IS A BIT MORE EXPERIENCE BAD?
THE ROLE OF ENTREPRENEURIAL EXPERIENCE ON INVESTMENT RATE

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Purpose: This study investigates the influence of entrepreneurial experience on small business investment. Its main purpose is to examine whether entrepreneurs with more prior start-up experience are better able to identify business opportunities and successfully transform these opportunities into investment projects.

Design/methodology/approach: The empirical setting in this study is Vietnam. The authors employ a panel data of small businesses (mostly households) from 2005 to 2013, and use a fixed effect method to estimate the regression coefficients. The results are also re-checked using the general method of moments (GMM) and matching technique.

Findings: Empirically, it is found that entrepreneurial experience is an important determinant of investment decisions. Specifically, entrepreneurs with one start-up experience make more investments than novice entrepreneurs. However, entrepreneurs with more than one start-up experience do not make more investments than entrepreneurs with one start-up experience.

Research limitations/implications: This is country-specific research. Further study may employ data from multi-countries to re-test the validity of the hypotheses.

Originality/value: This study provides a new perspective for analysing the role of entrepreneurial experience on entrepreneurial investments. It shows that prior start-up experience may turn out to be a liability to entrepreneurs since it restricts their ability to identify new opportunities.

Keywords: Entrepreneurial experience; Investment; Opportunity recognition; Small businesses; Vietnam

Introduction

Investment is important to small businesses because it affects their survival and growth (Ding et al., 2013). In this study, investment is measured as the additional financial capital invested in a venture (whether as fixed assets or working capital) as a ratio of the total capital of the venture (Guariglia, 2008). The most examined form of investment decision in the extant entrepreneurship literature is the initial investment (i.e., the venture establishment) (Davidsson and Henrekson, 2002; Stenholm et al., 2013; van Stel and Storey, 2004). However, this is only the first step in the entrepreneurship journey. Decisions concerning post-establishment investments may be more challenging, and probably also more sophisticated, as entrepreneurs assimilate real-world information and feedback from the market on their products and services (Cassar, 2014). It remains open to debate whether or not entrepreneurs' start-up experiences can help them to distinguish the useful information from the noise, identify opportunities, and keep making subsequent investments (Arte, 2017). While prior start-up experience may help entrepreneurs to recognise opportunities more quickly, it may also make them too inclined to rely on past heuristics and recipes, encouraging them to fall back on exploiting their experience rather than to explore new patterns and seek out new business opportunities (Politis, 2005). The question therefore arises whether entrepreneurial experience is an asset or liability to small business owners' investments?

To examine the influence of entrepreneurial experience on investments, the authors propose a theoretical model in which investment is the outcome of a process, some steps of which entrepreneurial experience may facilitate. Based on the theory of entrepreneurial opportunity identification and development (Ardichvili et al., 2003), it is specifically suggested that investment comes about as a result of recognising opportunities, evaluating them, and developing them into investment projects. While previous models focus mainly on explaining how business opportunities are formed (Carbonara et al., 2016; De Clercq et al., 2013), this study extends the convention further by capturing the realisation of opportunities, i.e., explicating how opportunities are finalised into investment projects. An opportunity that remains at the formation or

evaluation stages is merely the component of an opportunity; it is only by taking action and investing in it that the entrepreneur can test its viability as an investment project.

In this process of investment decision-making, entrepreneurial experience may play a key role. Experience itself cannot influence investment decisions; what matters is the knowledge that is derived from experience (Cope and Watts, 2000). During the process of transforming experience into knowledge, entrepreneurs with differing levels of experience may opt for different modes of transformation (Politis, 2005). Entrepreneurs with less experience are keen to explore the new patterns generated by their limited information. Experienced entrepreneurs, on the other hand, tend to exploit their more extensive information to generate solutions and make decisions (Toft-Kehler et al., 2014). This exploitation method may lead experienced entrepreneurs to become overdependent on heuristics and recipes, restricting their ability to identify new opportunities (Ucbasaran et al., 2010). As such, highly experienced entrepreneurs may not make any more investments than would their less experienced counterparts.

Examining a set of more than 9,500 observations of small businesses (mostly household ventures) in Vietnam over the 2005-2013 period, this study confirms the importance of prior start-up experience in facilitating the investment rate of the current venture. However, this study also shows that entrepreneurs with more than one prior start-up are not more effective in identifying and realising new opportunities than their less experienced counterparts are. The authors therefore suggest that while entrepreneurial experience may generate useful knowledge that improves investment levels, being inordinately experienced may turn out to be a liability to innovation and alertness.

The theoretical and empirical results of this study provide several significant implications for entrepreneurs and policymakers wishing to facilitate entrepreneurial investments. In general, local authorities should reduce the costs of participating in venturing activities because those entrepreneurs who obtain adequate start-up experience are more likely to identify and successfully transform business opportunities into investment projects. However, entrepreneurs should be aware that start-up experience alone cannot help them improve their ability to identify new opportunities. In fact, too much entrepreneurial experience may

restrict their inclination to explore the potential of new information and see them reverting to simply exploiting their experience.

Theory and hypotheses

Investment as a process of opportunity realisation

Once a new venture has been established, investment is the next topic of consideration for all entrepreneurs (Zhou, 2013). Investment is an important input leading to growth (business expansion), which is one of the key performance outcomes of new ventures (Guariglia and Liu, 2014). While previous research aims to analyse the process by which entrepreneurs recognise and identify business opportunities, the authors posit that opportunity recognition and identification cannot portray the full picture of entrepreneurship. A business opportunity that does not attract investment risks becoming a seed that has fallen on stony ground. This study therefore aims to provide a theoretical framework for the process of opportunity realisation. The framework is based on the work of Ardichvili et al. (2003) who offer a theory of entrepreneurial opportunity identification and development in which they suggest that while elements of opportunities may be recognised, opportunities are made rather than found. The authors of this study subscribe to that theory and further propose that business opportunities must be developed and finalised by investment decisions that are a result of three steps: opportunity recognition; opportunity evaluation; and opportunity realisation.

Opportunity recognition: Opportunity is an unfulfilled market demand, which entrepreneurs strive to satisfy by combining resources in a novel way to offer value-added solutions (Ardichvili et al., 2003). The extant literature has documented a list of the antecedents of entrepreneurial alertness to business opportunities. These include personality traits, social capital, and prior knowledge (Aidis, 2005; Busenitz et al., 2000; Lee et al., 2004). Baron and Ensley (2006) summarise the antecedents into "pattern recognition" ability – that is, the cognitive process by which individuals identify meaningful patterns (e.g., opportunities) in the apparently disparate events or trends that surround them. Baron and Ensley suggest that this entrepreneurial ability is a function of experience because, in their study, experienced entrepreneurs typically came up with

more prosperous, well-defined, and operationally feasible business opportunities than did novice entrepreneurs.

