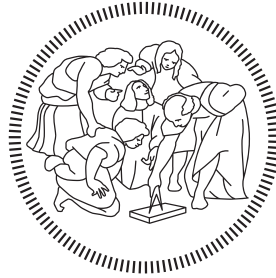# POLITECNICO DI MILANO

SCHOOL OF INDUSTRIAL AND INFORMATION

ENGINEERING

Master of Science in Management Engineering

Master Graduation Thesis

THE EFFECT OF COMMON GROUND ON

START-UP KNOWLEDGE ACCESS

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"To know that we know what we know, and to know that we do not know what we do not know, that is true knowledge."

Nicolaus Copernicus

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Abstract

This thesis investigates how team members access new knowledge, which is fundamental for start-up growth. We have hypothesized a curvilinear, inverse U-shaped relationship between team members' common ground and the probability of these members accessing new knowledge available. However, the negative effects of having too high common ground disappear if the team member has specialized human capital related to the knowledge available. An empirical test on a sample of 271 entrepreneurs that were provided the possibility to attend a course in idea validation confirm our contentions.

Extended Abstract

Existing literature studied how group dynamics, individual characteristics, and interpersonal relations affect knowledge acquisition and knowledge sharing within the firm, how leaders can foster positive activities to reach collective goals and the operational practices and procedures at their disposal. However, no previous research has investigated how the process of new knowledge acquisition is developed inside start-ups. The research question that we address is whether common ground influences the acquisition of knowledge by start-up members. To answer this question, we joined the InnoVentureLab research group that offered entrepreneurs access to their pre-accelerator programme. We measured start-up members' common ground and participants' attendance rate at the classes that were part of the training. We controlled for several control variables to estimate the association of common ground on the probability of attending the course. From our analysis, it emerges, among the main findings, that there is an inverse U-shaped relationship between the common ground among members and the probability of these members acquiring new knowledge by attending the lectures. On the other hand, managerial/economics or entrepreneurial prior knowledge eliminates the negative effects of having a too high common ground and transforms the inverse U-shaped relationship into a linear upward-sloping relationship.

Abstract Esteso

La letteratura esistente ha studiato come le dinamiche di gruppo, le caratteristiche individuali e le relazioni interpersonali influenzano l'acquisizione e la condivisione di conoscenza all'interno di un'impresa, come i leader possano favorire attività virtuose per raggiungere obiettivi comuni, e le procedure operative a loro disposizione. Tuttavia, nessuna ricerca ha investigato come il processo di acquisizione di nuova conoscenza sia sviluppato nelle start-up. La domanda di ricerca che formuliamo è se il common ground possa influenzare l'acquisizione di conoscenza da parte dei membri di una start-up. Per rispondere a questa domanda, ci siamo uniti al gruppo di ricerca InnoVentureLab che ha offerto agli imprenditori l'accesso al programma di pre-accelerazione. Abbiamo misurato il common ground dei membri delle start-up e il tasso di frequenza dei partecipanti alle lezioni che facevano parte del training. Abbiamo monitorato diverse variabili di controllo, per stimare l'associazione del common ground alla probabilità di partecipare al corso. Dalle nostre analisi emerge l'esistenza di una relazione a forma di U rovesciata tra il common ground dei membri e la probabilità che questi membri acquisiscano nuova conoscenza tramite l'accesso alle lezioni. D'altro canto, la presenza di conoscenze pregresse in ambito economico/manageriale o imprenditoriale elimina gli effetti negativi causati dall'avere un common ground troppo elevato e trasforma la relazione a forma di U rovesciata in una relazione lineare crescente.

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Chapter 1

Introduction

The main topic in strategic entrepreneurship is transforming start-ups into scale-ups, which is intimately related to the growth process. Growth often requires start-ups to make sudden and impulsive decisions since they experience a turbulent environment. For this reason, it is crucial to let members access all the knowledge available. Once someone in the team acquired new knowledge, sharing knowledge towards his colleagues should be encouraged, in order to have all the information readily at disposal of the group. Knowledge sharing is a widely studied topic in the existing literature. Research has demonstrated that knowledge sharing can improve important outcomes, such as decision-making, innovation, and performance [Jiang, Chen, 2018] [Srivastava *et al.*, 2006]. Moreover, in the firm's knowledge-based view, knowledge is the foundation of a firm's competitive advantage and, ultimately, the primary driver of a firm's value [Grant, 1996] [Spender, 1996] [Teece, 2000]. However, studies have focused on large companies, overlooking the presence of structural differences with small and early-stage firms, such as start-ups. First, while big corporations have formal mechanisms and technologies promoting knowledge sharing, like organizational and information systems, start-ups are project-based and may lack these infrastructures. Indeed, it is reasonable that infor-

mal mechanisms promote knowledge sharing in an early-stage firm, although no scientific evidence exists yet. Moreover, growth and scale-up processes require specific skills and competencies to start-ups, which may lack because of limited capability sets in very young firms [Cafferata *et al.*, 2009]. For this reason, it is important collecting new competencies which are not already present in the founding team by accessing new knowledge: it means acquiring new information, transferring new knowledge to the team, and integrating new knowledge into its behavioral repertoire [Hansen, 1999] [Jackson *et al.*, 2006]. On the other hand, the literature is inconsistent on when and how start-up team members acquire new knowledge and how the team's characteristics may affect this process. According to some scholars, start-ups usually go through a professionalization phase during which new necessary knowledge can be easily acquired to help with scaling and development [Boeker, Karichalil, 2002]. Other authors have argued that acquiring new knowledge is a difficult process with high transfer and integration costs [Lockett *et al.*, 2011]. Identifying and reducing transfer and integration costs should be a core task of strategic human capital management of new projects because the frictions associated with accessing new knowledge can be significant for new ventures. Since early-stage firms go through significant organizational changes as they mature, we believe that the costs of transfer and integration will change over time, meaning that there should be an ideal behavior of how team members share new knowledge. Therefore, the main objective of this thesis is to find quantitative evidence on the presence of informal mechanisms in start-ups, specifically how team members' interpersonal characteristics influence knowledge access dynamics within a start-up. As interpersonal characteristics, we have referred to common ground, which is defined as the set of presuppositions that actors, as a result of their ongoing sense-making and interaction with others, take to be true and believe their partners also take to be true [Cornelissen, Werner, 2014].

In other words, it refers to the pertinent mutual knowledge, mutual beliefs, and mutual assumptions that support interdependent actions in some joint activity. Common ground has already been fruitfully applied in organization theory to understand how coordination can be achieved across organizational units and occupational communities [Cramton, 2001] [Bechky, 2003] [Okhuysen, Bechky, 2009]. Common ground is considered to be even more valuable if associated with start-ups because they consist of people with similar backgrounds and experiences since often founders have shared previous experience. Indeed, it is reasonable to assume that usually, there is a high rate of initial common ground among the team members of the start-up. The initial common ground includes all the pertinent knowledge and prior history the parties bring to the joint activity. It involves their shared general knowledge of the world and all the conventions they know that are associated with their particular joint task. It also includes what parties know about each other before engagement, for example, the others' background and training, habits, and ways of working [Klein *et al.*, 2004]. This study wants to spot the knowledge access existing dynamics and understand the impact of common ground as a full-fledged resource for the start-up. To do this, we collaborated as research assistants to a pre-accelerating programme called InnoVentureLab. Through eight online sessions with highly experienced instructors, program participants have developed their managerial skills. They have acquired or consolidated specific knowledge related to fundamental business concepts to transform a business idea into a winning business model. The educational program has mainly provided participants with validated market research methodologies, the definition of the customer journey, and the pricing strategy. On our side, we had the opportunity to collect information of more than three hundred participants and keep it updated by monitoring their activities for several months. We took advantage of this data building an original database of the newborn start-ups in Italy to

argue that, within the start-up team, knowledge access is influenced by informal mechanisms. In fact, start-up members usually share a common ground that clearly influences their individual members' knowledge access. It follows that if a member, who is cohesive within the start-up team, shows interest in accessing knowledge, it is more likely that this is ultimately present in the lecture. Our empirical results are in line with the assumption that sharing common ground may enhance the propensity to access new knowledge, reducing transfer costs through the team's cohesion. In fact, we find that the level of the common ground of members in a team can increase the probability of a member being present at the lecture, and so accessing new knowledge. This relationship follows a curvilinear shape so that the marginal benefit of increasing common ground with one more additional unit decreases for high levels of common ground. However, other factors need to be studied, in conjunction with common ground, in order to properly understand the mechanisms that link team dynamics to members accessing knowledge decisions. This is why we considered how a member's past academic experience moderates a team's common ground. We found that members' common ground plays an important but different role whenever they have a business background.

We contribute to the extant literature in two main ways. First, our thesis contributes to the body of knowledge sharing, extending the perspective by also considering start-ups as early-stage companies. It adds to the existing literature on the access and internal knowledge sharing dynamics of a start-up team, focusing on interpersonal characteristics. Whether the common ground of a team is conducive to access new knowledge has not yet been addressed from an empirical point of view and constitutes the thesis's core theme. Second, in the entrepreneurial finance literature, there has been little scholarly attempt to look at the interplay between the different moderators of the association between members' common ground and the probability that a member will

access new knowledge. The remainder of this thesis is organized as follows. The second chapter deeply analyzes the existing literature. The third chapter puts forward some testable hypotheses in the context of prior research. The fourth chapter introduces the research design, the dataset, and the summary statistics. The fifth chapter presents the used econometric models and illustrates the results. The final chapter concludes the thesis and discusses the implications of our findings.

Chapter 2

Literature Review

In this chapter, we introduce knowledge access as the main theme of the thesis. Team knowledge access occurs when a team acquires new information, including locating valuable knowledge outside of the team, transferring new knowledge to the team, and integrating new knowledge into its behavioral repertoire [Hansen, 1999] [Jackson *et al.*, 2006]. External information sources are important, according to research, because teams with stronger external network connections are more efficient. According to the behavioral viewpoint, employees should be encouraged to engage in activities that promote a company's competitive imperatives. Teams must capture, analyze, and deploy information tools to create new products, services, and/or processes that contribute to the firm's superior results [Verona, 1999] [Zahra, George, 2002]. Knowledge access, which helps a team increase the depth and width of its knowledge, is tightly linked to knowledge sharing, which enhances team efficiency and engages the team in articulating and evaluating knowledge as it explores new ideas and develops creative solutions [Haas, Hansen, 2005] [von Krogh *et al.*, 2000]. Knowledge sharing is an activity through which knowledge (namely, information, skills, or expertise) is exchanged among people, friends, peers, families, communities, or within or between organizations [Bukowitz,

Williams, 1999] [Serban, Luan, 2002] [Ipe, 2003]. As defined, it is appropriately considered an ethical behavior that is the openness to share knowledge with others and can be viewed as a signal for recognizing a certain set of moral principles or values [Wang, 2004]. In the increasing ease with which employees can access online information, employees must also rely on their co-workers for knowledge sharing to effectively manage their work in the face of a rapidly changing market. Knowledge sharing has been described as a valuable intangible resource that holds the key to competitive advantage [Desouza, 2003]. Although knowledge sharing makes a company more competitive in the market, the reluctance to share knowledge should be considered a serious ethical problem because it compromises its survival. Given that one of today's organizations' normative problems is the successful use of this resource, deciding which factors encourage or hinder the exchange of crucial information within an organization is a research field for ethics and knowledge management [Van den Hooff, Van Weenen, 2004]. Team knowledge sharing occurs when activities aid the transfer of knowledge among team members; this helps a team identify and leverage lessons learned and solve technical challenges more effectively by ensuring that shared knowledge flows among team members with various advanced and distinct expertise [Jackson *et al.*, 2006] [Grant, 1996]. Indeed, while knowledge access pulls a team's interest outward, knowledge sharing draws it inward [Zhou, Li, 2012].

Knowledge access and sharing are subject of several studies in the existing literature that we have selected and analyzed. Studies were collected through a computerized search of Scopus databases. Articles were included if they were published in the main scientific journals in Business, Economics, Sociology, listed in Table A.1.

2.1 Knowledge Access

Studies were collected utilizing the following keywords: *"Knowledge"* and *"Access"*. We independently reviewed the selected articles, and we identified 12 of these as being potentially relevant.

Professional knowledge consists of interpretive action and interaction, including communication, cognition, and experience [Argote, Ingram, 2000]. The ability to effectively transfer knowledge among professionals is critical for important organizational outcomes such as the diffusion of best practices, routines, and innovation [Schön, 1991] [Carlile, 2002] [Tortoriello, Krackhardt, 2010]. However, knowledge transfer had proven challenging in practice, as knowledge tends to lock when required to be diffused across professional boundaries [Reagans, McEvily, 2003]. Informal networks are thought to play a critical role in inter-professional knowledge transfer [Hargadon, 2002]. Professionals can gain access to knowledge and experience social pressure to conform to standard practice by interacting with co-workers. Various theoretical perspectives can interpret knowledge transfer [Tortoriello *et al.*, 2012]. Given the study's social network lens, it appears that focusing on the structural context in which knowledge is transferred, rather than the inherent properties of knowledge itself, is more insightful [Brown, Duguid, 2002]. We define knowledge transfer as the exchange of 'facts, experiences, and insights' from one person to another to achieve this goal [Hargadon, Sutton, 1997]. Knowledge is transferred through a process in which people share their own knowledge – in the form of facts, experiences, and insights – with others and seek knowledge from their co-workers via interpersonal networks [Argote, Ingram, 2000]. Social networks' role in influencing knowledge transfer is particularly relevant in specific contexts in which decisions are based on heterogeneous knowledge and data, thus entailing high uncertainty and requiring continuous interaction between different roles [Mano-Negrin, Mittman, 2001].

Prior research has extensively used social networks to investigate and explain the effects of social interactions on creativity and innovation [Fleming *et al.*, 2007][Perry-Smith, Shalley, 2003][Sosa, 2011] [Burt, 2004] [Ebadi, Utterback, 1984] [Hargadon, Sutton, 1997] [Obstfeld, 2005] [Tsai, 2001].

