



PONTIFICIA UNIVERSIDAD CATOLICA DE CHILE
ESCUELA DE INGENIERIA

ON BECOMING AN ENTREPRENEUR: WHO LEARNS WHAT FROM WHOM AND WHERE?

NICOLÁS ANDRÉS LOZANO PEFAUR

Thesis to obtain the Degree of
Master of Science in Engineering

Advisor:

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*Control what you can, confront what
you can't.*

*And always remember how lucky you
are to have yourself.*

(Un) Lost - The Maine

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RESUMEN

Las organizaciones son una fuente de aprendizaje para adquirir conocimiento y habilidades; dar forma a las creencias y valores de los trabajadores; brindar oportunidades para aumentar el capital social; y proporcionar oportunidades que podrían alentar el emprendimiento en los empleados. Aunque no cabe duda de que las organizaciones desempeñan un papel importante en los procesos propios del emprendimiento, se sabe relativamente poco sobre quién aprende qué, de quién y dónde; y cómo este aprendizaje afecta el desarrollo en los miembros de la organización en cuanto a experimentar, cuestionar, observar y establecer redes. Estos comportamientos juegan un rol clave como facilitadores de la prospección de oportunidades de negocio. En esta tesis se analiza cómo las características formales de la organización (i.e. startup vs. empresa establecida) y sociales (i.e. tipo de supervisor y grado de interacción con esa persona) inciden en las actitudes (i.e. aversión al riesgo, valoración de la autonomía y del ingreso), creencias (i.e. autoeficacia emprendedora) y habilidades de prospección de oportunidades de negocio (i.e. observar, cuestionar, experimentar y crear redes) de los trabajadores. El estudio se basa en una encuesta *retrospective pretest-posttest* a 847 profesionales. Los hallazgos sugieren que *joiners* (empleados de startups) aumentaron sus niveles de comportamientos de crear redes y su autoeficacia emprendedora, con relación a los *never-joiners* (empleados de una organización establecida sin experiencia previa en startups). Además, los empleados aprendieron estos comportamientos de sus supervisores, independientemente de si la organización era una startup o una organización establecida, especialmente cuando su supervisor era uno de los fundadores. Esta tesis contribuye a la reciente literatura sobre cómo las organizaciones y los empleados influyen en el capital emprendedor de los trabajadores.

Palabras Claves: emprendimiento, detección de oportunidades, startup, aprendizaje de habilidades de emprendimiento, autoeficacia emprendedora.

ABSTRACT

Organizations are learning grounds for acquiring knowledge and skills; they shape workers beliefs and values; they provide opportunities to increase social capital; and provide opportunities all of which might encourage (or discourage) entrepreneurship among employees. Though there can be no doubt that organizations play an important role in the entrepreneurship process, relatively little is known regarding who learns what from whom and where, and how this learning impacts the development in organization members of experimenting, questioning, observing and networking, key behaviors that have been previously identified as facilitating business opportunity prospection. This thesis analyzes how the formal characteristics of the organization (i.e. startup vs. established company) and social characteristics (that is, type of supervisor, and degree of interaction) affects attitudes (i.e. risk aversion, autonomy and income), beliefs (i.e. entrepreneurial self-efficacy) and opportunity discovery behaviors (i.e. observing, questioning, experimenting and networking) for workers. The study is based on a retrospective pretest, posttest survey of 847 professionals. Findings suggest that joiners (startup employees) increased their networking behaviors and entrepreneurial self-efficacy relative to never-joiners (established organization employees without startup work experience). Moreover, employees learned these behaviors from their supervisors, regardless of whether the organization was a startup or an established organization, especially when their supervisor was a founder. This article contributes to the recent literature regarding how organizations and employers influence the entrepreneurial capital of employees.

Key Words: entrepreneurship, opportunity recognition, startup, entrepreneurial learning, entrepreneurial self-efficacy.

1. INTRODUCCION

There is growing interest among scholars in the role played by the workplace in the development of entrepreneurial activity (Elfenbein, Hamilton, & Zenger, 2010; Gompers, Lerner, & Scharfstein, 2005; Kacperczyk, 2012; Roach & Sauermann, 2015; Sørensen & Fassiotta, 2011). Organizations can be places of learning that impart knowledge and skills, give shape to workers' values and beliefs and provide opportunities for increasing social capital, all of which are factors having the potential to encourage (or discourage) entrepreneurship among employees (Sørensen & Fassiotta, 2011).

In any organization there are both structural and social aspects that influence an employee's decision to create a new business venture. At the structural level, bureaucratization is generally considered to be detrimental to entrepreneurship (Sørensen, 2007; Sørensen & Fassiotta, 2011) as it limits workers' exposure to different roles and tasks (Liang, Wang, & Lazear, 2014; Sørensen, 2007) whereas entrepreneurial activity demands mastery of a wide variety of roles (Lazear, 2005). Thus, prior literature suggests that opting to become an entrepreneur is facilitated by working in startups, whose relatively low levels of bureaucratization and division of labor tend to expose employees to multiple roles and duties (Liang et al., 2014; Nanda & Sørensen, 2010; Sørensen, 2007).

Despite the role of bureaucracy on employees, prior literature has documented ways in which entrepreneurs emerge after working in established organizations (Nanda & Sørensen, 2010; Sørensen & Fassiotta, 2011; Sørensen & Phillips, 2011). In other words, although the impact of working in a bureaucratic environment may be negative, there appear to be other, more nuanced aspects of established organizations that play a positive role in determining the probability a person will attempt to start a new business.

At the social level, employees' relationships with their peers and supervisors and the length and quality of such relationships influence entrepreneurial behaviors (Kacperczyk, 2012; Nanda & Sørensen, 2010; Van Auken, Fry, & Stephens, 2006;

Wyrwich, Stuetzer, & Sternberg, 2016). Social mechanisms conducive to the development of entrepreneurial activity among organization workers include the degrees of personal involvement, professional involvement, mentoring, and observation and discussion (Lazear, 2005; Nanda & Sørensen, 2010; Sørensen, 2007). By observing successful entrepreneurs or ex-entrepreneurs, people can learn much about how to organize resources and activities necessary for carrying out an entrepreneurial undertaking and build their self-confidence (Sorenson & Audia, 2000; Sullivan, 2000). This latter characteristic has a direct impact on entrepreneurial self-efficacy, a quality defined as a person's belief in his or her own ability to successfully assume the roles and perform the tasks involved in being an entrepreneur (Bandura, 1997; Zhao, Seibert, & Hills, 2005; Chen, Greene, & Crick, 1998). Studies also show that peer effects play an important role in the decision to become an entrepreneur (Giannetti & Simonov, 2009), as interaction with an entrepreneur role model increases the likelihood of such a decision (Wyrwich et al., 2016).

Although there is ample evidence that the organizational context is important for entrepreneurial activity, it is still not clear how the various formal characteristics of an organization such as structure, composition and routines compare to the social influences of workplace peers and supervisors as regards their relative weights in influencing the inclination to create one's own business. Nor is it obvious which behaviors or entrepreneurial skills are or are not developed by working in an established organization.

In light of the foregoing, this paper sets out to determine who learns what from whom and where. We analyzed how an organization's structural characteristics (startup versus established) and social characteristics (type of supervisor and degree of interaction with him or her) influence employees' attitudes (risk aversion, valuation of autonomy and income), beliefs (entrepreneurial self-efficacy) and business opportunity prospecting behaviors (observation, questioning, experimentation and networking).

We conducted a post-test, retrospective pre-test survey of 847 professionals who took an online course in organizational management. The results were broken down to distinguish between those who were (1) creators of a business (i.e., founders); (2) employees working for a startup (i.e., joiners); 3) employees who had previously worked

for a startup but at the time of the survey were working for an established business (i.e., past-joiners); (4) employees with no experience in startups (i.e., never-joiners); and (5) persons not currently working (i.e., unemployed).

We found that the four above-mentioned business opportunity prospecting behaviors are acquired by employees to a greater extent through direct interaction with their immediate boss or supervisor than from their employer organization as a whole. And when the supervisor is one of the founders of the business, even if it is not a startup, they learn even more. This suggests that employees learn prospecting behaviors more effectively if they have direct contact with the company founder than simply by working in a startup.

We also found that entrepreneurs (founders) exhibit greater levels of all four of the above-mentioned behaviors than other company managers, corroborating the results reported by Dyer et al. (2008). We did not find significant differences in any of these behaviors between joiners and employees of established organizations. However, compared to the employees (regardless of whether they are past- or never-joiners), joiners showed greater improvement over the 6 months previous to the survey in their networking behavior. Moreover, our findings indicate that the age of the employer organization has a negative marginal effect on how much employees perceive they have learned about opportunity prospecting behaviors.

Regarding the incidence of organizational variables on the development of these behaviors, we found that how much a person learns about networking, questioning and observing is directly proportional to the time spent with the supervisor and the quality of the relationship with him or her. The quantity and quality of time spent with the supervisor is positively related to both entrepreneurial self-efficacy and the intention to become an entrepreneur, particularly when the immediate supervisor is a founder.

The contribution of our paper lies in the finding that business opportunity prospecting behaviors are not static but rather can be learned and modified over time, as has been suggested by Baron (2006; 2007). Employees learn more about questioning, observing, networking and experimenting from their immediate supervisor than from their

employer organizations as a whole, especially when the former is a founder of the company. Working for startups may facilitate the acquisition of these behaviors because in such firms there are more opportunities to interact directly with the founder. It also allows employees to build up their entrepreneurial self-efficacy and reinforces their entrepreneurial intentions. Moreover, our research contributes to a literature stream that seeks to distinguish between the preferences of founders and joiners for certain entrepreneurial job attributes (Roach & Sauermann, 2015). Having been a joiner has long-term implications in that the ability to observe and network is not lost when one leaves a startup, and thus differentiates joiners from those who have never worked in a startup. Furthermore, we contribute to an emerging literature stream that focuses on the mechanisms that lead to entrepreneurial capital (Gonzalez-Urbe & Leatherbee, 2018; Leatherbee & Eesley, 2014), by exposing alternative paths for the acquisition of the skills required for entrepreneurial performance.

