Drivers of growth expectations in Latin American rural contexts

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Abstract

Purpose – Given the importance of growth-oriented entrepreneurship in the context of economic development and the need to understand how rural communities can be developed, the objective of this research is to determine how the drivers of growth expectations differ between urban and rural settings.

Design/methodology/approach – The methodology is threefold: first, a descriptive analysis with nonparametric testing is conducted, then pooled OLS is used to analyse the predictors of growth expectations in both contexts, and finally, coarsened exact matching is used to identify possible self-selection bias.

Findings – In contrast to mainstream entrepreneurship theory, it is found that entrepreneurs' intrinsic knowledge, skills, and abilities (KSAs) are not significant in the rural-specific model. The only exception is entrepreneurs' educational level, the importance of which is emphasised as a pivotal factor in increasing high-growth ventures in rural communities. Additionally, when self-selection is eliminated, rurality worsens growth intentions.

Originality – This research attempts to contribute to the ongoing debate regarding the factors that drive high-growth entrepreneurs in rural areas by analysing rural entrepreneurs in the high-growth context of a developing economy. The focus is on Chile—a country that is rarely investigated compared to the U.S. or Europe—to extend the literature on high-growth ventures and entrepreneurial ecosystems.

Practical implications – There is evidence that some growth-oriented entrepreneurs self-select into rural communities. Because the high-growth entrepreneurial dynamics in rural areas are unique, public policies should target purpose-driven entrepreneurial education. This includes encouraging "lifestyle entrepreneurship" (e.g., retirees returning to rural areas to become entrepreneurs), preventing entrepreneurial brain drain in rural areas, and attracting highly educated urban entrepreneurs to exploit opportunities in rural areas.

Keywords: Rural entrepreneurship, high-growth entrepreneurs, entrepreneurial ecosystem, Chile

1. Introduction

The dynamics between rural and urban business creation rates have been studied from different perspectives, such as those of self-employment with business creation and innovation (Faggio and Silva, 2014), spatial-temporal dynamics (Espinoza *et al.*, 2019; Oyarzo *et al.*, 2020), and business performance (Phillipson *et al.*, 2019). However, an overlooked approach to rural business has been "high-growth entrepreneurship (HGE)": businesses with 20% annual growth in employment over three years (Audretsch, 2012). This group represents only a small proportion of all business activity, yet evidence shows that it accounts for up to 80% of new job creation (Audretsch, 2012; Autio, 2005), with entrepreneurs being a stronger determinant of national economic growth than entrepreneurial activity in general (Stam and van Stel, 2009). Given the lack of analysis within the rural context, it is relevant to study rural entrepreneurs under the high-growth paradigm.

In characterisations of rural entrepreneurship, rurality refers to a territorial dimension that entails specific physical, social and economic characteristics different from those related to entrepreneurs of urban origin (OECD, 2006). Location, natural resources, social capital, business networks, and technology exert complex, dynamic influences on entrepreneurial activity (Hauser, 2000). However, the current literature is mainly based on developed countries, such as the United States (Hunt *et al.*, 2021; Lamb and Sherman, 2010; McGranahan *et al.*, 2011) or European countries (Bosma and Sternberg, 2014; Bosworth, 2012; Pato and Teixeira, 2016), while developing regions—such as Latin America—have received little attention. In South America, rurality has unique conditions that make this region an ideal candidate for a comparison study (Aguinis *et al.*, 2020): not only may this region feature contrasts between urban and rural settings that are starker than those observed in previous studies, but it is also characterised by a plethora of indigenous communities, a lack of facilities and urbanisation, high levels of poverty, and one of the most complex and diverse biospheres on the planet (Macpherson *et al.*, 2021).

Our method is threefold and sequential: first, an analysis of descriptive statistics is used to identify the core differences between rural and urban entrepreneurs; a pooled OLS is used to empirically test the high growth model in both contexts; and a nonparametric matching method (coarsened exact matching, or CEM) is used to match the individuals in the sample who live in rural areas with individuals who feature similar characteristics but are from cities. This approach permits the

control of possible self-selection bias. The main empirical results can be summarised as follows. First, as theorised in the high growth model, export orientation, opportunity motivation, risk tolerance, networking, self-efficacy, and education are urban-specific entrepreneurial growth-expectation drivers. However, in contrast to mainstream entrepreneurship theory, entrepreneurs' intrinsic KSAs are not all found to be significant in the rural-specific model. The significance and higher value of education coefficient in the rural model imply that educational level represents the most significant driver of growth in rural areas. Second, as expected, the employed matching techniques reveal that urban entrepreneurs exhibit better growth expectations than their rural counterparts. Third, when self-selection into rurality is controlled, the negative effect of rurality on growth expectations diminishes. One possible explanation for this phenomenon is that some "good quality" entrepreneurs self-select into rural regions. This interesting result offers some clues on the promotion of growth-oriented business in rural contexts through a focus on promoting the migration of high-quality human capital into rural communities.

These results support the current literature proposing that the high-growth paradigm does not apply in rural settings (Muñoz and Kimmitt, 2019), reinforcing the relevance of the ecosystem framework for rural and small cities (Kuckertz, 2019; Roundy, 2017; Roundy and Bayer, 2019; Villegas-Mateos, 2020). As such, it is believed that the support of "entrepreneurial activity" (the creation and pursuit of innovative opportunities to produce value) does not occur in a vacuum and is influenced by "*an interconnected set of forces that exist outside the entrepreneur*" (Roundy and Bayer 2019: 552). Furthermore, the entrepreneurial ecosystem concept emphasises that entrepreneurship occurs in a community of interdependent actors (Stam 2015: 1761). It consists of a set of individual elements—such as leadership, culture, capital markets, and open-minded customers—that come together in complex ways (Isenberg 2010: 3). In line with the notion of small-town entrepreneurial ecosystems introduced by Roundy (2017: 241) *("a community of individual and institutional agents located in a city of limited reach, scope, or size whose interactions result in a structure within which new ventures form and dissolve over time")*, this research contributes to the literature on rural entrepreneurial ecosystems by addressing the following question: what are the characteristics of high-growth rural entrepreneurs in Latin America? To the best of our knowledge, the drivers of entrepreneurial growth expectations in the rural areas of Chile, a perfect candidate for this study given the great heterogeneity between its

urban and rural settings (Muñoz, 2017; Muñoz, Kibler, *et al.*, 2020), have never been identified in the literature. These drivers are then compared with their urban counterparts. The empirical evidence, which is based on the HGE model, explicitly extends theories regarding rural entrepreneurship to developing contexts.

Roundy (2017) identified three general strategies that can be used to overcome size and resource limitations: (1) focus on the characteristics that make small entrepreneurial ecosystems different from larger ecosystems, such as lower labour and housing costs; (2) focus on the dense social networks on which such ecosystems are built; and (3) expand the boundaries of these ecosystems beyond the strict geographic borders in which they are located (e.g., by using the notion of rural entrepreneurial ecosystems instead of towns). Therefore, in addition to focusing on the social networks of rural entrepreneurial ecosystems (Roundy, 2017), practitioners who want to encourage entrepreneurial growth in rural settings must emphasise increasing their educational capabilities and continue to focus on opportunity motivation and export orientation. If education is promoted among the people inhabiting rural areas, future work should also consider the human capital migration phenomenon, as young entrepreneurs will leave rural settings in search of places where it is easier to operate businesses.

2. Theoretical framework

2.1 Urban and rural areas in developed economies

Most of the literature on the differences between rurality and urbanity comes from Europe, which is characterised by a uniquely polycentric urban structure with many small- and medium-sized cities. As such, over the last decade, the focus of this literature has been on how the relative concentrations of people and economic growth in the largest cities of many developed European countries have slowed down or even reversed. There are many reasons for this phenomenon, as major improvements in access to services such as internet broadband outside of large cities may have facilitated higher growth and increased the appeal of these areas for residents and firms. Additionally, the negative externalities of large cities, such as congestion costs, pollution, labour crowding, and high cost of living, may also increase the appeal of smaller centres and rural regions (Dijkstra *et al.*, 2013).

Bosworth (2012) defines a rural entrepreneur according to three characteristics: he or she must operate in a rural area, serve a rural population and sell a rural product. According to Korsgaard *et al.* (2015), "entrepreneurship in the rural" refers to entrepreneurial activities with limited embeddedness enacting a profit-oriented and mobile logic of space, whereas "rural entrepreneurship" represents entrepreneurial activities that leverage local resources to reconnect places to spaces. Both contribute to local development, but only the second has the potential for optimising the use of rural resources. In terms of comparing growth between rural communities and cities, two recent studies come to mind. First, Faggio and Silva (2014) studied the link between self-employment and certain salient aspects of entrepreneurship—namely, business creation and innovation—in urban and rural U.K. labour markets. Their findings showed that the incidence of self-employment is positively and strongly correlated with business creation and innovation in urban areas but not in rural areas. Rural workers tend to switch to self-employment in areas with relatively poor labour market opportunities. This suggests that more rural workers than urban workers choose self-employment as a last-resort option due to a lack of better alternatives. On the other hand, urban entrepreneurs are more prone to be motivated by opportunities. Second, Phillipson *et al.* (2019) performed propensity score matching to eliminate the effect of heterogeneous firms and focused on a pure assessment of the impact of rurality on business performance. Their results showed that rural and urban firms share many similar expectations for future growth; however, rural firms are significantly more likely to be exporters of goods and services and to have introduced new or improved goods through their businesses than their urban counterparts. Therefore, export orientation and product innovation are additional indicators of the important contribution that rural firms make to national economies.

