.
Reynolds, P. & Miller, B. 1992. New firm gestation: Conception, birth and implications for research. ***Journal of Business Venturing***, 7(5): 405-417.
Richie, B. S., Fassinger, R. E., Linn, S. G., Johnson, J., Prosser, J., & Robinson, S. 1997. Persistence, connection, and passion: A qualitative study of the career development of highly achieving African American-Black and White women. ***Journal of Counseling Psychology***, 44: 133-148.
Roach, M. & Sauermann, H., 2015. Founder or Joiner? - The Role of Preferences and Context in Shaping Entrepreneurial Orientations. ***Management Science***, 61(9): 2260- 2184.
Roberts, E.B, Eesley, C.E. 2011. Entrepreneurial Impact: The Role of MIT. ***Foundations and***

Trends in Entrepreneurship, 7(1): 1-149.
Roberts, E.B., Murray, F., & Kim, D. 2015. *Entrepreneurship and Innovation at MIT. Continuing Global Growth and Impact.* MIT Sloan School of Management.
Rogers, E.M. 1983. ***The Diffusion of Innovation***, 3rd Ed. New York: The Free Press.
Romanelli, E., & Schoonhoven, C.B. 2001**. The local origins of new firms**. Schoonhoven CB, & Romanelli E (Eds.), The Entrepreneurship Dynamic: 40-67. Stanford, CA: Stanford University Press.
Rounds, J. B., & Tracey, T. J. 1990. From trait-and- factor to person-environment fit counseling: Theory and process. ***Career Counseling: Contemporary Topics in Vocational Psychology***, 1-44.
Sauermann, H. 2005. Vocational Choice: A decision making perspective. ***Journal of Vocational Behavior***, 66: 273–303.
Saxenian, A. 1994. ***Regional Advantage: Culture and Competition in Silicon Valley and Route 128***. Cambridge, MA: Harvard University Press.
Schaefers, K. G., Epperson, D. L., & Nauta, M. M. 1997. Women's career development: Can theoretically derived vari-ables predict persistence in engineering majors? ***Journal of Counseling Psychology***, 44: 173-183.
Schell, D. W., & Davig, W. 1981. The community infrastructure of entrepreneurship. In K. H. Vesper (Eds.), ***Frontiers of entrepreneurship research,*** 563-590. Wellesley, MA: Babson College.
Schlaegel, C. & Koenig, M. 2014. Determinants of Entrepreneurial Intent: A Meta-Analytic Test and Integration of Competing Models. ***Entrepreneurship: Theory and Practice***, 38(2): 291-332.
Shane, S.A. 2000. Prior knowledge and the discovery of entrepreneurial opportunities. ***Organisation Science***, 11: 448-469.
Shane, S., & Venkataraman, S. 2000. The promise of entrepreneurship as a field of research. ***Academy of Management Review***, 25(1): 217-226.
Shapero, A., & Sokol, L. 1982. Social dimensions of entrepreneurship. In C. A. Kent, D. L. Sexton, & K. H. Vesper (Eds.), Encyclopedia of entrepreneurship, 72-90. Englewood Cliffs (NJ): Prentice Hall.
Shapero, A. 1984. The entrepreneurial event. In C. A. Kent (Ed.), ***The Environment for Entrepreneurship,*** 21-40. Lexington, MA: D.C. Heath & Company.
Sheeran, P. 2002. Intention-Behavior Relations: A Conceptual and Empirical Review. ***European Review of Social Psychology,*** 12(1): 1-36.
Shook, C. L., Priem, R. L., & McGee, J. E. 2003. Venture creation and the enterprising individual: A review and synthesis. ***Journal of Management,*** 29(3): 379-399.
Sieger, P., Fueglistaller, U., & Zellweger, T. 2014. Student Entrepreneurship Across the Globe: A Look at Intentions and Activities. ***St.Gallen: Swiss Research Institute of Small Business and Entrepreneurship at the University of St.Gallen*** (KMU-HSG).
Snyder, M. 1974. Self-monitoring of expressive behavior. ***Journal of personality and social psychology***, 30(4): 526-537.
Sorenson, O., & Audia, P.G. 2000. The Social Structure of Entrepreneurial Activity: Geographic Concentration of Footwear Production in the United States, 1940-1989. ***American Journal of Sociology***, 106(2): 424-462.
Sørensen, J.B. 2007. Bureaucracy and Entrepreneurship: Workplace Effects on Entrepreneurial Entry. ***Administrative Science Quarterly***, 52: 387-412.
Sørensen, J.B. Fassiotto, M.A. 2011. Organisation as font of entrepreneurship. ***Organisation Science,*** 22(5): 1322-1331.
Souitaris, V., Zerbinati, S., & Al-Laham, A. 2007. Do entrepreneurship programmes raise entrepreneurial intention of science and engineering students? The effect of learning, inspiration and resources. ***Journal of Business venturing***, 22(4): 566-591.