The remainder of this manuscript is organized into four sections. Section 2 reviews the existing literature and states the hypotheses to be tested; Section 3 describes the survey sample, the variables measured and the models used to estimate them; Section 4 sets out the model results and their interpretation; and Section 5 concludes with a discussion of the findings and their limitations as well as some possibilities for further research.

2. THEORETICAL FRAMEWORK AND HYPOTHESIS HIPÓTESIS

Organizational context can affect a person's knowledge, skills, attitudes and beliefs (Sørensen, 2007; Sørensen & Fassiotto, 2011). In regards to knowledge and skills, organizations can be a source of learning for employees on what is required to be an entrepreneur and/or can provide the necessary knowledge for developing new products and processes (Gompers et al., 2005; Lazear, 2005; Sørensen & Fassiotto, 2011). Skills in business opportunity prospecting depend on the ability to connect cognitively distant

ideas. Known as associative thinking, this ability is driven by four specific behaviors that can be acquired within an organization: questioning, experimenting, observing and networking (Dyer, Gregersen, & Christensen, 2008, 2009). Organizations also influence people's attitudes and beliefs. The decision to become an entrepreneur depends on certain attitudes such as the preference for autonomy (Benz, 2009; Hamilton, 2000), tolerance of risk and the importance of receiving an income (Roach & Sauermann, 2015). A key role in these factors is played by fellow employees and supervisors, who can, based on their own experiences and beliefs, shape the attitudes and beliefs of their peers (Nanda & Sørensen, 2010; Van Auken et al., 2006). Among these personal beliefs is entrepreneurial self-efficacy (ESE), defined as a person's belief in his or her ability to satisfactorily carry out entrepreneurial tasks (Bandura, 1997; Chen, Greene, & Crick, 1998; Zhao et al., 2005). Studies have shown that ESE is a key element in entrepreneurial success given that it is a fundamental personal resource for business performance (Tumasjan & Braun, 2012).

Entrepreneurial intentions is influenced by ESE (Bullough, Renko, & Myatt, 2014; Yao, 2016; Zhao et al., 2005) as well as by skills in business opportunity discovery (Dyer et al., 2008; Karimi, Biemans, Lans, & Chizari, 2013; Van Auken et al., 2006). Both the change in ESE and the development of opportunity prospection behavior may be influenced by a supervisor (Bosma, Hessels, Schutjens, Praag, & Verheul, 2012; Van Auken et al., 2006) and/or the type of organization a person works for (Gompers et al., 2005; Nanda & Sørensen, 2010; Sørensen, 2007; Sørensen & Fassiotto, 2011).

2.1. The influence of an organization on entrepreneurial beliefs and behavior

One of the oldest ideas regarding entrepreneurship is that company bureaucracy negatively affects the probability a person will become an entrepreneur (Merton, 1968; Schumpeter, 1950; Whyte, 1956). Established or larger organizations typically adopt relatively bureaucratic structures. They are highly specialized, follow routines and procedures throughout, and are made up of large-sized units in the operating core that generate dependencies and group tasks throughout the structure (Mintzberg, 1980; Nelson

& Winter, 1982). Decision-making is centralized and adapted to planning systems, and there is an elaborate administrative structure with a sharp distinction between line and staff. By contrast, less bureaucratic organizations such as entrepreneurial firms or startups have a simple, unelaborate structure (Henry Mintzberg, 1980). They have few agents, minimal differentiation between units and a small middle line hierarchy. Very few of its processes are formalized. Coordination is implemented through direct supervision. All important decisions are centralized in the founder or chief executive officer. Communication flows informally, mainly between the founder/CEO and the other organization members. Startups tend to be small in scale and therefore maintain an organic structure over which the entrepreneur can retain control. Many entrepreneurs avoid bureaucratic procedures due to their lack of flexibility (Mintzberg, 1980).

Sørensen (2007) observes that bureaucracies may influence the attitudes and mental dispositions of their employees in ways that make them less inclined to launch their own business. He further notes that bureaucracies may hinder development of the skills needed to be a successful entrepreneur. From a contextual viewpoint, the level of bureaucratization and focus on the organization's internal functioning may shape employees' exposure to entrepreneurial opportunities (Sørensen, 2007). Moreover, established organizations provide job stability and security as well as professional development policies that increase the opportunity cost of leaving to launch one's own business.

Cyert & March (1963) assert that one of the most important components of organizational behavior is the tendency to follow procedures, which include rules for task-performance and information-handling. Rules facilitate simplification and standardization as well as a certain degree of flexibility and the capability to anticipate distant future events in the face of uncertainty. These procedures are called routines (Eisenhardt & Martin, 2000; Feldman & Bolino, 2000; Felin et al., 2012; Nelson & Winter, 1982). Routines are essential for organizations and their growth (Zollo, Reuer, & Singh., 2002) and for individual and organizational learning processes (Argote, 1999; Huber, 1991; Levitt & March, 1988).

Organizational learning is based on routines (Argote, 1999; Huber, 1991; Levitt & March, 1988). It is coded in routines that guide behavior and are transmitted through socialization, education, imitation, personnel movement, mergers and acquisitions (Levitt & March, 1988). These routines are held in the collective memory and are thus repositories of knowledge. Although they have some flexibility, their nature is such that room for finding new solutions is limited and those that are adopted rarely encourage questioning of the status quo (Cyert & March, 1963; Gavetti, 2012). For this reason it is believed that large, highly structured organizations allow little space for questioning the status quo and experimenting. Interviews conducted by Dyer et al., (2008) reveal that entrepreneurs are more likely to question the status quo than executives or managers in established firms, whose questions are confined to understanding current processes. We may therefore suppose that bureaucracies, with their well-defined roles and hierarchies and their focus on routines and rules, require strict adherence to them, inducing in their members a timidity and conservatism that stifle opportunities for associative thinking and thus prevent them from developing individual behaviors characteristic of opportunity prospecting. Workers in startups where there are no routines or standardized procedures have greater autonomy in making strategic decisions and taking courses of action, which can improve their entrepreneurial self-efficacy (Bandura, 1997; Forbes, 2005).

Since bureaucratic organizations depend on standardized work processes or routines, coordination is typically achieved by specialization in work units that function as “islands” (Eisenhardt & Martin, 2000; Feldman & Bolino, 2000; Felin et al., 2012; Nelson & Winter, 1982). Knowledge of the tasks performed is thus concentrated in specific areas of an organization rather than across it. Chandler (1962) conjectures that the existence of divisions within an organization facilitates the internalization of routines and communication. In this view, employees of bureaucratic organizations are exposed to a limited number of tasks whereas successful entrepreneurial activity requires a mastery of a wide array of roles (Lazear, 2005). The actual structure of the organization plays a central role here in that the extent to which a job is defined broadly or narrowly will effect its holder’s ability to acquire a broad range of skills (Sørensen & Fassiottto, 2011).

Organizations with lower levels of bureaucratization and division of labor facilitate a greater exposure to multiple tasks. Since the size of an organization is one of the main drivers of role differentiation, skill development may be one reason why individuals from small firms are more likely to become entrepreneurs (Sørensen 2007).

In contrast with established organizations, we argue that the structure of entrepreneurial firms and their low level of bureaucratization give rise to environments that stimulate learning of behaviors characteristic of prospecting for entrepreneurial opportunities. In such contexts, employees learn from their colleagues about what is involved in starting a new venture and are constantly exposed to a network of suppliers and potential customers who are accustomed to dealing with startups (Gompers et al., 2005).

Context may thus play a major role in the long-term development of behaviors related to innovation and entrepreneurship. If the type of organization an individual works for facilitates learning or the development of opportunity prospection behaviors, then past-joiners, defined as employees of established organizations with previous startup experience, should display differences relative to never-joiners, defined as those who have never worked in a startup. Moreover, over time, we expect joiners to increase their entrepreneurial behaviors and beliefs more than never-joiners. We formalize this logic in the following hypotheses:

H1: Employees with previous experience in startups (past-joiners) will exhibit higher levels of opportunity prospection behaviors and entrepreneurial self-efficacy than employees without such experience (never-joiners).

H2: Employees of startups will exhibit greater increases in opportunity prospection behaviors and entrepreneurial self-efficacy over time, relative to employees of established organizations.

2.2. The influence of supervisors on entrepreneurial beliefs and behavior

Supervisors can have a significant impact on employees (Kacperczyk, 2012; Nanda & Sørensen, 2010; Sorenson & Audia, 2000). The levels of supervisors' personal involvement, professional involvement, mentoring, observation and discussion not only have a direct effect on workers' beliefs and behaviors (Van Auken et al., 2006), but can also influence their views on the nature of entrepreneurship (Sørensen & Fassiotto, 2011). Thus, to the extent supervisors are considered by their employees as role models, the former are in a position to shape people's career preferences (Eesley & Wang, 2017; Van Auken et al., 2006; Wyrwich et al., 2016).

Different role models have different beliefs and behaviors. This is particularly true when comparing managers with founders. Regarding beliefs, they differ in their entrepreneurial self-efficacy. Interviews by Wasserman (2012) have revealed that many entrepreneurs are convinced they alone are able to lead their startups to success. Founders tend to have higher levels of self-confidence and self-efficacy than non-founder managers (Bullough et al., 2014; Chen et al., 1998; Forbes, 2005; Zhao et al., 2005). As for behaviors, entrepreneurs are distinguishable from non-founder managers in the way they acquire information. The former question, experiment, observe and network more (Dyer et al., 2008), which explains why they often recognize opportunities that non-founder managers do not (Baron, 2007; Kaish & Gilad, 1991; Shane, 2003).