2.2 Urban and rural areas in emerging economies

The Latin American region, in general, has been characterised throughout its history by nondynamic, highly regulated, and highly informal labour markets (David *et al.*, 2020), and Chile is no exception, with 30% of its workforce engaged in self-employment or informal work. One of the main drivers of this has been the country's state of institutional fragility, which has positively affected necessity-based entrepreneurial efforts while hindering opportunity-based efforts (Amorós *et al.*, 2019). Nonetheless, the rates of entrepreneurship in Chilean rural areas are high, although presumably of a limited growth potential under current conditions (Modrego and Foster, 2021).

The body of studies on local entrepreneurship rates in developing countries, particularly Chile, is growing but still small. Amorós et al. (2013) showed the differences between the entrepreneurial contexts of core and peripheral regions; Modrego et al. (2014) analysed the relationship between market potential and spatial variations in the number and size of businesses; Modrego et al. (2015) addressed the relationship between entrepreneurship and municipal innovation; and Atienza *et al.* (2016) developed a spatial characterisation of municipal entrepreneurship in Chile by identifying spatial entrepreneurship clusters. Espinoza *et al.* (2019) analysed the spatial dependence among Chilean districts (municipalities) in terms of business start-up rates but did not consider the dynamics of entrepreneurship from a longitudinal perspective. Finally, Oyarzo et al. (2020) extend this, revealing the sticky characteristics of the persistence of growth rates among communities and characterising the diffusion of spatial spillover effects.

2.3 High-growth entrepreneurship and rurality

Since rural entrepreneurship in developing contexts is understudied (Ozgen and Minsky, 2007), a comparison study of this nature with the developed counterparts of such areas could be relevant in terms of assessing the differences between urban and rural settings and gaining new insights into the development of these areas. Studying the factors that generate a thriving entrepreneurial ecosystem, Stam (2015) proposed that entrepreneurs should be the main focus of attention in this context. However, in the more recent literature on rural entrepreneurship, the main focus is on specific rural characteristics (Dabson, 2001; Hauser, 2000; Hunt *et al.*, 2021; Muñoz and Kimmitt, 2019) and not on rural entrepreneurs. This suggests that examining rural entrepreneurs in a developing region in terms of the differences between them and their urban counterparts could contribute to the existing literature. This is particularly useful for practitioners given the potential of entrepreneurship as a tool for generating economic growth and the benefits that rural entrepreneurship provides in less-developed countries (Pato and Teixeira, 2016).

Any path that leads to entrepreneurial activity starts with entrepreneurs, but not just any entrepreneur will do. Scholars have tried to identify “high-growth” entrepreneurs and have used various terms and definitions in doing so. For example, Stam (2015:1759-1760) used the term “ambitious entrepreneurs,” defined as individuals who explore opportunities to discover and

evaluate new goods and services with the aim of exploiting them to create as much value as possible. Similarly, Baumol (1993:30) focused on "productive entrepreneurs," defined as individuals who engage in entrepreneurial activities to contribute directly or indirectly to the economy's net output or capacity to produce additional output. Using Ireland's definition of "high-potential entrepreneurs," Isenberg (2010:6) described these individuals as being export-oriented, innovative, technology-centred and able to generate at least 1 million USD in sales and create ten jobs within three years. In the specific context of Latin America, Lecuna *et al.* (2017) used the term "high-growth entrepreneurs," which refers to individuals who expect to hire at least five employees within five years and are highly educated, export-oriented, and motivated by opportunities. Regardless of the term used, the consensus among entrepreneurship scholars has been to emphasise growth as the crucial indicator of venture success (Baum *et al.*, 2001; Low and MacMillan, 1988). In particular, a focus is generally placed on growth in the number of employees instead of sales. (The specific measurement used in the analyses is defined in the following section as the dependent variable).

High growth entrepreneurship may be the best measure of the quality of entrepreneurship because, while the employment created through entrepreneurial activity can be seen as a societal performance measure, profit is mainly an individual performance measure (Bosma *et al.*, 2004:231). Furthermore, profits are an inaccurate measure in this context because profit may be somewhat misleading in the initial years of a venture since sunk costs often have to be gained back, reducing profits (Bosma *et al.*, 2004:231). High growth entrepreneurship is different from the World Bank's new business entry rate or the total early-stage entrepreneurial activity measurement used by the Global Entrepreneurship Monitor (GEM). This is mainly because the former can be overbooked with tax-avoiding self-employment start-ups with little motivation to grow, whereas the latter includes informal and necessity-driven entrepreneurship (Lecuna *et al.*, 2018:43), which appears to differ little from opportunity-driven entrepreneurial activity, as Shane (2009) noted.

Autio (2005) identified household income, education level, and the entrepreneurship opportunity orientation of entrepreneurs as drivers of high-growth ventures, while Lecuna *et al.* (2017) identified education level, export orientation, and opportunity orientation in a Latin American setting. Indeed, when Latin American rural areas are compared with urban areas, one of the most frequently studied variables is the education level of human capital. There is an extensive body of

literature about rural areas having less access to primary, secondary (Lopez, 2008), and higher education (Ferreyra *et al.*, 2017). Given the lower level of access to education in rural areas and that the best job opportunities are in cities, it can be expected that rural entrepreneurs are less educated. Additionally, education will have a more significant positive impact on rural entrepreneurship than on urban entrepreneurship. This is supported by a vast body of evidence on the positive effect of education on performance and thus growth (Van Der Sluis *et al.*, 2008)

Previous studies have also identified the importance of drivers such as innovation, social capital, institutions (Baumgartner *et al.*, 2013) and financial or technical assistance (Meccheri and Pelloni, 2006). The resources of credit and communications are particularly difficult to access in rural settings. As these are the most significant factors in explaining export-oriented entrepreneurship (Aparicio *et al.*, 2021), it can be expected that rural areas have lower levels of growth than urban areas (Amorós *et al.,* 2012). In summary, considering that (1) necessity-oriented enterprises are characterised by lower quality and less growth than opportunity-oriented enterprises (Lecuna *et al.*, 2017; Shane, 2009) and (2) the level of opportunity-motivated entrepreneurship tends to be higher in urban areas (Bosma and Sternberg, 2014; Faggio and Silva, 2014), the following hypothesis can be proposed:

Hypothesis 1: *The growth expectations of rural entrepreneurs are lower than those of urban entrepreneurs.*

Regarding entrepreneurs themselves, the literature has identified the relevance of their knowledge, skills and abilities (KSA) in the context of growth expectations (Lecuna *et al.*, 2017). Specifically, these are self-efficacy (Chandler and Jansen, 1992), alertness (Baum *et al.*, 2001), risk tolerance (Palich and Bagby, 1995) and networks (Ostgaard and Birley, 1994). The concept of KSA has long been utilised in the human resource literature as an inclusive term to reflect individual- and firm-level human capital assets (Cabello-Medina *et al.*, 2011; Schumann *et al.*, 1994).

First, self-efficacy refers to the strength of the self-confidence of entrepreneurs regarding whether their entrepreneurial skills are sufficient to complete various entrepreneurial activities, reflecting the belief that entrepreneurs are equipped with the competency needed to influence their

surroundings and succeed through corresponding actions (Boyd and Vozikis, 1994). Second, alertness is a characteristic of individuals who have a "unique preparedness" and are consistently scanning their environments, ready to discover opportunities (Kaish and Gilad, 1991). According to McMullen and Shepherd (2006), alertness is not entrepreneurial unless it involves judgement and movement towards action. *"To act on the possibility that one has identified an opportunity worth pursuing"* is the heart of being an entrepreneur (McMullen and Shepherd, 2006, p.132). Third, risk tolerance can be defined as the amount of risk (financial or other) that an individual is willing to accept and thus take. In particular for rural entrepreneurs, Spicka (2020) has identified how educational level, age and household size can affect its level of risk taking. Finally, social capital, defined as networking, has been consistently linked to firm growth (Ostgaard and Birley, 1994). Social capital theory was founded on the premise that a network provides value to its members by providing them with access to the social resources that are embedded within the network (Seibert *et al.*, 2001). The social resources embedded in such networks are thought to reduce the amount of time and investment required to gather information (Florin *et al.*, 2003). In reference to small firms, Bosma *et al.* (2004) found that human capital and social capital investment contribute significantly to explaining cross-sectional variance in performance.

