Abstract

Opportunity Identification and Different Knowledge Sources of Entrepreneurship
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The entrepreneurship literature has vastly focused on the antecedents and drivers toward recognizing opportunities for the individuals and has explained the factors influencing the identification of entrepreneurial opportunities (George et al., 2014). There are also ongoing studies regarding the sources of knowledge for the entrepreneurs to create ventures, and scholars put these sources into three categories of entrepreneurship namely as ?user entrepreneurship?, ?academic entrepreneurship?, and ?employee entrepreneurship? (Agarwall & Shah, 2014). Each of these entrepreneur typologies follows a different path toward entrepreneurship and has an idiosyncratic way of facing an opportunity to its exploitation.

However, there is no study answering how these entrepreneurship typologies identify opportunities on the basis of their unique process of becoming entrepreneurs and creating ventures. Thus, in our study, we aim to cross the opportunity recognition phenomenon with the mentioned typologies of entrepreneurship and explore how each typology recognize opportunities and exploit them. In particular, our research question is ?Which typologies of entrepreneurship fits which theories of
Theories of opportunity identification are codified into two schools of thoughts resulting in two different principles and framework. The opportunity creation theory refers to the subjective nature of opportunities while the opportunity discovery theory focuses on the objectivity of the opportunities. In the discovery theory, entrepreneurs recognize opportunities thanks to exogenous shocks of the market/industry whereas creation theory suggests that entrepreneurs identify opportunities endogenously through actions and evolved reactions (Alvarez & Barney, 2007).

Our theoretical study collects literature on these separate phenomena. It coincides the theories with the different typologies of entrepreneurship on the basis of their knowledge sources and provides propositions regarding this scholarship.

Based on the extant literature we conclude three propositions which require further studies to test them, and the next chapters of my Ph.D. dissertation will complement these theoretical backgrounds through empirical studies.

User entrepreneurs tend to discover opportunities more than creating them
Employee entrepreneurs tend to discover opportunities more than creating them
Academic entrepreneurs tend to create opportunities more than discovering them
Opportunity Identification and Different Knowledge Sources of Entrepreneurship

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Abstract
The entrepreneurship literature has vastly focused on the antecedents and drivers toward recognizing opportunities for the individuals. There are also ongoing studies regarding the sources of knowledge for the venture creation, and scholars put these sources into three categories of entrepreneurship namely as “user entrepreneurship”, “academic entrepreneurship”, and “employee entrepreneurship”. However, there is no study aiming to answer how these entrepreneurship typologies identify opportunities on the basis of their unique process of becoming entrepreneurs and creating ventures. Theories of opportunity identification are codified into two schools of thoughts resulting in two different principles and frameworks. The opportunity creation theory refers to the subjective nature of opportunities while the opportunity discovery theory focuses on the objectivity of the opportunities. Our theoretical study collects literature on these separate phenomena. It coincides the theories with the different typologies of entrepreneurship on the basis of their knowledge sources and provides propositions regarding this scholarship.

Keywords: Opportunity identification, User Entrepreneurship, Academic Entrepreneurship, Employee Entrepreneurship, Sources of Knowledge

1. Introduction
Innovation used to be known as the principle and the driver of wealth creation and economic growth for the individuals, companies, and countries. Schumpeter believed that the disruptive transformation of technologies/markets leads to a process of creative destruction that put the economy into a recession and will recover it by itself (Schumpeter, 2010). This disruption happens due to the information asymmetries, technology improvement and different needs existed in the market. In other words, agents with different knowledge and information can provide something valuable to themselves or to the public by integrating their knowledge into practice and create something novel (Aghion & Howitt, 1990). However, the process of creation from scratch requires creativity and innovativeness of the individuals in addition to their knowledge and their willingness (Goldsmith & Hofacker, 1991).