Indeed, networks are essential for innovation because network contacts serve as information 'pools' [Tortoriello *et al.*, 2014] that can flow through the social network's relational 'pipes' [Podolny, 2001]. Individuals may serve as information pools in these networks, but they may also serve as 'filters,' allowing certain forms of knowledge to move through while preventing others [Ghosh, Rosenkopf, 2014]. In particular, highly explicit knowledge and information is relatively easy to transfer from one person to another in a network and does not even require the desire of the person who originally possessed the knowledge [Hansen, 2002]. Awareness and information that is extremely tacit, on the other hand, can be challenging, if not impossible, to transfer through individuals in a network [Szulanski, 1996]. Even if the person who originally holds the knowledge is willing to share it, the transfer may still be imperfect [Collins, Guetzkow, 1964] [Huber, Daft, 1987]. Individuals can thus serve as filters, preventing highly tacit knowledge from passing through.

As a result, scholars concentrate on two forms of argumentation with separate analysis units: network structure (i.e., structural holes and network centrality) and personal relationships (i.e., strong and weak ties). For knowledge advantages and, as a result, advantages for new idea creation, network structure, and personal relationships follow the same logic. Information obtained via social media may result in the sense of familiarity or diversity. Both information familiarity and diversity have significant advantages for producing new ideas. On one side, loose and complex contacts linked by poor links imply access to a wide range of information. Access to such a wide range of information fosters creativity and feedback, and knowledge recombination

[Schumpeter, 1934]. As a result of the large and diverse connections with different types of knowledge and various potential associations, diverse and poor links are favorable for innovation emergence. Powerful ties can stifle creativity by encouraging conformity [Fleming *et al.*, 2007] [Uzzi, Spiro, 2005]. From a structural standpoint, positions in structural holes that bind unconnected subgroups are correlated with novel knowledge, which leads to good ideas [Phelps *et al.*, 2012] [Burt, 2004]. A broker position is described as one who acts as a link between two or more groups. In a social network, a broker position may provide many benefits for idea generation and creativity. Brokers are given information about trends and needs, and they can use information arbitrage to see if their ideas are popular [Burt, 2004]. Furthermore, a person's broker status is a good proxy for lead use [Kratzer *et al.*, 2016]. In line with the benefits of knowledge access, this connection between broker status and lead user indicates that brokers are ahead of the curve, benefiting greatly from a solution, and innovating to meet their needs [von Hippel, 1986, 2017]. Lead users' strategies can be commercially appealing and creative as a result of these characteristics [Franke, Shah, 2003] [Franke *et al.*, 2006] [Lüthje, 2004] [Morrison *et al.*, 2000]. On the other hand, strong links signify confidence and encouragement, encouraging innovation [Chua *et al.*, 2012] [Sosa, 2011]. To pass tacit information and promote collaboration, trust and network closure are needed [Morrison, 2002] [Reagans, McEvily, 2003]. This type of expertise can be provided by higher bandwidth of information provided by close relations [Aral, Van Alstyne, 2011]. Furthermore, the empirical evidence on the association between structural holes and creativity is mixed; some studies failed to find a positive link [Perry-Smith, 2006] [Zhou *et al.*, 2009]. In conclusion, familiarity, due to strong and diversity, as a result of weak systems, both have significant advantages for advancing new ideas. A new research perspective on social network mechanisms has recently emerged, focusing on

factors that may affect the impact of various network features. From idea creation to implementation, scholars identified four phases in the idea process. According to the authors, whether a particular network structure and location is advantageous is dependent on the current idea process. They conclude that many weak links are favorable in the ideation process. However, only a few strong ties are favorable in the elaboration phase to obtain tacit knowledge, in line with the claim that access to diverse knowledge leads to inspiration and innovation [Perry-Smith, Mannucci, 2017]. Strong relations can be used to supplement weak network structures like structural holes [Rost, 2011]. Other studies attempted to link the network structure to de facto knowledge access [Rodan, Galunic, 2004] [Wang *et al.*, 2014]. Although the network literature assumes that a diverse network location leads to access to a diverse range of knowledge [Aral, Van Alstyne, 2011], scholars have pointed out that this implicitly presumed relationship is not guaranteed, and that network literature is often content-agnostic [Burt, 2004] [Rodan, Galunic, 2004]. Recent research has shown that network structure and content have independent [Piezunka, Dahlander, 2015] [Wang *et al.*, 2014] and complementary effects [Moreira *et al.*, 2018] [Rodan, Galunic, 2004] [Schillebeeckx *et al.*, 2019] [Ter Wal *et al.*, 2016]. These studies' findings indicate that network features affect the information diversity that network actors face [Moreira *et al.*, 2018], team members' skills [Schillebeeckx *et al.*, 2019], linked actors' knowledge [Ter Wal *et al.*, 2016], and managers' access to heterogeneous knowledge [Ter Wal *et al.*, 2016] [Rodan, Galunic, 2004]. Researches have described two advantageous tactics for the broker role and the goodness of actors' ideas. First, non-brokers come up with better ideas as they concentrate on a small group of social peers [Rhee, Leonardi, 2018]. Second, and vice versa, as brokers devote their attention to a large number of social peers, they generate better ideas. Similarly, rather than focusing on social connections, the material and knowledge brokers actively

access may help distinguish types of brokers by exposing attitudes and tactics that clarify discrepancies in idea generation. The network's information content reflects various knowledge domains. The information of individuals is organized into linked domains. Cognitive schemas are made up of information attributes, and domains are made up of them [Dane, 2010] [Mannucci, Yong, 2018]. Domain and schema structure and connections between them define an individual's information depth and breadth. Depth describes the amount of knowledge attributes within schemas, and breadth represents the interconnectedness between domains. Individuals may have high expertise in one domain while still having experience in several or just a few other domains, so knowledge depth and breadth are conceptually independent. The depth and breadth of information domains can influence new idea generation, similar to the network literature arguments. Both the depth and breadth of one's knowledge may positively or negatively impact the generation of new ideas [Boh *et al.*, 2014]. Knowledge depth denotes a thorough understanding and allows for the recombination of knowledge attributes within a single domain; however, it can result in cognitive entrenchment [Dane, 2010]. Knowledge breadth allows for new combinations between domains, but too many domains can lead to knowledge overload. Other factors can influence the outcome of knowledge depth and breadth. One study discovered that the favorability of knowledge depth and breadth affects movie creators' artistic outcomes as they progress through their careers [Mannucci, Yong, 2018]. Another study revealed that specialists perform better in fast-changing domains, while generalists excel in slow-changing domains [Teodoridis *et al.*, 2018]. The combination of network structure and content can differentiate brokers by the knowledge domains they access through their ties. The latest study proposes that a broker's status and the knowledge depth and breadth of accessed information interact [Resch, Kock, 2020].

Moreover, studies have looked at how the composition of professional relationships influences knowledge transfer patterns. Organizational research has largely focused on professional networks as a means of recombining information and creating shared meanings within the organization [Levin, Cross, 2004].

2.2 Knowledge Sharing

Studies were collected utilizing the following keywords: *"Knowledge"* and *"Sharing"*. We independently reviewed the selected articles, and we identified 20 of these as being potentially relevant.

The majority of studies investigate all the elements which foster or deter knowledge sharing. People's characteristics in an organization are the most studied, both on macro and micro levels. Macro-level refers to the overall characteristics of a group of peers like racial and gender homogeneity or diversity. On the contrary, the micro-level refers to the individual characteristics of people like social-psychological forces. The individual characteristics are even more relevant if related to the leader. Other important elements in influencing knowledge sharing are the operational practices and procedures in the organization.

2.2.1 Macro-Level - Overall Characteristics of People

Prior research spent much effort on understanding how group dynamics impact the results of a company. We focused on what has been said about knowledge transfers. Teamwork is obviously a crucial factor that affects the efficiency of a group of peers. Teamwork, in turn, is influenced by the presence or absence of competition. One school of thought says that competition fosters positive collective outcomes because it encourages people to do their best [Crawford, LePine, 2012]. The other one says that competition is unhealthy because it discourages people from working together and helping each other [Zhang

et al., 2011]. We must distinguish between hyper-competition (i.e., competing to achieve personal gains and status with little concern for the means and possible harms to others) and development competition (i.e., competing for team functioning and development without a primary focus on winning against other team members) [Ryckman *et al.* 1994][Ryckman *et al.*, 1996]. Such a distinction is particularly relevant for teams because people working on the same team can compete to maximize their personal potential constructively and simultaneously enhance each other's individual performance and/or team collective performance [Tjosvold *et al.*, 2003]. According to the theory of competitive orientation, although much research views competition as mainly counterproductive, such a simplistic view overlooks that not all competition forms are maladaptive [Collier *et al.*, 2010]. Through the socialization process, people can learn to fit into a workgroup in which they compete with, rather than against, others to accomplish their collective goals [Collier *et al.*, 2010]. With the cultivation of development competition among team members, they can remain more psychologically healthy by following team rules during their competition and focusing on the entire team's benefit [Ryckman *et al.*, 1997]. Team hyper-competition is characterized by team members' need to outperform other members on the same team with little concern for the collective benefit. As a result, hyper-competition often causes confrontations, as well as indirect hostility, in a zero-sum game in which individuals strive to create personal advantages and disregard the needs of members of the same team. Team development competition, however, reflects a perspective of competition as facilitating team growth. Team development competition stresses a fair contest among team members without hostility, jealousy or anger, and with a superior common goal of team-level achievements and growth as a whole. Development competition primarily focuses on collective growth and team-work mastery [Ryckman *et al.*, 1996], which offers learning, self-improvement,

and self-discovery [Collier *et al.*, 2010][Ryckman *et al.*, 1996][Ryckman *et al.*, 1997]. Although motivating teamwork is never simple [Srivastava *et al.*, 2006], managers must identify the difference between the two kinds of competition and try to push towards development competition, which actually plays a major role in improving knowledge sharing [He *et al.*, 2014]. Moreover, a large body of research has shown that diversity can be a source of unique knowledge, with some drawbacks. We can talk whether about functional diversity or racial and gender diversity. Functional diversity can be defined as the degree to which team members differ in terms of their experience with a function 'in which they have spent the greater part of their career' [Bunderson, Sutcliffe, 2002]. The findings on this topic reveal that functional diversity hinders group knowledge sharing. However, when affect-based trust in a team becomes higher, the relationship between functional diversity and knowledge sharing becomes less negative [Cheung *et al.*, 2016]. [Harrison, Klein, 2007] notions of variety and separation are included in the two most widely debated theoretical viewpoints on diversity. The decision-making perspective views diversity as a unique knowledge source, arguing that race and gender diversity give the team more unique knowledge [Giambatista, Bhappu, 2010] [Harrison, Klein, 2007]. Consequently, team diversity (e.g., ethnicity, gender, age, and personality) will provide the team with unique knowledge, enhancing team performance [van Knippenberg *et al.*, 2010]. As a result, we expect ethnic and gender diversity to be favorably correlated with the consistency of the team's decisions. Social categorization and similarity attraction theories give rise to the second perspectdiversity: types separation [Tajfel, Turner, 1986] [van Knippenberg, Schippers, 2007]. Race and gender diversity, according to these hypotheses, hinders a team's success by reducing information sharing and acceptance among team members [Homan *et al.*, 2007] [Homan *et al.*, 2008]. Social categorization theory, for example, states that people categorize

themselves and others into in-groups and out-groups based on characteristics like race and gender, and that they depend more on in-group members than out-group members when making decisions [Turner *et al.*, 1987]. Similarly, the similarity attraction hypothesis proposes that people like and enjoy interacting with people who are similar to them because it confirms their own beliefs and behaviors [Pfeffer *et al.*, 2007]. As a result, team members who are similar to them are more likely to share and use knowledge from those who are similar to them than those who are not [Sia *et al.*, 2002]. Team diversity, according to this viewpoint, decreases the amount of shared and integrated knowledge, resulting in less knowledgeable and potentially poorer decision quality [Homan *et al.*, 2007] [Homan *et al.*, 2008]. Even though the two perspectives offer opposing theoretical mechanisms with vastly different implications, they are not mutually exclusive. The processes may coexist, or one process can dominate, depending on the team composition and growth stage [Giambatista, Bhappu, 2010] [Harrison, Klein, 2007]. As Harrison and Klein (2007) [Harrison, Klein, 2007] point out, different diversity types can evoke different degrees of variety and separation processes. A team with a high level of ethnic diversity, for example, could be more or less likely to go through separation processes than a team with a high level of gender diversity. Furthermore, newly-formed teams are more likely to experience separation because team members do not know one another due to a lack of prior experience working together, which raises the risk that individuals may depend on stereotypes, whether knowingly or unknowingly [Robert *et al.*, 2009]. In general, teams with a history of working well together are more likely to reap the advantages of variety rather than the disadvantages of separation [McLeod *et al.*, 1996]. Minorities that feel isolated, regardless of the other team members' actions, go through a fundamental separation process. Racial and gender diversity make it difficult for teams to share, use, and integrate their knowledge [van Knippenberg,

Schippers, 2007]. Studies found that text communication helps overcome the problems associated with racial diversity but exacerbates the problems with gender diversity. In contrast, FTF (face-to-face) communications positively correlate with knowledge sharing for individuals of the opposite sex.

2.2.2   Micro-Level - Individual Characteristics of People

Since knowledge is the foundation of a firm's competitive advantage - and it resides within individuals [Nonaka, Konno, 1998] - a large section of the literature studied factors and activities aimed at stimulating the free flow of knowledge within team's individuals. This is not a trivial objective to pursue because individuals' knowledge does not transform easily into organizational knowledge, even with specific methods and procedures. Rather, individuals tend to hoard knowledge for various reasons. Among all the factors, special attention must be paid to the effect of motivational factors. The study of the motivational factors that affect employees' willingness to share knowledge yields three broad categories that correspond to the most widely used intellectual streams to describe social behavior: economics, social psychology, and sociology [Coleman, 1988]. *Economic*: As extrinsic motivators for knowledge sharing, companies use monetary rewards, points for promotion, or both. In justifying social behavior, much of the utilitarian tradition, including classical and neoclassical economics, assumes rational, self-interested behavior [Granovetter, 1985]. *Social-Psychological*: Employees' desires to preserve ongoing relationships with others, especially in terms of knowledge provision and reception, are captured by anticipated reciprocal relationships. On the other hand, a sense of self-worth encapsulates how employees perceive themselves as contributing value to their organizations by knowledge sharing. Self-worth refers to an individual's level of liking for themselves, which is primarily based on competence, strength, or effectiveness in terms of actions [Gecas, 1971].

These structures agree with Huber's (2001) social-psychological factors that affect people's ability to share their knowledge.