When it comes to prospecting new opportunities one key behavior typical of founders is observing. Dyer et al. (2009) explain that entrepreneurs look for small behavioral details in consumers, suppliers and other companies and do so intentionally, carefully and consistently as they search for ideas about new ways of doing things. The ability to recognize new opportunities is directly related to the ability to observe individual behavior (Baron, 2007; Gruber et al., 2008; Shane, 2000). According to Baron (2007), by observing, entrepreneurs are able to recognize patterns that translate into new business opportunities (Christensen & Raynor, 2003; Dyer et al., 2009). Observing is a basic element of human behavior that entrepreneurs can be expected to practice more

consistently and exhaustively than others in their efforts to detect value opportunities (Casson & Wadeson, 2007).

A second key behavior exhibited by founders is questioning. According to Dyer et al. (2008), the questions asked by managers tend to have to do with understanding how to improve existing processes, whereas innovative entrepreneurs tend to challenge existing assumptions and conventions, analyzing options that in some cases were completely opposite to standard practice. This enables entrepreneurs to generate new perspectives and understandings of the world around them.

A third key behavior is experimenting. Entrepreneurs tend to try out new ideas, create prototypes and launch pilot projects. They are more sensitive than non-founder managers to the peculiarities of their organizational context and therefore tend to experiment constantly (Dew, Read, Sarasvathy, & Wiltbank, 2011). By contrast, managers in established organizations tend to view experimenting as potentially costly and inefficient Dyer et al. (2008).

A fourth key behavior is networking. The structure of an individual's network plays an important role in entrepreneurship (Stuart & Sorenson, 2005), determining the quantity and quality of the information they possess and how quickly they can assimilate it (Aldrich & Zimmer, 1986; Burke, 1995). Burt & Raider (2002), for example, find that entrepreneurs with many social connections are more likely to start businesses. In their interviews, Dyer et al. (2008) and Mueller et al. (2012) discovered that entrepreneurs build and maintain diverse social networks more frequently and with greater commitment than other managers. Entrepreneurs deliberately seek to establish these relationships in order to meet people with different ideas and perspectives and thereby extend their knowledge domains (Dyer et al., 2008; Nijkamp, 2003). Experienced entrepreneurs attempt to acquire potential clients and strategic partners with whom they can set objectives, determine available resources and exchange different points of view. Furthermore, Sarasvathy (2001) conjectures that entrepreneurs are more likely to build strong participatory cultures and attach great importance to networks and social relationships.

The impact of role models also depends on workers' pre-existing attitudes and preferences. Roach & Sauermann (2015) show that not everyone interested in entrepreneurship wants to be a founder, and therefore should not necessarily be considered an entrepreneur (Gompers et al., 2005; Sørensen, 2007). Roach & Sauermann (2015) distinguish the typology of joiners, as startup employees who are different than entrepreneurs. Joiners differ from employees of established firms in their motivations and expectations, however, valuing stability and a regular salary less while placing more importance on autonomy and responsibility (Sauermann, 2017). Furthermore, both joiners and entrepreneurs have a greater tolerance for risk than workers in established businesses. Roach & Sauermann (2015) further find that founders value independence and autonomy even more than joiners and that the decision to be a founder is influenced by contextual factors such as norms, role models and opportunities.

Many studies of entrepreneurship identify previous experience in startups as a key factor for understanding entrepreneurial outcomes (Elfenbein et al., 2010; Gompers et al., 2005; Shane & Khurana, 2003; Sørensen, 2007). The distinction between employees of established organizations who have previously worked in startups and those who have not is an important one given that such prior experience may play a key role in detecting valuable opportunities (Shane, 2000). Thus, in our analyses we distinguish the former group (past-joiners) from the latter (never-joiners).

A number of studies have demonstrated that networks (Kim & Aldrich, 2005; Klyver, Hindle, & Schøtt, 2005) and peers (Djankov, Qian, Roland, & Zhuravskaya, 2006; Falck, Heblich, & Luedemann, 2012; Giannetti & Simonov, 2009; Koellinger, Minniti, & Schade, 2007; Nanda & Sørensen, 2010) influence the decision to become an entrepreneur. Individuals in contexts that expose them to constant interaction with an entrepreneur role model are more likely to decide to start their own business (Wyrwich et al., 2016). By observing successful entrepreneurs, they learn how to organize resources and activities in order to launch a business venture and increase their self-efficacy (Sorenson & Audia, 2000; Sullivan, 2000). We thus hypothesize that:

H3: Employees increase their opportunity prospection behaviors and their entrepreneurial self-efficacy when their immediate supervisor is one of the firm's founders, relative to employees whose supervisors are not founders.

Brandon & Hollingshead (2004), Lewis et al. (2005) and Liang et al. (1995) focus on how individuals or units within an organization that concentrate knowledge and transfer it through connections with other individuals or units. This transfer may be influenced by factors such as intensity of connection, communication or contact frequency, and social similarity (Argote, Mcevily, & Reagans, 2003). Also, transactive memory systems are much more effective in close personal relationships (Wegner, 1986; Wegner, Erber, & Raymond, 1991). Opportunity prospection behaviors constitute tacit knowledge so the time spent in contact with a supervisor should increase both self-efficacy and opportunity prospection behaviors. Thus, we hypothesize that:

H4: Increases in opportunity prospection behaviors and entrepreneurial self-efficacy are positively related to the amount of time spent interacting with a supervisor and to the quality of that relationship.

2.3. Relative importance of the organizations vis-à-vis the supervisor

Little has been reported about the relative importance of the organization vis-à-vis peers as the source of learning about entrepreneurship. It is not clear whether employees acquire entrepreneurial characteristics from the mere fact of working in a given organization, or whether the interaction with other organizational members plays a greater role.

At the social level, employees' relationships with their peers and supervisors, and the intensity and quality of such relationships, are known to influence behaviors characteristic of entrepreneurship (Kacperczyk, 2012; Nanda & Sørensen, 2010; Van

Auken et al., 2006; Wyrwich et al., 2016). Social mechanisms conducive to the development of entrepreneurial activity among organization workers include the degrees of personal involvement, professional involvement, mentoring, and observation and discussion (Lazear, 2005; Nanda & Sørensen, 2010; Sørensen, 2007).

By observing successful entrepreneurs or ex-entrepreneurs, people can learn much about how to organize resources and activities necessary for carrying out an entrepreneurial undertaking and build their self-confidence (Sorenson & Audia, 2000; Sullivan, 2000). This latter characteristic has a direct impact on entrepreneurial self-efficacy (Bandura, 1997; Zhao, Seibert, & Hills, 2005; Chen, Greene, & Crick, 1998). Studies also show that peer effects play an important role in the decision to become an entrepreneur (Giannetti & Simonov, 2009), as interaction with an entrepreneur role model increases the likelihood of such a decision (Wyrwich et al., 2016). Because social learning and social comparison (Bandura, 1969; Bandura & Jourden, 1991; Leatherbee & Eesley, 2014) play an important role in shaping an individual's behaviors and beliefs, we hypothesize that:

H5: Increases in opportunity prospection behaviors and entrepreneurial self-efficacy of employees are less strongly related to the type of organization (established or startup) they work in than to the interaction with a supervisor.

3. DATA, VARIABLES AND METHODS

3.1. Survey sample

During 2016, we invited 850 professionals registered in a course on managing effective organizations given through the Coursera online learning platform to answer our survey. Participants had the incentive to answer truthfully, as a post-survey report was

provided to respondents. The implications of the report was further discussed in class, which motivated a high-response rate. A total of 847 valid survey questionnaires were submitted from various parts of the world but mainly from Latin America (93%). The countries most represented were Chile (22%), Peru (18%), Mexico (16%) and Colombia (11%).

Since all of those surveyed had chosen to take the course, the sample may be subject to self-selection bias. However, our sample is quite heterogeneous. The sample is comprised of 469 (57%) male and 354 (43%) female respondents, ranging from 19 to 73 years of age ($M=36$; $S.D.=10.1$). Regarding their educational attainment, 91 (10%) had completed secondary school or up to two years of post-secondary studies, 481 (58%) had a Bachelor's degree, 240 (29%) had a Master's degree, 16 (2%) had a doctorate and 24 did not answer this question.

The respondents' reported years of work experience ranges from 0 to 45 ($M=11$; $S.D.=9.2$). A total of 536 (63%) said they were employees working for companies started by others, 108 (13%) were entrepreneurs who created their own businesses and 177 (22%) stated that they were unemployed, while 26 (3%) did not declare their employment status. Of the employees, 204 (25%) had previously worked for a startup (defined as a firm with less than 5 years of existence and fewer than 15 employees) and thus were classified as past-joiners according to our definition. Of the remainder, 257 (32%) were never-joiners who had at no time worked for a startup, whereas 52 were joiners (6.5%) who at the time of the survey were working for a startup they did not create. Finally, respondents were also classified by the type of organization they were currently working for. Entrepreneurs and joiners working in startups accounted for 160 of respondents whereas 484 worked for established organizations.

Since a single questionnaire was used to measure both the dependent and the independent variables, two statistical considerations were kept in mind. First, the correlations between the variables might have been influenced by common-method bias. To reduce spurious correlations, the survey questions were separated and wherever possible, different response scales were employed (Roach & Sauermann, 2015). Second,

because the survey was a self-reported questionnaire, respondents may have given answers they thought were socially acceptable rather than truly indicative of their real preferences. This may be a concern in our regression analysis only to the extent the sources of measurement error correspond to unobservable respondent characteristics that are related to the other measured variables. We believe that our large set of control variables accounted for a large part of the heterogeneity that is typically not observed in this type of study. Any remaining individual differences would therefore have had only a minimal effect on the detection of systematic relationships in our large sample (Roach & Sauermann, 2015).