In one side, innovation can take place when an individual is seeking to satisfy needs or make pecuniary benefits from the invention by creating a business model and consequently by creating a firm (Shah & Tripsas, 2007; von Hippel, 2005). On the other hand, incumbent companies need to keep up the pace of knowledge and technological dissemination with the market, otherwise, they might not survive. This is the basic reason for the companies that are looking for new solutions (Teece, 2010). They try to innovate by finding solutions either internally (e.g. doing R&D activities) or externally (e.g. acquiring knowledge from universities and research institutes, crowdsourcing). Two approaches appear

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for the innovation strategies of the firms: centralized research and development activities (i.e. closed innovation paradigm), and open innovation (including both user and crowd innovation, and collaboration with other entities such as universities and other firms).

Extant literature has focused on diverse sources of knowledge as potential holders of solutions for latent needs. Entrepreneurs exploit knowledge from different sources and may deliberately or spontaneously combine them together in order to offer new solutions to the market. Academia, employment, and usage knowledge are the most common sources of knowledge that have been employed by the entrepreneurs and have been mentioned by previous scholars. Each entrepreneur within the mentioned typologies differ from each other and has idiosyncratic characteristics. They have acquired new knowledge from different sources and carry a different path toward entrepreneurship (Agarwall & Shah, 2014). The literature on entrepreneurship have explained the steps entrepreneurs pass in order to deliver the value to the market, but to our knowledge, no study has shed light for opportunity identification process between these typologies (Ardichvili et al., 2003; Bessant & Tidd, 2007). Here in this paper, we aim to address the very basic phenomenon of opportunity identification and clarify the differences between these diverse entrepreneurial origins.

2. Theoretical framework

2.1. Opportunity Identification

As yet, there is still a big debate if entrepreneurs are proactive for seeking and searching an opportunity to identify or they recognize and face the opportunity without actively making endeavors for it. Different schools of thoughts believe that different path to creating an opportunity exists. While Alvarez and Barney believe that the discovery theory and creation theory are incommensurable and can’t co-exist at the same time, Garud and Giuliani together with Sarasvathy have affirmed that these two concepts are contingencies and one of these two theories can prevail and dominate against the other at the same time and they are not irreconcilable (Alvarez & Barney, 2005, 2007; Garud & Giuliani, 2013; Sudabey et al., 2014; Sarasvathy, 2001). On the other hand, the ambiguity of the opportunity itself as an abstract concept which some believe it doesn’t exist ex-ante and we can analyze it merely ex-post, resulted in the nascent ideologies to shift the attention from the opportunity identification to the opportunity exploitation. The very recent efforts were the piece written by Foss and Klein who proposed the BAR framework that intends to concentrate on the Beliefs, Actions, and Results of the entrepreneurship process through the judgement-based view (Foss & Klein, 2018; Kitching & Rouse, 2017). Nevertheless, for the sake of our research and due to the underlying concept of our research question we need to investigate how the business ideas appear in the individuals’ minds. We deliberately do not aim to find how the ideas evolve and get exploited but to capture the locus that the ideas belong to by using different entrepreneurship typologies.

