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# Appreciative theorization of gazelle companies assisted by the Sercotec Arica Business Center

## *Teorización apreciativa de empresas gacelas asistidas por el Centro de Negocios Sercotec Arica*

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### ABSTRACT

The role played by gazelles in economic development processes is a topic of growing interest in the scientific and business community. Empirical evidence agrees that gazelles and fast-growing firms are innovative, transformative economic structures with capabilities to promote economic growth. This paper examines the role of a group of gazelle firms assisted in Arica that positively weigh the cost-benefit ratio of the Business Center program in Chile. This path poses an exercise in “appreciative theorizing” —as Richard Nelson (2018) calls it— and examines various factors of growth that cannot be explained by economic models in equilibrium.

**Keywords:** Business centers, economic growth, gazelle firms, innovation, appreciative theorizing.

**JEL codes:** B21 Microeconomics, D22 Firm behavior, J18 Public policy O43 Institutions and growth R11 Regional economic activity.

### RESUMEN

El papel que desempeñan las empresas gacelas en los procesos de desarrollo económico es un tema que está despertando cada vez más interés en la comunidad científica y empresarial. La evidencia empírica coincide que las firmas gacelas y de rápido crecimiento son estructuras económicas innovadoras, transformadoras y con capacidades de promover el crecimiento económico. En este artículo se examina el papel de un grupo de empresas gacelas asistidas en Arica y que ponderan positivamente la relación costo-beneficio del programa de Centros de Negocios en Chile. Este camino plantea un ejercicio de “teorización apreciativa” —como lo denomina Richard Nelson (2018)— y examina diversos factores del crecimiento que no se pueden explicar con modelos económicos en equilibrio.

**Palabras clave:** Centros de negocios, crecimiento económico, firmas gacelas, innovación, teorización apreciativa.

**Códigos JEL:** B21 Microeconomía, D22 Comportamiento de la empresa, J18 Política pública, O43 Instituciones y crecimiento, R11 Actividad económica regional.

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## 1. Introduction

The present research responds to the need to understand and collect the accumulated knowledge of the Small Business Development Centers program in Arica and the set of stylized facts of a set of gazelle firms analyzed under a theoretical appreciative construct of the firm (Nelson, 2018).

To this end, the article examines a series of descriptive variables of more than 840 firms assisted by the SERCOTEC-funded program, during the period 2015-2020, with the aim of identifying impact variables classified by size, gender, industry sector and ethnicity.

To expand the accumulated knowledge about the program and the assisted firms with the highest rate of increase in sales (gazelles' firms), the concern arises to answer what are the factors that would explain the sustainability of profitability and growth of five highly disruptive companies examined at the program level. The article posits an exercise in "appreciative theorizing" Nelson, (2018), where various growth factors that cannot be explained by economic models in equilibrium are examined. The key findings of the research conclude that gazelle firms not only create value for their business, but also for the Centers program and the regional economy. It highlights the speed of change, the crucial role of talent and technology integration, innovation, collaborative spirit, and collective learning.

## 2. Literature Review

Gazelles and fast-growth companies create and retain a substantial share of new jobs in industrialized and emerging economies, contribute to innovation and drive more disruptive business models in social and environmental fields (Rammohan, et al., 2022).

In reviewing the international literature, the Organization for Economic Co-operation and Development (OECD) states in its various studies that there is no definition or measurement method for growth companies. However, one possible definition focuses on those firms with an average annualized growth of more than 20% for three consecutive years, either in number of employees or business turnover, and with ten or more employees at the beginning of the growth period (OECD, 2008).

This definition has been widely adopted and is increasingly understood as synonymous with the term "high-growth". The European Commission's definition is the same as the above, however, it differs by a growth criterion, as employment is 10% lower (European Commission, 2014). Although there is no consensus definition of what a gazelle and/or fast-growing firm is in the international literature, as there are numerous definitions, and each corresponds to its own population of firms depending on the choice of growth indicators (e.g. employment, market share and market potential), growth metrics (absolute or relative), time dimension or firm growth process (i.e. organic growth or growth through acquisitions), authors such as Breschi et al, (2018), suggest that a focus on firms with high growth potential is backed by venture capital or angel investors, because they tend to invest in firms with the potential to grow rapidly due to their innovative characteristics, degree of disruption and industrial development potential (Segura & Cruz, 2015).

It should be noted here that while some VC-backed companies may meet the technical definition of a growth potential company, most of them are in sectors such as: software development, biotechnology, e-commerce

services, functional foods, and even sustainable construction and engineering.

### Gazelles and growth-potential companies

Eurostat's definition considers that both Gazelles and Growth Potential firms have at least 10 employees at the beginning of their growth and an average annualized growth of more than 20% over a three-year period. As such, research on high-growth entrepreneurship agrees that both definitions for these types of firms are characterized by achieving positive business indicators in a short period of time, and while both definitions provide a useful guide for identifying high-growth firms, alternative definitions exist.

For example, Mason (2020) discusses the definition of high-growth firms and argues that there are multiple definitions, but each varies according to the following areas:

1. The choice of growth indicator.
2. The measurement of growth
3. The time dimension
4. The growth process of companies

Since definitions of high growth potential may vary according to size, growth share, employment level, market share, production, or sales, being commonly used measures in the business literature, the fact is that the growth of companies can be measured in absolute or relative terms. Multiple or composite growth indicators and measures are also used.