Stewart, W.H., Watson, W.E., Carland, J.C., & Carland, J.W. 1998. A proclivity for entrepreneurship: A comparison of entrepreneurs, small business owners, and corporate managers. ***Journal of Business Venturing***, 14: 189-214.

Stuart, T., & Ding, W. 2006. When do scientists become entrepreneurs? The social structural antecedents of commercial activity in the academic life sciences. ***American Journal of Sociology,*** 112(1): 97-144.

Super, D. E. 1953. A theory of vocational development. ***American Psychologist,*** 30*:* 88-92.

Super, D. E. 1990. A life-span, life-space to career development. In D. Brown, L. Brooks, & Associates, (Eds.), ***Career choice and development*****,** 197-261. San Francisco: Jossey-Bass.

Swanson, J. L., Daniels, K. K., & Tokar, D. M. 1996. Measuring perceptions of career-related barriers: The Career Barriers Inventory. ***Journal of Career Assessment***, 4: 219-244.

Terry, D. J., & Hogg, M. A. 1996. Group norms and the attitude-behavior relationship: A role for group identification. Personality and Social Psychology Bulletin, 22: 776-793.

Thursby, J.G., Thursby, M.C. 2007. University licensing. ***Oxford Review of Economic Policy,*** 23: 620-639.

Tinsley, D. J., & Faunce, P. S. 1980. Enabling, facilitating, and precipitating factors associated with women's career orientation. ***Journal of Vocational Behavior****,* 17: 183-194.

Van Gelderen, M., Kautonen, T., & Fink, M. 2015. From entrepreneurial intentions to actions: Self-control and action-related doubt, fear, and aversion. ***Journal of Business Venturing***, 30 (5): 655-673.

Van Hooft, A. J., Born, M. P., Taris, T.W., van der Flier H., & Blonk, R. W. B. 2004. Predictors of job search behaviors among employed and unemployed people. ***Personal Psychology***, 57:25-59.

Van Loy, B., Landoni, P., Callaert, J., van Pottelsberghec, B., Sapsalis, E., & Debackere, K. 2011. Entrepreneurial effectiveness of European universities: An empirical assessment of antecedents and trade-offs. ***Research Policy,*** 40: 553-564.

Venkataraman, S. 1997. The distinctive domain of entrepreneurship research: An editor's perspective. In J. Katz & R. Brockhaus (Eds.), *Advances in entrepreneurship, firm emergence, and growth,* 3:119-138. Greenwich, CT: JAI Press.

Venkataraman, S. & Shane, S., 2000. The Promise of Entrepreneurship as a Field of Research. ***Academy of Management Review,*** 25(1): 217-226.

Vondracek, F. W., Lerner, R. M., & Schulenberg, J. E. 1986. ***Career development: A life-span developmental approach.*** Hillsdale, NJ: Erlbaum.

Wennberg, K., J. Wiklund, M. Wright. 2011. The effectiveness of university knowledge spillovers: Performance differences between university spinoffs and corporate spinoffs. ***Research Policy***, 40:1128-1143.

Werbel, J. D., & Gilliland, S.W. 1999. Person-environment fit in selection process. In G. R. Ferris (Ed), ***Research in Personnel and Human Resources Management***, 17:209-243. Stamford C.T. JAI Press.

Wright, M., Siegel, D. S., & Mustar, P. 2017. An emerging ecosystem for student start-ups. ***The Journal of Technology Transfer,*** 42(4)**:** 909-922.

Xavier, S.R., Kelley, D., Kew, J., Herrington, M., & Vorderwülbecke, A. 2012. Global entrepreneurship monitor 2012 global report. Global Entrepreneurship Research Association (GERA).