Sociological: Institutional frameworks, such as social norms, rules, and responsibilities, are seen as primarily regulating social behavior by sociologists [Coleman, 1988] Three organizational climate variables for knowledge sharing are linked to these institutional structures: fairness (a trusting climate), innovativeness (a climate that accepts failure and enables information to flow freely), and affiliation (a climate characterized by pro-social norms).

The fulfillment of basic psychological needs for competence, autonomy, and belongingness was found to be the primary underlying driver of knowledge sharing in our research. This is in line with [Paauwe, 2009], who claims that while HRM can be a catalyst for a variety of desirable results, the purpose of developing a successful workforce can only be achieved if the company cares about the needs and well-being of its employees. As a result, HRM should recognize all management practices related to these basic needs and establish practices with them in mind, if it wants to promote knowledge sharing. First, when an individual feels successful at work, their need for integrity is met. As a result, there should be opportunities to succeed at work and to apply and improve skills. Recruiting adequately qualified people, designing jobs that maximize the use of skills and competencies, performance management geared toward growth, and providing training and development opportunities are all possible ways to meet this need. The existing literature points out that the three salient motivational forces are an individual benefit, group benefit, organizational benefit [Bock *et al.*, 2005]. What follows is that HRM, which is keen to foster knowledge sharing, should identify all those people management practices that are relevant with regard to these basic needs, and develop the practices with them in mind [Paauwe, 2009]. When the fundamental needs are cared for, employees are more likely to develop positive attitudes toward

appropriate behaviors and see the collective benefits of them. This can, how-
ever, also be facilitated by communicating more explicitly what the desired
behaviors are and why they are important [Stenius *et al.*, 2016]. Moreover,
[Chen, Lin, 2013] postulate that cultural intelligence is a key driver of knowl-
edge sharing among culturally diverse teams. Cultural intelligence is defined
as people's capability to effectively deal with situations characterized by cul-
tural diversity [Earley, Ang, 2003]. When teams with cultural diversity spend
enough time to work through miscommunications and conflicts, they manage
to increase their innovative knowledge sharing [Mishra, Gupta, 2010][Swann
et al., 2003].

2.2.3 Characteristics of Leader

Prior research widely acknowledges that an organization's managers and lead-
ers play a relevant role in fostering knowledge sharing among employees. Em-
ployees often look to their superiors to understand the behavior expected by
their company and its leaders. If managers engage actively in knowledge shar-
ing, they signal what behavior is normative and convey that their subordinates
should engage in similar activities [Boh, Wong, 2014]. Explicit speeches about
common values and good habits are not enough. Leaders' deeds are far more
important than their words when determining how serious they really are about
what they say". Therefore, leaders serve as role models when they engage in
knowledge sharing [Bommer *et al.*, 2005]. Therefore, leaders should act as
role models. The more is their commitment to Knowledge sharing; the more
employees are motivated to engage in similar activities [Boh, Wong, 2014].
Moreover, team knowledge sharing can differ from interpersonal knowledge
sharing because, in the latter case, two people can be affected by interpersonal
factors such as mutual attraction and reciprocity [Blau, 1964]. Therefore, it
is necessary to let members identify with the leader and the group and share

collective goals, values, and norms, especially when members are dispersed and collaborate virtually [Mesmer-Magnus *et al.*, 2011].

Researchers also pointed out that - among the several leadership styles - the transformational leaders can be most effective in setting common values thanks to the self-transcendence effects of their behaviors [De Cremer, van Knippenberg, 2002]. Transformational leaders have a profound and extraordinary effect on their followers. They have been able to push performances beyond expectations thanks to their approach. This leadership style is based on four pillars: Individualized Consideration, Intellectual Stimulation, Inspirational Motivation, Idealized Influence. These leaders demonstrate genuine concern for followers' needs and feelings because personal attention to each follower is key in bringing out their very best efforts. They challenge followers to be innovative and creative and have the charisma to motivate them. Knowledge sharing cannot be arbitrarily forced. Team members may have reasons or motivations for hoarding their knowledge and thereby treat it as an important personal asset. Therefore, motivating team members to share their knowledge is a salient but challenging issue [Staples, Webster, 2008]. Second, effective knowledge sharing requires team members' synergistic collaboration toward a common goal [Boland, Tenkasi, 1995]. Leaders create a sense of commonality and interdependence by articulating a vision and prioritizing collective over individual needs and interests, and set the moral foundation for cooperative norms. Furthermore, through charismatic communication and role modeling, leaders set examples of self-transcendence to accomplish collective goals. As a result, cooperative expectations for group-oriented behaviors are likely to emerge [Jiang, Chen, 2016].

2.2.4 Operational Practices, Procedures, and Interventions

We have seen that Knowledge Sharing plays a key role in improving team efficiency. For this reason, companies look for practices to foster knowledge sharing. In the literature, we found several formal and informal activities that are supposed to be helpful. The convergence of individual information into collective knowledge is a central task of communities. In certain organizational environments, individuals with advanced expertise must integrate their knowledge into a community to realize its worth. Central to the effectiveness of these groups is the knowledge integration process. To be useful, the knowledge that is "owned" by individual members of such groups (Spender and Grant 1996) must spiral up to groups and even the organization's goals, where it can be exploited to further the organization [Nonaka, 1994]. Moreover, as knowledge is increasingly recognized as a primary strategic resource for organizations [Grant, 1996][Kogut, Zander, 1992], groups' work in the knowledge domain becomes central to organizational success. Nevertheless, while the knowledge integration process within groups is important, it is not always effective. That is, critical information is often not used by members [Stasser, Stewart, 1992]. Obstacles to an effective process include lack of familiarity among individuals, distinctive thought worlds, verbal skill disparities, insufficient conflict, unfamiliar language, status differences, and physical distance [Bechky, 1999]. Formal interventions that focus on improving the group process are a potential way to achieve superior knowledge integration [Okhuysen, Eisenhardt, 2002]. These formal interventions provide explicit instructions for the group to follow and guide the discussion among members [Okhuysen, 2001] [Pavitt, 1993]. These process interventions are designed to create a more structured group discussion and enhance the communication of personally held information. They range from basic instructions to share information [Henry, 1995] to more complex

interventions like the Nominal Group Technique [Bartunek, Murnighan, 1984] and the Delphi Technique [Dalkey, 1968]. These systematic interventions are designed to organize the community process to make it more knowledgeable and efficient. Although structured interventions can support a group's information integration process, little is known about how and when they will be successful. Formal interventions are often effective, but sometimes they have no effect or can even be detrimental [Green, 1975][Price, 1985]. This inability to predict their effects stems from our incomplete understanding of how formal interventions operate. Researchers rarely examine how these interventions actually help groups modify their process to integrate knowledge more effectively. Instead, they focus on differences in outcomes across groups with little attention to actual changes in individuals' interactions [Pavitt, 1993]. Formal interventions that focus on improving the group process are a potential way to achieve superior knowledge integration [Okhuysen, Eisenhardt, 2002]. These formal interventions provide explicit instructions for the group to follow and guide the discussion among members [Okhuysen, 2001][Pavitt, 1993]. These process interventions are designed to create a more structured group discussion and enhance the communication of personally held information. They range from basic instructions to share information [Henry, 1995] to more complex interventions like the Nominal Group Technique [Bartunek, Murnighan, 1984] and the Delphi Technique [Dalkey, 1968]. Formalization of rules and procedures can improve coordination and integration, but sometimes it could also reduce the flexibility needed on some occasions [Eisenhardt *et al.*, 2010] [Kortmann *et al.*, 2014]. Formalization, to the extent that it creates mutual assumptions and provides collective norms, helps build identity and cohesion, without which teams may struggle to coordinate [Gibson *et al.*, 2019]. Several studies have found that the degree to which the team's activities and tasks are formalized is positively associated with a range of beneficial team pro-

cesses, including reduced conflict and heightened psychological safety [Bunderson, Boumgarden, 2010]. Formalization might enhance global team effectiveness. Nevertheless, creating cohesion through the bureaucratic structure's imposition may bring several unintended consequences, such as restricting the free flow of knowledge [Courtright *et al.*, 2015][Estrada, 2015]. Importantly, however, [Adler, 2012] asserts that only when employees have the power to influence formalization, participating in how it is deployed, will serve social, productive ends. This constitutes another dilemma of formalization. Specifically, regarding individual outcomes such as the meaningfulness of work, it will be difficult for employees to construct a connection between their work and a broader significance when the employees' responsibilities are relatively fixed and subject to managerial dictates or other organizational constraints [Carton, 2018]. Hence, it makes sense that formalization that simultaneously provides enough flexibility for employees to exercise reasonable autonomy in respect of their own work, while also enabling effective coordination and generating a sense of collective purpose [Carton *et al.*, 2014], will result in that work being seen as more meaningful by the globally dispersed members. Moreover, we find that "knowledge integration is not simply a matter of assembling discrete pieces of knowledge, like Lego blocks. Rather, knowledge integration depends on how members know and integrate their individually held knowledge. The same knowledge can be "known" in multiple ways. Thus, while the factual content of information is important to knowledge integration, how that knowledge is accessed and the point of view from which it is considered also influences how individual knowledge is combined. More significant, it indicates how the collective value of that knowledge can be increased through alternative combinations that are created through different ways of knowing" [Okhuysen, Eisenhardt, 2002].

2.3   Common Ground

When we talk about common ground, we refer to the pertinent mutual knowledge, mutual beliefs, and mutual assumptions that permit people to use abbreviated communication forms and still be reasonably confident that potentially ambiguous messages and signals will be understood. Short of relying on common ground to interpret such communications, every vague or ambiguous referent would have to be unpacked, at great cost to the parties in the transaction. For example, in a relay race, as runner A approaches runner B and announces "stick", this one word has a clear meaning to runner B and requires no breath-wasting elaboration. Runner A does not have to tell runner B, "I am getting close to you and am just now reaching out the baton, so why don't you extend your right hand back to let me place the baton in your palm" [Klein *et al.*, 2004]. Common ground is defined as the cornerstone underlying good communication and teamwork in economics, linguistics, philosophy, and psychology models. Despite this, the common ground had received little attention in the management literature until recently, when some researchers began to relate common ground to successful communication and tacit cooperation. [Bechky, 2003]. Puranam, Singh, and Chaudhuri note, for example, that "common ground enables coordination because it allows people who possess similar stocks of knowledge to accurately anticipate and interpret each other's actions" (2009: 317). This is why the common ground is crucial for tacit coordination, which necessitates anticipating others' actions. Common ground is different from a simple agreement or shared beliefs, however; instead, it is defined as the entire backdrop of ideas, experiences, values, and information held in common by two or more parties, wherein each party knows that the other party also knows that they hold this information in common [Clark, 1996]. Consequently, if the information is part of the common ground underlying communication activities that can lead to coordination, both parties must

retain it and be recognized by both parties. These mutual understandings, accurately estimated, are the micro-foundations of effective communication. [Clark, 1996] categorized the sources of common ground as either communal or personal. Communal common ground is rooted in shared cultural communities, whereas personal common ground is built when individuals share experiences. Clark specified communal common ground contents as including knowledge related to human nature, language communities, cultures, and "ineffable experiences" (meaning situations that must be experienced personally to understand fully). For example, two strangers who grew up in the same city and enjoy helicopter skiing would have a large amount of communal common ground that they gained independence and is unlikely to change over time. On the other hand, the personal common ground grows in a particular way; its content develops over time as people share experiences, such as interactions, joint tasks, or shared perceptual events. Thus, common ground has a communal, cross-sectional component and also a personal, longitudinal component. Where the common ground is inadequate among members, more communication effort is required for coordination to occur—in part to identify what little common ground there is, and in part to actually try to communicate—and the likelihood of communication errors increases [Fast *et al.*, 2009] [Krifka, 2004]. Common ground is vital when workgroups face novel and surprising situations; under adversity, inadequate common ground will tend to diminish intragroup trust, to which we turn next. Common ground affects the effort needed to manage communications in a team. As common ground increases, members' communications become coded and economical, and the struggle needed to clarify and explain decreases. The common ground plays a relevant role in team effectiveness because it prevents poor communication and knowledge transfer, misunderstandings, delays. For this reason, firms want to build common ground among their employees in favor of better coordination. Teams

often employ activities such as updating others about changes that occurred outside their view or when they were otherwise engaged or inserting various clarifications and reminders, whether to be sure of something or to give team members a chance to challenge assumptions [Klein *et al.*, 2004]. Managers also want to leverage pre-existing common ground that may not be specific to the task at hand by staffing distributed teams with employees who worked together before (in order to utilize their shared interpersonal experiences) to ensure that employees know about each other's idiosyncratic work practices [Srikanth, Puranam, 2010]. Distributed projects within firms also take special measures to generate common ground by directly improving the observability of actions and outcomes. Technical tools like workflow management systems and version control systems are used to coordinate and generate common ground even without the need for direct communications between individuals [Srikanth, Puranam, 2014]. Furthermore, common ground is not permanent; it is continually deteriorating and requiring repair. As the situation changes, people are likely to different interpret what is happening and what others know. This can happen because employees may lack experience in team working, they may have access to different data or fail to monitor others' progress and get confused over who knows what [Klein *et al.*, 2004]. Theoretical insights indicate that common ground arising from shared positive experiences increases workgroup resistance to fracture under adversity more than common ground arising from similar backgrounds. A trust violation occurring among highly similar group members is perceived to be more severe. It results in a greater increase in group fracture likelihood than the same trust violation among dissimilar group members. Perceived leader benevolence and integrity are more vital than maintaining intragroup trust, even when the ability is necessary for task success. Finally, distrust can sometimes be warranted and even vital for a workgroup's task accomplishment [Priem, Nystrom, 2014].