For example, some studies examine annual growth, while others use growth between the initial and final year. In addition, the above definitions can be influenced by the growth process of companies. Specifically, growth can be organic, i.e., because of changes in the economic environment, or it can be the result

of mergers and acquisitions as noted above (Eurostat, 2020).

From an academic-scientific perspective, the first work where the concept of gazelle companies appears was published by Birch and Haggerty in 1997, who refer in this way to companies that present high levels of growth. This work was intended to explain the capacity of these companies to generate employment. As the field of study has deepened, new definitions of the gazelle concept have also emerged, emphasizing indicators such as turnover, employment, profits, growth levels, continuity of growth levels, and even the ratio between the size of the company and the number of employees (Henrekson et. al, 2010).

Regarding the profile of gazelle companies, a study carried out in this type of organizations in the Autonomous Community of Galicia, Spain, (ARDAN 2002) offers the following characterization:

- They are small or medium-sized companies.
- They have an average age of 10 years
- They have an average staff of 30 workers
- They have an average annual turnover of 3 million euros.
- They have a basically regional market with a growing concern for internationalization.
- Growing interest in product diversification and new markets (Kirzner, 2017).

### Innovation and gazelles

A factor that has been analyzed as a determinant of high performance in this type of company is innovation, which according to authors such as Palacios and García (2008) is present in higher indexes than the

business average. These authors point out that innovation must be conceived from an integral management throughout the organization, in such a way that it generates an authentic corporate innovative culture, because otherwise it loses power and does not represent such a determining factor in high business performance.

Innovation is generally seen as a source of growth and competitiveness and allows gazelle companies with an innovative profile to launch innovative products on the market, even if they do not belong to the technology industry (Tatum, 2007). Observing participation in R&D activities, Hölzl (2008) observes that this is a preliminary step to innovation and that, in the case of gazelles, the R&D effort is higher than the average for companies. There also appears to be a positive relationship between participation in research networks and long-term growth (Havnes et al., 2001).

### Profile of the entrepreneur

The level of education and personal development of entrepreneurs seems to be another variable associated with high organizational performance (Autio, 2007), since it seems that the most educated entrepreneurs bring to the companies the ability to adapt to the environment and the management of technologies (Krueger & Kumar, 2004).

Leiva et al., (2012) refer to a series of characteristics of entrepreneurs related to high-growth businesses, based on various studies that have been conducted in this segment:

- Those with university education predominate (Barringer et al., 2005; Sapienza and Grimm, 1997).
- Most are under 40 years of age when starting the business (Kaikkonen, 2006; Sims, 2006).

- They have work experience in the business targeted by the start-up (Friar and Meyer, 2003; Kantis and Diaz, 2008; Sapienza and Grimm, 1997).
- They tend to form partnerships or teams with people with similar demographic profiles (Cooper et al., 1994; Fesser and Willard, 1990; Friar and Meyer, 2003; Górriz and Hernández, 2007; Kantis and Díaz 2008).
- They are positively motivated towards entrepreneurship and growth (Cooper and Artz, 1995; Isaksen, 2005).

### Economic role of the entrepreneur

Austrian economist Joseph Schumpeter (1934), who has had a major influence on entrepreneurship as well as innovation, placed the entrepreneur at the center of his theory of economic development. Schumpeter defined the entrepreneur simply as someone who acts as an agent of change by creating a new combination of means of production. New combinations include process, product, and organizational innovations. The means of production include capital, equipment, premises, raw materials, labor and, in more recent times, information. Today, knowledge has joined the list as the indispensable ingredient for business success in the new millennium (Open University, 2017).

In contrast to the above, it is now widely accepted that, apart from the start-up phase, most small businesses in the world are more concerned with survival than growth and relatively few are particularly entrepreneurial (Gray 1998). Consequently, much of the research in this field has focused on finding the characteristics that distinguish entrepreneurs and their firms from others. Elizabeth Chell (1985, 1999), a social psychologist, has examined numerous approaches based on psychological traits and has concluded

that, while psychological aspects such as entrepreneurial intention and ability to recognize opportunities are strongly linked to entrepreneurial behavior, the context in which the entrepreneur operates is also very important (Chell, 1999).

### Entrepreneurial evolution

There is a great academic discrepancy between the more formal models of growth developed by neoclassical economists and the structuralist or evolutionist views based on a historical vision of growth processes (Nelson, 1982). In this sense, in neoclassical economics textbooks it is observed that companies are usually presented as a sort of black box, which somehow combine a certain amount of labor with a certain amount of capital, following what is postulated by a model dominated by the conventional theory of static equilibrium.

Undoubtedly, neoclassical economics provides us with a starting point for understanding a series of factors that affect the economic growth of companies, however, and given that we are in a stage of rapid technological transformation, in which there are various possibilities for studying the trajectories, routines and capabilities that affect business demographics, it is somewhat limited for us to adjust to a static modeling of growth phenomenon.

It is therefore essential to bear in mind that, if environmental and business conditions are favorable, the firm's resources and capabilities can progressively adapt to more innovative and competitive economic environments. Thus, affirming the idea, Edith Penrose (1959) in her book "The Theory of Firm Growth" studied the causes of business growth and the factors that lead to limiting its growth rate. In this sense, the author, in exploring the relationship between the firm's resources and its development, observed that firms are

an administrative organization made up of a set of resources, where the firm's growth is determined by the resources it possesses and by a business logic or culture of organization and behavior.