2.1.1. Opportunity Discovery Theory

In his article, Shane showed that entrepreneurs in separate fields built their companies thanks to the advancement of a technology, in particular, MIT’s 3DP invention, without searching for an opportunity. All founders of those eight companies explained that they were not seeking for a solution but instead they recognized that by employing the 3DP technology in their business they can provide something more valuable to the market (Shane, 2000). This finding is consistent with the Austrian economics framework, saying that the opportunities cannot be searched as in their essence, opportunities are non-existent abstracts until they get founded (Kaish & Gilad, 1991). In this framework, opportunities are objective concepts which could be found due to the turbulence of technology and/or the market. Therefore, getting exposed or being associated with an industry or market or entertainments will smooth the process of opportunity discovery. Thus, the obvious feature of these entrepreneurs is having a great alertness to the surroundings. Austrian economic’s scholars believe that entrepreneurs are significantly different from non-entrepreneurs in terms of capturing opportunities or exploiting from the observed
opportunities (Alvarez & Barney, 2007, Kirzner, 1973, Shane 2003). This identification process of opportunity is entitled as discovery theory (of opportunity). The discovery theory believes that opportunities exist independent of the individuals. This connotes to the objective essence of opportunity. In other words, the opportunities will be found sooner or later no matter who will find it. They exist and become available thanks to the exogenous turbulence and will be recognized by entrepreneurs who differ with non-entrepreneurs in some important aspects (Alvarez & Barney, 2007, Shane, 2003). In their piece, Alvarez and Barney used Mount Everest as the symbol and metaphor for opportunity explaining their assumptions that opportunities don’t get created but they exist as it is (Alvarez & Barney, 2007). However, the real value lied in this opportunity is not the Mount Everest itself, but the way how to find where the mountain is located and how to get there. Without having the knowledge/idea about how to make value from oil, this substance is useless until someone introduces a usage from it. It is like knowing the fact of gold existence but not finding the potential places to dig. In another explanation, Mount Everest as an opportunity doesn't connote how its existence brought pecuniary benefits to its territory. To put it differently, believing that opportunities are existent objects which bring economic benefits per se without an intervention of individuals doesn’t relate to the whole process of commercialization of an entrepreneurial opportunity.

2.1.2. Opportunity Creation Theory

On the other hand, other scholars believe that opportunity identification is a process in which individuals first identify a particular problem and then they aim and plan for how to solve it. Here, opportunities are considered as subjective concepts that will be explored thanks to a comprehensive plan of action by entrepreneurs (Sarasvathy, 2001). Therefore, opportunities are considered to be non-existent until when they are found and created by entrepreneurs. This implies that opportunities existence is dependent on the individuals to create them. The scholars who believe in this model of opportunity identification, use creation theory (of opportunity) for describing the phenomenon. In the creation theory, people look for the solutions and they search through all available channels until when they prevail. Despite the consensus about the importance of search in this model of opportunity identification, Alvarez and Barney believed that due to the non-existence essence of opportunity, the term ‘search’ has no meaning here (Alvarez & Barney, 2007). However, the negligence of their statement is because they haven’t separated the search process from searching for an enabler to reach to the solution or searching for the solution itself. In other words, different tools and mechanisms can help the individuals to answer a problem. The enablers might exist but they are needed to be taken into account and be observed. In fact, the ‘search’ term is not a distinction between creation and discovery theory when looking for an enabler since entrepreneurs, in general, tend to scan and search their surroundings. But in addition, in this model of opportunity identification, the entrepreneurs know what they want to achieve and plan on the basis of their expected outcome. This conveys that they anticipate the consequences of the potential solution. Then depending on each person’s perception of opportunity cost, she might initiate to deliver the solution or to discard it. In case she decides to deliver the value to the market, it might appear as a new product or a new service or a new technique of production or a new organization model. As a result, all the activities that an entrepreneur does is planned in order to solve a problem which ultimately might help her to commercialize and subsequently create a firm. The actions and reactions that entrepreneur take are formed endogenously and are not anymore primarily shaped due to a shock to the market (Sarasvathy, 2001). This type of opportunity identification bespeaks of the fact that the opportunities here are more prone to be market breakthrough as they are outcomes of an endogenous, unobserved and latent phenomenon.

2.2. Entrepreneurship and Knowledge Sources

Referring to the definition of entrepreneurship, different individuals may find opportunities to be exploited on the basis of their prior knowledge. These people take the required knowledge from their
employment, academic research and/or usage activities (Stevenson, 1983). Each step of entrepreneurship journey from its core idea management to decision making to human resource practices to the strategy and finance requires sophisticated knowledge which facilitates the business to sustain. The knowledge settings that will emerge in each step could be solely coming from one source or could be accumulated from different sources after the entrepreneur(s) building the management team. However, the first idea which in turn becomes the value proposition of the opportunity conventionally receives more attention than the subsequent steps. Depending on the cognitive attributes of the individuals and their perception of risk preferences, some ideas ultimately become opportunities to be exploited. The entrepreneurs who exploit an opportunity do not necessarily decide upon their current resources. The capabilities and competencies which are used by the entrepreneurs can come from their previous/current education, employment, and leisure/recreational activities which finally leads to the usage of that particular product/service. Here we describe the path toward entrepreneurship on the basis of these three distinctive knowledge origins. The entrepreneurship literature has labeled them as user entrepreneurship, employee entrepreneurship, and academic entrepreneurship (Agarwall & Shah, 2014).