Chapter 3

Theoretical Framework

3.1 Literature Gap and Research Question

In this chapter, we introduce our study's research question, explaining the straight lines that have led us to the following hypothesis. Summing up the previous chapter, several factors moved the academic attention on knowledge sharing and knowledge acquisition. Researchers studied how group dynamics and individuals characteristics affect knowledge acquisition and knowledge sharing within the company, how leaders can foster positive activities to reach collective goals, and the operational practices and procedures at their disposal. As a result, knowledge sharing within companies has been widely investigated in the last years. However, there are no papers that study the process of knowledge acquisition inside start-ups. In the light of this gap, we can state our research question:

> *How the common ground affects team knowledge access in a start-up?*

Why do we have this void in the existing literature? It is worth researching this topic? We believe that scholars overlooked this part of the literature because start-ups are a relatively recent phenomenon. The differences between

teamwork in companies or startups have been considered negligible. The most studied factors about knowledge sharing are psychological, social, organizational, and environmental. We think that those factors radically change if applied to the start-up context. First of all, there is a different competition and motivation level: while in a big company people could have no interest in sharing their knowledge - trying to stand out against the others - in a start-up, all the members are involved in the same way. Start-up members, on average, are more concerned about the fate of the collective activities because their future is tightly linked to start-up failure or success. The hierarchies do exist, but they are less strict because everyone's thought is fundamental. In this work environment, it is easier to receive feedback, ask questions, and share ideas and solutions. Working in a start-up is perceived as riskier, so everyone must believe in the project. Who works and grows up in the team develops a sense of belonging. We found the necessity of a study to verify how this kind of context alters the existing models and theories. Since we want to focus more on microscopic factors (individual characteristics and the relations due to these characteristics) than macroscopic, we believe that a targeted study on start-ups is more significant. In the existing literature, there are researches on group dynamics but only focused on team leaders as referents of the whole company. We want to make contact with every team member, which is easier if we analyze start-ups because of their size. Moreover, big companies already have practices and methods to foster knowledge acquisition, such as information/organizational systems, while start-ups do not because they do not have a formal structure. We find it useful to study start-ups because their members likely have more common ground than two colleagues in a company (start-up founders are often relatives, university colleagues, people who shared working or studying experiences). As a matter of fact, according to the "bird in hand" principle, start-up members rely on their available means: who they are,

whom they know, what they know. We want to study knowledge acquisition as a function of common ground.

3.2   How Common Ground Affects Knowledge Access in a Start-up

Since knowledge sharing can not come without participant costs, personal expectations that expected benefits would outweigh these costs are likely to be a significant determinant of sharing behaviors. Knowledge sharing not only requires both time and effort [Gibbert, Krause, 2002], but it also generates the classic public good dilemma in an organizational setting [Barry, Hardin, 1982] [Marwell, Oliver, 1993]: a knowledge asset contributed for the good of the organization can be used by others regardless of whether they contribute in return [Dawes, 1980][Thorn, Connolly, 1987]. This problem is exacerbated when a company values experience, like personal reputation, but not mentoring or assisting others [Leonard, Sensiper, 1998]. Not only does a person who wishes to share knowledge risk losing his or her unique value within the company, but any knowledge shared that is later found to be unsound or insignificant may also damage the individual's credibility. As a result, a common obstacle to information sharing may be the lack of adequate extrinsic and/or intrinsic incentives to compensate individuals for the costs of sharing knowledge [Constant *et al.*, 1996] [Huber, 2001]. Indeed, it is essential to understand the main costs involved in the information exchanges and how they vary depending on team structure and composition. A key factor in determining participant costs in knowledge sharing is the common ground among team members, defined as "the set of presuppositions that actors, as a result of their ongoing sense-making and interaction with others, take to be true and believe their partners also take to be true" [Cornelissen, Werner, 2014]. When team

members work together for the first time on the start-up project, the team's common ground level is deficient; consequently, people may experience a low degree of cohesion and involvement in start-up decisions. For this reason, some team members could decide not to attend classes when they are not part of the decision-making process, which lies to the more cohesive members. Increasing cohesion may have different outcomes on knowledge sharing and knowledge access, depending on its level. As cohesion increases, knowledge access enhances in the same way because each one feels more influential in start-up politics. Counter-intuitively, if the team's common ground and cohesion get too high, knowledge access narrows. In this case, knowledge transfer costs between team members become so low that the participants are still aware that knowledge is meaningful in decision-making. However, it is convenient that only one participant access the knowledge and share it afterward with negligible costs. We also recognize that, in addition to transfer costs, a high degree of cohesion may affect team sharing behavior through social-emotional mechanisms. Getting participants' attention in teams is challenging because their attention is diluted by their specific roles, tasks, and priorities [Metiu & Rothbard, 2013]. A reasonable solution to such a problem may be to increase team cohesion, which is defined as the degree to which the group's attractiveness and prestige, the members within it, or the group's activities create a force acting on the members to remain active within it [Festinger *et al.*, 1950]. Clarifying responsibilities and establishing specific team boundaries aids in the development of identification and cohesion, which is essential for teams to organize and prioritize their work activities efficiently. Simultaneously, the common ground helps strengthen team cohesion since all consciously coordinated action requires sufficient common ground — knowledge shared and known to be shared — to enable reciprocal predictability of action [Schelling, 1960]. For this reason, the common ground is considered a key indicator of how cohesive the team is. For

example, if two members have been accumulating direct experience together (i.e., same university, same work), they are more cohesive than the other team members.

We argue that the common ground may affect the information access by two opposed dynamics: low-medium level of the common ground leads to an increase of the knowledge access; in contrast, the excessive common ground leads to a decrease in the level of knowledge accessed. To summarize, assuming that the start-up members value knowledge, they want to transfer that knowledge. However, the common ground does not have a linear effect on knowledge access but has a different effect depending on its level. With a very low or very high level of common ground in start-ups, everyone cannot access knowledge due to different dynamics. On the other hand, for intermediate levels of common ground, more start-up members transfer knowledge.

Hypothesis 1 (H1): *The association between common ground and knowledge access is inverse U-shaped, with the entrepreneur's highest probability of accessing knowledge at intermediate levels of common ground.*

We reviewed possible moderators, namely boundary conditions that determine the occurrence or not of our hypothesis. To seek plausible moderators, we focused more on individual background and characteristics. We gathered much information such as qualifications, competencies, study and work experiences, achievements of all the participants. Particular attention was given to the presence or not of economics and entrepreneurship studies in peoples' backgrounds. We think that the individual's expertise can influence the probability of attendance in the function of common ground. Start-up members want to minimize the cost related to access to knowledge. For sure, people who have already attended economics or entrepreneurship courses in their life find easier our pre-accelerator programme. Their cost to access knowledge is only the time spent to attend classes because they are already familiar with some of the topics covered by our course. On the other hand, people who do not have a solid managerial/economic background may need additional time besides the classes to understand all the notions acquired during the training; then, their knowledge acquisition cost is higher. The common ground becomes very useful in this context. We have already seen how common ground can improve communication and knowledge sharing between team members. When a knowledge seeker and a knowledge provider share a common ground, the provider can craft his or her response according to what the seeker does and does not know and thereby increase the response's effectiveness [Hwang *et al.*, 2015]. We are led to believe that the most cost-effective approach is to let expert team members attend the course and share the acquired knowledge with their colleagues only subsequently. In this way, they can access knowledge at a lower cost than the other members, and they can exploit the common ground to transfer this knowledge efficiently. Under this scenario, the higher is the common ground within the start-up members, the lower are knowledge sharing costs, the higher are the sense of responsibility of team members with

specialized human capital and their probability to attend the classes.

Hypothesis 2 (H2): *The negative effects of having too high common ground on the probability of accessing knowledge reduce when team members have specialized human capital in management or entrepreneurship.*

Chapter 4

Method

4.1 Research Design

We got offered the opportunity to join [InnoVentureLab] to perform a Randomized Control Trial experiment. In this way, we could study a high number of start-ups, getting a statistically relevant sample. InnoVentureLab is a pre-acceleration programme created by three of the most important and renowned Italian universities: Politecnico di Milano, Politecnico di Torino, and Università Bocconi. It was offered the access to eight online training sessions and monthly webinars, workshops, and boot camps with dedicated instructors such as successful businessmen, coaches, mentors from prestigious incubators and accelerators. InnoVentureLab is a program focused on early-stage start-ups to take them from a conceptual idea to a minimum viable product. The programme conveyed validated methodologies to conduct market researches, define a customer journey, formulate a pricing strategy and create a business model through targeted exercises and class discussions. This path's ultimate goal was to prepare the young entrepreneurs to present their pitch to an audience of possible investors at the final Demo Day. The initiative registered more than 700 applications, and the managers selected 334 startups. We worked as

research assistants giving technical support during the eight lecture sessions and having regular calls and interviews with the entrepreneurs to monitor their progress.

Table 4.1: Structure of the training programme.

Week	Programme
LECTURE 1	Business Model Canvas
LECTURE 2	Understanding potential customers' problems
LECTURE 3	Conducting interviews with potential customers
LECTURE 4	Additional problem validation tools - tests
LECTURE 5	Offer validation
LECTURE 6	Solution validation
LECTURE 7	Results of the offer validation / solution
LECTURE 8	Summary and feedback
AFTER THE COURSE	Guarantee participation in the data collection process by involving start-ups with monthly events of general interest

4.1.1 Randomized Control Trial

One of the objectives of InnoVentureLab was to perform a Randomized Control Trial. RCTs are experimental studies that evaluate the effectiveness of a specific treatment in a given population. The fundamental characteristics of this kind of study are:

- *TRIAL*: the research changes a variable which is considered relevant in one of the two groups;

- *CONTROL*: the remaining variables are controlled to prevent the results from being contaminated by alternative explanation;

- *RANDOMIZED*: participants are randomly assigned to the two (or more) groups to increase their likelihood of being uniform and comparable.

To better understand the experiment, we can make an example:

How do I know if a particular type of plant grows better in the sun or in the shade?

To find out, I have to compare two situations: exposure to the sun and not exposure.

For example, for the same type of subjects, I can plant two seeds of the same plant in two different parts of the garden and observe what happens. To compare the two results, it is necessary to keep all the other conditions constant (type of soil, water, etc.).

In our case, participants were randomly assigned to three different groups, and each group received slightly different training. Researchers wanted to understand how different approaches to entrepreneurial decisions affect the performances of early-stage start-ups. The three proposed versions of the course were: scientific method, effectual approach, and control (without having either scientific or effectual training). All the other variables such as instructors, topics, hours of classes were constant.

To shorthand ideas about how our experiment was conducted, we can identify seven guidelines:

1. QUESTION

   How do different approaches to business decisions affect the performance outcomes of fledgling businesses?

2. SUBJECTS

   Early-stage start-ups.

3. WHAT WE WANT TO OBSERVE

   How entrepreneurs make decisions and the impact of this on the performance of their businesses.

4. UNDER WHICH CONDITIONS

   Compare the effects of a 'standard' approach to decision making with a 'scientific' approach and an 'effectual' approach.

5. TREATMENT AND CONTROL

   We offer different versions of the same training course for small groups of entrepreneurs:

   - Training on the scientific method for decision making;

   - Training on the effectual approach to decision making;

   - Training without the scientific method and effectual approach to decision making.

6. RANDOMIZATION

   The startups are randomly assigned to the three groups (to prevent any imbalances between the groups).

7. CONSTANT VARIABLES BETWEEN GROUPS

   All other variables are kept constant (number of training hours, number of lessons, instructors, topics, etc.).

4.1.2 The Research Assistant's Role

Research Assistants (RAs) were part of the research team and played a crucial role: helping ensure a rigorous, transparent, and ethical data collection process. This task lasted several months (Figure B.1), and mainly included questionnaires and interviews to collect data on the entrepreneurs participating in InnoVentureLab. It was executed following a predefined search protocol that

was understandable, logical in every step, and reproducible. It also ensured internal validity, respecting the universities' code of ethics, acting according to high moral standards (privacy of entrepreneurs, the truthfulness of the information reported, etc.). RAs received extensive training that ensures they have the necessary knowledge to perform their assigned tasks. The first call took place in September and has been characterized by a slightly reduced script compared to the monthly calls that have started after a few weeks (about 6 weeks after the beginning of the training). We had to call fifteen entrepreneurs for each round. Calls lasted about 30 minutes and were recorded. In doing so, we could play back them and give a score to all the database's variables. The main objective was understanding how the entrepreneur behaves in a 'scientific' (Table B.1) or 'effectual' (Table B.2), both way even before the course and during the training. As regards the lectures, there were three classes for each weekend training session. Our job was to set-up zoom meetings, record presences, create and submit opinion polls, supervise exercise rooms, give any kind of technical and practical support to entrepreneurs.

4.1.3 The Interviews

The interviews were composed by five sections: Ice-breaker, Basic Information, Scientific Method, Effectual Method and Conclusion. We reported the full text of the script in Table B.3.

Table 4.2: Alternative approaches to business decisions.

'Scientific' entrepreneurs:	'Effectual' entrepreneurs:
They question everything they think, they wonder what evidence they have to support their ideas, they always try to make decisions through tests;	They conceive of entrepreneurship as creating something new through the means they have at their disposal;
They reduce uncertainty by doing a lot of market research, collecting representative and appropriate data, and conducting rigorous experiments;	They reduce uncertainty by establishing a level of risk appropriate to their resources and trying to focus on the aspects they have direct control over;
They are aware of possible biases and are therefore methodical in conducting tests, evaluating results and making decisions accordingly.	They believe that probabilistic thinking has limits in new business contexts, and prefer to focus on actions and collaborations that can be activated immediately.

4.2   Data Collection

To test our hypotheses, we created a dataset containing participants' personal information provided at the time of registration to InnoVentureLab. Entrepreneurs provided the data under the explicit assurance that the information should be kept by InnoVentureLab and not transferred to third parties or used, except in anonymous and aggregate form. We complemented this material with the information gathered during the training period about each participant's attendance at the eight online lectures. The final database does

not include all start-ups with a single-person working team since they were not
relevant in terms of knowledge access and sharing. The start-ups which have
passed the screening phase are 89.

Table 4.3: Descriptive statistics of sample.

Variable	Mean	St.Dev	Min	Max	Count obs.
age	28.095	7.401	17	60	271
number of members	3.649	1.548	2	7	271
start-up working hours	12.940	15.785	0	105	271
years of working experience	4.833	6.348	0	35	271

This sample comprises 271 entrepreneurs, 200 males (73.80%) and 71 females
(26.20%). The average age is 28.1 years: more in detail, there are 115 people
under 25, 123 people aged 26 to 35,
27 people aged 36 to 50, and 6 peo-
ple over 50 people. The majority of
the entrepreneurs, 116 are workers
(42.80%), 86 are students (31.74%),
47 are both (17.34%), only 22 peo-
ple are concerned wholly on the start-
up (8.12%). Among workers, 71.43%
are full-time employed, and 28.57%
are part-time employed. On average,
the sample of entrepreneurs has 6.3
years of working experience. Despite

Figure 4.1: Distribution by regions.