To illustrate this point, Penrose identified that firms that are endowed with certain resources, managed by entrepreneurial managers provide both an incentive for expansion and a limit to the rate of growth. From this perspective, the growth rate of a firm is limited by the knowledge, managerial efficiency, and collection of productive resources at its disposal (Penrose, 1959).

### Business Growth from an Inductive and Appreciative Perspective

Most of the theories that seek to determine the sources of business growth have been based on inductive methods and case studies. However, during the last decades many researchers have moved away from narrative methods towards econometric and statistical techniques, using structural models that allow causality to be incorporated into the variables. The basic motivation behind this search was the scientific need to evaluate the statistical validity of the theories developed from casuistic observation of reality. Tarziján (2019) points out that, "*despite the attractiveness of this drive towards a statistical validation of the various theories, there is no consensus on the real progress on this front*".

As for business variables, certain factors have been identified that can be related to high profitability and growth (such as industry type, systematic investment in innovation and technological change), but we are still far from finding clear causalities or identifying specific variables that affect such profitability.

Other authors such as Bloom & Van Reenen (2010), in conducting an extensive

research program to systematically measure management practices in developed and developing countries, succeeded in explaining that the large differences in productivity between firms and countries - differences that cannot be easily explained by other factors - are variations in management practices.

Their research findings indicate that firms with better management practices tend to perform better on a wide range of dimensions: they are larger, more productive, grow in terms of size and productivity, as well as in terms of survival.

From an evolutionary perspective, Richard Nelson (1982) points out that research on the differences between firms and the implications for survival and growth rates has overemphasized formal modeling and quantitative analysis, neglecting a better understanding of what is happening within the firm. In consideration of the above, Nelson argues that industrial heterogeneity necessarily leads to a wide typology of firms and circumstances, different customer groups and a diversity of behavioral patterns (Nelson, 1982).

### **The Business Centers program's support for gazelles and MSME firms**

The long-term support infrastructures for small and medium-sized enterprises and fast-growing gazelle firms supported by the Business Centers program in Chile offer important ingredients for fostering more sustainable business ecosystems in emerging markets.

Centers must perceive the range of needs of successful gazelles and companies struggling for business survival. As such, the services that the program can offer and the appropriate time horizon for providing those services should ensure that entrepreneurs,

established companies and gazelle firms are not prematurely abandoned, as this would help maximize their long-term impact and expansion.

### **Business Development Centers**

Several countries and donor agencies have committed support to stimulate the economic growth of MSMEs over the past three decades. In this context, the international literature in this field is very diverse, and the variety of approaches and case studies represent the background against which public sector decision makers must work to find solutions to the different challenges faced by small businesses and gazelle firms. Most research considers business development services provided by Small Business Development Centers. Depending on the context or area of specialization, we can find different programs with very similar characteristics across countries.

From a conceptual perspective, Business Development Centers (BDC) are characterized as free assistance spaces, adapted to the specific needs of MSMEs and financed mainly by public institutions. The centers contribute to business growth and sustainability, on the grounds that a large segment of MSMEs lacks the necessary resources and capabilities to adequately overcome the challenges of the business life cycle. It is also increasingly thought that associativity and cooperation with support networks constitute an important element in the performance of local economies and enterprises (Katz, 2020).

For the European Commission, BDC are defined as "Those services generated by a public initiative, which aim to assist enterprises to successfully develop their businesses and to respond effectively to the challenges posed by their physical, social and business environment".

For the Small Business Administration (SBA), Small Business Development Centers (SBDCs) are “Cooperative efforts among the SBA, universities, the private sector, and state and local governments for the benefit of small businesses. Their services include free business counseling and low-cost training”.

The BDCs are designed to improve MSME access to all types of business assistance services in geographic areas with little or no service delivery. The Centers, initially referred to as non-financial services, are the most important public policy instrument to support small businesses. In addition, BDCs provide services in more than one area, operate in several markets at the same time, and can do so under different modalities, although recent trends are towards specialization (Barra, 2021).

According to Pietrobelli (2011), the notion of “Business Development Service” (BDS) is rapidly gaining popularity among policy makers and scholars of management, industrial organization, and development. Among the many definitions of BDS, the characteristic of real service is attributed to it, as it indicates its impact on the structural characteristics of enterprises (not only the financial impact), and especially on enterprise competitiveness.

### **Origin, transfer, and adaptation of the SBDC model in Chile**

The SBDC was an initiative implemented at a pilot level in the United States at the end of the 1970s. With more than 35 years of operation to date there are more than 1000 centers in the different states serving more than one million small businesses annually. Its services are based on free business consulting and low-cost training to improve business results. The model understands as business development milestones the definition of a

new business, the development of a business plan, the obtaining of new financing and the development of an export offer.