Opportunity evaluation: After identifying the opportunities, entrepreneurs will assess their feasibility. This stage is vital to deciding the levels of commitment and inputs that entrepreneurs will invest in their identified opportunities. Ardichvili et al. (2003) argue that at this stage, feasibility analysis may be formal, informal, or even uncirculated, but it is nevertheless an evaluation of the costs and gains of each available opportunity. The net benefits of pursuing an opportunity depend not only on the financial returns of the project but also on the subjective preferences or operational objectives of the entrepreneur. Cassar (2006) finds that entrepreneurs who face higher opportunity costs (e.g., income earned from paid employment) tend to undervalue their business opportunities and Ardichvili et al. (2003) note that the same opportunity, assessed using the same set of criteria, may be regarded as unappealing by some individuals while appearing profitable to others.

Opportunity realisation: Pavia (1991) uses product development as a metaphor for understanding opportunity realisation, in which the elaboration, production, revision, and refinement of selected opportunities that lead to finalised investment decisions can be seen as a process. The first steps of the process are "to sense" and "to justify"; these are somewhat passive, requiring thought rather than action, and contrast strongly with opportunity realisation, which involves making active efforts to finalise an opportunity for prosperity. The critical question is how to turn such opportunities into profitable projects? One of the key tasks of finalising an investment decision is to determine the financing strategy. If internally generated funds are insufficient for the project, the entrepreneur will need to secure external finance, requiring an additional task to be carried out, namely that of communicating the opportunity to external lenders for the purpose of fundraising (Chow and Fung, 2000). The entire process necessitates much hands-on action and an opening up to external scrutiny that can lead to the entrepreneur receiving criticism and even rejection. It is therefore unsurprising that only a few business opportunities are successfully developed and moulded into investment projects (Cassar, 2004). This framework posits that business opportunities

evolve into investment projects through a gradual process of formation, which stands in sharp contrast to the conventional view of the discovery process (Shane, 2000; Sigrist, 1999) in which opportunities are well-formed and ready for entrepreneurs to sense, find, and discover them.

The authors of this study, in addition to maintaining that investment is an opportunity realisation process, also suggest that entrepreneurs' prior start-up experience plays an essential role in facilitating the process. Entrepreneurs with more experience may have developed better ways of forming up investment projects from the available business opportunities, or they may do it faster and more efficiently than novice entrepreneurs. Before analysing the association between entrepreneurial experience and investment decisions (opportunity realisation), the next section defines the scope of entrepreneurial experience used in this study and explains its importance in venturing activities.

Entrepreneurial experience

Definition of experience and knowledge

According to Morris et al. (2012), the term 'experience' has been used by entrepreneurship scholars in four ways, namely: (1) an involvement in previous start-up activities; (2) the knowledge and skills that result in entrepreneurial know-how and practical wisdom; (3) the events that happened during the entrepreneurial process; and (4) observation of and/or participation in entrepreneurial activities.[1] The most popular measurement of experience is involvement in past venturing activities (Haynes, 2003). The literature particularly highlights the role of prior experience as an antecedent condition, facilitating the transformation of experience to knowledge.

Entrepreneurial experience, which is defined in this study as being involved in as least one previous start-up activity, may be transformed into knowledge through the learning process in which experience is an

[1] In fact, Morris et al. (2012) suggest a five-category classification. However, two categories are not distinctively separable, being (1) the sum of total things that have happened to a founder over his or her entrepreneurial career, and (2) the collective set of events that constitute the entrepreneurial process. For the sake of simplicity, therefore, the authors combine them into one group of experience.

input and the outcome is knowledge, or, more accurately, experientially acquired knowledge (Ulvenblad et al., 2013). To distinguish between the two concepts, Politis (2005) suggests that experience is the direct observation of, or participation in, events associated with venture creation, while knowledge is the practical wisdom derived from a particular experience.

Obviously not every type of experience is able to be transformed into knowledge. Some types of experience merely describe the assimilation of factual information. This has immediate utility but lacks long-term or developmental implications (Cope and Watts, 2000). Prior entrepreneurial experience on the other hand may stimulate fundamental change, encouraging entrepreneurs to reflect on and question not only their established ways of venturing, but also the underlying values and perceptions that drive their entrepreneurial decisions (Kirschenhofer and Lechner, 2012). As such, knowledge derived from entrepreneurial experience is not situation-specific but tends to influence entrepreneurs' vision, self-awareness, and understanding at a deeper level.

The transformation of entrepreneurial experience to knowledge

Entrepreneurs are often confronted with a wide set of experiences, providing them with substantial input for developing entrepreneurial learning. While scholars agree that the outcome of entrepreneurial experience is knowledge, the definition of the process through which the transformation occurs is far from gaining a consensus (Gabrielsson and Politis, 2012).

Early researchers suggest a four-step learning process: experiencing; reflecting; thinking; and acting (Kolb, 1984). In this process, experience leads to a substantial change of conception about an aspect of the entrepreneur's view of the world. This prompts change across a gamut of potential entrepreneurial behaviours as the entrepreneur ponders and searches for novel ways of explaining the reality (Cope and Watts, 2000). This processing model, however, is not fully adequate for understanding the uncertainties that entrepreneurs encounter. In practice, entrepreneurs seldom have sufficient time to explicitly conceptualise and transform experience to knowledge through a stepwise learning process (Ulvenblad et

al., 2013). Most of the time, the challenge of surprising critical events forces entrepreneurs to rely on their intuitive capacity to make immediate decisions. Thus, Kahneman (2015) theorises the two-system model to explain what drives the method whereby entrepreneurs process information and experience. In this model, there are two distinct processing systems: system 1 is fast, intuitive, and emotional; system 2 is slower, more deliberative, and logical. The difficulty lies in attribution. It is hard to tell which system is the one that is transforming experience to knowledge since the two systems seem to switch on/off automatically depending on the nature of the information being processed (Kahneman, 2003).

Politis (2005) proposes another model to understand the transformation of experience into knowledge. He posits that entrepreneurs can rely on one of two possible strategies when making decisions: exploitation or exploration. Exploitation is a strategy through which entrepreneurs take actions that replicate or are closely related to the ones that have already been taken, thereby exploiting their pre-existing experience. This includes the employment of refinement, routine, and implementation of knowledge. Exploration on the other hand is a strategy whereby entrepreneurs take new actions that are distinct from those they have taken in the past. This includes tactics such as variation, experimentation, discovery, and innovation, all of which relate to the creation of new knowledge based on pre-existing experience.

By focusing on the modes rather than the process of transformation, Politis (2005) argues that the same set of experiences may generate different knowledge outcomes depending on the mode of transfer. The next section of this study uses this exploration-exploitation model of experience to explain why some certain types of entrepreneur make more investments than others.

Experience and investment decisions

Making investments requires knowledge (i.e., an understanding of the reality of the situation, such as market conditions, competitive advantages, etc.). Therefore, the process of identifying, evaluating, and realising the business opportunities that have the potential to form investment projects is relevant to the process of transforming experience into knowledge. The more experience an entrepreneur processes, the more

knowledge she may gain to facilitate her investment decisions (Haynes, 2003). It could therefore be expected that entrepreneurs who have acquired start-up experience will make more investments than novice entrepreneurs for the following reasons.

First, experienced entrepreneurs are people who, having made one attempt to start a business, are willing to undergo the process all over again. These entrepreneurs are likely to employ the exploration mode, using their prior experience to enhance their ability to effectively recognise and act upon business opportunities. Politis (2005) suggests that opportunity-seeking entrepreneurs, who are keen to engage in new venture creation, often strive for variation and new challenges. This type of entrepreneur is highly explorative and alert and tends to actively connect disparate events to form up business opportunities. Ergo, it is expected that entrepreneurs who rely on exploration as their main mode of transforming experience to knowledge (repeat entrepreneurs) can better recognise, evaluate, and successfully realise business opportunities; hence, they make more investments than novice entrepreneurs.