### 2.2.1. User Entrepreneurship

The opportunity Identification has done by a user-entrepreneur when the aforesaid value proposition is based on an invention of a user of a product/service. Research have documented several user-led innovations that have crossed the path toward becoming the value propositions of entrepreneurship (Adams, Fontana, & Malerba, 2015; Agarwal & Shah, 2014; Baldwin, Hienerth, & von Hippel, 2006; Haelfliger, Jäger, & Von Krogh, 2010; Shah, Smith, & Reedy, 2012; Shah & Tripsas, 2007, 2016). Users generally seek some solutions in order to improve the experience of using products that are available in the market or to satisfy a need that has remained unanswered from the market, by creating something from scratch (von Hippel, 2005). Users’ information asymmetries and their unique framing of a problem and its solution make them competent to provide value to other users and to the society in general (Gambardella et al., 2016). In the first sight, they seek to provide the solution in order to satisfy their own needs. It is mentioned by previous scholars that, users innovate because they cannot find an alternative for answering their needs. Their expected benefits and the stickiness of information they have, persuade them to innovate themselves (Bogers et al, 2010). Then after innovating, they might share it with their peers. The community of users who in some aspects are interested in the usage of that product/service share eagerly their knowledge and opinions about that particular matter (Franke & Shah, 2003). These communities can be either virtual or physical. Research on user innovation have broadly studied the effects of communities on the progress of an innovation happened by users. From skateboarding whose (physical) community in California led major innovations to happen in the 1970s, to the open-source software (virtual) communities, there are important traces that how the first idea got ameliorated after getting distributed among others (von Hippel, 2001). Then the improved idea gets shared between the community members and in case the reaction to that product/service is positive, the user-innovator might start to commercialize it. This is believed to be the path for becoming an end-user (individuals who use the products as a daily routine) entrepreneur (Shah & Tripsas, 2007). The flaw within this model is the neglection of those user-innovators who find the solution and bring it into reality without sharing it with a community. In this model, community and public Interaction are prerequisites to opportunity identification, however, in the classic model of entrepreneurship process, the existence of these two terms are not required (Shah & Tripsas, 2007). In some occasions, the user-innovator introduces its innovation to the market and makes an attempt to commercialize without spreading the innovation with the community members. Albeit, this event might happen when the innovator’s incentives tend to be more monetary than social, as by sharing it with the community, the risk of appropriation by others arises. However, the chance of a better performance from the innovation seems to be less in this scenario.

In other words, regardless of the performance of the plausible created firms by user-innovators, they might decide not to share the opportunity with others and waiting for the public responses. The possession of the required knowledge of how to evaluate the opportunity before bringing it as a commodity to the market is underestimated in this model.
On the other hand, there are professional-user entrepreneurs who work for an organization and their role is associated with the use of some particular products. During their employment, they might experience flaws and difficulties regarding the use of that product. In case they find a solution to answer their own need, later they might leverage on the basis of their invention leaving the organization and make their own firm (Adams et al., 2013; Shah & Tripsas, 2007).

Organizations themselves might encounter flaws within their own routine and as a result, they innovate to satisfy their own need and to improve their performance. These innovations afterward might become a solution to the market’s needs, thus, the company might count it as an extra source of revenue (even though they primarily aimed at satisfying their needs) and the managerial board might decide to make another division on the basis of those innovations. The so-called phenomenon as user-organization innovation has different characteristics and mechanisms in comparison to the end-user and professional-user innovations, hence I don’t include them in this typology of entrepreneurship (Shah & Tripsas, 2007).