In 2014, the transfer of knowledge was agreed in the Free Trade Commission of the Chile-United States FTA. Based on this agreement, a Memorandum of Understanding was signed for the promotion of entrepreneurship and growth of SMEs, which is beginning to be implemented through a mission led by the Ministry of Economy, Development and Tourism. The adaptation of the model included consultation with SME authorities and national interest groups; the development of an SBDC diploma course for future operators; the development of a pilot plan; among others. The opening of 21 centers is carried out in 2015, which increase to 51 in 2017, after calls for public tender. Along with this, a joint work is carried out with the University of Texas San Antonio for the transfer of good practices and operation with economic impact. The operators of the Centers in Chile were universities, productive development corporations and business associations. One of the aspects that deepens the model is the evaluation of the results and impacts on the clients served. The implicit objective of the adaptation of the model is the territorial deployment of a public offer executed by juridical persons under public or private law. In this sense, each center defines its own conceptual and operational design framed in the regulations and manuals defined by SERCOTEC.

In addition to SERCOTEC and the CDN operator, the Regional Governments are involved, which propose guidelines for productive development in the local economic sectors; and private actors with whom strategic alliances are made to improve the services offered. The CDNs are focused on Smaller Size Enterprises (MSEs), which are



those that obtain revenues of up to UF 25,000 per year. The Centers were conceptualized as:

A space where the EMT and entrepreneurial business community will find comprehensive and effective support to develop their capabilities and their businesses, through high-value technical advice, general and/or specialized, along with a process of accompaniment and monitoring of their work plans, hoping to produce impact on their businesses, based on effort, perseverance and mutual commitment (Sercotec, 2015).

The CDN Network is established throughout the country offering free assistance services for entrepreneurs, micro and small businesses. These services consist of specialized technical assistance, accompaniment and follow-up aimed, on the one hand, at strengthening productive processes with a focus on efficiency and market satisfaction and, on the other hand, at improving the management skills and management capabilities of entrepreneurs. In this scheme, the accompaniment corresponds to comprehensive assistance and personalized coaching that includes field visits to the productive or service units. Finally, follow-up is carried out on the companies that have graduated from the CDN, which makes it possible to measure subsequent results and to identify new needs that can be addressed.

The objective of the Business Centers is to contribute to the development of business capabilities and business of the country's entrepreneurs through a comprehensive and effective offer of services to capture economic impact on them and their mission is to "promote growth, productivity, new networks and business opportunities, training and education of entrepreneurs, contributing to the viability and sustainability of their

businesses and workers". The services offered by a CDN correspond to counseling, training, access to financial supply, market research, linkage with the local productive system and the generation of alliances with institutions (Sercotec, 2015).

### 3. Hypothesis

This article answers the following questions: what are the most dynamic companies assisted by the Business Centers program in Arica and what are their characteristics? What are the characteristics of the companies that experience the most important growth in their turnover and that have a positive cost-benefit ratio for the Business Centers program? The study identified Gazelle companies with a positive entrepreneurial repertoire that explain their performance based on an appreciative theorizing instrument Nelson (1983) applied in an extreme region with a fragile entrepreneurial ecosystem.

### 4. Methodology

The research adopted a qualitative and descriptive research design using the case study method. The case study approach facilitates an in-depth investigation of a phenomenon in its actual context to answer the "how" or "why" questions of the events or phenomena examined (Yin, 2018). This approach provides insight into the interest and how business development services (BDS) provide appropriate and economically impactful solutions for MSMEs and gazelle firms in the Arica and Parinacota Region. It also shows whether business assistance has an impact on the companies advised and as is sometimes the case, whether growth comes from within the company, i.e., from its entrepreneurial spirit, mission, and business model. In recent decades, several socio-economic, environmental, and technological changes have posed challenges to companies,

demanding the implementation of new and different business strategies. In this research we focus on the institutional experience of the Business Centers model in Chile. It is, moreover, pioneering research in the field and, therefore, traditionally associated with meso and microeconomic variables. The companies assisted by the CDN program are among those that require greater long-term support to create business value, preserving their trajectory and guaranteeing future profitability (Dosi, Nelson, et al., 2000).

We have chosen to examine, through the analysis of reports, statistics, interviews, official documents, consultation with experts and entrepreneurs, those elements that are justified by the scarce systematization of the experience of the areas of study.

To empirically verify the impacts achieved by the program in the Region of Arica and Parinacota, Neoserra software was used to examine a database of more than 800 clients served in the period identified above.

From the available information, it was feasible to elaborate a longitudinal database, which represents the dynamics and growth of the clients served and examines the relationship between the main performance indicators of the program, with other variables that the literature suggests for its treatment, among them, efficiency by gender, ethnicity, size, and economic sector.

Of the total number of companies analyzed, 400 economic impact surveys and work plans were analyzed in depth. The application of the measurement instrument corresponds to the procedure established by the Directorate of Sercotec Centers and is based on a survey of similar characteristics used by the SBDC program in the United States.

To obtain additional information on the growth impacts of the assisted companies, an appreciative theorizing method was applied to five “gazelle companies”, which made it possible to identify qualitative aspects not recorded in the available information. Much of this effort was focused on identifying the factors that justify the annual rates of sales growth.

Following the establishment of the inclusion criteria for the case study methodology and appreciative theorizing (Nelson, 2018; Katz, 2021, et al.), different search strategies were designed to identify business cases to be included in the review. Review of work plans and the historical record of attendances built into the Neoserra software were used to eliminate bias or errors in interpretation. The overall strategy included confidential interviews with gazelle and laggard companies.