Hypothesis 2: *Rural entrepreneurs' growth expectations are positively affected by opportunity alertness/motivation (H2a), self-efficacy (H2b), networking (H2c), risk tolerance (H2d), and education level (H2e).*

3. Data and methods

3.1 Data

The Adult Population Survey (APS) dataset of the Global Entrepreneurship Monitor (GEM), particularly the portion relating to Chile from 2015 to 2018, is used to test the stated hypotheses. These years constituted a period of economic and financial stability for the country with no external shocks that could affect the analysis. The GEM research project is an annual assessment of the national level of entrepreneurial activity in multiple diverse countries. Its main indicator is Total Early-Stage Entrepreneurial Activity (TEA), which assesses the percentage of the working-age population who are either about to start engaging in an entrepreneurial activity or started doing

so within the last 3.5 years (Reynolds *et al.*, 2005). This database also includes entrepreneurs' geographic locations, enabling the classification of entrepreneurs' rurality without respondent bias. Although the GEM database has a large amount of data corresponding to entrepreneurs from more than 40 countries, it has some shortcomings: it primarily uses an individual level of analysis and rarely a firm-level one, it mainly focuses on new entrepreneurs rather than incumbents, and it defines entrepreneurship in Schumpeterian and Kirznerian terms, downplaying broader economic perspectives (Marcotte, 2013). Another problem with the GEM project is that data are collected over telephone surveys, leading to possible observational errors. Moreover, since the data are mainly cross-sectional in nature, there is a risk of endogeneity. However, given the comparative size and consistency of this database between countries, the GEM database is a powerful tool for measuring entrepreneurship.

Chile is used as a case study since, due to its characteristics, it can be considered an extreme case, as the processes of theoretical interest are more transparent in this country than they are in others (Eisenhardt, 1989; Eisenhardt and Graebner, 2007). Chile has the highest level of development of any Latin American country (Amorós *et al.*, 2013), and it exhibits an exceptional entrepreneurial activity rate (Stam, 2013), with more than 90% of its enterprises being small or medium-sized (Ur Rehman and Rehman, 2016). Furthermore, the promotion of entrepreneurship is used as a public policy tool to reduce economic growth gaps impacting impoverished areas (ODEPA, 2014). However, the country has a high level of centralism, which positions entrepreneurs outside the country's main macroareas at a substantial disadvantage in terms of access to public and private resources (Villegas-Mateos, 2020) and thus accentuates the effects of rurality (Amorós *et al.*, 2013; Espinoza *et al.*, 2019).

To classify each entrepreneur as urban or rural, the population and surface area of each district according to the 2017 National Census (National Survey Institute, 2017) and the definitions of the OECD (2006) and Muñoz and Kimmitt (2019) are used to classify each commune of the country as rural (1) or urban (0), as shown in Figure 1. Then, these classifications are matched to each respondent's place of residence as stated in the GEM survey results. Through this identification process, the data are parsed by hand, typographical errors are corrected and data that indicate a locality or neighbourhood instead of the commune corresponding to the respective respondent are

modified. This process eliminates less than 1% of the sample, thus improving and assuring the sample's validity. The result is a sample of 5,835 nascent entrepreneur respondents, and 4,325 of these are urban and 1,510 are rural.

===== Insert Figure 1======

3.2 Model

We base our growth expectations model on Lecuna *et al.* (2017), adding a dummy variable for rurality and controlling for yearly fixed effects and the commune income level.

$$\boldsymbol{HGE_i = \beta_0 + \gamma Rural_i + x'_i\beta_1 + u_i} \quad \textbf{(1)}$$

where

- HGE: Entrepreneurs' growth expectations.
- u: A Perturbation vector.
- Rural: Whether an entrepreneur lives in a rural commune.

and x_i contains

- OPNES: Entrepreneurs' motivation, namely, necessity or opportunity.
- KSA: Entrepreneurs' intrinsic KSAs.
- EXP: Firm export orientation.
- D: Control variables.
- Year: Yearly fixed effects.

3.3 Dependent variable

Per the OCDE definition, each entrepreneur's growth expectations are measured as the *"difference between the number of current employees and that of future employees (expected job growth) in 5 years"* (Audretsch, 2012). As entrepreneurs are known for exhibiting overconfidence (Singh, 2020), there could be some respondent bias, causing skewness. We control for this by transforming the variable using the expression ln(X+1), which is consistent with previous literature (Darnihamedani and Terjesen, 2020; Efendic *et al.*, 2015; Hessels *et al.*, 2008; Levie and Autio, 2011). There are other potential measures for measuring growth that focus on sales or profits (e.g. Pratono, 2016). However, as the sample is mainly made of nascent entrepreneurs, most of them do

not have sales or a growth record; thus, the effectiveness of these measures is reduced.

3.4 Explanatory variables

The independent variables are divided into entrepreneurial and firm characteristics. In accordance with the literature usually referenced when measuring entrepreneurs' intrinsic skills, these are mental acuity (alertness), self-efficacy, networking, risk tolerance, and education level. The self-efficacy trait refers to the extent to which an individual perceives that he or she has the knowledge, skills, and experience required to start a new business (Arenius and Minniti, 2005). Knowing other entrepreneurs (networking) augments the probability of becoming an entrepreneur (Kwon and Arenius, 2010). Fear of failure measures an entrepreneur's lack of confidence to cope with problems that could occur during a new business venture process (Autio *et al.*, 2013). Finally, education influences entrepreneurial activity, as highly educated entrepreneurs have the capability to recognise more opportunities (Kwon and Arenius, 2010). Table I details the specific questions used to control for these variables.

Following Lecuna *et al.*, (2017) the variables "export orientation", "innovation level", and "motivation to undertake a new venture" are considered. To determine whether a venture was born due to a market opportunity or out of the corresponding entrepreneur's necessity (i.e., he or she was out of work), the following question is used as a proxy: "Are you involved in this start-up to take advantage of a business opportunity or because you have no better choices for work? The answer choices are as follows: (1) take advantage of a business opportunity; (2) no better choices for work; (3) a combination of both of the above; (4) have a job but seeking better opportunities; and (5) other. Responses 2 and 3 are marked with a "0" to indicate motivation stemming from necessity, while responses 1 and 4 indicate motivation stemming from an opportunity. The respondents who choose "other" (a marginal percentage of the sample) are left out of the study, as there is no straightforward way to categorise them and their inclusion could induce problems with correlation (Puente *et al.*, 2019). The TEAEXP variable is used to control for the examined ventures' export orientation, measured as the percentage of each firm's sales that are international. Because there are limited data available regarding innovation orientation in the sample and similar answers were given by both types of entrepreneurs on this topic, this variable is dropped before the next analysis steps. Keeping it would diminish the sample size to the point that its coverage

would be impacted negatively.

3.5 Control Variables

The role of age as a determinant of entrepreneurial intention has been extensively studied in extant literature (Azoulay *et al.*, 2020; Deller *et al.*, 2019; Kautonen *et al.*, 2014). Based on Acs *et al.* (2009), the importance of age in the context of entrepreneurial intention has been recognised, particularly among entrepreneurs in the age range of 30-44. Nonetheless, recent studies have determined that the effect of age on entrepreneurial intention exhibits an inverse U-shaped curve. Kautonen *et al.*, (2014) expanded this model, showing that older individuals who are willing to consider entrepreneurship are more likely to employ themselves than their younger counterparts but that they rarely start growth-oriented owner-managed businesses or turn to self-employment due to a lack of suitable opportunities in the labour market. Particularly in rural settings, the main driver of this variable is human capital flight, as young people leave these areas for the better job/venture opportunities offered in cities, and retirees return to rural communities in search of a better quality of life (Deller *et al.*, 2019). Therefore, the square of the examined entrepreneurs' ages (age2) is included; this variable is used to control for any nonlinear effects of age on the entrepreneurs' growth expectations, as is typical in the literature (Estrin *et al.*, 2013; Stephan *et al.*, 2015). Dummies for present income level were added, as an individual's present level of income should affect his or her expectations of future income and thus growth.

Finally, we include gender, as early-stage entrepreneurship motivation varies significantly by gender, with different growth expectations (Bosma *et al.*, 2020; Stephan *et al.*, 2015).

======Insert TABLE I here========

3.6 Methodology

Skewness and kurtosis tests are performed to ensure that none of the variables are normally distributed (the details are reported in the appendix). Next, a Mann–Whitney test was performed to identify differences between urban and rural entrepreneurs. This method produces better results than the t test in the context of nonparametric distributions (Haigh and Conover, 1981). Additionally, we found no correlation or multicollinearity issues, as reported in Tables II and III.

===== Insert Table II here=====

===== Insert Table III here=====

The economic conditions of Chile during the analysed years could bias the results; thus, year dummies must be added. Considering that the respondents do not repeat each year, a pooled OLS method is selected. Nonetheless, Oyarzo *et al.* (2020) demonstrated a high level of consistency in Chile's most and least entrepreneurial areas; thus, the drivers of entrepreneurship should not change much from year to year. Finally, the model's initial testing show heteroscedasticity, which is corrected through the use of robust errors.