APPENDICES

APPENDIX 1

Universities taking part to the Inter-university Consortium AlmaLaurea

#	University	#	University
1	Bari	**33**	Padova
2	Bari Politecnico	**34**	Parma
3	Basilicata	**35**	Perugia
4	Bologna	**36**	Perugia Stranieri
5	Bolzano	**37**	Piemonte Orientale
6	Cagliari	**38**	Reggio Calabria Mediterranea
7	Calabria	**39**	Roma Campus Bio-Medico
8	Camerino	**40**	Roma Foro Italico
9	Cassino e Lazio Meridionale	**41**	Roma La Sapienza
10	Catania	**42**	Roma LUMSA
11	Catanzaro	**43**	Roma Tor Vergata
12	Chieti e Pescara	**44**	Roma Tre
13	Enna Kore	**45**	Roma UNINT
14	Ferrara	**46**	Salento
15	Firenze	**47**	Salerno
16	Foggia	**48**	Sannio
17	Genova	**49**	Sassari
18	Insubria	**50**	Scienze Gastronomiche Bra
19	L'Aquila	**51**	Siena
20	LIUC Castellanza	**52**	Siena Stranieri
21	LUM Casamassima	**53**	Teramo
22	Macerata	**54**	Torino
23	Marche Politecnica	**55**	Torino Politecnico
24	Messina	**56**	Trento
25	Milano IULM	**57**	Trieste
26	Milano Vita-Salute S. Raffaele	**58**	Tuscia
27	Modena e Reggio Emilia	**59**	Udine
28	Molise	**60**	Urbino
29	Napoli Federico II	**61**	Valle d'Aosta
30	Napoli L'Orientale	**62**	Venezia Ca' Foscari
31	Napoli Parthenope	**63**	Venezia IUAV
32	Napoli Seconda Università	**64**	Verona

APPENDIX 2
Student Entrepreneurship Survey

This is survey has been developed in collaboration with AlmaLaurea. These questions are those related to the entrepreneurship survey, which are included in the main survey of AlmaLaurea. The survey has been administrated in two waves, the first wave at time of gradations and the second wave one year after graduation.

- Wave 1: Questions from D1 to D19
- Wave 2: Questions from D1a to D3a

<u>WAVE 1</u>

[For everyone]

D1. You will find listed some sentences. You should point out, how much, each sentence define yourself, using a scale from 1 to 7 (1=not at all and 7=a lot)

a. [1 ..... …7] I thought of creating a company based on my idea
b. [1 ..... …7] I thought I have had a good idea for the creation of a company
c. [1 ..... …7] I perceived to have the skills for creating a company.

[For everyone]

D2. Have you ever had equity in a company? (If you have equity in more than a company, please refer your answer to the company more recent)

[01] Yes and I still have it
[02] Yes, but I do not have it anymore
[03] No, I have never had

[If D2 = 01 or D2 = 02]

D3. Is /was equity in a company created by a relative?

[01] Yes
[02] No

[For everyone]

D4. Have you ever founded a company?

[01] Yes, during my university studies
[02] Yes, before my university studies
[03] No

[If D4≠03]

D5. How many companies have you founded to date?

[01] Only one
[02] 2
[03] 3
[04] 4
[05] 5 or more

[If D4≠03]

D6. In your company, have you ever had a business partner? (If you have founded more than one company, please refer your answer to the most recent one.)

[01] Yes
[02] No

[If D4=3]

D7. If you have never founded a company, did you take (recently or during the past) any actions in order to create one? With "actions" we intend, for example: sending applications for authorizations of the main activities, writing a business plan, speak with some potential investor, etc.

[01] Yes
[02] No

[If D4≠03 o D7 =01]

D8. In the early stages of starting a company, you can find lots of difficulties and obstacles. Below you will find a list of some of them. You should indicate, in order to your experience, how each obstacle has been relevant, using a scale from 1 to 7, where 1=not at all and 7=a lot. We ask you to answer even if you never created a company (you have just done some actions in order to) or your company is not still active.

a. [1 ..... …7] Red tape difficulties
b. [1 ..... …7] Lack of adequate technical skills
c. [1 ..... …7] Lack of adequate managerial skills
d. [1 ..... …7] Difficulties of financing access
e. [1 ..... …7] Difficulties in finding partners
f. [1 ..... …7] High tax and contributions
g. [1 ..... …7] Lack of market information

D8bis. Have you ever meet other types of difficulties or obstacles in the start-up phase? (If you had more than one difficult or obstacle, you should refer to the most relevant one..)

[01] Yes
[02] No

[If D8bis=1]

D8other. Specify the difficulty or the obstacle:

_____

D8otherbis. Indicate how much this difficulty or obstacle has been relevant, using a scale from 1 to 7, where 1=not at all and 7=a lot.

[1 ……..7] Other

[If D4≠03]

D9. Is your company still active? (Please take into account the most recently founded company).

[01] Yes
[02] No

[If D9 =02]

D10. What were the reasons for the company's closure?

a. Revenues or profit are lower than expected
b. There have been problems related to the financing issue
c. There were conflicts among shareholders
d. There were unexpected market events
e. Inadequate initial business plan design/construction
f. There were some problems among the working group
g. Identified different job opportunities
h. Other (Specify)

[If D4≠03 o D7 =01]

D11. In recent years, who do you believe has hand down to you stimulus and competences (not necessarily technical competences) useful for the development of an entrepreneurial activity?