To measure the change over time in opportunity prospection behaviors and entrepreneurial self-efficacy, a retrospective pretest-posttest methodology was used, in which a single survey was conducted asking the same questions in relation to two different points in time: the date of the survey (t_2) and six months earlier (t_1). This raises a further consideration regarding the responses. Howard, Schmeck & Bray (1979) have demonstrated that respondents may overestimate their knowledge of self-reported behaviors. When information relating to different times is collected at those same moments on separate surveys, a question asked on the initial survey about a given variable may increase respondent's awareness of it, biasing their response on the follow-up survey. The retrospective pretest-posttest technique reduces this ceiling effect problem and is particularly useful for cases involving short time periods where the additional steps and costs of other approaches cannot be justified (Nielsen, 2011).

3.2. Dependent Variables

The four opportunity prospection behaviors (experimenting, questioning, observing and networking) measured in our survey were represented by four dependent variables following the methodology validated by Dyer et al. (2008). The questionnaire data relating to entrepreneurial self-efficacy was represented by a dependent variable according to the methodology set out by Forbes (2005). For each behavior, a score was

calculated as the average of the points assigned to the corresponding survey question responses on a scale of 1 to 7, where 1 indicated a response of “totally disagree” and 7 indicated “totally agree.” Details on the measurement of each variable are set out in what follows.

Questioning. Measured with the following set of questions: I constantly ask thought-provoking questions to get at the root of the problem; I ask insightful “what if” questions that provoke exploration of new possibilities and frontiers; I often ask questions that challenge the status quo; I regularly ask questions that challenge others’ fundamental assumptions. Cronbach’s alpha for the scale was $\alpha_{t1} = 0.77$; $\alpha_{t2} = 0.71$.

Observing. Measured with the following set of questions: I get innovative ideas by directly observing how people interact with products and services; I have a continuous flow of new business ideas that comes through observing the world; I regularly observe the activities of customers, suppliers, or other companies to get new business ideas. Cronbach’s alpha for the scale was $\alpha_{t1} = 0.8$; $\alpha_{t2} = 0.78$.

Experimenting. Measured with the following set of questions: I have a history of taking things apart to see how they work; I actively search for new ideas through experimenting; I frequently experiment to create new ways of doing things; I am adventurous, always looking for new experiences. Cronbach’s alpha for the scale was $\alpha_{t1} = 0.74$; $\alpha_{t2} = 0.76$.

Networking. Measured with the following set of questions: I regularly meet with people outside of the immediate industry to find best practices and spark new ideas; I regularly talk with a diverse set of people (e.g., from different business functions, companies, industries, geographies, etc.) to find and refine new business ideas; I actively seek out individuals from very different backgrounds who can help find and evaluate new ideas; I frequently interact with a large network of contacts to get ideas for new products, services and customers. Cronbach’s alpha for the scale was $\alpha_{t1} = 0.80$; $\alpha_{t2} = 0.79$.

Entrepreneurial Self-Efficacy (ESE). Measured following Forbes (2005) by the degree of certainty expressed by the respondent regarding his or her skill in carrying out

certain tasks. Some of these tasks were: Setting and meeting market-share goals; Creating a company to develop new ideas; Devising a strategic plan. Cronbach's alpha for the scale was $\alpha_{t1} = 0.95$; $\alpha_{t2} = 0.94$.

Entrepreneurial Intentions. For this variable we applied the questionnaire proposed by Liñán & Chen (2009) using a 7-point scale ranging from "totally disagree" to "totally agree." Among the questions were the following: A career as entrepreneur is attractive for me; I am prepared to start a viable firm; I know how to develop an entrepreneurial firm and I am determined to create a firm in the future. The complete set of questions is given in the Appendix. Cronbach's alpha for the scale was $\alpha_{t1} = 0.96$; $\alpha_{t2} = 0.95$.

Source of Learning. The survey also asked where the respondents had learned their business opportunity prospection behaviors. Responses were assigned points on a scale of -10 to +10, where -10 represented the response "completely from the organization" and +10 the response "completely through interaction with my supervisor."

Learning of Exploration Behaviors. Finally, the level of learning or change over time for each of the four behaviors was calculated as the difference between their values at each of the two time points on which respondents were questioned. The difference is not absolute and could even be negative.

3.3. Independent Variables

Employment Profile. Survey respondents were questioned about their current employment status. More specifically, they were asked whether they worked at a firm they created (founders), for a firm created by others (employees), or were unemployed. Among those responding that they were employees, three categories were identified according to the definitions provided earlier: joiners, past-joiners, and never-joiners. Altogether, there were five categories, each identified by a separate binary variable.

Startup or Established Organization. A binary variable was also created to distinguish between startups and established organizations. The variable was equal to 1 for respondents who worked for a startup (whether founders or joiners), and to 0 for those who worked for established organizations (past-joiners and never-joiners). For unemployed respondents the variable was undefined.

Percent of Time with Supervisor Interaction. Respondents were asked about the percentage of time they interacted with their immediate supervisor. The variable for this factor took discrete values between 0 and 100, where 0 represented no time with such interaction while 100 represented 100% of the time.

Quality of Relationship. To capture the quality of the relationship between the respondents and their immediate supervisor, they were asked to rank how enriching they found the relationship on a scale of 0 to 20, where 0 represented a “very poor” relationship and 20 a “very good” one. The number of points was assigned to a variable.

Supervisor-founder. Respondents were asked whether their immediate supervisor was also one of the firm’s founders and their responses were assigned to a binary variable equal to 1 if the answer was “yes” and 0 if the answer was “no.”

Separate variables were also defined to gauge respondents’ attitudes to autonomy, income and risk aversion using the methodology developed by Roach & Sauermann (2015). For the first two variables, respondents were questioned about the importance of choosing their own projects and receiving an income, respectively. As regards to risk aversion, they were asked to state the extent to which they would prefer the certainty of winning US\$1,000 to a 50% chance of winning US\$2,000. All three variables were measured on a scale of 0 to 100.

3.4. Control Variables

A number of control variables were defined to avoid possible biases in the results. One of them represented the respondent’s gender, which was equal to 1 for men and 0 for women. Age was controlled for with a variable representing year of birth. This allowed us

to determine whether or not the younger generations preferred working in startups to organizations with a longer tradition (Ouimet & Zarutskie, 2014).

Respondents were also asked to indicate their educational attainment. The seven possible response categories were: some secondary school, secondary school completed, two-year post-secondary diploma, four-year post-secondary degree, Master's degree or Master of Business Administration, and doctorate, scaled from 1 to 7.

The respondents' years of work experience (expressed in integers) was also controlled for. Finally, respondents were asked to indicate the approximate number of employees at their firm and its years of existence. These data were used to control for the size of the organization respondents worked for.

3.5. Methods

For purposes of statistically analyzing the survey data, the dependent variables were divided into three sets. The first set contained the variables relating to the survey respondents' employment profile categories. A series of multinomial logit regressions were conducted comparing entrepreneurs, joiners, past-joiners and never-joiners on their measured levels of opportunity prospection behaviors, beliefs and attitudes. The second set of variables represented the changes over time in these behaviors measured for each respondent. In this case, since the variables were continuous and in some instances could be negative, count data models such as Poisson and binomial or probabilistic models could not be used so a multiple linear regression model was estimated using ordinary least squares (OLS). Respondents were compared on the basis of the type of organization they worked for. Finally, the third set of variables represented the source of learning and was used to explore the extent to which behaviors were learned from a respondent's organization or their immediate supervisor. For these variables we again estimated a multiple linear regression model with ordinary least squares (OLS), for the same reasons mentioned above.

Other variables that may impact entrepreneurial intentions include demographic factors. A number of studies have investigated the influence of gender (Karimi et al., 2013; Maes, Leroy, & Sels, 2014; Shinnar, Hsu, & Powell, 2014; Sullivan & Meek, 2012; Westhead & Solesvik, 2016) on entrepreneurial intentions and self-efficacy. Other researchers have focused on age and formal education (Entrialgo & Iglesias, 2016; Hatak, Harms, & Fink, 2015; Wadee & Padayachee, 2017; Westhead & Solesvik, 2016). Controlling for these variables may therefore be expected to reveal differences in entrepreneurial intentions.

4. ANALYSIS AND RESULTS

Various descriptive statistics and the correlation matrix for the survey variables are shown in Table 4-1. The correlations were relatively low, indicating that collinearity is not a concern. On average, respondents interacted with their supervisor about 75% of the time. The supervisor was one of the company founders in 29% of cases. In what follows we present the results of our statistical analyses of the survey data for the three sets of dependent variables described in the previous section.

4.1. Prospection behaviors, attitudes and entrepreneurial self-efficacy

In this subsection we set out the main statistical results for the first set of dependent variables, which show how respondents' four opportunity prospection behaviors, entrepreneurial self-efficacy and attitudes to autonomy, income and risk aversion all varied depending on their employment profile. The percentage differences of the results for each variable from the whole-sample mean are exhibited for each employment profile category in Figure 4-1.

As regards the four behaviors, at the time of the survey ($t = 2$) entrepreneurs displayed higher levels of networking ($p = 0.021$), observing ($p = 0.001$) and experimenting ($p = 0.003$) than the aggregate of the other categories of respondents. This supports the conclusions reported by Dyer et al. (2009), who established that entrepreneurs are more active than managers in these behaviors. Entrepreneur respondents also did better than the rest in entrepreneurial self-efficacy ($p = 0.026$) and showed greater entrepreneurial intentions ($p = 0.000$). These latter two findings agree with those reported in similar studies (Bullough & Myatt, 2014; Chen et al., 2015; Zhao et al., 2005). Our results further indicated that entrepreneurs and joiners on average attached less importance to income and were less risk averse than employees of established organizations. This is consistent with Roach & Sauermann (2015).

Respondents working at established organizations were also compared on the basis of whether or not they had previous startup experience. At time $t = 2$, past-joiners and never-joiners were statistically similar at questioning ($p = 0.990$) and experimenting ($p = 0.529$) but past-joiners had higher levels of networking ($p = 0.004$), observing ($p = 0.033$), ESE ($p = 0.026$) and entrepreneurial intentions ($p = 0.001$). This result partly supports our hypothesis H1, which posits that past-joiners have stronger opportunity prospection behaviors and ESE than never-joiners. To test the statistical similarity of these two employment profile categories, we performed a t-test on all of the control variables. The null hypothesis that groups differed were rejected for our control variables.