A possible source of endogeneity stemming from omitted variables is the economic conditions of each commune. For example, suppose the sample comes from only affluent rural communities or poor urban communities. In that case, the results could differ from the actual economic conditions, as a better economic setting could improve growth expectations. For this reason, the average commune income, as a proxy for regional wealth, was included as a control.

Given the observational nature of most data, researchers must be careful about different sources of bias in estimations. Since the survey subjects of this study are, by definition, not randomly allocated to the treatment groups (rural and urban), self-selection bias may exist. To explore the pure effect of rurality on growth expectations, in an ideal experiment, there should be identical or randomly selected individuals in each group (Heckman, 1990). Thus, this possibility must be controlled. Matching techniques are, in general, used as a way to balance or equalize the distribution of covariates among treated and control groups to reduce this estimation bias (Stuart, 2010). One such method uses the CEM framework of Blackwell *et al.* (2009), and its underlying idea is to replicate a comparison between treated and control (rural and urban, respectively) study objects. The use of this feature is usually not feasible in observational studies when treated and untreated study objects are compared and matched according to their observable attributes before treatment. Blackwell et al. (2009) used the term "data preprocessing" to refer to the process implemented to reduce the imbalance between the treated and control groups. Moreover, matching reduces the model dependence of the estimation (Ho *et al.*, 2007). Alternatively, treatment effects, such as propensity score matching (PSM), could be used in this case to reduce selection bias and

produce a matched-pair comparison between rural and urban observations, as was done by Phillipson *et al.* (2019). However, recent literature has stated that CEM is a more appropriate method, since CEM replicates a fully blocked experiment, arranging experimental units in groups (blocks) that are similar to one another, while PSM replicates only a randomised trial (Canes, 2017; King and Nielsen, 2019).

Notably, the treatment of this research differs from the norm because rural and urban areas are not inherently treatment groups in the traditional sense. Entrepreneurs make many choices themselves based on many variables that are difficult or impossible to control (e.g., preferences). In the context of this research, the decision of where to start a business is conditional on many variables. For example, a rural inhabitant is more likely to start his or her business in a rural setting, given the extra costs associated with moving or even his or her preference for living in a more rural setting. This decision can also be related to expectations for growth and hence can generate bias in the treatment effect estimation. After the sample is checked for imbalance (based on $\mathcal{L}_1$ as defined in Blackwell *et al.* (2009), the results show that CEM pruning improves the balance between the treated and control groups[i], reducing the sample to 641 urban and 425 rural entrepreneurs with similar characteristics.

In summary, we employ three methodologies in this study: first, a descriptive analysis with nonparametric testing is performed to identify the core differences between the sample's rural and urban entrepreneurs; then, pooled OLS is utilized to empirically test the high growth model in both contexts in relation to the drivers of HGE; and finally, CEM is employed for robustness testing—namely, to identify any possible self-selection bias.

4. Results

4.1 Preliminary Results

Table III details the descriptive analysis, showing that the urban entrepreneurs' education level is higher and that the rural entrepreneurs are slightly more sensitive to opportunities. Export orientation is slightly higher in cities, and the urban entrepreneurs' growth expectations feature a higher growth expectation index, reflecting the greater dynamism of the economy in these areas. Likewise, the urban group exhibits a slightly higher opportunity index.

========= Insert Table IV here =======

The OLS results are reported in Table IV. Column (1) includes the full sample, whereas column (2) considers only urban entrepreneurs and (3) considers only rural entrepreneurs. The results from the urban and full samples are similar to those found in the literature, as KSAs, export orientation and opportunity motivation are shown to be drivers of growth expectations. The only disparity with the literature is the negative effect of networks. Most importantly, in this sample, being from a rural commune negatively impacts growth expectations when all the other variables are controlled.

The results corresponding to the rural sample (Column 3) show that opportunity motivation and export orientation are drivers of growth, thus supporting the literature. However, only the KSAs of risk tolerance, alertness and education exhibit findings similar to those of the literature. Interestingly, an interaction effect is detected between rurality and most of the education levels, as all these coefficients are larger and more significant than the others. This suggests that education level positively affects growth expectations more strongly in rural communes than in urban areas. Additionally, there was no evidence that personal income affects growth expectations in the rural model, in contrast to its urban counterpart.

For the CEM approach, the linear model described in equation (1) was used, and the treatment and covariates applied in the previous sections are employed.

====== Insert Table V here======

Table V shows the OLS and CEM estimations, demonstrating a significant difference between the estimations with and without matching. Specifically, the sample average treatment effect on the treated sample is negative and larger (in size) than its OLS counterpart. In general, since better entrepreneurs go to urban settings, the OLS method overestimates the negative effect of rurality on growth expectations. After self-selection is controlled and the two most identical sets of entrepreneurs from each setting are compared, the negative impact of rurality on growth expectations increases. This suggests some level of self-selection in that good entrepreneurs are choosing to put their business in rural settings instead of cities. One possible explanation could be that they are leaving urban environments due to personal preferences (more space, less traffic, etc.) or because they are seeking less competition.

Finally, the pairing results confirm that growth expectations are higher in urban areas, confirming the results of the previous OLS method. Moreover, the matching method shows that if all else is equal, living in an urban setting increases entrepreneurs' growth expectations, thus reinforcing the validity of hypothesis 1. This is in line with the current literature on entrepreneurial ecosystems, which states that entrepreneurs do not develop in a vacuum and that local characteristics, such as access to finances and infrastructure, affect new ventures' growth expectations (Kuckertz, 2019).

4.2 Robustness tests

The results presented thus far are preliminary because not all model specificities are considered. In this section, before drawing any conclusive inferences from the results, it would be useful to confirm whether the results are robust enough to hold under different conditions and how they might change when the assumptions underlying the data are tightened, relaxed, or otherwise altered. As such, three types of robustness tests are performed to determine whether taking these specificities into account changes the findings. In the first test, we test for correlations between the entrepreneurs' educational level and other variables, for example, self-efficacy or income levels. Therefore, we repeat our previous method with and without the entrepreneurs' education level in a stepwise fashion to see how this variable interacts with the other variables. The results in Table VII show that the significance of these factors does not change.

Next, we divide our sample into groups of high- and low-growth entrepreneurs using an alternative binary definition of "new firms with 20% yearly growth" (Audretsch, 2012). We proxy this with the '*number of workers*' variable, using a benchmark of least 250% growth over 5 years (20% yearly; up to five years compounded). The results in Table VII show that in rural settings, while growth expectations are dependent on entrepreneur characteristics and an export orientation in the low-growth sample, the high-growth sample is dependent only on educational level, an export orientation and a motivation orientation. This further confirms the value of education in rural settings in relation to promoting high growth entrepreneurship.

Finally, given that self-employed individuals are usually regarded as low-quality, low-growth entrepreneurs (OECD, 2017), separating them from the full sample could give a counterfactual to the analysis, thus increasing the depth of the results. For this, the sample is divided into groups of nascent entrepreneurs with and without employees (i.e., self-employment). The results in Table VIII show that when self-employed individuals are eliminated from the sample, the results do not change materially from those of the previous analysis in section 4.1. However, only education is relevant for growth expectations in the self-employment sample. In fact, in the self-employed rural sample, the strongest driver of growth expectations is a PhD-level education. This specific and interesting result complements the findings of the coarsened exact matching process, suggesting that entrepreneurs with high education levels self-select to live in rural areas as highly skilled freelance workers (OECD, 2017).

====== Insert Tables VI, VII, & VIII here ======

5. Discussion

Entrepreneurship is often viewed as a universal "solution" for rural development. However, there is little consensus between the high growth model and the rural entrepreneurship literature regarding the factors that drive growth in rural areas. This research attempts to contribute to this ongoing debate by analysing rural entrepreneurs in the high-growth context of a developing economy. In addition to examining rurality, this research focuses on Latin America—which has rarely been investigated in comparison to the U.S. or Europe—to extend the literature on high-growth ventures. Latin America was selected as a geographical focus since understanding the

above dynamics in a developing country is of interest. Following Villegas-Mateos (2020), the presented results reflect the relevance of having policies specifically suited to the Latin American regional context. Given policymakers' interests in promoting growth in developing areas through these kinds of ventures, an understanding of which factors influence them can contribute to the success of such endeavours.

5.1 KSAs as growth drivers

As theorised with the high growth model, the following drivers are significant for the urban sample (partially supporting hypothesis 2): export orientation, opportunity motivation, risk tolerance, networking, self-efficacy, and education. However, in contrast to mainstream entrepreneurship theory and hypothesis 2, the examined entrepreneurs' intrinsic KSAs are not all significant in the rural-specific model. Previous studies argue that networks positively impact firm performance (e.g., Pratono, 2018). However, when focusing specifically on rural communities, authors have proposed that small towns are unlikely to have a high concentration of local firms, which means that they are less likely to benefit from agglomeration economies and economies of scale (Glaeser *et al.*, 2014; Roundy, 2017).