Another study contributing to the user entrepreneurship literature refers to the self-evaluation of financial return and profit threshold as the indicators of user’s invention fate. In their paper, Shah and Tripsas have a mere look over innovations made by users, and explicitly follow the destiny that is envisaged to them. They use “access to the complementary assets” and the “appropriability regime” of an industry in order to evaluate the relevant costs and profits that exist for the users to decide whether to become an entrepreneur or to license the innovation or share it as a hedonic joy with others (Shah & Tripsas, 2016).

Although this model explains the phenomenon clearly, it is not considering the psychological and sociological principles of entrepreneurship theories for becoming an entrepreneur.

In another study, Agarwal and Shah demonstrated that the users due to their unique needs and their focused and contextual knowledge can provide solutions which could satisfy market’s demands. They do not gain operational, organizational and technological knowledge with the mere experience of using a particular product/service. This being said, the user-entrepreneurs seem to be creating firms by focalizing on their product/service innovation. Reported by previous researchers, the complementary assets of user-founded firms are the communities that surround the innovators who become the entrepreneurs afterward (Adams et al., 2015; Agarwal & Shah, 2014; Baldwin et al., 2006; Haefliger et al., 2010; Shah & Tripsas, 2007). The appropriability regime is unfavorable for the users as they find it user-hostile due to the PHOSITA criteria. User-entrepreneurship is supposed to happen in an uncertain market and a decreasing rate of entry is estimated as the industry grows and gets mature. They will finally occupy niche markets. It is proposed that by strengthening the appropriability regime and the access to the complementary assets, user-entrepreneurship will occur less than other types of entrepreneurship (Agarwal & Shah, 2014). Although domain knowledge of entrepreneurs is essential and is considered as the foundation to commercialize the innovation, having access to the complementary assets for the user-entrepreneurs is considered a pre-requisite (Haefliger et al., 2010; Shah & Tripsas, 2016).

As user innovation is not limited to particular industries, they seem to invent products, services, and other means to satisfy their own needs. Depending on the sector of their invention, they might be able to select protecting their invention via getting a patent. However, this is not a usual case for the user innovators. In fact, studies have shown that users are prone to diffuse their invention with others and have social and hedonic motivations, hence, they often do not enforce their filed patents (Shah, 2005). Hitherto this paradigm has shifted and now they create a venture and commercialize from their invention. In terms of accessing to the complementary assets, the only factor they seem to be able relying on is the communities to whom they share the interests. Therefore users do not seem to benefit from these two indicators for becoming entrepreneurs.

This group of individuals with the preferences of joining communities, and sharing their innovations with their peers seem to cover different knowledge settings and having diverse information
asymmetries (Von Hippel, 2001, 2005). Therefore, they seem to influence less by the risk factors regarding their innovation being brought to the market by themselves. These people by being users of a product/service are also exposed to a market or an industry and there is a higher chance to remain aware of the exogenous shocks and turbulence in the market. Therefore, we hypothesize the following:

**Proposition 1. User entrepreneurs tend to discover opportunities more than creating them**

### 2.2.2. Employee Entrepreneurship

Knowledge-based view of the firm explains that the tacit knowledge is acquired from different individuals, and varied knowledge settings would be suitable for the firms producing competitive goods and services (Felin & Hesterly, 2007; Grant, 1996). The disseminated knowledge in the working environment varies a wide range of subjects. Both explicit and tacit knowledge appear in technological, operational, marketing, and organizational dimensions (Agarwal & Shah, 2014). Individuals with different knowledge basis serving a firm might encounter an opportunity due to their dissatisfaction with a task or they just simply find another interesting alternative for how to serve the market (Hellmann, 2007). They might believe that there is another concept rather than the status quo which could be helpful for the firm to increase its efficiency or to provide an innovation which is of more value than the current product/service. As Hellmann mentioned, four possibilities emerge here (focused equilibrium, stubborn equilibrium, intrapreneurial equilibrium, and entrepreneurial equilibrium) as a result of a dialogue between employee and employer (Hellmann, 2007).

Parhankangas and Arenius defined this phenomenon as “new venture creation based on knowledge which are associated with the parent firm activities” (Parhankangas & Arenius, 2003).