Second, experienced entrepreneurs possess more task-related human capital to facilitate the generation of the knowledge required to recognise, evaluate, and realise business opportunities. According to Unger et al. (2011) task-related human capital is human capital (i.e., knowledge and skills) that relates to the current tasks of entrepreneurs (e.g., prior start-up experience). It differs from non-task-related human capital, which is human capital that does not relate to the current tasks of entrepreneurs (e.g., general education). Task-related human capital is more likely to boost investment because it is content-specific, i.e., related to a particular aspect of the venturing activity. As such, entrepreneurs with task-related human capital may better transform their prior start-up experience into useful knowledge that can be directly employed in exploring their current markets, suppliers, customers, and even in understanding the norms of doing business (Cassar, 2014). The more similar the prior experience is to the current venturing tasks, the easier it is to transform that experience into useful knowledge (Ulvenblad et al., 2013). This increase in knowledge may enhance the development of the effectiveness of the entrepreneur's opportunity recognition, evaluation, and realisation.

Third, as a result (outcome) of human capital investments, experienced entrepreneurs possess the knowledge and skills that are essential to recognising, evaluating, and realising business opportunities. According to Unger et al. (2011) human capital investments include experience such as education and work experience that may or may not lead to entrepreneurial knowledge and skills. The outcomes of human capital investments are the acquired knowledge and skills that can only be gained from being involved in hand-on tasks, such as those that were tackled in a prior start-up experience. Irrespective of whether the previous start-up was a failure or a success, experienced entrepreneurs gain more knowledge than novice entrepreneurs. This conceptualisation of human capital, which focuses on the outcomes rather than on the investment in human capital, highlights the role of knowledge over experience (Aidis and van Praag, 2007; Unger et al., 2011). Specifically, entrepreneurs who acquire actual entrepreneurial knowledge may enhance their chances of successfully realising business opportunities.

Finally, experienced entrepreneurs may develop a well-performing cognitive schema structure (knowledge and cognition structure) to facilitate investment decisions. The stronger the cognitive schema (i.e., the richer it is in content and the better at information organisation) the more patterns and opportunities the entrepreneurs can observe in their surrounding and circumstances (Baron, 2007). The reason for this is that through experience, entrepreneurs establish prototypes that can serve as templates for identifying investment opportunities. For example, a prototype for investment opportunities may include features such as novelty, profitability, plausibility, and the likelihood of being able to successfully combine resources to realise the idea (Ucbasaran et al., 2009). Entrepreneurs with prior start-up experience may have better prototypes to justify whether an idea is an opportunity or not, and may be better able to identify the investment opportunities that appear meaningless to those entrepreneurs who lack well-developed prototypes of business opportunities (Baron and Ensley, 2006).

In general, experienced entrepreneurs have greater knowledge and skills that are the outcomes of their prior start-up experience, and tend to actively explore their acquired knowledge to identify new opportunities,

thus giving them a better chance of recognising business opportunities than novice entrepreneurs. Consequently, the authors suggest the following hypothesis:

H1: Entrepreneurs with start-up experience make more investments than novice entrepreneurs.

Experience liabilities

The traditional learning curve perspective suggests that the performance of a focal task will improve each time the task is engaged with (Barkema and Schijven, 2008). This expectation is rationalised by a growing stock of experience accumulated from repetition. However, recent literature suggests that the relationship between experience and organisational performance generally, and entrepreneurial performance in particular, is hardly linear. Scholars have attempted to challenge the assumptions made by this traditional learning theory. The first assumption is that experience effects are always positive, which fails to acknowledge that experience may be detrimental when it is transferred to a setting where previous lessons do not apply (Haleblian and Finkelstein, 1999). Second, it equates experience with learning even though the experience may not automatically trigger learning because other, more deliberate, actions are required for learning to take place (Cassar, 2014).

In the corporate management literature, the non-linear relationship between organisational experience and firm performance has been widely confirmed. For example, Haleblian and Finkelstein (1999) find that the relationship between acquisition experience and performance is a U-shaped function. Nadolska and Barkema (2007) also suggest a U-shaped relationship between international joint venture experience and the longevity of the acquisitions. Nguyen and Cai (2016) further hypothesise a cubic relationship between learning from industry experience and diversification value. In sum, the literature points out that experience is far from being a panacea and can actually decrease performance.

This study extends this strand of research into the context of entrepreneurship, and suggests that entrepreneurial experience is not necessarily positively associated with an improved ability to recognise,

evaluate, and realise the business opportunities that lead to investment projects. Indeed, this study hypothesises that too much entrepreneurial experience may even exert a negative impact on investment decisions.

To investigate the potential adverse influence of entrepreneurial experience, it is important to acknowledge two key characteristics of experience that are widely discussed in the literature: specificity and heterogeneity. Specificity refers to how close the relevant aspects of experience are to the investment opportunities of the current venture (Nguyen and Cai, 2016). As the main impact of experience on learning is the reduction of causal ambiguity, experience needs to be sufficiently specific to enable the identification of relevant causal patterns. When specificity is insufficient, negative experience transfer may occur due to the application of lessons that do not work in the new setting (Barkema and Schijven, 2008).

In the context of entrepreneurship, there is substantial variability across entrepreneurial opportunities, resulting in limited transfer of gained knowledge (Jacob et al., 1999). Cassar and Craig (2009) suggest that much of the knowledge concerning an entrepreneurial opportunity and the investment projects that exploit it is specific to that business, its circumstances, its particular organisational environment (e.g., the supply chain), and the meso-environment (e.g., the industry). While knowledge can, indeed, be applied from one setting to another, research shows that, at least in the context of entrepreneurship, the conditions for the successful transfer of knowledge from one context to another are fairly restrictive (Clement et al., 2007). As such, entrepreneurs with more than one start-up experience are susceptible to superstitious learning, which may lead to incorrect inferences from past events. As the knowledge acquired from the entrepreneurial experience fails to facilitate efficient learning because of its case-specific characteristics, entrepreneurs with more than one start-up experience may be no better placed than those entrepreneurs with just one in terms of recognising, evaluating, and realising business opportunities.

Another concept associated with experience is heterogeneity (Barkema and Schijven, 2008), which is defined as the scope of experience that an entrepreneur is exposed to. Heterogeneity induces causal ambiguity and difficulty in learning from experience (Nguyen and Cai, 2016). In the context of

entrepreneurship, heterogeneity encompasses the various sources of information that entrepreneurs obtained from the previous start-ups. In order to successfully extract learning from such a bundle of experiences, entrepreneurs need to establish deliberate learning mechanisms.

In the organisational learning literature, it has been demonstrated that deliberate learning mechanisms, such as having a department dedicated to evaluating operational performance (e.g., quality control), training schemes, and incentive programs tied to learning are essential to learning from experience (see Barkema and Schijven (2008) for a review). This strand of literature suggests that experience accumulation is a necessary but insufficient condition for learning.