The greater significance of education in rural areas implies that the level of education represents the most significant growth driver in rural areas. This finding is similar to those of a previous study on Chile, where primary- and secondary-level education was shown to be significantly better perceived by experts living outside the core urban regions of the country (Villegas-Mateos, 2020). Therefore, it is of public interest to focus on education as a channel for encouraging self-sustaining rural ventures that create jobs over the long term. However, merely investing in primary, secondary, and higher education is insufficient.

Suppose policymakers decide to promote the development of higher education institutions in rural regions. What stops the new professionals they educate from leaving for cities when they cannot find jobs or good opportunities to start businesses in their rural areas? Hunt *et al.* (2019) give a case example for not "only" educating them. In the U.S., a lack of the high-tech knowledge and skills associated with high-growth innovation in rural communities has led to a proliferation of job training programs. However, there is little participation in these programs; moreover, since there

are so few rural firms with jobs requiring high-tech knowledge, residents with such training are often forced to leave their communities in search of job opportunities elsewhere, perpetuating a cycle of declining local job skills. This highlights the need to develop strategies such as leveraging nontraditional educational institutions or attracting talent to increase rural communities' stock of human capital (Roundy, 2017).

5.2 Differences in high-growth expectations

Meta-analysis studies suggest that the impact of education on selection into entrepreneurship is nonsignificant, so there should not be a lack of entrepreneurs in rural settings, at least in relation to education levels (Van Der Sluis *et al.*, 2008). The problem with this is that the quality of these ventures should be lower, in line with Faggio and Silva's (2014) findings regarding the necessity-oriented aspects of rural ventures. If growth expectations are lower in rural settings and KSAs barely influence these expectations, there will be more individuals who are entrepreneurs out of necessity than entrepreneurs with an opportunity orientation; thus, there will be little room for high-growth expectations in rural regions. These findings contradict the relevance and importance of communities from rural areas of the U.K. (Phillipson *et al.*, 2019). From these discussions, we propose that the high-growth paradigm is not relevant in rural developing country economies, supporting Muñoz and Kimmitt, (2019)

5.3 Self-selection into rurality

When the possibilities entrepreneurs are presented with when choosing where to locate are considered, selection bias becomes a concern. In any regression analysis, we must assume that unobservable characteristics play a role in the location decisions of entrepreneurs (e.g., preferences). This introduces bias into estimations of the rural effect on growth since the rural variable may capture the effects of these unobservable characteristics. One way to correct this is with matching techniques, and in this research, CEM is used. A positive bias of the rural effect is found in the OLS estimation, i.e., the rural effect is even more negative than the OLS estimation shows. In other words, when self-selection into rurality is controlled, the negative effect of rurality on growth expectations diminishes. One possible explanation for this phenomenon is that a sample of "good-quality" entrepreneurs self-selects into rural regions. This interesting result offers some clues on how growth-oriented business (but not necessarily high growth) can be promoted in rural

areas through a focus on the emergence of human capital migrating into rural communities. For this group, profit is not the only entrepreneurial motivation, as they can also hold social, innovative, or hybrid motivations (Douglas *et al.*, 2021). For example, Webber *et al.* (2018) discussed a U.K. tourism-dominated, low-productivity rural area with a stock of entrepreneurs who were more motivated to supply products and services they believed in and sustain their quality of life than to try to achieve higher productivity levels.

5.4 Policy implications and future work

Based on our previous discussion, we can suggest some avenues for future policy research. First, researchers should focus on the reasons why some of these entrepreneurs are returning to rural areas. These could be lifestyle entrepreneurs (e.g., retirees returning to rural areas to become entrepreneurs) or so-called elderpreneurs—also known as senior entrepreneurs or third-age entrepreneurs (Kautonen *et al.*, 2014; Leporati *et al.*, 2020). Because HGE dynamics in rural areas are unique, public policies should specifically target purpose-driven entrepreneurial education. This includes but is not limited to encouraging lifestyle entrepreneurship, preventing rural entrepreneurial brain drain, and attracting highly educated urban entrepreneurs to exploit opportunities in rural areas (Deller *et al.*, 2019). Therefore, public policies in developing economies could implement tailor-made rural entrepreneurship education in rural areas. A proposal to encourage the creation of high growth entrepreneurship in rural areas should work to improve the identified deficiencies; namely, it should generate training plans to promote exports and encourage advanced human capital to create ventures outside large cities. In this way, entrepreneurs can be encouraged to stay in rural communes, and their flight can be prevented.

Second, another possibility for attracting new entrepreneurs comes from the potential of digitalisation for rural communities. Driven by current migration (Roper, 2021) and economic (Phillipson *et al.*, 2020) shocks from the COVID-19 pandemic or advances in broadband access such as Starlink (Herath, 2021), the gap between urban and rural communities will continue to narrow. This will open up new opportunities for ventures born in the rural world to serve the world. Applied in a well-thought-out way, digital possibilities not only can create change but also may create a future leapfrog effect for rural communities (Meyn, 2020).

Finally, and answering the call of Dvouletý (2020), we can extend our research on HGE by exploring the diversity of different types of self-employed entrepreneurs. For example, we can disaggregate self-employers based on their skill and job classifications, level of dependence upon other part-time jobs (hybrid self-employer), level of transition into a job-creator status, and level of dependency on one or more customers. Using these new levels of depth, we can determine with more specificity the characteristics of the kinds of entrepreneurs who are more prone to growth in rural settings. In this way, policymakers can be enabled to focus specifically on these kinds.

6. Conclusions

This research presents an empirical test of the high-growth entrepreneurship paradigm in a rural developing country setting, namely, Chile. Based on data from 2015 to 2018, drivers of growth expectancy are estimated while rural and urban entrepreneurs are compared. While the drivers of High growth entrepreneurship among urban entrepreneurs are similar to those identified in the literature, a negative effect of rurality on entrepreneurs and an positive effect of education level are revealed. Further analyses controlling for model specifications confirm the importance of highly educated individuals who self-select into rural communities.

The contribution of this research is threefold. First, it is confirmed that rurality has a negative impact on high-growth expectations. However, no significant difference is found between the samples in terms of motivation, as both groups are mainly entrepreneurs motivated by opportunity rather than need. Second, it is found that entrepreneurs' education levels are lower in rural areas, but the coefficient of the education variable for the rural sample is larger than that for the urban sample. This implies that education affects growth expectations more in rural settings than in urban settings. A possible explanation for this phenomenon may be the diminishing marginal effects of education or marginal human capital flight towards large cities, where an entrepreneur's high education level can positively affect his or her entrepreneurship to a much greater extent than it can in a rural area, as rural areas have fewer opportunities. Finally, the importance of growth expectations and of not only retaining but also attracting "good-quality" entrepreneurs who self-select into rural regions is demonstrated. Thus, these results contribute to the hitherto empirically unexplored comparison between rural and urban settings in a high-growth entrepreneurship theoretical context. Indeed, they shed new light on unexplored aspects of the growth potential of

rural entrepreneurship, providing new insights with both policy and scholarly relevance concerning the future development of entrepreneurship in Chile and South America.

This study is not without limitations. First, the "rural"/"urban" dichotomy entails some limitations that are difficult to address. Rurality exists in many shapes and forms, and the characteristics that define a place as rural are not absolute. Moreover, although Chile fits the profile of an ideal case in which to study the entrepreneurial dynamics between rural and urban entrepreneurs, it represents only one economy. Expanding the sample of entrepreneurs to other developing countries would improve the reliability and replicability of the findings. In addition to these limitations, the data involve survey measures of growth expectations, which could introduce response bias if entrepreneurs express overconfidence.

Finally—and according to Anderson and Obeng (2017), it must be stressed that the Eurocentric conception of entrepreneurship must be reviewed to reveal the determining nature of circumstances experienced in place. Indeed, if the particularities of this socioeconomic context are not considered, the promise of entrepreneurship as a panacea for economic distress is unlikely to be realized. Rural entrepreneurship must be considered a contextualised (socially, culturally, spatially, and institutionally) phenomenon (Gaddefors and Anderson, 2019). This study takes one step toward determining how the drivers of growth expectations differ between urban and rural areas in a very different setting from those explored in the mainstream entrepreneurship literature, namely, one with higher levels of poverty, inequality, and exclusion; worse infrastructure; and weaker welfare policies (Muñoz, Naudé, *et al.*, 2020).

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Tables

Table I. Variable definitions.