## 5. Discussion

The purpose of the literature review was to demonstrate how, in recent decades, gazelles and fast-growing enterprises are driving the evolution and transformation of local productive systems. In this search for a better understanding of the subject, contributions from different disciplines individually contribute to understanding the nature and behavior of this actor that is the SME entrepreneur, including their advantages and disadvantages, and their ways of inserting themselves in an increasingly competitive and globalized society. This debate is of particular importance for authors such as Vázquez Barquero (2011), who suggests that companies and organizations make investment and location decisions in innovative and fertile territories, where integration and collaboration play an important role in

accessing knowledge and enhancing learning and innovation.

Due to this, a diversity of theoretical approaches emerges, ranging from the nature of the firm in the broad sense of the literature to understand its structure, behavior, size, and growth (Casson, 1982 et al.). By examining the specific traits of the SME entrepreneur, entrepreneurship, management and leadership styles, business evolution, among other factors such as resilience and survival structures, areas that help explain the differences between successful and lagging firms (Nelson, 1982; Marcus, 2006 et al.).

It underscores the idea that success and failure depend in part on leadership style, learning ability and entrepreneurial behavior (Cope, 2005; Politis, 2005; Rae, 2005). In this context, the business literature suggests that better management practices help to improve business profitability, growth, and sustainability (Bloom, Van Reenen, et al., 2010).

Based on the above, the research results suggest that the lack of management skills and capabilities is a major obstacle to the growth of enterprises and the ability to withstand economic shocks and market failures (Bloom & Van Reenen, 2007; 2010).

The literature review first recognizes what entrepreneurs need to successfully manage their firms, and from there to make a classification of the main functions of entrepreneurs that allows to locate in which area and how external services will influence. In other words, it is from the perspective of business needs that development services can be rationalized. It is recognized that for companies to perform in the market they require the fulfillment of a series of functions ranging from sales to finance, management and technology management (DESIDE, 2001).

Overall, the results of the CDN program confirm that long-term assistance inputs have a significant impact on business performance, and even on hiring staff and obtaining financing, however, there is still much to learn about how this information affects the performance of the firm as a whole and, more specifically, how it interacts with productivity, competitiveness, and regional innovation.

The discussion on the Arica - Chile Business Center Case Study suggests that although it is difficult to establish precisely the ultimate reasons underlying these business improvements in Arica (an extremely backward region), due to the wide diversity of enterprises and businesses assisted by the program, it seems reasonable to conclude that they reveal a profound transformation in the assisted enterprises, which is in line with the impacts originally foreseen by SERCOTEC.

This form of causality appears when analyzing the economic impact surveys, where it was possible to show that the quantitative and qualitative results obtained are the result of a series of actions aimed at resolving internal deficiencies and common problems, including overcoming problems of access to new markets, access to financing and more efficient management of the company's resources and capabilities.

Regarding the magnitude of the general impacts, the business growth of owners of ethnic origin stands out. This finding is to be expected, in the first case, because it is a region with a strong presence of indigenous population, and secondly, because of the notorious transformation and changes in the attitude of micro and small enterprises in the areas of services, agriculture and artisanal manufacturing. In the latter case, considering that evolutionary theories (Nelson, 1982-2018) have an empirical basis of great explanatory

value, the historical patterns of the Aymara people also determine their commercial behaviors and singularities. Therefore, it should be considered that knowledge transfer processes in this customer segment favorably condition their management practices and economic performance.

Regarding the success factors of gazelle firms, it is confirmed that the great heterogeneity of the firms and sectors assisted, it is complex to analyze it under an economic model in equilibrium (Nelson, 1982, Katz, 2021), for such reason, the competitive nature of the firm, the owner's purpose, the capacity to assume risks or the general levels of commercial ability, constituted a critical area for the research that, justified using a set of "stylized facts" that describe the behavior of the firms from confidential Case Studies (Yin, 2014) applied in the region of Arica and Parinacota.

The stories of the five interviewed firms belonging to the agro-industrial (**A and B**), technological (**C**), photovoltaic energy (**D**) and high complexity veterinary services (**E**) sectors, - whose names cannot be disclosed due to the confidentiality clause established by SERCOTEC - possess certain similarities of personality and knowledge that, have influenced to some degree in the growth experienced in these last five years. In addition, the firms interviewed base their success on occupying advantageous spaces for growth and on their leadership style vis-à-vis management. They are focused, innovative, disciplined, and agile. In general, cumulative returns on sales exceed 25% annually. They are companies whose expansion responds with agility to changes in demand, work in close contact with their clients and collaborators, are flexible and react quickly to the threat of new competitors and have consolidated a support network with the Business Center,

including articulation with other business support agencies such as SERCOTEC, CORFO and technology service providers that are not located in the region of Arica and Parinacota.

In addition, the companies consulted show business skills, collaborative sense and configure a set of positive characteristics based on leadership, reputation, and capacity to invest sustainably in new technological resources and attraction of human talent.

The characteristics of these firms and their operating structure contribute to company growth, and it is quite logical to expect that composition, size, average age, education level and other traits such as emotional and business intelligence are related to economic growth.

The significant variables among the gazelles examined over the rest of the SMEs assisted is that the main industries of the former more frequently face major changes due to the incorporation of new technologies. This result is consistent with the hypothesis that among the gazelles there is a greater disposition to innovation management and intensive investment in technology and attraction of human talent.