We next examined the relationship between respondents' employment profile and their opportunity prospection behaviors, attitudes and beliefs. A series of multinomial logit regressions were performed contrasting entrepreneurs, joiners and past-joiners with never-joiners, our baseline category, in order to explore the potential effects of experience on entrepreneurship. The results for each category, shown in Table 4-2, were generated separately by six models. Models 1 to 4 focus on the prospection behavior variables separately. We use separate models for each of the independent variables observing, experimenting, networking and questioning because of multicollinearity. This does not

affect our inference regarding the comparison between different groups. Model 5 includes entrepreneurial self-efficacy (ESE). Model 6 includes respondents' attitudes (autonomy, income and risk aversion). In the case of Model 6, these three variables were included in a single model because the risk of multicollinearity is low.

The findings for Models 1 to 4 show that, compared to never-joiners, high levels of observing, experimenting, networking and questioning were positively related with being an entrepreneur, while high levels of networking and observing were positively related with being a past-joiner. Model 5 results shows that self-efficacy levels are positively related with being an entrepreneur, joiner or past-joiner compared to the baseline never-joiners. The results generated by Model 6 reveal that respondents with relatively high autonomy, low risk aversion and low valuations of income had a greater propensity to be entrepreneurs than those who work in established organizations and had no previous startup experience.

Table 4-1: Descriptive statistics and correlations

	Variable	Mean	S.D.	1	2	3	4	5	6	7	8	9	10
1	Observing	5.78	1.03	1									
2	Experimenting	5.20	1.22	0.63	1								
3	Networking	5.31	1.23	0.64	0.55	1							
4	Questioning	5.77	0.96	0.63	0.54	0.55	1						
5	Entrepreneurial self-efficacy	5.47	1.07	0.62	0.54	0.56	0.51	1					
6	DeltaEXP	0.48	0.78	0.25	0.33	0.22	0.21	0.22	1				
7	DeltaOBS	0.62	0.87	0.32	0.21	0.17	0.21	0.20	0.76	1			
8	DeltaQUE	0.57	0.87	0.22	0.20	0.18	0.33	0.20	0.71	0.76	1		
9	DeltaNET	0.61	0.89	0.27	0.22	0.34	0.24	0.19	0.71	0.74	0.73	1	
10	DeltaESE	0.83	1.09	0.25	0.12	0.17	0.24	0.32	0.56	0.64	0.62	0.62	1
11	Entrepreneur	0.13	0.33	0.16	0.12	0.09	0.11	0.09	0.03	0.10	0.06	0.08	0.10
12	Joiner	0.06	0.24	0.00	-0.06	-0.06	0.00	0.05	-0.03	0.04	0.05	0.06	0.04
13	Past-joiner employee	0.24	0.43	0.01	0.01	0.07	-0.02	0.02	0.04	0.00	0.01	-0.02	-0.04
14	Never-joiner employee	0.30	0.46	-0.12	-0.03	-0.12	-0.03	-0.11	-0.03	-0.07	-0.05	-0.06	-0.06
15	Unemployed	0.21	0.41	0.00	-0.04	0.03	-0.04	-0.01	-0.01	-0.02	-0.05	-0.02	0.00
16	Startup	0.19	0.39	0.13	0.06	0.04	0.09	0.10	0.01	0.11	0.09	0.11	0.11
17	Percentage interaction time with supervisor	74.4	27.3	0.04	-0.01	0.02	0.04	0.00	0.06	0.10	0.13	0.10	0.09
18	Quality of relationship with supervisor	16.0	3.94	0.12	0.12	0.08	0.09	0.11	-0.01	0.02	0.06	0.00	-0.02
19	Supervisor is company founder	0.29	0.45	0.11	0.06	0.04	0.01	0.13	0.13	0.15	0.13	0.11	0.18
20	Sex	0.57	0.49	0.13	0.21	0.09	0.15	0.16	0.00	-0.01	0.07	0.00	0.03
21	Age	35.9	10.1	0.14	0.05	0.10	0.12	0.09	-0.05	-0.08	-0.08	-0.09	-0.11
22	Educational attainment	4.29	0.97	0.07	-0.02	0.09	0.07	0.05	-0.14	-0.11	-0.15	-0.13	-0.10
23	Work experience	10.9	9.19	0.17	0.06	0.08	0.13	0.10	-0.07	-0.07	-0.07	-0.09	-0.10
24	Age of the company	33.7	46.2	-0.03	0.02	0.02	-0.01	-0.06	-0.12	-0.18	-0.18	-0.14	-0.18

This table summarizes the descriptive statistics of the main variables in the analysis and their respective correlations. The first two columns give the mean and standard deviation, respectively. All of the data for the variables were obtained from a questionnaire administered to the survey participants.

Variable		11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	Observing														
2	Experimenting														
3	Networking														
4	Questioning														
5	Entrepreneurial self-efficacy														
6	DeltaEXP														
7	DeltaOBS														
8	DeltaQUE														
9	DeltaNET														
10	DeltaESE														
11	Entrepreneur	1													
12	Joiner	-0.12	1												
13	Past-joiner employee	-0.26	-0.17	1											
14	Never-joiner employee	-0.31	-0.20	-0.42	1										
15	Unemployed	-0.20	-0.13	-0.27	-0.33	1									
16	Startup	0.78	0.52	-0.33	-0.39	-0.25	1								
17	Percentage interaction time with supervisor	0.05	-0.01	-0.02	-0.01	0.00	0.04	1							
18	Quality of relationship with supervisor	0.15	0.02	0.01	-0.04	-0.12	0.14	0.25	1						
19	Supervisor is company founder	0.33	0.17	-0.08	-0.29	0.03	0.39	0.10	0.13	1					
20	Sex	0.09	-0.03	-0.01	0.01	-0.08	0.06	-0.13	-0.01	-0.02	1				
21	Age	0.16	-0.07	-0.01	0.02	-0.12	0.09	-0.07	0.03	0.03	0.17	1			
22	Educational attainment	0.11	0.01	-0.04	0.02	-0.09	0.10	-0.06	0.08	0.00	0.04	0.35	1		
23	Work experience	0.17	-0.07	0.012	0.01	-0.15	0.11	-0.05	0.05	0.05	0.16	0.90	0.31	1	
24	Age of the company	-0.23	-0.18	0.10	0.20	-0.03	-0.31	-0.06	-0.02	-0.29	0.05	0.09	0.07	0.06	1

This table summarizes the descriptive statistics of the main variables in the analysis and their respective correlations. The first two columns give the mean and standard deviation, respectively. All of the data for the variables were obtained from a questionnaire administered to the survey participants.

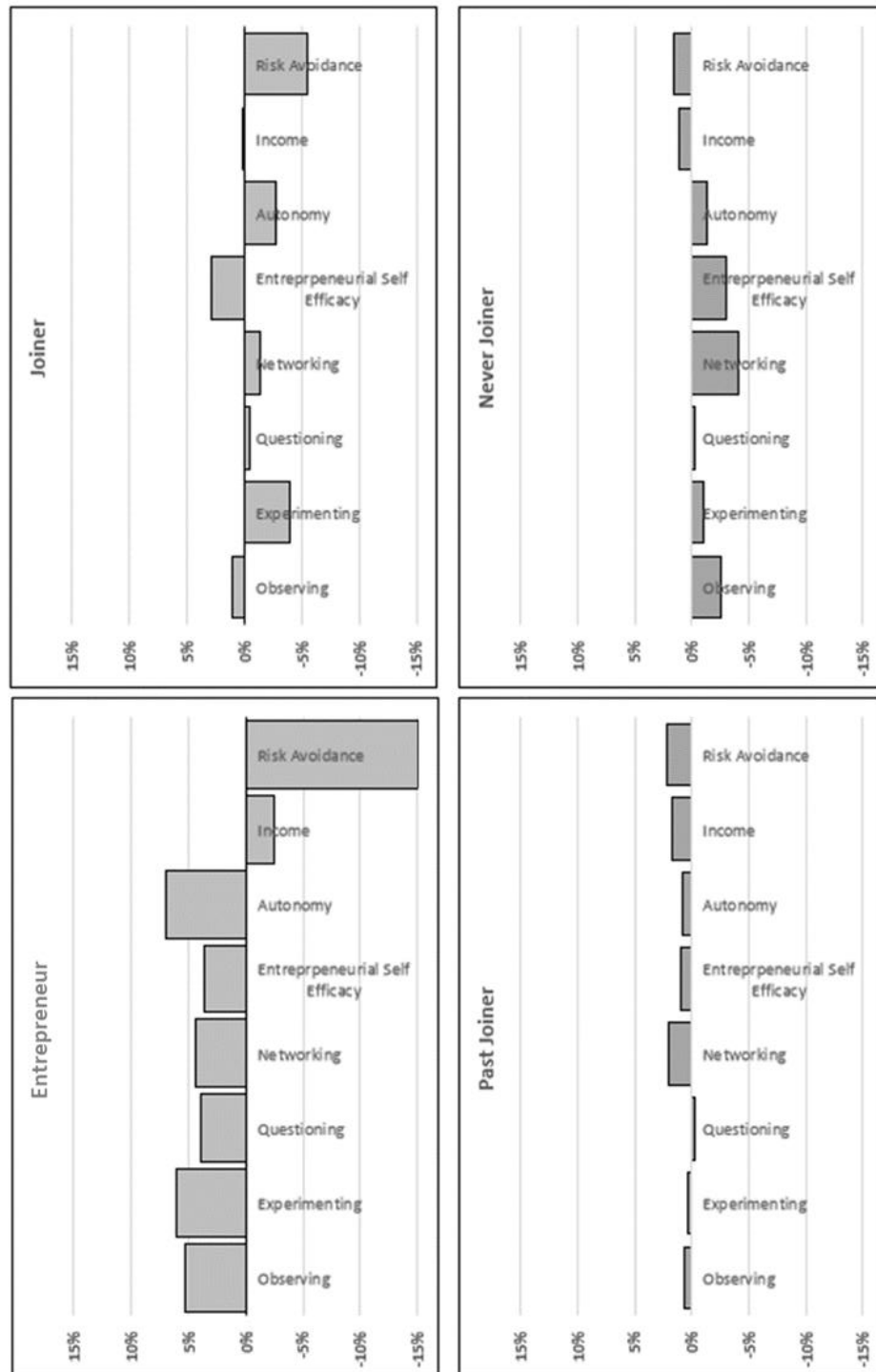


Figure 4-1: Percentage difference from the sample mean, by employment profile category

Table 4-2: Multinomial logit regression results: opportunity behaviors, attitudes and beliefs, by employment profile at time $t = 2$.