25 foreign entrepreneurs (9.22%), the majority of the 246 are Italian (90.78%).
The majority of them live in Italy: 135 in the north-west (49.82%), 60 in the
centre (22.14%), 31 in the north-east (11.44%), 32 in the south (11.81%) and
7 in the islands (2.58%); only 6 people live abroad (2.21%). As regards educa-
tion, 165 people have a bachelor's degree (60.89%), 96 have a master's degree
(35.42%), 9 have a Ph.D. (3.32%). In total, 49 entrepreneurs have attended a

master's or a postgraduate course (18.08%). The majority of them, 183 have an economics-management background (67.53%), 101 have an entrepreneurship background (37.27%). Only 39 people are experienced entrepreneurs (14.39%), the other 232 are first-time entrepreneurs(85.61%). As regards start-ups, 64 (71.59%) offer a service, 14 (22.51%) offer a product, 11 (5.90%) both. On average, there are 3.6 members in the teams and spend 4.8 hours per week on start-up activities. To perform our analyses, it was appropriate to apply a few transformations to the dataset to improve the model's accuracy subsequently developed. Since our original continuous data did not follow the normal curve, we logarithmic transformed it to make it bell-shaped. In other words, the logarithmic transformation reduced the skewness of our original data so that the statistical analysis resulted from this data became more valid. We also transformed the categorical variables using an orthonormal representation based on dummy variables.
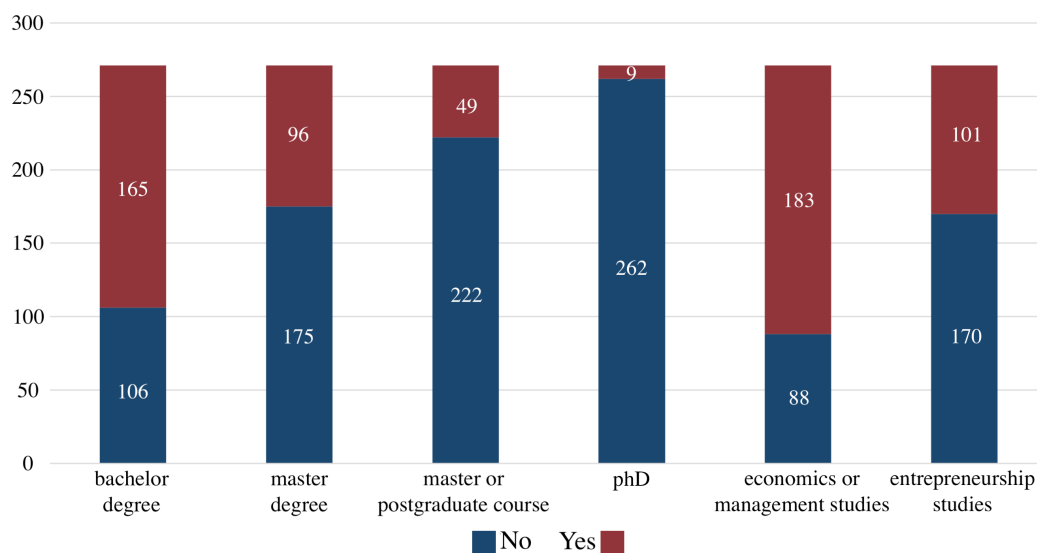
Figure 4.2: Education overview.

4.2.1 Dependent Variable

Start-ups have been randomly assigned to twelve different groups. Each in-structor lectured to three groups during the eight training sessions: scientific, effectual, and control. We have been keeping track of the entrepreneurs' at-tendance at each lecture, and we created eight dummy variables, one for each training week. At the end of the programme, we merged the data into a unique variable, resulting in eight records for each participant. As a result, we ob-tained the *attendance* variable, a dummy that indicates a value of 1 if the participant attended the lecture, and 0 otherwise.

4.2.2 Independent Variables

For our statistical model, we considered two distinct independent variables to shape the common ground linking each member with the rest of the team. In-deed, we investigated whatever the team members shared common experiences in the academic career. Common ground can be characterized in terms of two basic categories.

The *Initial common ground* includes their shared general knowledge of the world and all the conventions they know associated with their particular joint task [Clark, 1996].

Public events so far include knowledge of the event history — the activity the participants have engaged in together up to the present point in the joint activity [Clark, 1996].

Following this definition, we asked the entrepreneurs if they had followed an-other teammate's same university, even in different periods. Indeed, for each participant, we registered the colleagues' names and the length of the period. As a result, we aggregated this information in the variable *ln_common_ground_1*, which indicates for each participant the total time, expressed in months, spent in the same university of other team members. This variable is considered as

a proxy of the initial common ground. We continued asking the entrepreneurs if they had been involved in direct cooperation with any teammate during this period (i.e., developing academic projects, studying or working together). As in the previous variable, we built *ln_common_ground_2*, which is considered as a proxy of the public events so far.

4.2.3 Control Variables

We included in our econometric model several control variables to avoid misinterpretations of the association between the common ground and the probability of a member attending the lecture. On the basis of a careful review of the extant literature, we included variables related to the participant characteristics and the start-up typology. We control for participants by age measured in years (*ln_age*), sex (*d_male*), country of residence (*d_foreign*) and past experience in entrepreneurship (*d_prior_experience*). We further control for start-ups by an average of time working spent by entrepreneurs (*ln_startup_working_hours*) and service offered (*d_service*).

Table 4.4: Description of variables.

Variable	Description
Dependent variable	
attendance	Dummy variable that is equal to 1 if the member attended lecture, and 0 otherwise
Independent variable	
ln_common_ground_1	Common ground of the member. See Section 4.2.2 for details on the measurement of the variable
ln_common_ground_2	Common ground of the member. See Section 4.2.2 for details on the measurement of the variable
Moderators variables	
d_management_studies	Dummy variable that is equal to 1 if the member, before the start-up, took a course of Economics or Management
d_entrepreneurship_studies	Dummy variable that is equal to 1 if the member, before the start-up, took a course of Entrepreneurship
Control variables	
ln_age	Member's age at the time of the registration
d_male	Dummy variable that indicates the member's gender: 1 if male, 0 if female
d_foreign	Dummy variable that indicates the member's nationality: 1 if foreign, 0 if Italian
d_prior_experience	Dummy variable that is equal to 1 if the member had any prior entrepreneurship experience before the start-up, and 0 otherwise
ln_startup_working_hours	Member's average of weekly working hours spent to start-up
d_startup_service	Dummy variable that indicates the member's start-up typology: 1 if service, 0 if product

Table 4.5: Descriptive statistics of variables.

Variable	Mean	St.Dev	Min	Max	Count obs.
Dependent variable					
attendance	0.632	0.482	0	1	2,142
Independent variables					
ln_common_ground_1	1.898	1.737	0	6.368	2,142
ln_common_ground_2	2.013	2.010	0	5.262	2,142
Moderators variables					
d_management_studies	0.675	0.468	0	1	2,142
d_entrepreneurship_studies	0.372	0.483	0	1	2,142
Control variables					
ln_age	3.342	0.228	2.890	4.110	2,142
d_male	0.738	0.439	0	1	2,142
d_foreign	0.092	0.289	0	1	2,142
d_prior_experience	0.143	0.351	0	1	2,142
ln_startup_working_hours	2.208	0.898	0	4.663	2,142
d_startup_service	0.715	0.451	0	1	2,142

Table 4.6: Correlation matrix.

	Variable	1		2		3		4	
1	attendance	1							
2	ln_common_ground_1	0.052	**	1					
3	ln_common_ground_2	0.021		0.185		1			
4	d_management_studies	0.042	**	0.061	***	0.150		1	
5	d_entrepreneurship_studies	-0.004		0.022		0.116		0.404	
6	ln_age	-0.081	***	0.181		-0.150		0.083	***
7	d_male	0.067	***	-0.069	***	-0.037	*	-0.001	
8	d_foreign	-0.156		-0.088		-0.020		0.084	***
9	d_prior_experience	0.006		0.177		-0.064	***	-0.007	
10	ln_startup_working_hours	-0.012		0.113		-0.113		0.016	
11	d_startup_service	-0.099		-0.011		0.071	***	0.087	

Continues below

Continued from above

	5		6		7		8	9	10		11
1											
2											
3											
4											
5	1										
6	-0.040	*	1								
7	-0.044	**	-0.074	***	1						
8	0.123		-0.047	**	-0.100		1				
9	-0.055	**	0.433		0.053	**	-0.021	1			
10	0.152		0.213		0.047	**	0.108	0.172	1		
11	0.079	***	0.022		-0.040	*	0.144	0.001	0.069	***	1

Note: *, **, and *** indicate significance levels at 0.10, 0.05 and 0.01, respectively.

Chapter 5

Empirical Analysis

We first estimated the following model in order to test **H1**:

$$\text{Prob}\,(Attendance) \,=\, b_0 \,+\, b_1\,Common\,Ground \,+\, b_2\,Common\,Ground^2 \,+$$
$$+\, \gamma\,Controls \,+\, \varepsilon$$

$$(5.1)$$

We used this model to study the effect of common ground on knowledge access. The dependant variable is the likelihood that a start-up member attends the training. In accordance with **H1**, we expect a positive and significant coefficient of *Common Ground* and a negative and significant coefficient of *Common Ground^2*, this confirming an inverse U-shaped relationship between the common ground among two members and the probability of these members accessing knowledge at the training. We ran a set of *probit* estimates with robust standard errors to consider any possible biases due to heteroscedasticity. Results are shown in Table 5.1. The difference between column I and II is the independent variable taken into account, *ln_common_ground_1* and *ln_common_ground_2*, respectively. Accordingly, the econometric specification in column I of Table 5.1 is:

$$\text{Prob}\,(attendance) \,=\, \text{b}_0 \,+\, \text{b}_1\, ln\_common\_ground\_1 \,+\, \text{b}_2\, ln\_common\_ground\_1^2 \,+$$
$$+\, \gamma\, controls \,+\, \varepsilon \tag{5.2}$$

Similarly, the econometric specification in column II of Table 5.1 is:

$$\text{Prob}\,(attendance) \,=\, \text{b}_0 \,+\, \text{b}_1\, ln\_common\_ground\_2 \,+\, \text{b}_2\, ln\_common\_ground\_2^2 \,+$$
$$+\, \gamma\, controls \,+\, \varepsilon \tag{5.3}$$

5.1 Empirical Model Results of H1

Let us first focus on the control variables. It can be observed that participants' age, expressed by *ln_age* is negatively and significantly associated with the probability of member accessing training ($p < 0.01$), meaning that older participants are less likely to attend lectures. In terms of marginal effects, a one-SD increase in the value of *ln_age*, which means an increase from 3.342 to 3.570 years, leads to a decrease of 6.21% in the probability that a member will be present (from 67.26% to 61.05%). This fact is primarily explained because younger people have a higher inclination for the study since most under 25 people of our sample are mainly students. Moreover, the fact that the entire programme was carried out online may have affected people's propensity, with younger entrepreneurs resulting more confident with technology.

Furthermore, the *d_male* dummy, which indicates whether the participant is a male or a female, is positively associated with the probability that the member will attend, and this result is enough significant in estimates ($p < 0.05$). In terms of marginal effects, when this variable assumes the value 1, the probability that the member is present increases by 5.37% (63.24% to 68.61%). As far as the knowledge access process is concerned, our model indicates that the *d_foreign* variable is negatively and significantly associated with the probability of the member accessing lecture, meaning that start-up teams made

up of Italian members are more likely to attend. Talking about the marginal effect of this variable, a change in the value of this dummy from 0 to 1 is associated with a 23.59% decrease (from 69.18% to 45.59%) in the probability of being present. Unsurprisingly, prior experience in entrepreneurship, represented by *d_prior_experience* is statistically and significantly associated with an higher propensity of accessing knowledge ($p < 0.05$). In terms of marginal effects, when this variable assumes the value 1, the probability that the member is present increases by 7.78% (from 66.04% to 73.82%). Moreover, the *ln_startup_working_hours*, which indicates the participant's commitment expressed in hours, is positively associated with the probability that the member will attend. However, this result is only weakly significant in estimates ($p < 0.1$). A one-SD increase in the *ln_startup_working_hours* variable is associated with 2.47% increase in the probability that the member will attend (from 67.22% to 69.69%). Finally, *d_service* is negatively and significantly associated with the access to knowledge ($p < 0.001$), thus suggesting that when a start-up delivers a service is less likely that members will access knowledge. Talking about the marginal effect of this variable, a change in the value of this dummy from 0 to 1 is associated with a 12.05% decrease (from 75.59% to 63.54%) in the probability of being present. As far as the first independent variable related to the common ground (*ln_common_ground_1*) is concerned, and consistent with hypothesis **H1**, we find a positive and significant linear term of the member common ground variable. In contrast, the squared term related to the measure of member common ground (*ln_common_ground_1²*) is negatively and significantly associated with the dependent variable ($p < 0.05$). Together, the two coefficients of *ln_common_ground_1* and *ln_common_ground_1²* suggest an inverse U-shaped relation between member common ground and the likelihood of a participant accessing knowledge, with the common ground vertex equal to 2.8, which corresponds to the 66-percentile of the distribution. This evi-

dence is confirmed in Figure 5.1, which shows a graph of the marginal effects of knowledge access for different *common_ground_1* values.