With respect to the factors that explain the sustainability of the income of the companies interviewed, there are important findings. Among them, the role of industries in the trajectory of profitability and survival stands out. In this sense, it seems that the results indicate that the industry effect has a significantly higher persistence coefficient than the company effect, although the differentiating factors of each of the firms are the result of knowledge of the sector, commercial self-demand, and purpose.

The interviews confirm that Gazelle business owners have recognized the

link between learning and continuous improvement and have begun to reorient their firms around it and, even better, that the firms emphasize that they are “regional knowledge-creating firms”.

## 6. Research results

By their own definition, Gazelle and High Growth firms are characterized by high revenue growth, which explains the higher performance they obtain with respect to the rest of the firms. The Gazelle companies interviewed have maintained an annual growth of over 25% in the period 2015-2020, while the average annual growth of conventional established firms observed an annual growth of less than 9% according to the information examined in the tax folders of the Internal Revenue Service.

Gazelle and High Growth firms have a lower level of risk than those in the comparison group analyzed in the longitudinal statistics, as they scale faster in underserved or higher industry growth markets. In particular, the analysis of the results and impacts of the program implementation in Arica is based on data provided by the Neoserra system. Thus, it was possible to access a history of 840 clients during the period 2015-19. The data allowed populating a database that collects the characteristics and performance indicators of entrepreneurs and businessmen. Along with the above, more than 400 economic impact surveys applied to people served by the Center at different stages of the business life cycle were analyzed (Henderson, 1979). On the other hand, the impact on sales, job creation and obtaining financing was analyzed through the documents provided by the clients served by the Center, i.e., the SII tax folder, employment contracts and financing agreements (Barra, 2021). The Center makes a differentiation among its clients, recognizing

those who are owners of ongoing businesses, gazelle firms and entrepreneurs with business ideas.

In summary, the Center’s performance is evaluated, on the one hand, through indicators associated with the activities involved in the delivery of technical assistance and, on the other, through changes in business activity (see Table 1). It is difficult to establish a trend in the indicators, since the number of clients per year of operation is variable and the fourth year analyzed has partial data. However, there are indicators on the performance of the enterprises that show a significant impact, for example: increase in sales, number of jobs created, and new enterprises formalized.

Finally, it is important to note that of the total increase in sales achieved by the Arica CDN, 39.2% of the increase in sales is generated by gazelles. These are equivalent to 2% of the total of 840 companies analyzed.

**Table 1.**  
**Economic impact of the Arica Center (2015-2019)**

INDICATOR	YEAR 1 <sup>1</sup>	YEAR 2	YEAR 3	YEAR 4	TOTAL, CUMULATIVE / AVERAGE
	2015-2016	2016-2017	2017-2018	2018-2019	
Clients assisted	321	497	457	302	1.577
Clients assisted per advisor	80	107	107	107	100
Hours of counseling per client	10,3	8,7	8,0	6,0	8,25
Companies reporting increase in sales	35	135	140	66	376
Increase in sales (Thousands \$ CLP)	205.445.320	1.050.391.874	1.552.453.210	1.271.362.396	4.079.652.800
% Of companies assisted that increase sales	10,9%	27,5%	31,4%	21,8%	22,9%
% Share of increase in sales generated by Gazelles (N3)	55,9%	41,7%	32,5%	42,7%	39,2%
% Increase in sales generated by women	42,9%	57,7%	51,7%	58,5%	52,7%
% Increase in sales generated by men	48,6%	37,2%	43,4%	41,5%	42,7%
Jobs created	37	34	45	46	162
Formalized enterprises in first category	32	44	41	15	132
% Formalized enterprises over total number of clients N1	36%	35%	39%	41%	37%
Financing obtained (Entrepreneur's savings and credits requested with program support)	183.186.098	121.404.820	171.569.425	213.268.614	689.428.957
Financing obtained (Subsidies)	44.626.103	73.400.529	67.579.028	28.400.000	214.005.660

Source: Own elaboration based on Neoserra.

Considering only sales by economic<sup>2</sup> sector, the largest increases are found in the following sectors: Agriculture; Accommodation, food, and tourism services; and Services, with over 50% (See Table 2). It is worth mentioning that these sectors have an important share in the number of clients of the Center.

**Table 2.**  
**Overall increase in sales by economic sector (2015-2019)**

Sector	% Increase in sales
Services	54,0
Agriculture	80,3
Wholesale and retail trade	49,2
Accommodation, food, and tourism services	64,6
Transportation and warehousing	13,0
Manufacturing	42,5
Other sectors	50,6

Source: Own elaboration based on Neoserra.

<sup>2</sup> Data obtained from the Neoserra platform as of March 31, 2019. The fourth year ends on September 30, 2019; therefore, the values are subject to further increases that will positively affect the economic impact of the program.

The largest increases in sales<sup>3</sup> are found, 1) by company size, in the microenterprise segment; 2) by economic sector, in Services, Wholesale and retail trade and Accommodation, food and tourism services; and 3) by ethnic identification, in those businessmen and entrepreneurs who do not self-identify with any Indigenous People (See Table 3).