In the context of entrepreneurship, unfortunately, it seems that there is no deliberate learning mechanism that fosters deliberate learning actions, probably because of the nature of entrepreneurial activity that inhibits effective learning from experience. For tasks that are well defined, repeated often, and accompanied by timely feedback, lessons may be successfully learnt. However, it is unclear whether individuals who become involved in several new businesses will have access to the kind of frequency and repetition of start-up experience to provide sufficient feedback to enable learning (Cassar, 2014).

It is also well-documented that entrepreneurs are emotionally connected to their ventures by their strong aspirations for success, inevitably resulting in biased learning (Robert and Arvids, 2006). For example, Cassar and Craig (2009) find that entrepreneurs are inclined to make forecasts about their future performance based on their expectations rather than on the lessons learnt from the last period's operational results. In addition, entrepreneurs engage in many different tasks during the business creation process, which imposes a particular level of difficulty in identifying relevant causal patterns (Politis, 2005). Therefore, given that feedback from entrepreneurial experience is relatively noisy (heterogenous), infrequent, and incomplete, entrepreneurs with more than one start-up experience may not learn much more than entrepreneurs with only one start-up experience.

Finally, beside the characteristics of the learning environment (i.e., specificity and heterogeneity), it is important to investigate the learning mode that experienced entrepreneurs employ to extract learning. The authors suggest that entrepreneurs with more than one start-up experience are likely to switch to the exploitation mode (rather than the exploration mode) of transforming experience into knowledge, thereby reducing their chances of recognising and realising new opportunities. Politis (2005) argues that habitual entrepreneurs effectively handle the continuous liabilities of newness by employing analogous reasoning, routinised behaviour, and direct implementation of prior knowledge. This mode of exploiting prior experience can reduce the resources required for coping with the newness of the various ventures' establishment. These entrepreneurs who put their primary focus on the exploitation of pre-existing knowledge may be able to efficiently handle the liabilities of newness and increase their chances of venturing survival (Kirschenhofer and Lechner, 2012) but the opportunity costs of this strategy are obviously the chances of exploring experience and identifying new opportunities. Also along this line of argument, Ucbasaran et al. (2009) suggest that repeat (habitual) entrepreneurs show a greater reliance on heuristics because they have developed a repertoire of experience to draw upon. This can lead to biases such as thinking that enough is known, inferring too much from limited information, and attempting to repeat previously successful recipes. Moreover, repeat entrepreneurs tend to be overly dependent on past contacts, which may hinder their network interactions and hamper their access to new information and ideas (Toft-Kehler et al., 2014).

As such, it is suggested that:

H2: Entrepreneurs with more than one start-up experience do not make more investments than entrepreneurs with one start-up experience.

Data and methodology

Data

To test the proposed hypotheses, this study employs the Small and Medium Enterprise (SME) dataset published by the Central Institute for Economic Management (CIEM) of Vietnam[2]. This dataset is a collaboration of CIEM with two other institutions, namely the Institute of Labour Science and Affairs of Vietnam (ILSAA), and the Development Economics Research Group (DERG) of Copenhagen University.

The SME survey covers information on several operational aspects of small ventures in Vietnam, mostly household businesses, including their production, sales structure, investment, and employment. Besides covering venture information, the household characteristics of the owner-managers and their social network information are also extensively surveyed. The first investigation was conducted in 2005 since when it has been carried out every two years. Approximately 2,800 small businesses in 10 provinces across Vietnam are randomly selected to participate in the project. In this study, the authors employ the dataset over a 9-year period, from 2005 to 2013 (5 surveys in total).[3] In cleaning the data, firms with no identification code and unmeaningful accounting information were dropped. Moreover, the outliers are controlled for by censoring the top and bottom 1% of observations in each variable, leaving a final sample of 9,579 firm-year observations in the regression.

Variables and summary statistics

The primary dependent variable in this study is investment decision measured by investment rate. The higher the investment rate, the more business opportunities that are successfully finalised into investment projects and vice versa. Specifically, *Investment rate* in this study is the ratio of a firm's investment value to its total capital over a period of two years (due to the survey settings). This investment variable is, because of the nature of the survey, slightly different from the conventional measures employed in previous studies and arguably could better capture entrepreneurial investment decisions. First, unlike previous studies, which assign firm investment as the difference between the fixed asset values across two consecutive periods, the

[2] http://ciem.org.vn/danh-muc-nghien-cuu-du-an/2511

[3] In fact, the dataset is available to 2015 at the time this paper is written. However, the 2015 dataset does not have firm ID and therefore cannot be matched with the previous years.

SME survey directly asks entrepreneurs to report the values of investment that they made in their businesses. Second, the investment variable in this study captures not only fixed asset investment but also investment in research and development, human capital upgrading (training), patents, and additional working capital. The authors suggest that an investment decision, whether in fixed or intangible assets, is a result of the process of deliberately identifying, evaluating, and finalising business opportunities (Ding et al., 2013). Therefore, the investment variable constructed in this study is expected to thoroughly reflect the investment decisions of entrepreneurs.

The independent variable of interest in this study is start-up experience, which is measured using a set of variables: the first is a dummy variable to indicate whether an entrepreneur has previous entrepreneurial experience or not. Specifically, *Start-up before* takes value 0 if the current venture is the entrepreneur's first start-up venture, and 1 if it is not the first. While the authors propose that there is a difference in investment decision-making between experienced entrepreneurs and novice entrepreneurs, they also argue that start-up experience is a one-off gain since individuals with more than one prior start-up may not have gained more knowledge than individuals with just one. To addess this proposition, three additional variables are employed. The first is *Start-up experience* – a categorical variable, which takes value 0 for novice entrepreneurs, value 1 for entrepreneurs with one start-up, and value 2 for entrepreneurs with more than 1 start-up. The second variable is *More than one start-up*, which takes value 0 if an entrepreneur has only one start-up prior to the current one, and 1 if she has more than one. The third variable is *Number of start-ups*, which is a count variable of the numbers of start-ups an entrepreneur had before taking on the current venture.

The model also controls for covariates that may influence investment decisions. At the venture level it includes conventional variables such as firm age, firm size, operating industry, and types of ownership. These variables represent the firm-specific and industry-specific characteristics that significantly determine the rate, value, and frequency of investment (Valliere and Peterson, 2009; Zhou, 2017). In addition, the level of investment may depend on the degree of access to external finance, including bank loans. Firms

that obtain insufficient external finance (i.e., financially constrained firms) have, *ceteris paribus*, fewer available capital resources to invest in comparison to firms that have full access to external finance (Guariglia and Liu, 2014). Two variables are employed to address this issue: *Liability*, which is the ratio of a firm's total liability over its total capital; and *Bank loans*, a dummy variable that takes value 1 if a firm borrowed from a bank during the previous period and value 0 it did not.

At the individual level, the study includes entrepreneurs' gender and ethnic backgrounds as variables. These individual-specific factors play an essential role in reinvestment decisions because they indicate the knowledge and experience of entrepreneurs, which may markedly influence their ability to recognise and evaluate business opportunities (Tran and Santarelli, 2014). Moreover, individuals' previous work experience may also affect their ability to recognise business opportunities (Ulvenblad et al., 2013). Therefore, the model controls for entrepreneur employment experience, which is measured by a set of mutually exclusive dummy variables. Entrepreneurs can select one of six options that best describes their previous main work status. These options are state enterprise (1), non-state enterprise (2), self-employed in the manufacturing/construction industries (3), self-employed in the trade/services industries (4), collective farm (5), and other (6). The definition and summary statistics of these variables are presented in Table 1.