	Estimate	Entrepreneur	Joiner	Past-Joiner	Observations
Model 1	Observing	0.310*** (0.001)	0.172 (0.103)	0.149* (0.058)	561
Model 2	Experimenting	0.175** (0.027)	-0.052 (0.553)	0.046 (0.500)	561
Model 3	Networking	0.208*** (0.005)	0.092 (0.269)	0.183*** (0.005)	561
Model 4	Questioning	0.174* (0.085)	0.014 (0.900)	-0.004 (0.962)	561
Model 5	Entrepreneurial self-efficacy	0.231** (0.012)	0.218** (0.042)	0.146* (0.069)	498
Model 6	Autonomy	0.054*** (0.000)	0.001 (0.955)	0.008 (0.383)	384
	Income	-0.020** (0.017)	0.001 (0.944)	-0.002 (0.845)	
	Risk	-0.008** (0.037)	-0.005 (0.280)	-0.001 (0.729)	

Note: This table reports a series of multinomial logit regressions that were performed contrasting entrepreneurs, joiners and past-joiners with never-joiners, our baseline category, to explore the potential effects of experience on entrepreneurship. The dependent variable represents the four categories of the employment profile: entrepreneur, joiner, and past-joiner. The control variables are sex, age, years of work experience and educational attainment. The results for each category were generated separately by six models. Models 1 to 4 focus on the prospection behavior variables separately. We separate the independent variables observing, experimenting, networking and questioning because of potential multicollinearity. This does not affect our goal of comparing the behaviors between groups. Model 5 includes the entrepreneurial self-efficacy variable reflecting respondents' beliefs. Model 6 includes the variables representing respondents' attitudes. In the case of Model 6, we include these variables in a single model as multicollinearity does not seem likely. As robustness tests we ran Models 5 and 6 including the prospecting variables, but results remain consistent throughout. The complete table with all the estimators and control variables, as well as the robustness tests are available from the authors. The figures in parentheses are the p -values.

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

4.2. Change over time in opportunity prospection behaviors and entrepreneurial self-efficacy

This subsection reviews our results on how individuals developed or learned over time the different opportunity prospection behaviors and the evolution in their ESE beliefs as a function of their employment profile category. The changes in these variables were measured for the half-year time window separating the two moments $t = 1$ and $t = 2$ on which the respondents were queried. Attitudes towards autonomy, income and risk aversion were not included in this analysis, however, as it was found that these variables showed little change given that for personal characteristics of this nature, six months is a relatively short period of time. For all four opportunity prospection behaviors, on the other hand, the average level increased over time.

The percentage differences of the results from the whole-sample mean for each of the behavior and ESE variables are given by employment profile category in Figure 4-2. On average, entrepreneurs and joiners learned these behaviors at a level above the mean. Entrepreneurs displayed significantly greater levels of learning than the other categories as regards observing ($p = 0.011$), questioning ($p = 0.047$), networking ($p = 0.015$) and entrepreneurial self-efficacy ($p = 0.003$). Entrepreneurs' learning of experimenting ($p = 0.328$) was also greater but the difference was smaller. Also, joiners displayed greater levels of learning than established company employees (past-joiners and never-joiners) of observing ($p = 0.143$), questioning ($p = 0.163$), networking ($p = 0.018$) and entrepreneurial self-efficacy ($p = 0.054$). There is not significant differences in experimenting's learning between joiners and established company employees ($p = 0.692$).

Among employees of established organizations, past-joiners, on average, exhibited greater increases than never-joiners in their levels of observing ($p = 0.142$), questioning ($p = 0.143$), networking ($p = 0.288$), experimenting ($p = 0.102$) and ESE ($p = 0.273$).

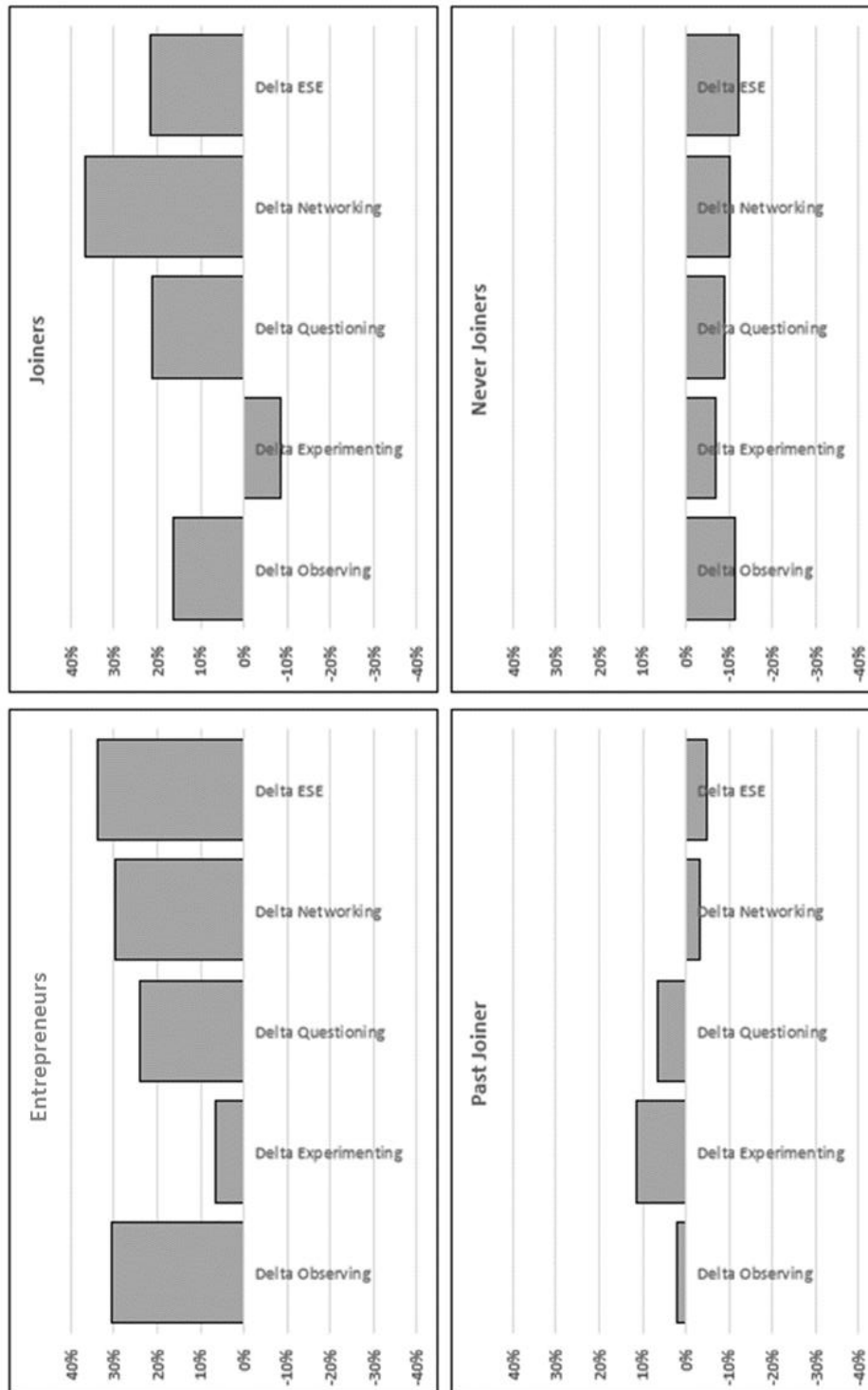


Figure 4-2: Percentage difference from the simple mean of change over time in learning each opportunity prospection behavior, by employment profile.

4.2.1. Startup employees vs. established organization employees

How respondents learned over time was also compared on the basis of respondents' employer type, the analysis in this case being confined to employees, that is, excluding entrepreneurs and the unemployed. The results are set out in Table 4-3.

Startup employees learned more on average than those in established organizations over the intervening period when it came to observing ($p = 0.143$), questioning ($p = 0.163$), networking ($p = 0.018$) and ESE ($p = 0.054$). This partially supports Hypothesis H2, which posits that startup employees learn more opportunity prospection behaviors and ESE than established organization workers.

4.2.2. Supervisor effects

The relationship between learning the opportunity prospection behaviors and interaction with one's supervisor was explored using multiple linear regression (OLS). The dependent variables representing the changes over time in the four behaviors were regressed on independent variables representing the respondents' interaction time with their supervisor, how enriching they found this interaction, and a dummy indicating whether or not the supervisor was a company founder. Also included in the regression were the control variables for respondents' sex, age, educational attainment and years of work experience as well as the age of the company.

The results for the changes in opportunity prospection behaviors are shown in Table 4-4. This Model included the whole sample except the unemployed. As can be seen, learning of each behavior at the aggregate level was greater when the supervisor was one of the founders. This supports our Hypothesis H3. In addition, for established organizations, the greater the interaction with the supervisor, the greater the increase in questioning, lending partial support for Hypothesis H4.