We find a similar behavior when the second independent variable related to the common ground (*ln_common_ground_2*) is considered. Control variables like *ln_age* and *d_foreign*, which represent age and nationality of participants, are still negatively and significantly associated with the probability of accessing training ($p < 0.01$). The variable referred to the gender of the participant, (*d_male*), is still positively associated with the dependent variable, but with lower significance ($p < 0.1$). It is confirmed that prior experience, (*d_prior_experience*), and time effort, (*ln_startup_working_hours*), are still positively and significantly associated with the probability of a member accessing training, ($p < 0.05$) and ($p < 0.1$), respectively. Start-up typology, (*d_service*) is still negatively and significantly associated with the probability of accessing training ($p < 0.01$). As before, there is a positive and significant linear term of the member common ground variable (*ln_common ground_2*), while the squared term related to the measure of member common ground (*ln_common_ground_2²*) is negatively and significantly associated with the dependent variable ($p < 0.05$). The the two coefficients of *ln_common_ground_2* and *ln_common_ground_2²* confirm the inverse U-shaped relation with the common ground vertex equal to 2.2, which corresponds to the 48-percentile of the distribution, as shown in Figure 5.1.
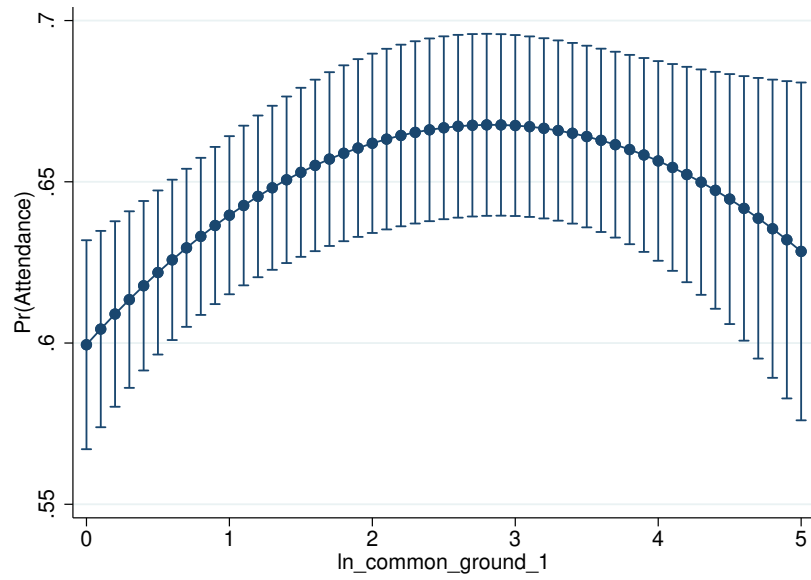
(a) *ln_common_ground_1*
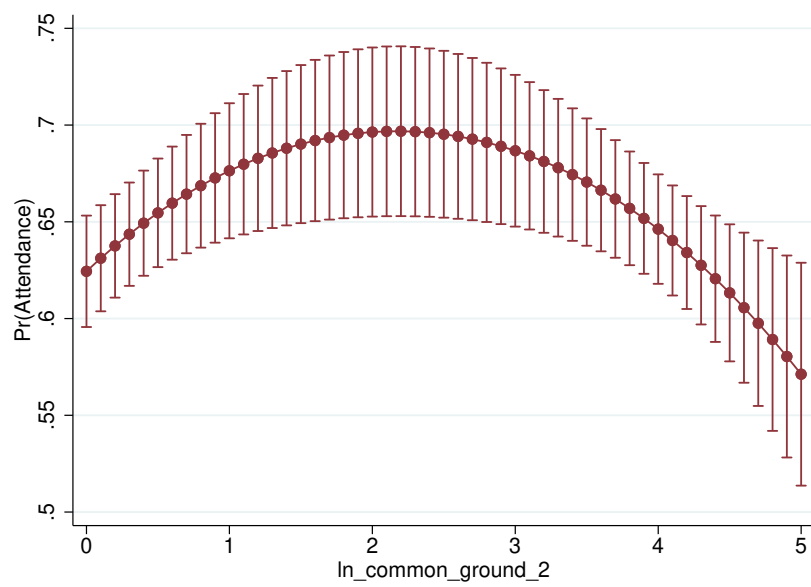
(b) *ln_common_ground_2*

Figure 5.1: Predictive probability of attendance at different levels of common ground.

Table 5.1: Common ground and probability of attending lecture of the member.

attendance	I		II	
Control variables				
ln_age	-0.730	***	-0.666	***
	(0.184)		(0.181)	
d_male	0.146	**	0.125	*
	(0.066)		(.065)	
d_foreign	-0.611	***	-0.638	***
	(0.102)		(0.101)	
d_prior_experience	0.224	**	0.197	**
	(0.094)		(0.093)	
ln_startup_working_hours	0.077	*	0.076	*
	(0.039)		(0.039)	
d_startup_service	-0.346	***	-0.378	***
	(0.072)		(0.071)	
Common ground variables				
common_ground_1	0.139	***		
	(0.047)			
common_ground_1^2	-0.024	**		
	(0.009)			
common_ground_2			0.199	***
			(0.068)	
common_ground_2^2			-0.045	***
			(0.015)	
const.	2.792	***	2.637	***
	(0.698)		(0.696)	
Week dummies	YES		YES	
Start-up Stage dummies	YES		YES	
Other employment dummies	YES		YES	
N	2,142		2,142	

The dependent variable is a dummy variable that indicates a value of 1 if the member attended lecture, and 0 otherwise. For a description of the variables, see Table 4.3. Week, Start-up stage, and Other employment dummies are included in the estimates (coefficients are omitted in the Table). The estimates were derived from probit estimates with robust standard errors. The estimates in Column I were derived with common ground 1 as independent variable. The estimates in Column II were derived with common ground 1 as independent variable. Standard errors in round brackets. *, **, and *** indicate significance levels at 0.10, 0.05 and 0.01, respectively.

In order to test **H2**, we need to add the moderation effects of the member's prior academic experience (i.e., managerial-economics and entrepreneurial studies) for the main independent variables related to common ground (*Common Ground* and *Common Ground²*). Considering that we are testing the moderation of a curvilinear relation (*Common Ground*), we included two interactive terms in the econometric specification. Accordingly, the econometric specification to test **H2** is the following:

$$
\begin{aligned}
Y ={}& b_0 + b_1\,Common\,Ground + b_2\,Common\,Ground^2 + b_3\,Moderator + \\
& + b_4 Moderator \cdot Common\,Ground + b_5 Moderator \cdot Common\,Ground^2 + \\
& + \gamma\,Controls + \varepsilon
\end{aligned}
$$

$$(5.4)$$

where *Moderator* is an indicator of the presence of managerial-economics or entrepreneurial studies in participant's background, according to hypothesis **H2**. We econometrically tested hypothesis **H2**, and results are reported in Table 5.2. In the first two columns, we resorted to *d_management_studies* as an indicator of managerial-economics studies' presence in participant's background. Contrary in the last two columns, estimates refer to *d_entrepreneurship_studies*, as an indicator of managerial-economics studies in participants' backgrounds. The difference between columns I-III and columns II-IV is the dependent variable taken into account, *ln_common_ground_1* and *ln_common_ground_2*, respectively.

Accordingly, the econometric specifications in columns I and II of Table 5.2 are:

$$Y = b_0 + b_1 \, ln\_common\_ground\_1 + b_2 \, ln\_common\_ground\_1^2 +$$
$$+ \, b_3 \, d\_management\_studies + b_4 \, d\_management\_studies \cdot ln\_common\,ground\_1 +$$
$$+ \, b_5 \, d\_management\_studies \cdot ln\_common\_ground\_1^2 + \gamma \, controls + \varepsilon$$

$$(5.5)$$

$$Y = b_0 + b_1 \, ln\_common\_ground\_2 + b_2 \, ln\_common\_ground\_2^2 +$$
$$+ \, b_3 \, d\_management\_studies + b_4 \, d\_management\_studies \cdot ln\_common\,ground\_1 +$$
$$+ \, b_5 \, d\_management\_studies \cdot ln\_common\_ground\_2^2 + \gamma \, controls + \varepsilon$$

$$(5.6)$$

Similarly, the econometric specifications in columns III and IV of Table 5.2 are:

$$Y = b_0 + b_1 \, ln\_common\_ground\_1 + b_2 \, ln\_common\_ground\_1^2 +$$
$$+ \, b_3 d\_entrepreneurship\_studies + b_4 d\_entrepreneurship\_studies \cdot ln\_common\,ground\_1 +$$
$$+ \, b_5 \, d\_entrepreneurship\_studies \cdot ln\_common\_ground\_1^2 + \gamma \, controls + \varepsilon$$

$$(5.7)$$

$$Y = b_0 + b_1 \, ln\_common\_ground\_2 + b_2 \, ln\_common\_ground\_2^2 +$$
$$+ \, b_3 d\_entrepreneurship\_studies + b_4 d\_entrepreneurship\_studies \cdot ln\_common\,ground\_1 +$$
$$+ \, b_5 \, d\_entrepreneurship\_studies \cdot ln\_common\_ground\_2^2 + \gamma \, controls + \varepsilon$$

$$(5.8)$$

5.2 Empirical Model Results of H2

Consistent with our hypothesis **H2**, when interactive terms are added, the results suggest that the academic background moderates the association between common ground and the dependent variable: the highest probability of a member accessing knowledge is associated with higher levels of common ground when the member had not management-economics or entrepreneurial knowledge. The interaction effects of the curvilinear relations may appear unclear at first. For this reason, in Table 5.3, we report, for the sake of clarity,

the coefficients of common ground variables for members without academic experience (i.e., b1 and b2, respectively for Common Ground and Common Ground^2) and with academic experience (b1 + b4 and b2 + b5, respectively for Common Ground and Common Ground^2). Results reported in Table 5.3 show that member academic experience moderates the relationship between common ground and the probability of a member to be present. When *d_management_studies* is taken into account, the impact is very tangible: when the variable is equal to 1, signaling the participant possession of economics-managerial background, the relationship becomes linear. This definitely states that the likelihood of a member to access new knowledge increases with higher levels of common ground when the member has economics-managerial knowledge higher than the median value. This trend is verified taking as independent variable both *ln_common_ground_1* and *ln_common_ground_2*; the only difference is that in the first case the curve is linear and upward-sloping, while in the second case the curve is linear and constant. Moreover, we plotted the relationships in Figure 5.2 5.3. The graph (a) and (b) in Figure 5.2 report the predicted probability of attending lecture by a member as a function of Common Ground, contingent to the *d_management_studies*, considering *ln_common_ground_1* and *ln_common_ground_2*, respectively. When *d_management_studies* assumes the value 0, the vertex corresponds to the values 2.1 for *ln_common_ground_1* and 2.2 for *ln_common_ground_2*. On the other hand, when *d_management_studies* takes on the value 1, the relation is linear, and obviously, there is no vertex since. Thus, when a start-up member has prior managerial-economics knowledge, the positive effect of accessing new knowledge of a cohesive start-up also emerges for higher values of common ground. Similarly, when *d_entrepreneurial_studies* is considered, the impact is even tangible, as the relationship becomes linear. This trend is confirmed taking as independent variable both *ln_common_ground_1* and *ln_common_ground_2*; the

only difference is that in the first case the curve is linear and upward-sloping, while in the second case the curve is flatter. Indeed, we plotted the relationships in Figure 5.3: the graph (a) and (b) report the predicted probability of attending lecture by a member as a function of Common Ground, contingent to the *d_entrepreneurial_studies*, considering *ln_common_ground_1* and *ln_common_ground_2*, respectively.

Table 5.2: Common ground and probability of attending lecture of the member: role of academic studies.

attendance	I		II		III		IV	
	d_management_studies				d_entrepreneurship_studies			
Control variables								
ln_age	-0.727	***	-0.648	***	-0.682	***	-0.627	***
	(0.186)		(0.181)		(0.185)		(0.183)	
d_male	0.164	**	0.096		0.167	**	0.125	*
	(.066)		(0.066)		(0.066)		(.065)	
d_foreign	-0.624	***	-0.676	***	-0.604	***	-0.624	***
	(0.102)		(0.103)		(0.102)		(0.102)	
d_prior_experience	0.289	***	0.244	***	0.223	**	0.187	**
	(0.095)		(0.091)		(0.095)		(.093)	
ln_startup_working_hours	0.095	**	0.068	*	0.083	**	0.074	*
	(0.039)		(0.039)		(0.039)		(0.040)	
d_startup_service	-0.361	***	-0.370	***	-0.344	***	-0.389	***
	(0.072)		(0.072)		(0.072)		(0.072)	
Common ground variables								
common_ground_1	0.259	***			0.225	***		
	(0.086)				(0.060)			
common_ground_1^2	-0.060	***			-0.049	***		
	(0.017)				(0.012)			
common_ground_2			0.797	***			0.315	***
			(0.158)				(0.094)	
common_ground_2^2			-0.183	***			-0.074	***
			(0.036)				(0.021)	
Moderator factors								
d_management_studies	0.107		0.276	***				
	(0.095)		(0.086)					
ln_common_ground_1# #d_management_studies	-0.248	**						
	(0.105)							
ln_common_ground_1^2# #d_management_studies	0.074	***						
	(0.021)							
ln_common_ground_2# #d_management_studies			-0.765	***				
			(0.174)					
ln_common_ground_2^2# #d_management_studies			0.174	***				
			(0.040)					
d_entrepreneurship_studies					-0.056		-0.026	
					(0.100)		(0.090)	
ln_common_ground_1# #d_entrepreneurship_studies					-0.196	**		
					(0.097)			
ln_common_ground_1^2# #d_entrepreneurship_studies					0.063	***		
					(0.020)			
ln_common_ground_2# #d_entrepreneurship_studies							-0.214	
							(0.141)	
ln_common_ground_2^2# #d_entrepreneurship_studies							0.054	*
							(0.032)	
const.	2.737	***	2.413	***	2.568	***	2.502	***
	(0.703)		(0.702)		(0.699)		(0.708)	
Week dummies	YES		YES		YES		YES	
Start-up Stage dummies	YES		YES		YES		YES	
Other employment dummies	YES		YES		YES		YES	
N	2,142		2,142		2,142		2,142	