Previous literature has made a clear distinction for the spin-offs appearing from a commercial context by introducing typologies for this phenomenon (Fryges & Wright, 2014). Although corporate spin-offs are born thanks to the parent firm’s IP rights, employee spin-offs are created with an indirect use of parent firm’s intellectual assets such as tacit knowledge of a group of employee(s). Nonetheless, the common point for the diverse typologies of this phenomenon is that they all are formed on a know-how transfer from a parent firm to a new one (Fryges & Wright, 2014). Horizontal spin-off refers to the firms that are in the same industry to the parent firm and vertical spin-off are founded in different settings than the parent firm. While the latter contributes to the market-breakthroughs and the creation of new industries, the former contributes to the progress and development of the existing industry (Muendler et al., 2012).

This type of spin-offs (employee spin-offs) emerge when the newborn knowledge (or the new recognized opportunity) doesn’t comply or to tackle the core activity of the parent firm, hence the spillovers will be used outside the parent-firm boundaries (Fryges & Wright, 2014). It is perceived that the current capabilities and complementary assets of the parent firm are not sufficient for tackling the first steps of new knowledge development.

As visualized, the push from an incumbent to create a new division or a new subsidiary on the basis of an internal innovation follows a different path when compared to the employee’s ideas for promoting an innovation and creating a firm. Therefore, we hypothesize that the dynamics of opportunity identification and entry, both, seem to differ among each newly created ventures and spin-off typologies. In this article, we don’t constrain ourselves selecting from horizontal or vertical spin-offs or other classifications of spinoffs. In order to avoid the misinterpretation for the term “spin-off” as a sold division of a parent firm, and for the aim of this paper for making a distinction between the sources of knowledge for entrepreneurship, we use the term of “employee entrepreneurship” for this category. Apart from the cognitive features of entrepreneurs, employee entrepreneurs seem to have better access to complementary assets. Studies have shown that human capital, physical and organizational knowledge, geographical proximity, social networks, and venture capitals are more accessible to this type of entrepreneurs. As this typology of entrepreneurs has more knowledge about the organizational and technical aspects, they mostly seem to be creating ventures when they encounter an opportunity
from a tacit knowledge they gained before. On the other hand, they have shown eagerly to form a firm when they possess an intellectual property right in form of a patent (Agarwall & Shah, 2014; Klepper & Sleeper, 2005). Thus, the barriers to entry seem to be less complicated for the employee entrepreneurs.

Again, these individuals are exposed to the industry and hold higher chances to know the behavior of consumers/suppliers and the market in general. Ex-ante, they seem to have a systematic confidence which is shaped and constructed thanks to their previous employment and helps them to look around for opportunities. These result in a higher sensitivity for the shocks and turbulence of the surroundings. Therefore we hypothesize that:

**Proposition 2.** Employee entrepreneurs tend to discover opportunities more than creating them

### 2.2.3. Academic Entrepreneurship

Academic entrepreneurship refers to the creation of ventures by a student, faculty or a staff of a university or a public-funded (no profit organizations) research institute on the basis of a discovery emerged from an academic research activity (Di Gregorio & Shane, 2003; Shane, 2004). The knowledge (coming from a non-profit research) and the founders of the newly created firm (who are affiliated with the research institute) are considered as the criteria for academic entrepreneurship. Some scholars have had different approach and definition for this phenomenon. Some believe that the surrogate entrepreneurs who do not have any affiliation with the public funded research institute but exploit knowledge which were developed there, are included in the university spinoff definition (Nicolaou & Birley, 2003). However, others believe that the existence of both “developed knowledge/technology” and “founders from a research institute” is the necessary condition for university spinoffs (McQueen & Wallmark, 1982; Smilor et al., 1990). These two terms result in the classifications of university spinoffs into orthodox (existence of knowledge and academic founders), hybrid (existence of knowledge and academic founders retaining their position in academia but also having an affiliation with a company) and technological (existence of knowledge only) spinoffs.