**Table 3.**  
**Share of sales growth by size, economic sector, and ethnicity**

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	AVERAGE
	2015-2016	2016-2017	2017-2018	2018-2019	
Micro	28,6	61,4	61,9	63,5	53,9
Small	55,2	34,4	32,6	35,6	39,4
Medium	16,2	4,3	5,4	0,9	6,7
Services	20,6	29,6	38,9	59,4	37,1
Agriculture	4,2	10,3	4,7	14,4	8,4
Wholesale and retail trade	29,5	34,2	23,9	7,9	23,9
Accommodation, food, and tourism services	9,1	7,9	5,9	11,2	8,5
Transportation and warehousing	17,1	2,9	5,6	0	6,4
Manufacturing	1,0	8,2	3,5	6,4	4,8
Other sectors	18,6	6,9	17,4	0,8	10,9
With ethnicity (Aymara, Quechua, Other)	28,5	33,3	30,7	34,8	31,8
Without Ethnicity (Does not declare belonging to an ethnic group)	71,5	66,7	69,3	65,2	68,2

Source: Own elaboration based on Neoserra.

For the overall analysis of the Center's performance, a cost-benefit analysis is proposed based on budgetary and business performance data of the clients. For this calculation, two methodologies are proposed, the division between the Center's operating expenses and, first, the increase in sales of the clients served and, second, the increase in tax revenue. Except for year 1, the operation of the Center produces positive figures. The reading would be that, for every peso spent

on the operation of the Center, the companies achieved 2.8 pesos in sales and the Internal Revenue Service is able to collect 1.7 pesos. Thus, the break-even point of the Center was achieved in the third year of operation, justifying its permanence as a local initiative for the development of the region's business park.

<sup>3</sup> Increases in sales are calculated based on the following formula ((Final sales level - Initial sales level) / (Initial sales level)) \*100. Revenues correspond to the Taxable Base gross of the monthly VAT returns, obtained from the Internal Revenue Service platform.

**Table 4.**  
**Cost-benefit analysis (2015-2019)**

	YEAR 1 2015-2016	YEAR 2 2016-2017	YEAR 3 2017-2018	YEAR 4 <sup>a</sup> 2018-2019	TOTAL, ACCUMULATED
SERCOTEC	197.921.000	203.990.000	205.510.000	205.510.000	812.931.000
Tarapaca University	216.900.000	108.180.000	108.180.000	108.180.000	541.440.000
Other contributions	16.000.000	16.000.000	19.000.000	19.000.000	70.000.000
Operating cost	430.821.000	328.170.000	332.690.000	332.690.000	1.424.371.000
Increase in sales	205.445.320	1.050.391.874	1.552.453.210	1.271.362.396	4.079.652.800
Cost-benefit ratio measured by the increase in sales	-0,5	3,2	4,7	3,8	2,8
Tax Collection (VAT)	88.474.351	459.981.300	1.176.881.476	651.533.036	2.376.870.164
Cost-Benefit Ratio measured by increase in tax collection	-0,2	1,4	3,5	2,0	1,7

Source: Own elaboration based on Neoserra.

In general, the Center produces several positive impacts recognizing the segment of companies it serves. We refer to companies that wish to develop an entrepreneurial activity but lack experience. The technical assistance provided improves the chances of a positive performance for the companies and entrepreneurship. It should be remembered that approximately 60% of the clients served do not have sales. The level of education of the clients is a strength for the Center's clients since most of them have completed university or high school education. The strategy for market penetration is supported by assistance around business administration and the formulation of a business plan. Once the first sales barrier is overcome, business development is linked to hiring workers or applying for financing from formal institutions.

### Indirect effects of the program in Arica

While it is true that the facts, circumstances and descriptive statistics are mainly based on a static and partial equilibrium evaluation (2015-2019) of the impact of the CDN in Arica and Parinacota, the research is complemented by a broader analysis of the indirect effects of the program on the regional macro by examining what happened in other areas

of entrepreneurship and the local economy - banks, intermediate input supplier companies, articulation with technical training centers, physical infrastructure and performance of regulatory and subsidy agencies in the public sphere. This explains the difference between the private impact - measured by the model - and the social impact of the program in Arica. In this sense, the social impact of the program includes several dimensions of economic and social development, such as the creation of ethnic entrepreneurship, individual and associative learning, enhancement of local heritage and conservation of natural resources, among other areas, which the private measurement does not capture. Especially because the CDN has a territorial deployment from the coast to the highlands, with an abundant participation of entrepreneurs with ethnic origin, among other areas that will be described later.

Thus, beyond the strictly economic aspect, this type of program ends up affecting the structure and behavior of the enterprises and firms that receive business advice, also including the family nucleus. In addition, the social construction process manages to capture, by way of example, phenomena such as the transition from parents to children in



the management of agricultural enterprises and the commerce sector and the adaptive changes that this brings about in the operation of the same - including the incorporation of technology and the propensity to seek support from specialized external consultants with CDN support, being an important by-product of this type of policy.