The changes over time in entrepreneurial self-efficacy and entrepreneurial intentions attributable to respondents' supervisor interaction were also measured. The

regression results are presented in Table 4-5. They indicate that working in a startup improved ESE levels (Model 1b in the table) more than working in an established organization. ESE also increased with the percentage of supervisor interaction time (Model 1c), which is consistent with Hypothesis H4. Finally, if the supervisor was one of the founders, entrepreneurial self-efficacy also increased (Model 1d).

The previous literature suggests that working in a startup or interacting with an entrepreneur increases the entrepreneurial intentions (Lee, Kam, Foo, & Leung, 2011; Van Auken et al., 2006). To see if our sample is consistent, we estimate the change in time of entrepreneurial intentions, depends on the same variables. As for entrepreneurial intentions, it appears that working for a startup is positively related to increases in intentions, albeit not statistically significant (Model 2b) and unsupported in the full specification (Model 2f). Moreover, entrepreneurial intention is positively and significantly related to the amount of interaction with the supervisor (Model 2c), and the increase was greater still if the supervisor was a founder (Model 2d).

In general, the variable that indicates the most robust relationship with opportunity prospection behaviors and entrepreneurial self-efficacy is the fact that the supervisor is a founder. This extends to entrepreneurial intentions, as well. Thus, our results support the idea that the influence of a role model on an individual's entrepreneurial characteristics is independent of the type of organization the individual works for.

Table 4-3: Change over time in learning each opportunity prospection behavior, by type of organization employed in.

	Established organization employee			Startup employee		
	Mean $t = 1$	Mean $t = 2$	Δ Mean	Mean $t = 1$	Mean $t = 2$	Δ Mean
Observing	5.133 (1.119)	5.716 (1.024)	0.583 (0.793)	5.123 (0.932)	5.844 (0.952)	0.719 (0.935)
Questioning	5.190 (1.060)	5.749 (0.897)	0.559 (0.842)	5.048 (0.894)	5.739 (0.962)	0.691 (0.953)
Experimenting	4.691 (1.205)	5.179 (1.207)	0.488 (0.714)	4.556 (1.035)	4.998 (1.265)	0.443 (0.872)
Networking	4.668 (1.229)	5.236 (1.254)	0.568 (0.786)	4.398 (1.296)	5.233 (1.353)	0.835 (1.019)
Entrepreneurial self – efficacy	4.642 (1.211)	5.401 (1.064)	0.759 (0.950)	4.614 (1.077)	5.630 (1.082)	1.016 (1.118)
	N=422	N=422	N=422	N=45	N=45	N=45

This table shows the average measured level of each opportunity prospection behavior described in Dyer et al. (2008) and of entrepreneurial self-efficacy. The results are given for two points in time: the date of the survey ($t = 2$) and six months previous ($t = 1$). They are broken down by type of organization the respondent works for (established organization or startup). The Δ Mean column indicates the learning of each behavior, that is, the change as measured between $t = 1$ and $t = 2$. As can be seen, learning is greatest for startup employees in all behaviors except experimenting. The last column shows the p -value for the significance test of the difference between the changes found for each group. The most significant difference was found for networking and entrepreneurial self-efficacy. In each case, a one-tail test was applied. The figures in parentheses are the standard deviations.

Table 4-4: OLS regression result: opportunity prospection behaviors learning.

	Whole sample (except unemployed)			
	Delta OBS	Delta QUE	Delta EXP	Delta NET
Supervisor is founder	0.210** (0.040)	0.147 (0.140)	0.190** (0.042)	0.157 (0.123)
Percentage of time interacting with supervisor	0.002 (0.292)	0.003* (0.075)	0.000 (0.899)	0.001 (0.548)
Quality of relationship with supervisor	0.004 (0.723)	0.017 (0.122)	0.003 (0.765)	0.005 (0.667)
Start Up	0.063 (0.554)	0.032 (0.758)	-0.116 (0.233)	0.112 (0.289)
Sex	0.061 (0.473)	0.128 (0.125)	0.062 (0.424)	0.055 (0.520)
Age	-0.001 (0.933)	0.002 (0.817)	0.015* (0.097)	0.001 (0.886)
Educational attainment	-0.067 (0.160)	-0.098** (0.034)	-0.092** (0.033)	-0.063 (0.184)
Work experience (years)	-0.005 (0.638)	-0.006 (0.524)	-0.018* (0.062)	-0.011 (0.279)
Age of company (years)	-0.002* (0.053)	-0.002* (0.063)	-0.002* (0.075)	-0.001 (0.293)
Constant	0.771** (0.027)	0.464 (0.173)	0.477 (0.133)	0.753** (0.030)
Number of observations	473	473	473	473
R-squared	0.047	0.056	0.038	0.038

Note: The dependent variables are the change over time in the opportunity prospection behavior levels. This Model uses the whole sample excluding the unemployed. The figures in parentheses are the p -values.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 4-5: OLS regression results: change over time in entrepreneurial self-efficacy and entrepreneurial intentions.

VARIABLES	Model 1a	Model 1b	Model 1c	Model 1d	Model 1e	Model 1f	Model 2a	Model 2b	Model 2c	Model 2d	Model 2e	Model 2f
Start Up	Delta ESE 0.372*** (0.000)	Delta ESE 0.372*** (0.000)	Delta ESE 0.004** (0.036)	Delta ESE 0.403*** (0.000)	Delta ESE 0.003 (0.953)	Delta ESE 0.196 (0.108)	Delta INTEN -0.023 (0.767)	Delta INTEN 0.119 (0.186)	Delta INTEN 0.003** (0.016)	Delta INTEN 0.247*** (0.003)	Delta INTEN 0.001 (0.937)	Delta INTEN -0.071 (0.500)
Percentage of time interacting with supervisor						0.002 (0.426)					0.003* (0.063)	0.337*** (0.001)
Supervisor is founder						0.311** (0.009)						
Quality of relationship with supervisor						0.003 (0.953)					0.001 (0.937)	-0.005 (0.672)
Sex	0.048 (0.599)	0.006 (0.945)	0.110 (0.260)	0.050 (0.575)	0.054 (0.570)	0.117 (0.255)	-0.023 (0.767)	-0.085 (0.308)	-0.068 (0.407)	-0.035 (0.656)	-0.048 (0.562)	-0.117 (0.184)
Age	-0.008 (0.398)	-0.013 (0.202)	-0.004 (0.750)	-0.007 (0.490)	-0.008 (0.432)	-0.013 (0.246)	-0.005 (0.542)	-0.013 (0.169)	0.004 (0.666)	-0.003 (0.733)	-0.003 (0.760)	-0.007 (0.487)
Educational attainment	-0.110** (0.023)	-0.112** (0.028)	-0.083* (0.074)	-0.115** (0.019)	-0.011** (0.037)	-0.068 (0.223)	-0.087** (0.039)	-0.031 (0.503)	-0.101** (0.022)	-0.095** (0.026)	-0.108** (0.016)	-0.027 (0.570)
Work experience (years)	-0.001 (0.903)	-0.004 (0.745)	-0.006 (0.584)	-0.004 (0.691)	-0.001 (0.918)	-0.004 (0.737)	-0.003 (0.731)	-0.005 (0.638)	-0.011 (0.260)	-0.006 (0.514)	-0.006 (0.527)	-0.009 (0.409)
Constant	1.604*** (0.000)	1.757*** (0.000)	1.109*** (0.002)	1.495*** (0.000)	1.609*** (0.000)	1.284*** (0.002)	1.306*** (0.000)	1.364*** (0.000)	0.884*** (0.004)	1.238*** (0.000)	1.366*** (0.000)	0.992*** (0.006)
Number of observations	611	498	540	601	567	418	559	456	494	549	519	382
R-squared	0.023	0.066	0.028	0.053	0.022	0.073	0.024	0.049	0.040	0.041	0.030	0.084

Note: In Model 1 the dependent variable is the change over time in entrepreneurial self-efficacy. In Model 2 the dependent variable is the change over time in entrepreneurial intentions. Both models control for sex, age, educational attainment and years of work experience. Startup is a binary variable equal to 1 if the respondent works for a startup and 0 if the respondent works for an established organization. The figures in parentheses are p-values.

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

4.3. Source of opportunity prospection behavior learning

Next we explore the source of employees' entrepreneurial behavior learning, that is, the relative importance of the type of organization an employee works in, and the social interaction within it. The respondents in our survey reported on average that they learned more about such behaviors from interaction with their supervisor than from their organization (see Table 4-6).

Table 4-6: Source of learning opportunity prospection behaviors and entrepreneurial self-efficacy, by employment profile.

Where did you learn these behaviors?				
	Founder	Joiner	Past Joiner	Never Joiner
Observing	1.704 (6.307)	0.667 (6.110)	0.802 (6.352)	0.734 (5.998)
Questioning	2.5 (5.818)	1.5 (5.425)	1.983 (5.736)	1.403 (5.798)
Experimenting	1.971 (5.884)	-1.862 (6.192)	0.188 (6.221)	0.864 (5.826)
Networking	2.379 (6.206)	0.133 (6.511)	0.883 (6.118)	0.659 (6.120)
This table shows the source of learning for each of the four opportunity prospection behaviors. Respondents were asked to state where they learned them on a scale of -10 to +10, where -10 indicated "completely from the organization" and +10 indicated "completely from interaction with my supervisor". The results show that, on average, they learned more from supervisor interaction. Standard deviations are shown in parenthesis.				

The tendency of learning from the supervisor was even greater when the supervisor was a founder, as can be seen in Table 4-7. These differences are statistically significant for observing, questioning and networking at confidence levels of 90% or better, whereas in the case of experimenting the same was true at the 84% confidence level.

Table 4-7: Source of learning opportunity prospection behaviors and entrepreneurial self-efficacy, by whether or not supervisor was one of the founders.