To control for regional time-invariant factors that may influence local firm investment, a set of 63 province dummies are included in the model. Finally, the authors notice that some entrepreneurs may make investment because of the available industry-specific and business-cycle-specific opportunities. As such and following Ding et al. (2013) and Guariglia et al. (2011), the model includes a set of the interaction terms between industry dummies and year dummies, on top of the individual dummies. This method is intended to control for industry-level time-variant fluctuations over a year, this being a good proxy for business opportunities.[4]

[4] Regression results with conventional industry and year dummies (without their interaction terms) remain robust.

<Table 1 inserts here>

Table 1 shows that, on average, entrepreneurs make investments equivalent to 10% of total capital in each period. The average firm is more than 14 years old but with only around 16 employees. These statistics are consistent with the structure of the dataset in which household businesses account for 66% of the total sample. Regarding employment experience, 50% of entrepreneurs worked in either state-owned or non-state-owned companies while 26% had been self-employed before the current venture. For start-up experience, 3% of total sampled entrepreneurs have prior start-ups, and only 1% have been involved in more than one previous start-up. The pairwise correlation matrix of key variables is presented in Appendix A.

Empirical specification and estimation

Following the entrepreneurship literature (Audretsch and Elston, 2002; Zhou, 2013), the authors propose the following reduced-form investment equation:

$$(\mathbf{1})\ Investment_{igt} = \beta_0 + \beta_1\left(Firm\ controls_{igt}\right) + \beta_2\left(Owner\ controls_{igt}\right) + \beta_3\left(Start\ up\ before_{igt}\right) + \beta_4\left(More\ than\ one\ start\ up_{igt}\right) + \beta_5\left(Number\ of\ start\ ups_{igt}\right) + \beta_6\left(Start\ up\ experience_{igt}\right) + v_i + v_t + v_{jt} + v_g + \mu_{it}$$

where i denotes an individual venture, g is the province, and t a year. Thus, $(Investment_{igt})$ is the investment rate of firm i in province g in year t. The term $\left(Firm\ controls_{igt}\right)$ is a column vector of the following variables: firm age, firm labour size, liability ratio, the status of using bank loans, and seven types

of ownership[5]. $(Owner\ control_{igt})$ incorporates entrepreneur gender and ethnic dummies. The term $(Start\ up\ before_{igt})$ is a dummy variable that takes value 1 if entrepreneurs have at least one prior start-up, and value 0 if entrepreneurs are novices. $(More\ than\ one\ start\ up_{igt})$ is a dummy variable taking value 1 if entrepreneurs have more than one prior start-up, and value 0 otherwise. The term $(Number\ of\ start\ ups_{igt})$ is the number of prior start-ups an entrepreneur has had. Finally, $(Start\ up\ experience_{igt})$ is a categorical variable, which takes value 0 for novice entrepreneurs (starting up for the first time), value 1 for entrepreneurs with one previous start-up, and value 2 for entrepreneurs with more than one prior start-up (value 1 is used as the benchmark).

The investment function also includes a time-specific component v_t, accounting for macro-business cycle effects, and an industry-specific time-specific component v_{jt}, which accounts for industry-specific business cycle effects. These effects are controlled by the corresponding dummy variables and their interaction terms. Firm-specific time-invariant characteristics are captured by v_i, with region-specific time-invariant characteristics being captured by v_g. This study controls for these components by estimating the equation using a fixed effect technique that accounts for the multi-level clustered structure of the observations.[6] Finally, μ_{it} is the idiosyncratic component of the error.

Empirical Results and Robustness Test

Empirical Results

Table 2 presents the regression results. Column 1 only includes control variables. Columns 2 to 4 include three start-up experience variables. Column 5 is a lump-sum specification for robustness checking. Lastly, column 6 compares the three levels of start-up experience, with entrepreneurs with a single prior start-up being the benchmark.

[5] Refer to Table 1 for detailed summary of the 7 types of ownership.
[6] The *reghdfe* program in Stata which sets to absorb both firm ID cluster and province ID cluster.

<Table 2 inserts here>

Since the performance of all variables remains robust for all specifications, the authors take the coefficients of the lump-sum specification in column 5, which includes all variables, as a representative for interpretation. The coefficients associated with start-up experience are positive and statistically significant, indicating the importance of entrepreneurial experience to the process of recognising, evaluating, and realising business opportunities in the current venture. Regarding economic size, entrepreneurs with start-up experience invest, on average, 3.2% of total capital more than novice entrepreneurs. This result lends support to the hypothesis H1, which is further confirmed by the results in columns 6, showing that novice entrepreneurs invest less than entrepreneurs with one previous start-up.

The two variables associated with more than one start-up experience are statistically insignificant. Thus, there is no statistical difference between the investment values of entrepreneurs with one previous start-up versus those with more than one, indicating statistically that entrepreneurs with more than one start-up experience do not make more investment than their less experienced counterparts. As such, hypothesis H2 is fully supported: start-up experience is a one-time gain.

Regarding the control variables, the coefficients associated with firm size are positive and statistically significant, indicating that large firms, on average, make more investment than small firms. Interestingly, the coefficients associated with bank loans are negative, showing that the more bank loans firms obtain, the less investment they make, which may reveal that obtaining bank loans may restrain small businesses from making (risky) investments (Nguyen, 2018). Investment projects put forward by small firms are relatively risky and typically require long-term debt; from a bank's viewpoint, they may well appear to be unsafe investment vehicles (Zhou, 2012). Further, the coefficients loaded on the year dummies are all negative and statistically significant. This finding may signal that investments made by small businesses in Vietnam are

losing momentum, probably because the institutional systems have failed to keep up with the recent developments in the private sector (Nguyen et al., 2018).

Robustness test

General Method of Moment

Even though the fixed effect estimator could, to some extent, deal with unobservable heterogeneity and potential endogeneity in the model, this study also employs the first-difference system General Method of Moments (GMM) (Arellano and Bond, 1991) to ensure the robustness of the results. Specifically, GMM uses a first-difference method to control for firm-specific time-invariant effects. Moreover, lagged values of potentially endogenous variables are used as instruments to control for potential endogeneity. Following the literature, the authors suspect that investment may have a reverse effect on the three explanatory variables including Previous start-up, More than one previous start-up, and Number of start-ups, as well as firm size (Bond and Meghir, 1994; Guariglia and Liu, 2014). As such, the lagged 1- to 4-period values of these variables are used as their instruments. The validity of the instruments is examined by two tests: the Hansen (J) Test for over-identifying restrictions, and the serial correlation test AR(2) in the differenced residuals. The regression results are presented in Table 3.