		Stimulus	Competences
a.	Family (parents, relatives..)	☐	☐
b.	Student from the same university course	☐	☐
c.	Students from other university courses	☐	☐
d.	Friends outside university	☐	☐
e.	University Professors	☐	☐
f.	Courses organized by secondary school	☐	☐
g.	Courses organized by university	☐	☐
h.	Courses organized by other institutions	☐	☐
i.	Other activities organized by university (i.e. coaching, business plan organization..)	☐	☐
l.	Other (Specify)	☐	☐

[If D4≠03 o D7 =01]

D12. In your university curriculum, was planned a course focused on entrepreneurship and business creation?

[01] Yes, it was planned and I followed it
[02] Yes, it was planned and I did not follow it
[03] No, it was not planned

[If D12=01]

D13. On a scale from 1 to 7 (where 1=not at all and 7=a lot), how do you think this course has been useful for the execution of an entrepreneurial activity?

[1…….7]

[If D12≠01]

D14. On a scale from 1 to 7 (where 1= not at all and 7=a lot), how do you think this course would have been useful for the execution of an entrepreneurial activity?

[1..... 7]

[For everyone]

D15. Have you ever taken part to a business plan competition?

[01] Yes
[02] No

[If D15 = 01]
D16. What kind of business plan competition was?

_____

[If D15 = 01]
D17. In which province?

[ ]

[For everyone]
D18. You will find some sentences listed below. You should point out how much, in order to you, each sentence is more representable to you, using a scale from 1 to 7 (1=not at all and 7=a lot)

a. [1 ..... …7] I am ready to do everything to be an entrepreneur
b. [1 ..... …7] My professional objective is that to become an entrepreneur
c. [1 ..... …7] I will do everything in order to found and manage a company
d. [1 ..... …7] I am determined to create a company in the future
e. [1 ..... …7] I have seriously thought to start a company
f. [1 ..... …7] I am strongly inclined to start a business sooner or later
g. [1 ..... …7] I think about bad things that happened to me in the past
h. [1 ..... …7] It is hard for me to forget some unpleasant images from my youth
i. [1 ..... …7] Painful past experiences keep being replayed my mind
l. [1 ..... …7] I get nostalgic about my childhood
m. [1 ..... …7] Happy memories of good times spring readily to mind
n. [1 ..... …7] t gives me pleasure to think about my past.
o. [1 ..... …7] I do things impulsively
p. [1 ..... …7] It is important to put excitement in my life
q. [1 ..... …7] Taking risks keeps my life from becoming boring
r. [1 ..... …7] Since whatever will be will be, it doesn't really matter what I do.
s. [1 ..... …7] My life path is controlled by forces that I cannot control
t. [1 ..... …7] It does not make sense to worry about the future, since there is nothing that I can do about it.
u. [1 ..... …7] When I want to achieve something, I set goals and consider specific means for reaching them
v. [1 ..... …7] Meeting tomorrow's deadlines and doing other necessary work comes before tonight's play
z. [1 ..... …7] I complete projects on time by making steady progress

[For everyone]
D19. Overall, you think that it is possible to be confident in people or is it always better to take attention in managing with people? We ask you to make a judgment from 1 to 7

(where 1 means "You are never too careful in dealing with people" and 7 means " You can trust in the major part of people")

[1 ..... 7]

WAVE 2

[For everyone]

D1a. Have you ever founded a company?

Note: A company is an organization of individuals conducting a commercial or industrial enterprise. A corporation, partnership, association or joint stock company.

[01] Yes, soon after my university studies
[02] Yes, during my university studies
[03] Yes, before my university studies
[04] No

[If D1a=4]

D2a. If you have never created a company, have you ever undertaken (recently or during the past) some actions in order to create one? With "actions" we intend, for example: sending applications for authorizations of the main activities, writing a business plan, speak with some potential investor, ecc

[01] Yes
[02] No

[If D1a≠04 o D2a =01]

D3a. During last year (after your universities studies) who do you believe has hand down to you stimulus and competences useful for the development of an entrepreneurial activity? (Note: more than one answer is allowed)

		Incentives	Competences
a.	Family (parents, relatives..)	☐	☐
b.	(Ex-) University's Classmates	☐	☐
c.	Students from other University courses	☐	☐
d.	Friends outside university	☐	☐
e.	University's Professors	☐	☐
f.	Courses organized by University	☐	☐
g.	Courses organized by other institutions (..)	☐	☐
h.	Other activities organized by university (i.e. coaching, business plan organization..)	☐	☐
i.	Other (Specify)	☐	☐