Variable	Code	Source	Detail
Growth Expectation	HGE	GEM	Log form of the difference between the following two questions. (1) "Excluding the owners, how many people, including current and future employees, will be working for this company in five years? Please include all exclusive subcontractors—that is, persons or companies that work ONLY for this business and do not work for others as well". (2) "Not counting the owners, how many people are currently working for this business? Please include all exclusive subcontractors—i.e., persons or businesses that work ONLY for this business and do not work for others as well".
Rural		NC	Whether the entrepreneur's commune is classified as rural (YES/NO)
Entrepreneurs' KSAs			
Alertness	Opport	GEM	"In the next six months, will there be good opportunities for starting a business in the area where you live?" (YES/NO)
Self-efficacy	Suskill	GEM	"Do you have the knowledge, skills and experience required to start a new business?" (YES/NO)
Networking	Knowent	GEM	"Do you know someone personally who started a business in the past 2 years?" (YES/NO)
Fear of Failure	Fearfail	GEM	"Would a fear of failure prevent you from starting a business?" (YES/NO)
Education level	UNEDUC	GEM	UN harmonised educational attainment ranked on a scale from 0 (no education) to 7 (postgraduate education).
Firm Characteristics			
Export-orientation	TEAEXP	GEM	Percentage of sales that are made internationally according to the following scale: (3) more than 75%, (2) 25-75%, (1) less than 25%, and (0) zero.
Motivation-orientation	Opnes	GEM	"Are you involved in this start-up to take advantage of a business opportunity or because you have no better choices for work?" (1) take advantage of a business opportunity; (2) no better choices for work; (3) combination of both of the above; (4) have a job but seeking better opportunities; and (5) other.
Controls			
Age, age-square	Age, Age2	GEM	Age at the time of the survey.
Gender	Gender	GEM	0 for male and 1 for female.
Household size	hhsize	GEM	Size of each entrepreneur's household.
Commune income	reg_income	MSD	Average income per capita of each entrepreneur's commune.
Income	Hig_income, Mid_income, Low_income	GEM	Dummies indicating whether an entrepreneur is in a low-, mid- or high-income tier.

Sources: GEM: Global Entrepreneurship Monitor, MSD: Ministry of Social Development, NC: National Census

Table II. Pairwise correlations.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Growth expectancy	1.00								
(2) Alertness	0.06*	1.00							
(3) Self-efficacy	0.06*	0.03*	1.00						
(4) Networking	0.01	0.05*	0.08*	1.00					
(5) Fear of failure	-0.08*	-0.10*	-0.15*	-0.01	1.00				
(6) Age	-0.06*	-0.06*	0.08*	-0.07*	0.03*	1.00			
(7) Age2	-0.07*	-0.05*	0.07*	-0.07*	0.03*	0.98*	1.00		
(8) Gender	-0.21*	-0.01	-0.04*	-0.02	0.03	0.01	0.01	1.00	
(9) Household size	0.01	0.01	-0.01	0.01	-0.02	-0.10*	-0.11*	0.06*	1.00
(10) Education	0.16*	-0.03*	0.03	0.16*	0.00	-0.12*	-0.13*	-0.14*	-0.12*
(11) Rural	-0.10*	0.03*	0.01	-0.01	-0.01	0.00	-0.01	0.04*	-0.03*
(12) Motivation orientation	0.13*	0.11*	0.03*	0.09*	-0.08*	-0.14*	-0.14*	-0.16*	-0.02
(13) Export orientation	0.16*	0.01	-0.01	0.00	-0.02	-0.02	-0.02	-0.05*	0.00
(14) Income (low)	-0.14*	-0.02	-0.01	-0.12*	0.02	0.03*	0.04*	0.23*	0.00
(15) Income (mid)	-0.01	0.01	-0.01	-0.04*	-0.01	-0.05*	-0.05*	-0.01	0.03*
(16) Income (high)	0.14*	0.01	0.02	0.15*	0.00	0.02	0.01	-0.19*	-0.02
(17) Regional income	0.07*	0.02	0.01	0.05*	-0.01	0.06*	0.06*	-0.04*	-0.05*

Variables	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
(10) Education	1.00							
(11) Rural	-0.20*	1.00						
(12) Motivation orientation	0.23*	-0.05*	1.00					
(13) Export orientation	0.02	-0.08*	0.04*	1.00				
(14) Income (low)	-0.41*	0.18*	-0.26*	-0.08*	1.00			
(15) Income (mid)	-0.06*	0.03*	0.01	-0.05*	-0.41*	1.00		
(16) Income (high)	0.41*	-0.18*	0.22*	0.12*	-0.46*	-0.61*	1.00	
(17) Regional income	0.22*	-0.31*	0.07*	0.10*	-0.20*	-0.05*	0.23*	1.00

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

Table III. Descriptive analysis.

Variable	Code	Group	Valid Cases	Mean	Standard Deviation	Min	Max	Mann–Whitney U test	Prob > |z|	
Entrepreneurs' KSAs										
Alertness	Opport	Urban	4,325	0.61	0.49	0	1	-2.47	0.01	***
		Rural	1,510	0.64	0.48	0	1			
Self-efficacy	Subskill	Urban	4,325	0.86	0.34	0	1	-1.13	0.26	
		Rural	1,510	0.87	0.33	0	1			
Networking	Knowent	Urban	4,325	0.65	0.48	0	1	0.49	0.62	
		Rural	1,510	0.64	0.48	0	1			
Fear of failure	Fearfail	Urban	4,325	0.22	0.42	0	1	0.56	0.58	
		Rural	1,510	0.21	0.41	0	1			
Education	UNEDUC	Urban	4,325	4.02	1.46	0	7	15.19	0.00	***
		Rural	1,510	3.31	1.55	0	7			
Firm Characteristics										
Export-oriented	TEAEXP	Urban	4,325	1.62	0.25	0	1	7.17	0.00	***
		Rural	1,510	1.38	0.22	0	1			
Expected growth	exp_growth	Urban	4,325	1.62	1.07	0	7.6	8.26	0.00	***
		Rural	1,510	1.38	1.00	0	7.6			
Opportunity	Opnes	Urban	4,325	0.75	0.43	0	1	3.96	0.00	***
		Rural	1,510	0.70	0.46	0	1			
Controls										
Age	Age	Urban	4,325	40.55	13.36	18	90	-0.04	0.97	
		Rural	1,510	40.48	13.02	18	80			
Gender	Gender	Urban	4,325	0.40	0.49	0	1	-3.10	0.00	***
		Rural	1,510	0.45	0.50	0	1			
Household size	Hhsize	Urban	4,325	3.83	1.87	1	43	1.04	0.30	
		Rural	1,510	3.71	1.50	1	10			
Commune income	reg_income	Urban	4,325	336.67	136.37	189	1381	35.23	0.00	***
		Rural	1,510	245.46	60.62	154	741			
High income	in_hig	Urban	4,325	46%	0.50	0	1	13.632	0.00	***
		Rural	1,510	26%	0.44	0	1			
Medium income	in_low	Urban	4,325	19%	0.40	0	1	-13.4	0.00	***
		Rural	1,510	36%	0.48	0	1			
Low Income	in_med	Urban	4,325	35%	0.48	0	1	-2.071	0.04	**
		Rural	1,510	38%	0.48	0	1			

*p<0,1 **p<0,05, and ***p<0,01 (two tailed)

Table IV. OLS Models for full, urban and rural subsamples.

	Dependent Variable: High Growth Expectation (HGE)		
	(1)	(2)	(3)
VARIABLES	Full Sample	Urban Sample	Rural Sample
Rural	-0.108***		
	(0.0315)		
Entrepreneurs' KSAs			
Alertness	0.0946***	0.0838***	0.120**
	(0.0276)	(0.0325)	(0.0516)
Self-efficacy	0.129***	0.139***	0.108
	(0.0391)	(0.0446)	(0.0805)
Networking	-0.0573**	-0.0682**	-0.0366
	(0.0284)	(0.0337)	(0.0524)
Fear of failure	-0.142***	-0.140***	-0.153**
	(0.0318)	(0.0372)	(0.0617)
1.UNEDUC	0.0723	-0.0219	0.159
	(0.0944)	(0.136)	(0.131)
2.UNEDUC	0.157*	0.0776	0.228*
	(0.0921)	(0.136)	(0.120)
3.UNEDUC	0.190**	0.0847	0.307***
	(0.0820)	(0.121)	(0.111)
4.UNEDUC	0.254***	0.106	0.486***
	(0.0850)	(0.123)	(0.124)
5.UNEDUC	0.322***	0.180	0.557***
	(0.0868)	(0.124)	(0.131)
6.UNEDUC	0.403***	0.286**	0.467***
	(0.0923)	(0.129)	(0.145)
7.UNEDUC	0.365***	0.179	0.766
	(0.131)	(0.157)	(0.485)
Firm Characteristic			
Export-oriented	0.703***	0.677***	0.802***
	(0.0667)	(0.0768)	(0.135)
Opportunity	0.121***	0.120***	0.106*
	(0.0312)	(0.0379)	(0.0547)
Controls			
Age	0.00913	0.0114	0.00297
	(0.00630)	(0.00706)	(0.0140)
Age"2	-0.000140*	-0.000179**	-2.79e-05
	(7.18e-05)	(7.88e-05)	(0.000168)
Gender	-0.352***	-0.332***	-0.400***
	(0.0270)	(0.0320)	(0.0509)
Household size	0.0138	0.00938	0.0325**
	(0.00846)	(0.00944)	(0.0162)
Regional income	4.32e-05	5.07e-05	0.000185
	(0.000137)	(0.000144)	(0.000418)
Low income	-0.0974**	-0.166***	0.0548
	(0.0425)	(0.0499)	(0.0832)
Medium income	-0.0641*	-0.0924**	0.00941
	(0.0338)	(0.0393)	(0.0672)
	-	-	-
Constant	1.126***	1.236***	0.844**
	(0.174)	(0.212)	(0.339)
Yearly dummies	YES	YES	YES
Observations	5,835	4,325	1,510
R-squared	0.108	0.094	0.137

Robust standard errors are in parentheses. High income and UNEDUC.0 were omitted due to collinearity.
**** p<0.01, ** p<0.05, and * p<0.1*

Table V. Coarsened exact matching.