<Table 3 inserts here>

The AR(2) suggests there is no serious issue with autocorrelation. However, the Hansen (J) test poses a concern about the validity of the lagged instruments. The authors have tried the deepest lags, but the cost of irrelevance (in that the deeper the lags, the less relevant they are to the endogenous variables) is higher than the benefits of validity (the instruments remain correlated with the error terms). Blundell and Bond (1998) and Benito (2005) show that when samples with a very large cross-sectional dimension are used in

estimation, it tends to over-reject the null hypothesis of instrument validity.[7] Given the size of the panel, the authors are inclined to pay scant attention to the J test.

The regression results using GMM are consistent with the results using fixed estimation. The key argument that entrepreneurial experience, though important, is a one-time advantage remains fully supported.

Coarsened Exact Matching

In addition to the regression technique, this study also employs the score matching approach to explicitly deal with the selection bias issues in the data. The observations in the control group (novice entrepreneurs) may differ from the observations in the treatment groups (entrepreneurs with prior start-up experience) in terms of factors such as firm characteristics other than the treatment effect (start-up experience). If the entrepreneurial decision to undertake another start-up depends on a factor such as firm characteristics, then a pairwise comparison of the average investment between novice entrepreneurs and experienced entrepreneurs reflects a combination of the average causal effect and the effect of selection bias (Abadie and Imbens, 2011).

To reduce the influence of selection bias, the authors employ the coarsened exact matching technique (CEM), which assigns each observation a bin signature depending on the covariates. Specifically, an observation is represented by properties coarsened to discrete values using a coarsening or binning strategy. Thus, each member is given a bin signature that will be used to match with other members with the same bin signature (Iacus et al., 2012). Then the CEM weights obtained from matching will be used to correct for selection bias.

The authors assigned a bin signature to every entrepreneur using a set of covariates that relate to their decision to (re-)start new ventures or not. These covariates are classified into four groups. The first group indicates the ease of access to local transportation infrastructure, be it road, rail links, or a port. The easier

[7] Significant J test statistics can be found in estimation results Nickell and Nicolitsas (1999); Benito (2005); Benito and Hernando (2007); Greenaway et al. (2007); and Chen and Guariglia (2013).

it is to access the local transportation infrastructure, the more likely it is that entrepreneurs will decide to start business ventures again (Yeung, 2007).

The second group of covariates is related to the importance of the venture to the entrepreneur and this is captured by two questions: 'How many income generating jobs do you currently have?' and 'Is the firm the main source of income for your household?'. If an entrepreneur has several employment jobs, and if the current business is not the main source of household income, it is less likely that she will continue down the road of entrepreneurship by starting another business venture. This is known as the opportunity cost of entrepreneurship (Cassar (2006).

The third group of covariates is the entrepreneurs' individual backgrounds, including their ethnicity and levels of education. It is well-documented that entrepreneurs who are female, or members of minor ethnic groups, or less educated are less likely to be habitual entrepreneurs (Levie, 2007; Zelekha, 2013).

The last group of covariates includes variables relating to the characteristics of the venture, including its operational capacity (whether it is operating at maximum capacity), and the use of e-trading. Entrepreneurs running firms with full capacity and/or using an e-trading platform to do business are more able or likely to take the additional risk of launching another start-up.

The average treatment effects are reported in Table 4. The results show that there is a statistical difference in the investment value made by novice entrepreneurs and entrepreneurs with one start-up experience. However, the number of start-ups does not determine the level of investment. In other words, investment is not a linear function of start-up experience.

<Table 4 inserts here>

Discussion

This study investigates the impact of entrepreneurial experience on the post-establishment investments of entrepreneurial ventures. The authors consider the investment decision to be an outcome of the process of identifying, evaluating, and realising business opportunities. Following Ardichvili et al. (2003), they argue that while elements of opportunities may be recognised, opportunities are made rather than found. Thus, this study holds a sharply distinct theoretical viewpoint in comparison to the conventional literature that focuses on the factors that affect opportunity recognition. This study extends the literature by proposing a three-step process of opportunity recognition, evaluation, and realisation. Specifically, it suggests that the opportunities that fail to materialise into investment projects are merely elements of opportunities. This theoretical argument is consistent with the early literature that affirms that entrepreneurship is not only about innovation but also relates to risk-taking, financing, and fundraising activities (Baumol, 1968).

The authors show that the three-step model is informative in accounting for firm investment heterogeneity. One implication of the model is its explanation of the effects of entrepreneurial experience on investment decisions. At each step of the process (namely recognising, evaluating, and realising), entrepreneurs need different sets of knowledge and skills. If their experience does not provide the necessary knowledge for accomplishing a particular step, that experience cannot move the opportunity onto the next step. For example, employment experience may provide knowledge that is useful for identifying business opportunities, but it does not provide sufficient relevant knowledge for the entrepreneur to be able to realise the opportunities (i.e., to make investment decisions). As such, employment experience cannot transform opportunities into final investment projects.

Although employment experience is not relevant to entrepreneurial investments, entrepreneurial experience is very much so, as is highlighted by this paper. An adequate level of entrepreneurial experience is of help in recognising business opportunities and increasing the chances of successfully transforming opportunities into investment projects. However, too much entrepreneurial experience may hobble investment decisions. Entrepreneurs with more than one prior start-up are keen to institutionalise their entrepreneurial activities. In other words, their cognitive schemas are highly constrained within the knowledge gained from their

previous ventures. This largely reduces the active domains in which they can explore new information, reducing the likelihood of their recognising and realising business opportunities.

By integrating a novel framework of investment process into the theory of entrepreneurial learning, the authors are able to highlight two issues that are being intensively discussed in the current entrepreneurship literature. First, entrepreneurship does not stop once individuals have established their new ventures (Baumol and Strom, 2007). While a large body of literature examines entrepreneurship in the contexts of nascent ventures, self-employment, and the intentions of venturing, insufficient attention is paid to post-establishment entrepreneurial activities. It is essential for household businesses and small firms to continue making investments in order to ensure that their ventures survive and grow (Werthes et al., 2018). Hence, understanding the determinants of post-establishment investment decisions is at least as important as understanding the factors that prompt an individual to engage in venturing activities in the first place, if not more so.

Second, entrepreneurial experience has a non-linear effect on the process of realising business opportunities. Cassar (2014) emphasises the importance of industry experience over start-up experience. The authors of this study, however, submit that entrepreneurial experience has a specific effect on investment. The key point to understand is that it is a one-off dividend. Too much entrepreneurial experience may turn out to be a dangerous thing if it limits the entrepreneur's ability to recognise new opportunities.

Besides these theoretical contributions, the findings in this study also have several implications for entrepreneurs and policymakers. Entrepreneurs will benefit from understanding that experience is not only important for new idea generation but is also key to opportunity realisation. Therefore, active learning would allow entrepreneurs to detect the meaningful patterns that are a crucial component of opportunity recognition ability (Baron and Ensley, 2006). Specifically, the empirical results show that start-up experience is crucial to investment decisions. However, it is noteworthy that serial entrepreneurs may not enjoy an advantage boost when compared to entrepreneurs with only one prior venturing experience. This

study suggests that entrepreneurs should focus on improving their knowledge related to the current venture in order to realise more business opportunities.

Regarding policymaking, this study finds that start-up experience is associated with an increase in the investment rate, indicating that local authorities should lower the costs of venturing activities in order to enhance entrepreneurial investments. Methods of lowering the entrance costs for start-ups include easing business registration procedures, introducing subsidy schemes for nascent ventures, and offering a more entrepreneurship-friendly institutional environment. Entrepreneurs who have grown with their venturing activities have more chances of recognising the meaningful patterns that lead to success.