Where did you learn these behaviors?	<i>Supervisor ≠ founder</i>	<i>Supervisor = founder</i>	t-test (<i>p value</i>)
	Mean (SD)	Mean (SD)	
Observing	0.364 (6.082)	1.657 (6.160)	0.020
Questioning	1.368 (5.845)	2.171 (5.600)	0.092
Experimenting	0.358 (5.907)	0.977 (6.269)	0.163
Networking	0.224 (6.285)	2.064 (5.774)	0.003
	N=330	N=134	

This table shows the source of learning for each of the four opportunity prospection behaviors broken down by whether or not the supervisor was one of the company founders. Respondents were asked to state where they learned them on a scale of -10 to +10, where -10 indicated "completely from the organization" and +10 indicated "completely from interaction with my supervisor". The results show that respondents reported learning more when their supervisor was a founder than when he or she was not. The last column gives the *p*-values for the one-tailed *t*-test to determine the significance of the differences between the two alternatives for each behavior.

When we investigated how the influence of a supervisor who is also a founder varied depending on whether the respondent worked for a startup (i.e., a joiner) or an established organization, we found that both categories reported they learned more from their founder-supervisors than from their organization, with no statistically significant differences between them. This implies that founder supervisors are an important source of learning, regardless of the type of organization. This is consistent with Hypothesis H5.

To fully test this hypothesis, which posits that increases in opportunity prospection behaviors are more strongly related to interaction with a supervisor (whether or not a founder) than to the type of organization, we used a dependent variable which indicated which of the two was the more important source for respondents' learning of each of the opportunity prospection behaviors.

The regression results are set forth in Table 4-8. As may be observed in every case, the higher the percentage of time interacting with the supervisor, the greater the superiority

of this interaction over the organization as a source of learning. And when the supervisor was also the founder, respondents learned more from supervisor interaction than from the organization. The company age variable, which controlled for whether the source of learning depended or not on the type of organization, turned out not to be significant in any of the cases, leading us to conclude that there were no significant differences between the type of organization, regarding the learning of the various behaviors. Instead, such learning depends on whether or not the supervisor with whom the employee interacts is also a founder. We explored the results using a binary variable for startups instead of age, and observed the same pattern of results.

Finally, the results presented in this section might seem to suggest that the idea posited in Hypothesis H2 regarding opportunity prospection behaviors, according to which startup employees show greater increases than those in established organizations, is not correct. In fact, as we reported at the start of this subsection, not just startup employees but employees of established organizations as well learn about opportunity prospection behaviors given that supervisor interaction carries relatively more weight in the learning process than the type of organization. However, this phenomenon is more pronounced when the supervisor is a founder. This in turn constitutes statistically significant evidence reinforcing Hypothesis H3, which posits that employees learn more about opportunity prospecting behaviors when their immediate supervisor is also a founder.

Table 4-8: OLS regression results: source of learning opportunity prospection behaviors.

VARIABLES	Model 1	Model 2	Model 3	Model 4
	Where did you learn Networking?	Where did you learn Questioning?	Where did you learn Experimenting?	Where did you learn Observing?
Percentage of time interacting with supervisor	0.038*** (0.001)	0.049*** (0.000)	0.057*** (0.000)	0.047*** (0.000)
Supervisor is founder	1.552** (0.027)	0.936 (0.156)	0.887 (0.188)	1.515** (0.026)
Age of company (years)	-0.004 (0.515)	0.005 (0.353)	0.004 (0.573)	0.003 (0.652)
Age	0.018 (0.806)	0.002 (0.981)	-0.047 (0.492)	-0.032 (0.649)
Sex	0.145 (0.822)	0.545 (0.358)	0.231 (0.705)	0.320 (0.604)
Work experience (years)	0.111 (0.145)	0.016 (0.820)	0.112 (0.124)	0.060 (0.426)
Educational attainment	0.824** (0.012)	0.998*** (0.002)	0.878*** (0.007)	0.738** (0.026)
Constant	-8.295*** (0.000)	-7.590*** (0.001)	-7.674*** (0.001)	-6.212*** (0.007)
Number of Observations	368	390	381	407
R-squared	0.118	0.090	0.107	0.076

Note: The variable ranged over a scale of 20 points, where -10 indicated the respondent learned entirely from the organization and +10 indicated the respondent learned entirely from the supervisor. The age of the company was controlled for to distinguish between startups and established organization. The figures in parentheses are *p*-values.
 *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

5. DISCUSSION AND CONCLUSIONS

Organizations are a source of learning about entrepreneurship. They can have an impact on the abilities (skills and knowledge) their members will require if they decide to launch their own businesses. Entrepreneurship learning may arise either from the formal aspects of an organization (i.e., its structure, policies and practices) or from the social interactions that occur within it.

This study has focused on the different actors in a workplace context and the skills involved in identifying business opportunities that lead to entrepreneurial activity. Using survey data from a sample of 847 professionals on an organizational management course, we first divided the employed respondents into four main categories denoted founders (i.e., entrepreneurs), joiners, past-joiners and never-joiners on the basis of their relationship with the organization they worked at. We then measured their levels of observing, questioning, experimenting and networking (defined in the literature as business opportunity prospection behaviors), their entrepreneurial self-efficacy, and entrepreneurial intentions at the time of the survey and six months earlier so as to determine the change over time.

Our results suggest that entrepreneurs display higher levels on these factors than respondents in the other categories, corroborating the findings reported by Dyer et al. (2008). There is an important distinction to be made in the case of joiners, however. Though entrepreneurs and joiners both work in startups, the latter do so because of their preferences for the attributes associated with that status (Roach & Sauermann, 2015) and their personal attitudes such as risk tolerance and valuation of income. Thus, on these characteristics joiners and employees of established organizations are not very different. However, after a certain length of time at a startup, joiners do show higher levels of self-efficacy than employees of established organizations. This may occur because the former are in constant contact with an entrepreneur who has high self-efficacy and acts as a role model, and also because in a startup they are exposed to a greater number of tasks and roles. Given the nature of startups and the scarcity of their resources, the various tasks

involved in entrepreneurial activity will typically be handled by fewer people. In such a situation, self-confidence and belief in one's ability to achieve objectives are indispensable (Baum, Bird, & Singh, 2011).

We have also shown that opportunity prospection behaviors and skills are not necessarily static but rather can change over time. We further showed that the type of organization where a person works can influence how much they learn about these behaviors. For example, our comparison of established organization employees with and without startup experience revealed that past-joiner employees exhibited greater levels of a number of these behaviors at the time of the survey. However, when examining how they changed over time, which indicates how much was learned during the intervening period, no significant differences were found. This may have been due to the fact that both categories worked in the same established organization context.

The existing literature has not yet identified the relative importance of the structural and social characteristics of organizations in learning opportunity prospection behaviors. This study contributes to the literature in that it has shown how individuals learned more, on average, regarding these behaviors through interaction with immediate supervisors the more time they spent with them. And in cases where the individuals described the quality of the relationship as enriching, they learned much more from their supervisor, than from the organization itself.

Finally, our research indicates that the maturity or age of an organization has no influence on the source of an individual's learning of opportunity prospection behaviors. Rather, what is important is whether or not the individual's immediate supervisor is one of the company founders, that is, an entrepreneur, for it is the entrepreneurs who possess much of the knowledge on how to develop these skills. Where there is interaction with founder-supervisors, it is much more likely that they will be the source of learning regardless of the type of organization. However, given the simple, organic structure of startups, it is also much more likely that startup employees will enjoy close interaction with the founder. Note in this regard that role models have a significant influence on the behaviors and beliefs of those who interact with them (Bosma et al., 2012; Chlosta,

Patzelt, Klein, & Dormann, 2012; Fornahl, Dirk, 2003; Kacperczyk, 2012; Lafuente, Vaillant, & Rialp, 2007). Our results suggest that social interaction carries more weight than the formal or structural aspect of an organization when it comes to learning opportunity prospection behaviors and developing entrepreneurial self-efficacy. We have also contributed in showing that an individual's immediate supervisor can have greater influence than the organization in how much they learn about such behaviors.

The results presented in this study have a number of implications for the literature on entrepreneurial activity. First, they reaffirm the finding reported by Roach & Sauermann (2015) that not all individuals working in startups desire to be founders. We complement this by finding that the two groups have different levels of observing, questioning, experimenting, networking, self-efficacy and entrepreneurial intentions. They also differ in their attitudes to income, autonomy and risk. Second, we have shown that joiners more effectively boost their self-efficacy than employees of established organizations. This is important in light of the fact that entrepreneurial self-efficacy has been shown to play an important role in entrepreneurial intentions (Bullough et al., 2013; Zhao et al., 2005) and entrepreneurial success given that it is a key personal resource for the performance of a firm (Tumasjan & Braun, 2012).

A possible limitation of the present study is that our sample may have been affected by self-selection bias since all of the respondents were taking the same course, meaning the sample was not random. Most of the respondents had post-secondary studies in management and engineering. Also, a question that remains open is whether context influences the acquisition of opportunity prospection behaviors in ways not considered here. This could be explored in future research by controlling for founder-supervisors' age or experience, or including as a variable whether or not a supervisor working for an established organization is a past-founder of a business.

The main message of this study is that entrepreneurial capital (measured here as opportunity prospection behaviors and entrepreneurial self-efficacy) can be acquired. However, in contrast to prior literature that suggests that the path to acquire this capital is by joining a startup (Elfenbein et al., 2010; Gompers et al., 2005; Sørensen, 2007), we

find that the key mechanism is to work directly with a founder, regardless of whether the company is a startup or an established organization. Founders exhibit high levels of behaviors that are key for entrepreneurial performance. Thus, the more employees interact with entrepreneurs, the more likely they will acquire the behaviors and beliefs useful for entrepreneurship (Leatherbee & Eesley, 2014). This interaction is thus beneficial to employees, enabling them to enrich their entrepreneurial capital (Gonzalez-Uribe & Leatherbee, 2018) by developing their opportunity prospection behaviors and strengthening their entrepreneurial self-efficacy. And such a relationship will occur more frequently in startups, where employees' immediate supervisors are more likely to be entrepreneurs as well.

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