The dependent variable is a dummy variable that indicates a value of 1 if the member attended lecture, and 0 otherwise. For a description of the variables, see Table 4.3. Week, Start-upstage, and Other employment dummies are included in the estimates (coefficients are omitted in the Table). Estimates were derived from probit estimates with robust standard errors. In Column I and Column II, only the direct effect of management or economics studies moderator is included, on common ground 1 and common ground 2, respectively. In Column III and Column IV, only the direct effect of entrepreneurship studies moderator is included, on common ground 1 and common ground 2, respectively. Standard errors in round brackets. *, **, and *** indicate significance levels at 0.10, 0.05 and 0.01, respectively.
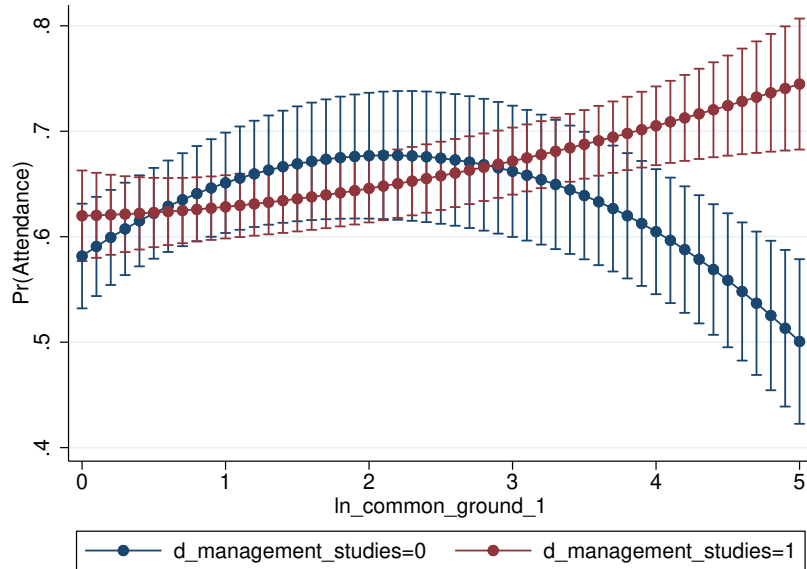
(a) *ln_common_ground_1*
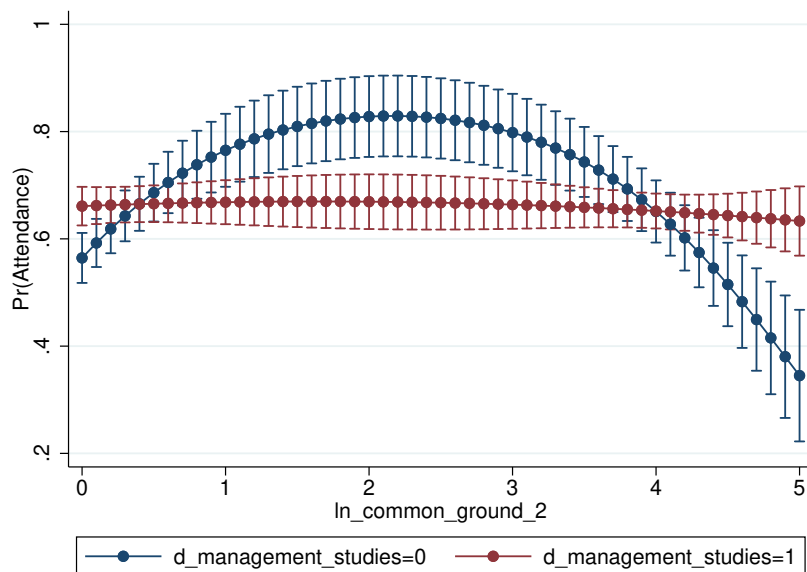
(b) *ln_common_ground_2*

Figure 5.2: Predictive probability of attendance at different levels of common ground according to the member's academic experience.
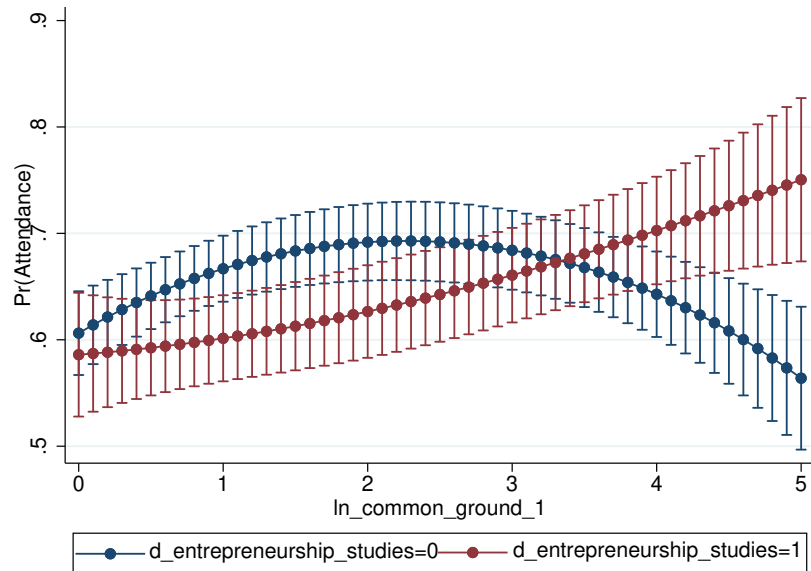
(a) *ln_common_ground_1*
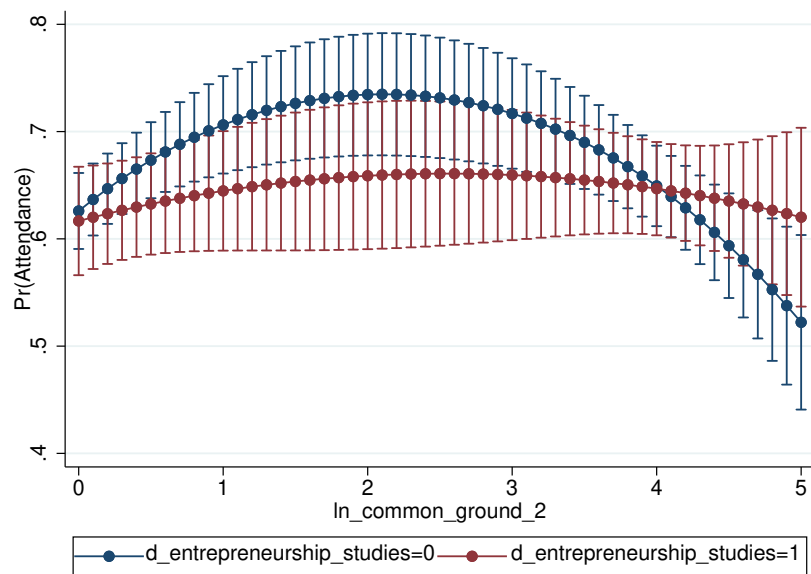
(b) *ln_common_ground_2*

Figure 5.3: Predictive probability of attendance at different levels of common ground according to the member's academic experience.

Table 5.3: Role of common ground according to the moderator effect of member prior academic experience.

	Without academic experience			
	I-II		III-IV	
	d_management_studies=0		d_entrepreneurship_studies=0	
ln_common_ground_1	0.259	***	0.225	***
	(0.086)		(0.060)	
ln_common_ground_1^2	-0.060	***	-0.049	***
	(0.017)		(0.012)	
ln_common_ground_2	0.797	***	0.315	***
	(0.158)		(0.094)	
ln_common_ground_2^2	-0.183	***	-0.074	***
	(0.036)		(0.021)	
	With academic experience			
	d_management_studies=1		d_entrepreneurship_studies=1	
ln_common_ground_1	0.011	**	0.029	**
	(0.060)		(0.129)	
ln_common_ground_1^2	0.014	***	0.014	***
	(0.012)		(0.023)	
ln_common_ground_2	0.032	***	0.101	*
	(0.023)		(0.169)	
ln_common_ground_2^2	-0.009	***	-0.020	**
	(0.054)		(0.038)	

Coefficients of Common Ground variables, according to the models with interactions (Column I-II and Column III-IV, for d_management_studies and d_entrepreneurship_studies, respectively) are reported. We report both coefficients of Common Ground when the member has NOT academic experience (i.e., b1 and b2, respectively for Common Ground and Common Ground^2, according to Eq.5.4) and the coefficients of Common Ground variables when the member has academic experience (b1 + b4 and b2 + b5, respectively for Common Ground and Common Ground^2, according to Eq.5.4). Standard errors in round brackets. *, **, and *** indicate significance levels at 0.10, 0.05 and 0.01, respectively.

Chapter 6

Conclusions

6.1 Discussions

This dissertation has studied how team members' interpersonal characteristics influence knowledge access dynamics within a start-up and how previous individual human capital moderates these dynamics. For this purpose, we joined the InnoVentureLab research group, and we have been in contact with entrepreneurs for several months during the entire programme. We collected and analyzed data from questionnaires, direct calls, and training sessions to test our hypotheses. The econometric analyses' results support our contention that the association between the quantity of common ground between start-up members and the probability of these members accessing new knowledge follows a curvilinear, inverse U-shaped relation. As common ground increases, even knowledge access increases. Instead, for very high values of common ground, the positive effect of additional mutual understandings disappears and the probability of a member accessing knowledge decreases. We argue that the main reason for this result pertains to team dynamics influenced by common ground. As cohesion increases, start-up members feel influential and involved in team strategy and politics. In fact, people with little or no common ground

with other members may decide not to attend the training, having no interest in accessing knowledge for the start-up decision-making process. In the case of very high common ground, knowledge transfer costs among team members are very tight. Thus, it is convenient to let just one member attend the training and share new knowledge afterward, with no or negligible costs. We then identified a possible moderator that affects the principal relation. Specifically, we showed that members' previous economics/entrepreneurial knowledge acts as a complementary factor, which reduces the side effect of having a too high common ground level and eliminates the decreasing branch of the curvilinear relation.

The moderator's direct effect on the probability of a member accessing knowledge may appear unclear at first. Initially, we have proved that with high levels of common ground, the transfer costs, or better, the costs of sharing the information, are tight. Indeed, it is convenient for the start-up members to keep to themselves and preserve the knowledge to transfer it later if necessary. Successively, we have shown that if the start-up members have managerial and economics academic knowledge or entrepreneurial know-how, this human capital makes this convenience fail. On the contrary, it is affordable to access the information immediately. The explanation for this lies in the costs of accessing the knowledge, which is even lower if members have the business knowledge, and therefore the theoretical foundation to assimilate new knowledge. In this case, the costs of accessing knowledge are mainly due to the time spent attending the lecture. In contrast, if members do not have business knowledge, it will occur the cost of comprehending and absorbing the new knowledge in addition to attending the lecture. Considering this further effort, the balance tip in favour of transferring information promptly rather than postpone in the future. Differently, the entrepreneur compares the costs of accessing knowledge immediately or in the future transferred by colleagues. Accessing immediately

implies only the attending cost if he/she has an academic background, otherwise also the cost of learning. Accessing in the future implies only the transfer cost, whatever the entrepreneur has an academic background or not. Indeed, the transfer cost in the future is lower than accessing immediately if the member has business knowledge; on the contrary, it is higher if the member has no business knowledge.

6.2 Conclusive Remarks

In this chapter, we finally point out the main findings we bring to the entrepreneurship literature. Besides, the main limitations of our work as well as other possible future investigations are also mentioned.

6.2.1 Main Findings and Implications

In this thesis, we make two major contributions to the existing literature. First, our study is added to the body of knowledge access and sharing, and it expands the perspective to include start-ups as early-stage businesses. It contributes to the current literature on a start-up team's access and internal knowledge sharing dynamics by concentrating on interpersonal characteristics. The thesis' central theme is whether a team's common ground is conducive to accessing new information. Second, there has been little academic effort in the entrepreneurial finance literature to examine the interplay between the various moderators of the association between the two. We answer the fundamental question of how early-stage start-ups realize entrepreneurial opportunities. The work focuses on a key process, namely acquiring and integrating novel competencies through knowledge access. The empirical study is conducted on the start-ups participating in InnoVentureLab in 2020. We discovered that a team's degree of common ground increases the likelihood of a member at-

tending a lecture and gaining new information. Since this relationship has a curvilinear shape, the marginal gain of adding one more unit to common ground decreases as the common ground level increases. In addition to common ground, other considerations must be explored to fully comprehend the processes that connect team dynamics to members making knowledge decisions. This is why we looked at how a member's prior academic experience moderates a team's common ground. When members have a business education, we discovered that their common ground plays a significant but different role.

From a managerial perspective, members of start-ups need to develop their company's competencies as it matures. For this, they typically need to acquire new knowledge. However, when is the best time to do so? Is it better to access the knowledge immediately or let a teammate share it as needed in the future? In this thesis, we show that accessing and integrating new knowledge change over time and depend on the team's common ground.

6.2.2 Limitations and Future Research

We acknowledge that our analysis presents some limitations, that however, open the doors for future research developments. First of all, our variables did not take into account when the common ground dates back. According to researchers, common ground is not permanent since it is continually deteriorating [Klein *et al.*, 2004]. Additional studies on group dynamics would allow us to measure the current state of common ground. Secondly, we used the valued common ground level to measure the possible cohesion and interactions among start-up members. However, our measure did not allow us to control for either the real interactions among members within a team or the nature of these interactions. In this respect, we have not been able to discriminate between colleagues that exploited their mutual knowledge and had several interactions

after attending the training from colleagues that attended the programme but did not have any interpersonal engagement on course topics beyond the classes. Although we believe this latter case is quite unlikely, given that start-up members had to work together on weekly deliverables, we cannot exclude extreme cases. Moreover, human relations are the basis of our study, and these relations are radically changed since the beginning of the Covid-19 pandemic. We may have made some assumptions based on the existing literature whose validity is challenged by the phase that humanity is facing. Relationships within colleagues are different; human touch in the workplace is often non-existent. The predominant diffusion of smart-working deeply influences interpersonal interactions. In this regard, further studies on the online working environment would allow us to discern whether our results are contaminated by training and start-up activities carried out online or if they are generalizable to group dynamics in general.

Appendix A

Table A.1: List of journals.

Query	Name	H
F	Academy Of Management Journal	304
F	Academy Of Management Review	260
M, P, S	Accounting, Organizations And Society	125
S	Administrative Science Quarterly	175
E	American Economic Review	277
M	Contemporary Accounting Research	90
E	Econometrica	179
E, F	Entrepreneurship Theory And Practice	140
E, M	Harvard Business Review	170
S	Human Relations	124
P	Human Resource Management	87
I	Information Systems Research	151
E, F, M	Journal Of Accounting And Economics	143
E, F, M	Journal Of Accounting Research	132
P	Journal Of Applied Psychology	269
E, M	Journal Of Business Ethics	168
F	Journal Of Business Venturing	170

Continues on the next page

Query	Name	H
M, P	Journal Of Consumer Psychology	99
E, F	Journal Of Consumer Research	167
E, F, M	Journal Of Finance	285
M	Journal Of Financial And Quantitative Analysis	110
M	Journal Of Financial Economics	240
E, F	Journal Of International Business Studies	184
F, M	Journal Of Management	208
I	Journal Of Management Information Systems	137
M	Journal Of Management Studies	172
E, F	Journal Of Marketing	233
E, F	Journal Of Marketing Research	159
F	Journal Of Operations Management	181
E	Journal Of Political Economy	179
E, F	Journal Of The Academy Of Marketing Science	159
F	Management Science	237
F	Manufacturing And Service Operations Management	77
E, F	Marketing Science	120
F	MIS Quarterly Management Information Systems	216
I	Operations Research	128
M	Organization Science	224
M	Organization Studies	140
P	Organizational Behavior And Human Decision Processes	136
M	Production And Operations Management	102
E	Quarterly Journal Of Economics	246

Continued from the previous page

Query	Name	H
M	Research Policy	224
F	Review Of Accounting Studies	67
E	Review Of Economic Studies	133
M	Review Of Finance	53
E, F, M	Review Of Financial Studies	174
F	Sloan Management Review	95
E, M	Strategic Entrepreneurship Journal	38
F	Strategic Management Journal	269

List of journals defining the step of the Systematic Literature Review screening process, with ranking query (E for the SCImago "Economics and Econometrics", F for the SCImago "Finance", I for the SCImago "Information Systems", M for the "Business, Management, and Accounting", P for the SCImago "Psychology", and S for the SCImago "Sociology") and H index for each element.