Previous literature has also explained four phases for the creation of university spinoffs. The first phase is the research activity which would be carried out by the researcher, then the opportunity would be framed from the research outcome. Clearly, the opportunity gets recognized after “research activity” and before “opportunity framing” phases. Pre-organisation and re-orientation of the entrepreneur(s) are the following phases (Vohora et al., 2004).

The academics either base their research from an imperfection mentioned by previous colleagues in a codified information or they are asked to do a research from their institute’s superiors who basically plan for the research. It has been also shown in previous papers that the results of an industry-sponsored university research have been framed in a commercial opportunity by lead academics (Vohora et al., 2004). In another instance, the academics themselves discover and find commercial opportunity from their research and file a patent or create a venture. As told in previous literature, the mindset of scientists is to publish or perish. Then after the emergence of intellectual property, commercialization opportunity might appear (Vohora et al., 2004). The nature and essence of academics make them prone to create a new value through a systematic scan and search rather than exposing themselves to the external market shocks. Even if they are not aware that their research outcome might have commercial benefits, and others make efforts exploiting from it, it is needed to investigate whether those who capture the opportunity, does it due to an external shock or not. In this case, as described before, there are surrogate entrepreneurs who find an application from a research that has been done by academics but the literature has not explained how exactly they encountered the opportunity. Nonetheless, here, by explaining the characteristics of academics who become entrepreneurs on the basis of their own research, it is so unlikely that they recognize the opportunity due to an exogenous factor.

Academics who create a new firm, need to compensate for the lack of knowledge for how to manage it. The complementary assets they intrinsically might be able to use are the Technology Transfer Offices and their networks in universities. These assets compared to the accessible assets to the employee entrepreneurs are in short supply. This might be a reason why some academics do not put themselves in an uncertain situation for becoming an entrepreneur even by considering that their
research outcome has a great value for the economy and society. Thus, incubators disposal for this type of entrepreneurs could be indeed synergetic.

Appropriability regime favors this type of entrepreneurs as they usually create venture on the basis of a research they had done before. Those research most likely are codified and are protected through an overlapping set of patents which prevent others to take an advantage of commercializing their knowledge. However, these entrepreneurs are not well-positioned for access to the previously mentioned complementary assets. Therefore, they seem to have difficulties for entering an industry when they aim to exploit from their research which is embedded in a tacit knowledge and cannot be protected (Agarwall & Shah, 2014).

It could have been difficult to reach the following statement if academic entrepreneurs were not supposed to create a firm on the basis of their research but also other experiences. The iterative nature of research formulation and the path-dependency of it together with the less-exposed individuals (researchers) to the market and industry make them fit the second school of thought regarding the opportunity identification phenomenon. Thus, we propose the following:

**Proposition 3.** Academic entrepreneurs tend to create opportunities more than discovering them

### 3. Conclusion

The characteristics and behavior of individuals together with their knowledge source might shape the way they give value to an innovation, hence, considering their risk costs, they might identify it as an opportunity to be exploited. Individuals with different knowledge sources seem to find opportunities in a different manner. Surely entrepreneurs have accumulated information from different sources and they can’t be grouped into only one category among the mentioned sources in reality. However, the aim of our study was to shed light on the peculiar and unique path of opportunity identification for each entrepreneur’s typology. By this, we purposefully isolated the entrepreneurs of each category carrying knowledge from their own source. In addition, the opportunity identification process in our belief is not an incompatible phenomenon and in reality, the actions and reactions of entrepreneurs follow and conflate the principles of both theories of opportunity identification. But here, we assume a higher contingency for each typology of entrepreneurs to fit into one of the theories of opportunity identification. We should keep in mind that the described concepts have a subtle and delicate boundary to be separated and they might cross each other in reality. Lastly, It is worthy to point that the unit of analysis for the propositions of this article is based on the entrepreneur, not the opportunity. This connotes that one can induce different propositions by studying the nature of opportunities and linking them with the opportunities each typology of entrepreneurs seeks to exploit.

### References