	Dependent Variable: High Growth Expectation (HGE)					
VARIABLES	(1) OLS	(2) OLS	(3) OLS	(4) CEM	(5) CEM	(6) CEM
Rural	-0.233***	-0.228***	-0.117***	-0.171***	-0.171***	-0.174***
	(0.0303)	(0.0304)	(0.0299)	(0.0659)	(0.0655)	(0.0621)
Entrepreneurs' KSAs						
Alertness			0.0947***			0.0458
			(0.0275)			(0.0752)
Self-efficacy			0.133***			0.254
			(0.0388)			(0.157)
Networking			-0.0486*			-0.134
			(0.0283)			(0.0856)
Fear of failure			-0.142***			-0.245**
			(0.0318)			(0.115)
1.UNEDUC			0.0723			-0.209
			(0.0944)			(0.380)
2.UNEDUC			0.157*			-0.175
			(0.0921)			(0.338)
3.UNEDUC			0.190**			-0.0881
			(0.0820)			(0.291)
4.UNEDUC			0.254***			-0.156
			(0.0850)			(0.292)
5.UNEDUC			0.322***			0.0832
			(0.0868)			(0.293)
6.UNEDUC			0.403***			0.0989
			(0.0923)			(0.312)
7.UNEDUC			0.365***			-0.842
			(0.131)			(0.909)
Firm Characteristic						
Export-oriented			0.716***			0.761***
			(0.0657)			(0.207)
Opportunity			0.134***			0.0682
			(0.0305)			(0.135)
Constant	1.616***	1.717***	1.267***	1.671***	1.957***	1.595***
	(0.0162)	(0.0349)	(0.0912)	(0.0492)	(0.123)	(0.295)
Year dummies	No	Yes	Yes	No	Yes	Yes
Observations	5,835	5,835	5,835	1,066	1,066	1,066
R-squared	0.009	0.012	0.106	0.007	0.017	0.107

*Robust standard errors are in parentheses. UNEDUC.0 was omitted due to collinearity. The income variables are not included in the model. *** p<0.01, ** p<0.05, and * p<0.1; the control variables and year dummies are omitted from the results. Columns (1) and (3) show the OLS model after the addition of the control variables, while columns (4)-(6) show the CEM.*

Table VI: Robustness analysis: Effect of education level.

	(1)	(2)	(3)	(4)	(5)	(6)
	Full Sample		Urban Sample		Rural Sample	
	(No ED)	(With ED)	(No ED)	(With ED)	(No ED)	(With ED)
Rural	-.128***	-.108***				
	(.031)	(.031)				
Entrepreneurs' KSAs						
Alertness	.085***	.095***	.076**	.084***	.109**	.12**
	(.028)	(.028)	(.032)	(.032)	(.052)	(.052)
Self-efficacy	.136***	.129***	.147***	.139***	.109	.108
	(.039)	(.039)	(.045)	(.045)	(.081)	(.081)
Networking	-.042	-.057**	-.056*	-.068**	-.013	-.037
	(.028)	(.028)	(.034)	(.034)	(.052)	(.052)
Fear of failure	-.139***	-.142***	-.138***	-.14***	-.143**	-.153**
	(.032)	(.032)	(.037)	(.037)	(.062)	(.062)
1.UNEDUC		.072		-.022		.159
		(.094)		(.136)		(.131)
2.UNEDUC		.157*		.078		.228*
		(.092)		(.136)		(.12)
3.UNEDUC		.19**		.085		.307***
		(.082)		(.121)		(.111)
4.UNEDUC		.254***		.106		.486***
		(.085)		(.123)		(.124)
5.UNEDUC		.322***		.18		.557***
		(.087)		(.124)		(.131)
6.UNEDUC		.403***		.286**		.467***
		(.092)		(.129)		(.145)
7.UNEDUC		.365***		.179		.766
		(.131)		(.157)		(.485)
Firm Characteristic						
Export orientation	.7***	.703***	.673***	.677***	.829***	.802***
	(.067)	(.067)	(.077)	(.077)	(.138)	(.135)
Opportunity	.136***	.121***	.13***	.12***	.143***	.106*
	(.031)	(.031)	(.038)	(.038)	(.055)	(.055)
Low income	-.196***	-.097**	-.24***	-.166***	-.087	.055
	(.039)	(.042)	(.046)	(.05)	(.073)	(.083)
Medium income	-.119***	-.064*	-.137***	-.092**	-.061	.009
	(.033)	(.034)	(.038)	(.039)	(.065)	(.067)
Observations	5835	5835	4325	4325	1510	1510
R-squared	.103	.108	.09	.094	.119	.137
Bayesian Crit	16687.994	16711.809	12557.851	12597.963	4208.697	4228.625
Akaike's Crit	16567.905	16545.018	12449.524	12445.031	4118.259	4100.949

*Robust standard errors are in parentheses. The control variables and year dummies were omitted from the results. UNEDUC.0 and High income were omitted due to collinearity. *** p<.01, ** p<.05, and * p<.1*

Table VII: Robustness analysis: High-Growth and Low-Growth Samples.

	(1)	(2)	(3)	(4)	(5)	(6)
	Full Sample		Urban Sample		Rural Sample	
	(Low growth)	(High growth)	(Low growth)	(High growth)	(Low growth)	(High growth)
Rural	-.064*	-.108***				
	(.039)	(.032)				
Entrepreneurs' KSAs						
Alertness	.149***	.025	.133***	.022	.187***	.036
	(.036)	(.028)	(.044)	(.032)	(.062)	(.052)
Self-efficacy	.141***	.088**	.09	.107**	.274***	.04
	(.047)	(.039)	(.058)	(.045)	(.072)	(.083)
Networking	.133***	-.047*	.156***	-.046	.075	-.051
	(.038)	(.028)	(.047)	(.034)	(.065)	(.053)
Fear of failure	-.154***	-.083***	-.172***	-.1***	-.114*	-.023
	(.039)	(.032)	(.048)	(.037)	(.062)	(.064)
1.UNEDUC	.097	.075	-.02	.002	.232*	.157
	(.095)	(.099)	(.148)	(.139)	(.123)	(.148)
2.UNEDUC	.017	.154	-.051	.117	.119	.188
	(.094)	(.094)	(.144)	(.14)	(.121)	(.117)
3.UNEDUC	.107	.147*	.079	.05	.128	.269**
	(.082)	(.082)	(.13)	(.122)	(.106)	(.109)
4.UNEDUC	.022	.209**	-.026	.071	.093	.449***
	(.089)	(.085)	(.136)	(.123)	(.12)	(.125)
5.UNEDUC	.13	.276***	.074	.152	.214	.479***
	(.093)	(.087)	(.14)	(.124)	(.135)	(.136)
6.UNEDUC	.145	.358***	.13	.264**	.071	.397***
	(.107)	(.092)	(.153)	(.13)	(.163)	(.143)
7.UNEDUC	.145	.292**	.029	.148	.751	.602*
	(.19)	(.12)	(.195)	(.152)	(.974)	(.312)
Firm Characteristic						
Export orientation	.61***	.436***	.505***	.416***	.953***	.506***
	(.103)	(.07)	(.123)	(.078)	(.18)	(.156)
Opportunity	.015	.11***	.01	.096**	.015	.145***
	(.039)	(.032)	(.049)	(.039)	(.063)	(.055)
Low income	-.335***	-.032	-.335***	-.101**	-.339***	.117
	(.054)	(.044)	(.067)	(.05)	(.092)	(.091)
Medium income	-.194***	-.067**	-.2***	-.097**	-.189**	.008
	(.049)	(.034)	(.058)	(.039)	(.09)	(.068)
Observations	2058	3756	1492	2819	566	937
R-squared	.157	.095	.139	.082	.228	.119
Bayesian Crit	4989.033	9264.613	3785.954	7094.168	1286.574	2282.494
Akaike's Crit	4848.296	9108.835	3658.565	6951.509	1182.447	2166.27