Appendix B

september						
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

october						
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

november						
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

dicember						
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

january						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

february						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28						

march						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

april						
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

● Training Session ● Interviews Session

Figure B.1: InnoVentureLab's calendar.

Table B.1: Scientific approach.

Step	Definition
Theory definition	The articulation of the set of fundamental ideas (and the relationships between them) that make the business proposal valid
Hypothesis articulation	Predictions that logically arise from the idea, but which have yet to be tested through tests. Only one testable element for each hypothesis
Hypothesis testing	Collect rigorous data from a representative sample of the target population and conduct a series of measurements that allow us to see if what we observe is in line with the hypothesis or not
Rigorous evaluation of test results	Objective analysis of the results and re-evaluation of the theory
Decision	The decision whether your idea is worth pursuing as it is, must be modified in one or more components (pivot), or abandoned (exit), based on: estimate of the future value of the idea and the costs for its realization, and a decision threshold

Table B.2: Effectual approach.

Step	Definition
Bird in hand	Starting from the means at your disposal: WHO you are (tastes, preferences, skills), WHAT you know (knowledge, experience), WHO you know (personal/professional networks)
Affordable loss	Make decisions based on what you can afford to lose (given the means available) rather than how much you think you can earn
Crazy quilt	Develop your market through strategic partnerships and create a community of stakeholders / suppliers of external resources willing to support the company
Lemonade	Take advantage of contingencies and unforeseen events and turn them into opportunities rather than trying to avoid surprises
Pilot in the plane	Address uncertainty by focusing on actions that can lead to the desired future, rather than relying on forecasts

Table B.3: Script of the interviews.

Step	Questions
ICE-BREAKER	Find out if it's a good time to talk. Specify duration and type of questions. Inform about the use of data.
BASIC INFORMATION	How many hours (per week) does each team member dedicate on average to the start-up? How do you organize yourself working with the other team members?
SCIENTIFIC METHOD	
Theory	Tell me about your idea's value proposition (key benefit you offer your customers), who are your prospects, and what issues do they have? How did you identify these customers and these problems? Why do you think your solution will be successful? Can you explain to me how you came to these conclusions?
Hypothesis	I would like to know more about your potential customers. How did you identify them and how did you understand what problem they have? What did you want to understand, what did you discover? What questions did you ask?

Step	Questions
Test	I would like to further investigate the problem of the user you are facing with your business idea. How did you study / deepen it? Have you collected any data? If yes, what kind? (questionnaire, interview) How did you / did you decide what kind of research to do? What questions did you ask? Who did you make them to?
Valuation	What emerges from the data you have collected? Where have you stored the data? What did you find out from the information gathered? How did you analyze this data? How did you decide how to analyze them?
Decision	How did you use the information collected / what emerges from the data collected? Have you set minimum thresholds to decide how to evaluate the collected data? How?
EFFECTUAL METHOD	
Bird in hand	Tell me how you started developing your idea. How did you come up with this idea? What was the starting point? How are your interests, your previous knowledge and experience, and your personal connection related to your idea? What role did these factors play exactly?

Step	Questions
Affordable loss	I would like you to tell me what kind of resources (economic and otherwise) you are using to develop your business idea. How did you decide how many resources to devote to the project?
Crazy quilt	Tell me about your relationships with suppliers, competitors, other entrepreneurs, any partners. Do you have any relationship with them? What kind? (partnerships, alliances) Who did you make them with (suppliers, customers, potential competitors)? When did you start thinking about / forming these relationships?
Lemonade	Let's talk now about the development of your idea to date. Can you remember a situation where something unexpected happened (ask for examples)? If so, how did you react? What decisions did you make following this events?
Pilot in the plane	I would like to talk about the factors and potential risks that you believe will determine the future of your startup. Which ones are they? Why do you think these factors will be important? Can you tell me how you defined these factors? What did you focus on? What are you doing about it?
CONCLUSION	Thank the entrepreneurs.

Appendix C

Table C.1: Marginal effects of ln_common_ground_1.

ln_common_ground_1 values	Marginal effects on the probability to be attended		
	coeff	sign.	st.error
0	0.599	***	0.017
0.2	0.609	***	0.015
0.4	0.618	***	0.013
0.6	0.626	***	0.013
0.8	0.633	***	0.012
1	0.640	***	0.013
1.2	0.645	***	0.013
1.4	0.651	***	0.013
1.6	0.655	***	0.014
1.8	0.659	***	0.014
2	0.662	***	0.014
2.2	0.664	***	0.014
2.4	0.666	***	0.014
2.6	0.667	***	0.014
2.8	0.668	***	0.014
3	0.667	***	0.014
3.2	0.667	***	0.014
3.4	0.665	***	0.014
3.6	0.663	***	0.015
3.8	0.660	***	0.015
4	0.656	***	0.016
4.2	0.652	***	0.017
4.4	0.647	***	0.019
4.6	0.642	***	0.021
4.8	0.635	***	0.024
5	0.628	***	0.027

Table C.2: Marginal effects of ln_common_ground_2.

ln_common_ground_2 values	Marginal effects on the probability to be attended		
	coeff	sign.	st.error
0	0.624	***	0.015
0.2	0.638	***	0.014
0.4	0.649	***	0.014
0.6	0.660	***	0.015
0.8	0.669	***	0.016
1	0.676	***	0.018
1.2	0.683	***	0.019
1.4	0.688	***	0.020
1.6	0.692	***	0.021
1.8	0.695	***	0.022
2	0.696	***	0.022
2.2	0.697	***	0.022
2.4	0.696	***	0.022
2.6	0.694	***	0.022
2.8	0.691	***	0.021
3	0.687	***	0.020
3.2	0.681	***	0.019
3.4	0.674	***	0.017
3.6	0.666	***	0.016
3.8	0.657	***	0.015
4	0.646	***	0.014
4.2	0.634	***	0.015
4.4	0.621	***	0.017
4.6	0.606	***	0.020
4.8	0.589	***	0.024
5	0.571	***	0.029

Table C.3: Marginal effects of ln_common_ground_1. Model with interactions for member prior academic experience (d_management_studies).

ln_common_ground_1	Marginal effects on the probability to be attended					
	Without academic experience *(d_management_studies=0)*			With academic experience *(d_management_studies=1)*		
	coeff	sign.	st.error	coeff	sign.	st.error
0	0.582	***	0.025	0.620	***	0.022
0.2	0.599	***	0.023	0.621	***	0.019
0.4	0.615	***	0.022	0.622	***	0.017
0.6	0.629	***	0.022	0.624	***	0.016
0.8	0.641	***	0.023	0.626	***	0.016
1	0.651	***	0.024	0.628	***	0.015
1.2	0.660	***	0.026	0.631	***	0.015
1.4	0.666	***	0.027	0.634	***	0.016
1.6	0.671	***	0.028	0.638	***	0.016
1.8	0.675	***	0.030	0.642	***	0.016
2	0.677	***	0.030	0.646	***	0.016
2.2	0.677	***	0.031	0.650	***	0.017
2.4	0.676	***	0.032	0.655	***	0.017
2.6	0.673	***	0.032	0.660	***	0.016
2.8	0.668	***	0.032	0.666	***	0.016
3	0.662	***	0.032	0.672	***	0.016
3.2	0.654	***	0.031	0.678	***	0.016
3.4	0.645	***	0.031	0.684	***	0.016
3.6	0.633	***	0.031	0.691	***	0.017
3.8	0.620	***	0.030	0.698	***	0.018
4	0.605	***	0.030	0.705	***	0.019
4.2	0.588	***	0.031	0.713	***	0.021
4.4	0.569	***	0.032	0.720	***	0.023
4.6	0.548	***	0.033	0.728	***	0.026
4.8	0.525	***	0.036	0.736	***	0.028
5	0.501	***	0.040	0.745	***	0.032

Table C.4: Marginal effects of ln_common_ground_1. Model with interactions for member prior academic experience (d_entrepreneurship_studies).

ln_common_ground_1	Marginal effects on the probability to be attended					
	Without academic experience *(d_entrepreneurship_studies=0)*			With academic experience *(d_entrepreneurship_studies=1)*		
	coeff	sign.	st.error	coeff	sign.	st.error
0	0.606	***	0.020	0.586	***	0.030
0.2	0.621	***	0.018	0.588	***	0.026
0.4	0.635	***	0.016	0.591	***	0.024
0.6	0.647	***	0.016	0.594	***	0.022
0.8	0.658	***	0.016	0.598	***	0.021
1	0.667	***	0.016	0.601	***	0.021
1.2	0.674	***	0.016	0.606	***	0.021
1.4	0.681	***	0.017	0.610	***	0.021
1.6	0.686	***	0.018	0.615	***	0.021
1.8	0.689	***	0.018	0.621	***	0.022
2	0.692	***	0.018	0.627	***	0.022
2.2	0.693	***	0.019	0.633	***	0.022
2.4	0.693	***	0.019	0.639	***	0.023
2.6	0.691	***	0.019	0.646	***	0.023
2.8	0.688	***	0.019	0.653	***	0.023
3	0.684	***	0.019	0.661	***	0.023
3.2	0.679	***	0.019	0.669	***	0.023
3.4	0.672	***	0.019	0.677	***	0.023
3.6	0.664	***	0.019	0.685	***	0.024
3.8	0.654	***	0.020	0.694	***	0.024
4	0.643	***	0.020	0.703	***	0.026
4.2	0.630	***	0.022	0.712	***	0.028
4.4	0.616	***	0.024	0.721	***	0.030
4.6	0.600	***	0.027	0.731	***	0.033
4.8	0.583	***	0.030	0.741	***	0.036
5	0.564	***	0.034	0.750	***	0.039

Table C.5: Marginal effects of ln_common_ground_2. Model with interactions for member prior academic experience (d_management_studies).

| ln_common_ground_2 | Marginal effects on the probability to be attended | | | | | |
| | Without academic experience (d_management_studies=0) | | | With academic experience (d_management_studies=1) | | |
	coeff	sign.	st.error	coeff	sign.	st.error
0	0.564	***	0.024	0.661	***	0.018
0.2	0.618	***	0.023	0.663	***	0.017
0.4	0.665	***	0.026	0.665	***	0.017
0.6	0.705	***	0.029	0.666	***	0.018
0.8	0.738	***	0.032	0.667	***	0.019
1	0.765	***	0.035	0.668	***	0.021
1.2	0.786	***	0.036	0.669	***	0.022
1.4	0.803	***	0.037	0.669	***	0.024
1.6	0.815	***	0.038	0.670	***	0.025
1.8	0.823	***	0.038	0.670	***	0.026
2	0.828	***	0.038	0.669	***	0.026
2.2	0.829	***	0.038	0.669	***	0.026
2.4	0.827	***	0.038	0.668	***	0.026
2.6	0.821	***	0.038	0.667	***	0.025
2.8	0.812	***	0.038	0.665	***	0.024
3	0.798	***	0.037	0.664	***	0.023
3.2	0.780	***	0.036	0.662	***	0.022
3.4	0.757	***	0.034	0.660	***	0.020
3.6	0.728	***	0.032	0.657	***	0.018
3.8	0.693	***	0.030	0.655	***	0.017
4	0.651	***	0.030	0.652	***	0.017
4.2	0.602	***	0.031	0.649	***	0.017
4.4	0.546	***	0.036	0.645	***	0.019
4.6	0.483	***	0.044	0.642	***	0.023
4.8	0.415	***	0.054	0.638	***	0.027
5	0.345	***	0.063	0.633	***	0.033

Table C.6: Marginal effects of ln_common_ground_2. Model with interactions for member prior academic experience (d_entrepreneurship_studies).

ln_common_ground_2	Marginal effects on the probability to be attended					
	Without academic experience *(d_entrepreneurship_studies=0)*			With academic experience *(d_entrepreneurship_studies=1)*		
	coeff	sign.	st.error	coeff	sign.	st.error
0	0.626	***	0.018	0.617	***	0.026
0.2	0.647	***	0.017	0.623	***	0.024
0.4	0.665	***	0.017	0.630	***	0.024
0.6	0.681	***	0.019	0.635	***	0.025
0.8	0.695	***	0.021	0.640	***	0.026
1	0.706	***	0.023	0.645	***	0.028
1.2	0.716	***	0.025	0.649	***	0.030
1.4	0.723	***	0.026	0.652	***	0.032
1.6	0.729	***	0.028	0.655	***	0.033
1.8	0.733	***	0.028	0.657	***	0.034
2	0.735	***	0.029	0.659	***	0.035
2.2	0.735	***	0.029	0.660	***	0.035
2.4	0.733	***	0.029	0.661	***	0.035
2.6	0.729	***	0.028	0.661	***	0.034
2.8	0.724	***	0.027	0.660	***	0.033
3	0.717	***	0.026	0.659	***	0.031
3.2	0.708	***	0.025	0.658	***	0.029
3.4	0.696	***	0.023	0.656	***	0.027
3.6	0.683	***	0.021	0.654	***	0.025
3.8	0.667	***	0.020	0.650	***	0.023
4	0.649	***	0.019	0.647	***	0.022
4.2	0.629	***	0.020	0.643	***	0.023
4.4	0.606	***	0.023	0.638	***	0.025
4.6	0.581	***	0.027	0.633	***	0.029
4.8	0.553	***	0.034	0.627	***	0.035
5	0.522	***	0.042	0.620	***	0.043

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