This study has some limitations that future research may want to address. First, it is a country-specific study that requires reiteration in other contexts to confirm its generalisability. Second, the proportion of experienced entrepreneurs in the sample is relatively small, being only 3% of the total surveyed entrepreneurs. This small sample may create a bias in estimation. As such, the findings in this study should be interpreted with care.

Conclusion

Using a sample of more than 9,500 small business observations in Vietnam from 2005 to 2013, this study analyses the role of entrepreneurial experience on small firm investments. It proposes that investment decisions are the outcome of a process that starts with an entrepreneur recognising opportunities, evaluating them, and finalising them into investment projects. This paper suggests that, supplementary to this framework, entrepreneurial experience is an important determinant of investment decisions. The key argument is that adequate prior start-up experience may equip entrepreneurs with the relevant knowledge and skills required to identify and realise business opportunities in their current ventures. However, too much entrepreneurial experience may exert a negative effect on investments because it makes entrepreneurs overly reliant on successful recipes and well set-up routines, which largely reduce the chances of identifying new opportunities.

Tables and Figures

Table 1: Variable Definition and Summary Statistics

Variable	Definition	Mean	SD	Min	Max
Investment	Firm investment as a ratio of total capital in a survey period (two years)	0.103	0.204	0	1.225
Firm size	Natural log of the number of employees (report here the number of employees)	16.524	29.891	1	198
Firm age	Firm age since establishment	14.632	10.062	3	56
Bank loans	Takes value 1 if a firm takes out bank loans in the previous period (the last 2 years), 0 otherwise	0.663	0.465	0	1
Entrepreneur gender	Takes value 1 for male, and 0 for female	0.648	0.482	0	1
Form of ownership					
Household business	Takes value 1 for household business, and 0 otherwise	0.662	0.474	0	1
Sole proprietorship	Takes value 1 for sole proprietorship business, and 0 otherwise	0.079	0.276	0	1
Partnership	Takes value 1 for partnership business, and 0 otherwise	0.001	0.052	0	1
Cooperative	Takes value 1 for cooperative business, and 0 otherwise	0.026	0.169	0	1
Limited Liability Company (LLC)	Take values 1 for LLC, and 0 otherwise	0.194	0.386	0	1
Joint stock company (JSC)	Take values 1 for JSC, and 0 otherwise	0.034	0.174	0	1
Joint venture with foreign capital	Takes value 1 for joint venture with foreign capital business, and 0 otherwise	0.004	0.013	0	1
Entrepreneur ethnicity					
Kinh Ethnic	Takes value 1 for “Kinh” ethnic (the largest ethnic population in Vietnam), 0 otherwise	0.932	0.248	0	1
Hoa Ethnic	Takes value 1 for “Hoa” ethnic (the second largest ethnic population in Vietnam), 0 otherwise	0.054	0.242	0	1
Other minor Ethics	Takes value 1 for all minor ethnics, 0 otherwise	0.014	0.061	0	1
Entrepreneur Previous employment					

State enterprise	Takes value 1 if the main previous employment of an entrepreneur was a state-enterprise, and 0 otherwise	0.247	0.431	0	1
Non-state enterprise	Takes value 1 if the main previous employment of an entrepreneur was a non-state enterprise, and 0 otherwise	0.252	0.428	0	1
Self-employed Manufacturing/construction	Takes value 1 if the main previous employment of an entrepreneur was self-employed in the manufacturing or construction industries, and 0 otherwise	0.091	0.284	0	1
Self-employed Trade/services	Takes value 1 if the main previous employment of an entrepreneur was self-employed in the trading or service industries, and 0 otherwise	0.162	0.377	0	1
Collective farm	Takes value 1 if the main previous employment of an entrepreneur was in a collective farm, and 0 otherwise	0.121	0.336	0	1
Other	Takes value 1 if the main previous employment of an entrepreneur was not in any of the above-described items, and 0 otherwise	0.127	0.322	0	1
Start-up experience					
Start-up before	Takes value 1 if an entrepreneur has at least one prior start-up, 0 otherwise	0.033	0.174	0	1
More than one start-ups	Takes value 1 if an entrepreneur has more than one prior start-up, 0 otherwise	0.012	0.109	0	1
Start-up experience	A category variable, which takes value 0 for novice entrepreneurs, value 1 for entrepreneurs with one previous start-up, and 2 for entrepreneurs with more than one previous start-up	0.032	0.192	0	2
Number of start-ups	The number of start-ups	0.023	0.168	0	4

Note: The statistics are provided for 9,579 firm-year observations from 2005 to 2013. The data source is the SME dataset published by the Central Institute for Economic Management (CIEM) of Vietnam.

Table 2: Regression Results Using FE

	(1)	(2)	(3)	(4)	(5)	(6)
Start-up before		0.034**			0.032**	
		(0.015)			(0.015)	
More than one start-ups			0.032		0.030	
			(0.023)		(0.049)	
Number of start-ups				0.020	-0.004	
				(0.014)	(0.030)	
Novice entrepreneurs						-0.028*
						(0.017)
Entrepreneurs with more than one start-up						0.056
						(0.059)
Firm age	0.000	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Firm size	0.013***	0.014**	0.014***	0.014***	0.014**	0.005
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.006)
Owner gender	-0.000	-0.000	-0.000	-0.000	-0.001	0.003
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.010)
Hoa ethnic	0.001	0.001	0.000	0.000	0.001	0.0172
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)	(0.025)
Minor ethnic	-0.030	-0.031	-0.031	-0.030	-0.030	-0.029
	(0.033)	(0.033)	(0.033)	(0.032)	(0.032)	(0.041)
Access to bank loans	-0.105***	-0.105***	-0.105***	-0.106***	-0.105***	-0.100***
	(0.006)	(0.006)	(0.005)	(0.006)	(0.006)	(0.007)
2007 year	-0.094***	-0.094***	-0.0944***	-0.094***	-0.094***	-0.084***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
2009 year	-0.0320***	-0.031***	-0.032***	-0.032***	-0.032***	-0.024***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.007)
2011 year	-0.053***	-0.052***	-0.053***	-0.053***	-0.052***	-0.046***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.007)
2013 year	-0.058***	-0.057***	-0.058***	-0.058***	-0.058***	-0.051***
	(0.006)	(0.006)	(0.006)	(0.007)	(0.007)	(0.007)
Observations	9,579	9,579	9,579	9,579	9,579	9,579
R-squared	0.447	0.447	0.447	0.447	0.447	0.483

Note: The dependent variable is firm investments as a ratio of total capital. The estimator is fixed (*reghdfe* in Stata), clustering both firm ID and province ID. A set of 7 types of ownership, 6 types of entrepreneurs' previous employment, and the interaction terms between year dummies and 2-digit industry dummies are included. In column (6), the categorical variable 'start-up experience' is employed as the independent variable. The benchmark is 'entrepreneurs with only one start-up before' (the subset of observations that take value 1 in 'start-up experience'). The variable 'Novice entrepreneurs' is the subset of observations that take value 0 in 'start-up experience'. And the variable 'entrepreneurs with more than one start-up' is the subset of observations that take value 2 in 'start-up experience'. Standard errors and test statistics are asymptotically robust to heteroskedasticity. * indicates 10% significant level; ** indicates 5% significant level; *** indicates 1% significant level.