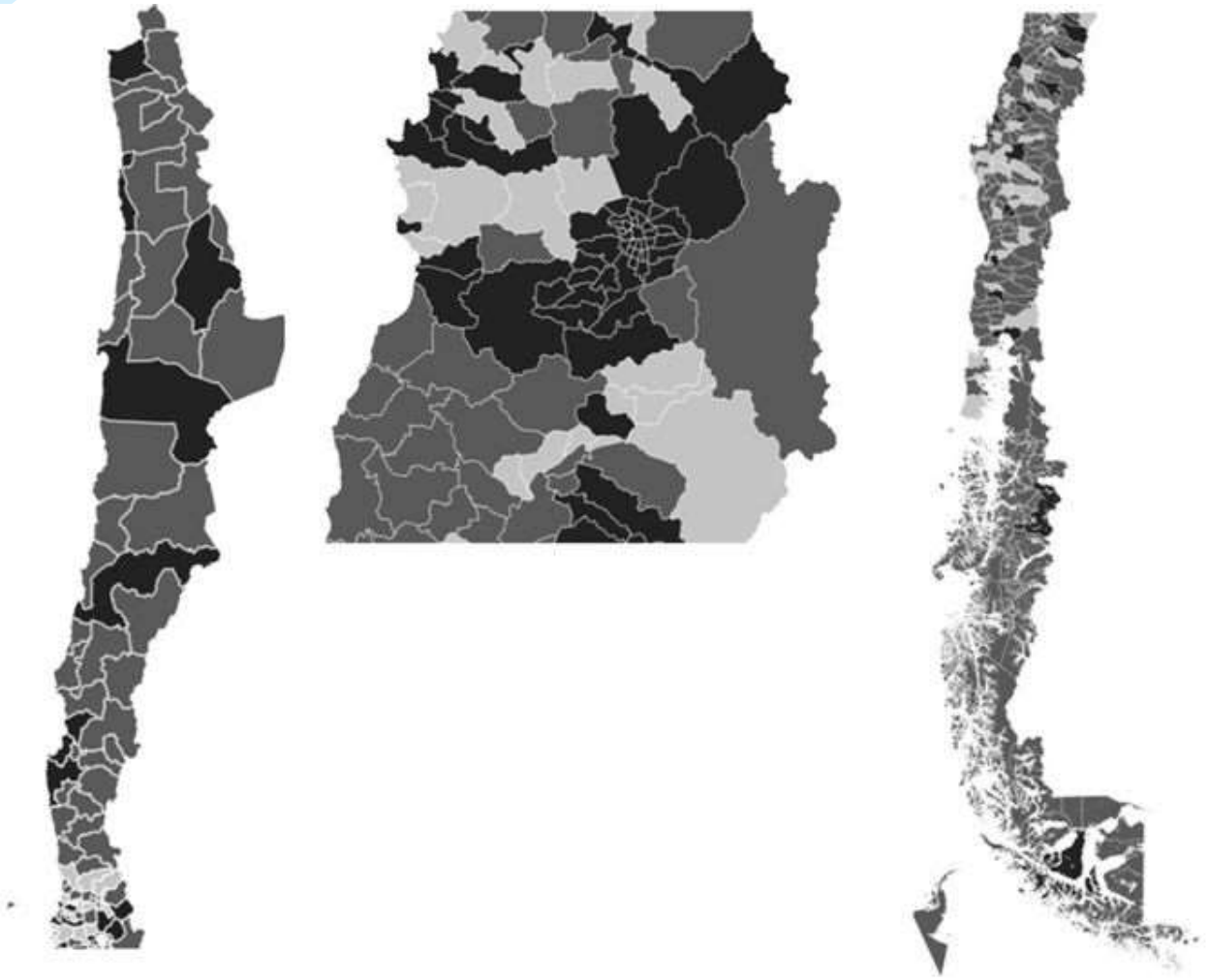
*Robust standard errors are in parentheses. The control variables and year dummies were omitted from the results. UNEDUC.0 and High income were omitted due to collinearity. *** p<.01, ** p<.05, and * p<.1*

Table VIII: Robustness analysis: With and without self-employment.

	(1)	(2)	(3)	(4)	(5)	(6)
	Full Sample		Urban Sample		Rural Sample	
	No Self-employment	Self-employment Only	No Self-employment	Self-employment Only	No Self-employment	Self-employment Only
Rural	-.14***	.105				
	(.033)	(.083)				
Entrepreneurs' KSAs						
Alertness	.102***	-.013	.088**	-.003	.128**	-.04
	(.03)	(.066)	(.036)	(.071)	(.053)	(.154)
Self-efficacy	.13***	.024	.142***	.035	.091	.187
	(.041)	(.109)	(.048)	(.106)	(.079)	(.447)
Networking	-.076**	-.034	-.098***	-.023	-.035	-.066
	(.031)	(.07)	(.037)	(.076)	(.054)	(.163)
Fear of failure	-.135***	-.11	-.135***	-.098	-.137**	-.174
	(.034)	(.086)	(.04)	(.093)	(.063)	(.219)
1.UNEDUC	.014	.282	-.03	.133	.03	.227
	(.098)	(.238)	(.147)	(.277)	(.125)	(.277)
2.UNEDUC	.124	.366	.068	.275	.138	.356
	(.098)	(.223)	(.147)	(.288)	(.123)	(.313)
3.UNEDUC	.148*	.466**	.059	.366	.221*	.583**
	(.087)	(.183)	(.131)	(.229)	(.113)	(.239)
4.UNEDUC	.242***	.388**	.097	.375	.48***	.182
	(.091)	(.187)	(.133)	(.236)	(.13)	(.224)
5.UNEDUC	.277***	.542***	.143	.481**	.507***	.454*
	(.093)	(.187)	(.135)	(.231)	(.138)	(.256)
6.UNEDUC	.371***	.587***	.242*	.598**	.519***	.139
	(.1)	(.196)	(.141)	(.242)	(.155)	(.315)
7.UNEDUC	.342**	.601*	.207	.29	.289	3.201***
	(.14)	(.309)	(.174)	(.287)	(.358)	(.706)
Firm Characteristic						
Export orientation	.699***	.451***	.696***	.412***	.748***	.366
	(.075)	(.136)	(.086)	(.156)	(.15)	(.308)
Opportunity	.132***	.028	.141***	-.005	.095*	.163
	(.033)	(.078)	(.042)	(.085)	(.055)	(.169)
Low income	-.068	.158	-.175***	.238*	.185**	-.031
	(.047)	(.11)	(.055)	(.124)	(.09)	(.206)
Medium income	-.046	-.045	-.089**	-.036	.097	-.058
	(.038)	(.068)	(.045)	(.075)	(.072)	(.169)
Observations	4892	943	3581	744	1311	199
R-squared	.109	.081	.096	.088	.135	.265
Bayesian Crit	14035.324	2663.668	10535.757	2076.895	3587.81	646.449
Akaike's Crit	13872.94	2542.441	10387.355	1966.206	3463.525	567.41

Robust standard errors are in parentheses. The control variables and year dummies were omitted from the results. UNEDUC.0 and High income were omitted due to collinearity.
**** p<.01, ** p<.05, and * p<.1*

Figure 1: Classification of municipalities based on rurality levels.



A map of Chile with each municipality classified as urban (dark), rural (grey), or mixed (white). Images from left to right: Northern Chile, the core regions of Santiago and Valparaiso, and Southern Chile. Source: Based on ODEPA, (2014)

Appendix A

Table A1. Normality test

Variable	Obs.	Pr(Skewness)	Pr(Kurtosis)	chi (2)	Prob>chi2
Growth expectation	5,835	0.00	0.00	.	0.00
Alertness	5,835	0.00	.	.	.
Self-efficacy	5,835	0.00	0.00	.	.
Networking	5,835	0.00	.	.	.
Fear of failure	5,835	0.00	0.0051	.	0.00
Age	5,835	0.00	0.00	.	0.00
Gender	5,835	0.00	.	.	.
Household size	5,835	0.00	0.00	.	.
Education	5,835	0.00	0.0049	.	0.00
Rurality	5,835	0.00	0.00	.	0.00
Opportunity orientation	5,835	0.00	0.00	.	0.00
Export orientation	5,835	0.00	0.00	.	.
Regional income	5,835	0.00	0.00	.	.

[i] $\mathcal{L}_1$ measures the extent to which the treated and untreated groups are unbalanced. To calculate this, for each variable of the model, a histogram for the treated group is created; then, the untreated histogram group is subtracted from each bin of the treated group (this is done for each variable); next, the sum of all the differences in frequency is divided by 2. A lower $\mathcal{L}_1$ indicates a more balanced selection of data. In the model, the original unbalanced sample has an $\mathcal{L}_1$ of 0.96 (a value closer to 1 indicates a very unbalanced sample). After the matching procedure is performed, the $\mathcal{L}_1$ decreases to 0.76.