Table 3: Regression Results Using GMM

	(1)	(2)	(3)	(4)	(5)	(6)
Start-up before		0.056***			0.054***	
		(0.019)			(0.019)	
More than one start-ups			0.028		0.016	
			(0.027)		(0.050)	
Number of start-ups				0.023	0.006	
				(0.019)	(0.037)	
Novice entrepreneurs						-0.044**
						(0.021)
Entrepreneurs with more than one start-up						0.063
						(0.077)
Firm age	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Firm size	0.037***	0.037***	0.038***	0.038***	0.038***	0.025***
	(0.008)	(0.008)	(0.008)	(0.008)	(0.007)	(0.008)
Owner gender	0.001	-0.000	0.001	0.001	-0.000	0.001
	(0.005)	(0.004)	(0.005)	(0.005)	(0.004)	(0.005)
Hoa ethnic	-0.024***	-0.024***	-0.024***	-0.024***	-0.024***	-0.020**
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)	(0.010)
Minor ethnic	-0.013	-0.017	-0.013	-0.013	-0.016	-0.021
	(0.030)	(0.030)	(0.030)	(0.030)	(0.030)	(0.032)
Access to bank loans	-0.104***	-0.103***	-0.104***	-0.104***	-0.104***	-0.098***
	(0.007)	(0.008)	(0.007)	(0.007)	(0.008)	(0.008)
2007 year	-0.091***	-0.090***	-0.091***	-0.091***	-0.090***	-0.084***

	(0.005)	(0.005)	(0.006)	(0.006)	(0.005)	(0.006)
2009 year	-0.028***	-0.027***	-0.028***	-0.028***	-0.028***	-0.019***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.007)
2011 year	-0.049***	-0.048***	-0.049***	-0.049***	-0.048***	-0.043***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
2013 year	-0.045***	-0.044***	-0.044***	-0.044***	-0.043***	-0.039***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.007)	(0.007)
Hansen (J)	0.042	0.025	0.044	0.034	0.047	0.121
AR(2)	0.242	0.255	0.186	0.247	0.194	0.222
Observations	9,579	9,579	9,579	9,579	9,579	9,579

Note: The dependent variable is firm investments as a ratio of total capital. The estimator is SGMM (*xtabond2* in Stata). The variables that suffer from potential endogeneity are including firm size and the three experience variables; they are instrumented by their lagged values. Specifically, the instruments for difference equation are lagged 2- to 4-year level variables. The instruments for level equation are the differences of variables from 1- to 4-year lags. AR(2) is the autocorrelation test under the null that there is no autocorrelation in the transformed equations. Hansen (J) is the over-identification test for the validity of the instruments, under the null that the instruments are valid and there are no misspecifications. A set of 7 types of ownership, 6 types of entrepreneurs' previous employment, and the interaction terms between year dummies and 2-digit industry dummies are included. In column (6), the categorical variable 'start-up experience' is employed as the independent variable. The benchmark is 'entrepreneurs with only one start-up before' (the subset of observations that take value 1 in 'start-up experience'). The variable 'Novice entrepreneurs' is the subset of observations that take value 0 in 'start-up experience'. And the variable 'entrepreneurs with more than one start-up' is the subset of observations that take value 2 in 'start-up experience'. Standard errors and test statistics are asymptotically robust to heteroskedasticity. * indicates 10% significant level; ** indicates 5% significant level; *** indicates 1% significant level.

Table 4: Average Treatment Effects Using Coarsened Exact Matching

	(1)	**(2)**	**(3)**
Start-up before	0.025*		
Control: novice entrepreneurs	(0.013)		
*Treatmen*t: entrepreneur with start-up experience			
Start-up experience (1)	0.029**		
Control: entrepreneurs with no previous start-up	(0.013)		
Treatment: entrepreneurs with one previous start-up			
Start-up experience (2)		0.206	
Control: entrepreneurs with one previous start-up		(0.108)	
Treatment: entrepreneurs with more than one previous start-up			

More than one start-up	0.019
Control: novice entrepreneurs and entrepreneurs with one previous start-up	(0.071)
Treatment: entrepreneurs with more than one previous start-up	

Note: The estimation method of the average treatment effect is the coarsened exact matching (CEM). The variable 'start-up before' takes value 1 if an entrepreneur has at least one prior start-up, 0 otherwise. As such, the control group 'novice entrepreneurs' is the subset of observations that take value 0, and the treatment group 'entrepreneur with start-up experience' is the subset of observations that take value 1. The variable 'start-up experience' is a categorical variable, which takes value 0 for novice entrepreneurs, value 1 for entrepreneurs with one previous start-up, and 2 for entrepreneurs with more than one previous start-up. As such, in 'start-up experience (1)' the control group 'entrepreneurs with no previous start-up' is the subset of observations that take value 0, and the treatment group 'entrepreneurs with one previous start-up' is the subset of observations that take value 1. Similarly, in 'start-up experience (2) ' the control group 'entrepreneurs with one previous start-up' is the subset of observations that take value 1, and the treatment group 'entrepreneurs with more than one previous start-up' is the subset of observations that take value 2. The variable 'more than one start-up' takes value 1 if an entrepreneur has more than one prior start-up, 0 otherwise. As such, the control group 'novice entrepreneurs and entrepreneurs with one previous start-up' is the subset of observations that take value 0, and the treatment group 'entrepreneurs with more than one previous start-up' is the subset of observations that take value 1. The CEM weights are calculated using the control variables and a set of instrumental variables including the access to roads, railways, and ports of the business location, the number of income-generating jobs of the entrepreneurs, whether the firm is the main source of their income, the ethnic background, level of education, production capacity, and the use of e-trading in doing business.

Appendix A: Correlation Matrix of Key Variables

	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
Investment (1)								
Firm age (2)	-0.138							
Firm size (3)	0.205	-0.155						
Owner gender (4)	0.012[#]	0.032	-0.041					
Start-up before (5)	0.066	-0.059	0.064	0.055				
More than one start-up (6)	0.032	-0.025[#]	0.045	0.032	0.167			
Number of start-up (7)	0.034	-0.024	0.059	0.031	0.195	0.891		
Access to bank loans (8)	-0.334	0.093	-0.307	0.008	-0.041	-0.025	-0.023[#]	

Note: [#] indicates *non*-significant at 1%. Investment is a ratio of firm investment value over total capital in a survey period (two years). Firm size is natural log of the number of employees. Firm age is the number of years since establishment. Owner gender is a dummy variable, which takes value 1 for male, and 0 for female. Start-up before is a dummy variable, which takes value 1 if an entrepreneur has at least one prior start-up, 0 otherwise. More than one start-up is a dummy variable, which takes value 1 if an entrepreneur has more than one prior start-up, 0 otherwise. Number of start-up is a count variable of the number of start-ups that an entrepreneur has. Access to bank loans is a dummy variable, which takes value 1 if a firm takes out bank loans in the previous period (the last 2 years), 0 otherwise.

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