### **Business growth of Gazelle companies based on Appreciative Theorizing**

The stories of the five companies interviewed belonging to the agro-industrial, technological, photovoltaic energy and highly complex veterinary services sectors - whose names cannot be revealed due to the confidentiality clause established by SERCOTEC - have certain similarities of personality and knowledge that, to some degree, have influenced the growth experienced in the last five years. In addition, the firms interviewed base their success on occupying advantageous spaces for growth and on their leadership style vis-à-vis management. They are focused, innovative, disciplined, and agile. In general, cumulative returns on sales exceed 25% annually. They are gazelles whose expansion responds with agility to changes in demand, work in close contact with their clients and collaborators, are flexible and react quickly to the threat of new competitors and have consolidated a support network with the Business Center, including articulation with other business support agencies such as SERCOTEC, CORFO and technology service providers that are not located in the region of Arica and Parinacota.

In addition, the companies consulted show business skills, collaborative sense and configure a set of positive characteristics based on leadership, reputation, and capacity to invest sustainably in new technological resources and attraction of human talent.

The characteristics of these firms and their operating structure contribute to company growth, and it is quite logical to expect that composition, size, average age, educational level, and other traits such as emotional and business intelligence are related to economic growth. Likewise, sales growth depends at least in part on key performance indicators such as volume, degree of diversification of products and services, and access to underserved but high-growth potential markets.

The equation (talent + capital + purpose) provides unique competitive advantages, based on the assumption that a company is more likely to grow when it makes significant use of its cognitive capabilities to direct the company's resources and knowledge to attract capital, showing dynamism and a certain capacity to take risks, venturing into more complex industrial environments. In addition, the purpose of these companies examined coincides with a long-term vision, which facilitates the reorganization of their business models.

Something similar happens with respect to production technologies, where the perception of the companies interviewed agrees that other determining factors for the growth of the firm are the ability to adapt to change, automation of technology for product distribution and computer knowledge to control the internal and external processes of the company.

The significant variables among the gazelles examined over the rest of the SMEs assisted is that the main industries of the former face major changes more frequently due to the incorporation of new technologies. This result is consistent with the hypothesis that among the gazelles there is a greater disposition to innovation management and

intensive investment in technology and attraction of human talent.

While it is true that it is difficult to harmonize these traits in the same firm because they belong to different industrial sectors, the similarities form valuable patterns that are difficult to imitate. However, successful companies whose revenues have a high profit share tend to have a high ratio between technological investment and new product development.

With respect to the factors that explain the sustainability of the revenues of the companies interviewed, there are important findings. Among them, the role of industries in the trajectory of profitability and survival stands out. It seems that the results indicate that the industry effect has a significantly higher persistence coefficient than the company effect, although the differentiating factors of each of the firms are the result of knowledge of the sector, commercial self-demand, and purpose.

As preconceived, authors such as (Dosi 1972; Dickinson, 2011, et al.) suggest that the evolution and trajectory of a firm is determined by internal factors (e.g., choice of strategies, financial resources, and managerial skills) and external factors (e.g., competitive environment, macroeconomic factors). Therefore, the stages of the life cycle of a business with innovative potential are the result of changes in the aforementioned factors, which arise from the strategic activities executed by the firm. According to the interviews conducted, Gazelles firms attach importance to the influence of the entrepreneurial ecosystem, where certain institutional and innovation supports end up facilitating or hindering different levels of profitability. Even so, each company has consolidated throughout the assistance a

clear support for its competitive advantage, taking advantage of business opportunities and market failures present in the territory.

Likewise, the companies interviewed are forming flexible ecosystems of collaborators that make it possible to accelerate innovation processes and adapt to sudden changes in the sector more quickly.

The research has found that the companies interviewed grow significantly faster and create more value for the owners than the rest of the companies statistically analyzed. In addition, they can generate socio-economic impacts by providing high-skilled jobs, stimulating the growth of supplier networks, collaborating with academic institutions, and engaging deeply with local communities in the territory. Similarly, gazelle companies explain the sustenance of their profitability by virtue of their degree of innovation (Roberts, 2020), reputation (Dowling, 2020), trajectory, commercial ability, and industry-attributable components (Porter, 2003).

The worst-performing firms assemble lethal combinations of rigidity and unfocusedness and tend to fail faster because of their lack of discipline and commitment to the actions mandated in the framework of business assistance. In addition, they participate in unprofitable markets and their annual operating margin is less than 5%. They also recognize inefficiencies in their production processes, show low adaptation to change and take too long to enter new markets. In this sense, given that firms with low yields have more direct competitors, they are less effective in controlling the classic forces of regional industry.

## 7. Conclusion

Being able to count on companies that are engines of employment generation is a

challenge for the country that becomes even more relevant in the current context, where it is urgent to promote economic reactivation. In this complex and challenging scenario, gazelle companies, which are characterized by growing a lot in a short period of time and therefore generate a large part of the new jobs, are presented. Therefore, they are key to boost the economic recovery and the future of Chile (Endeavor, 2020).

The research has found that the gazelle companies interviewed grow much faster and create more value for the owners than the rest of the companies statistically analyzed. Moreover, they can generate socio-economic impacts by providing highly skilled jobs, stimulating the growth of supplier networks, collaborating with academic institutions, and engaging deeply with local communities in the territory. Similarly, the companies examined provide exceptional benefits to all stakeholders, not only to their owners and/or families, but can also help less innovative territories to develop solutions that address more complex business challenges, such as facilitating access to clean energy or fostering more sustainable agriculture through their experiences, learning and knowledge.

Peter Senge (1990), who popularized his research on learning organizations, described them as places “where companies continually expand their capacity to create the outcomes they really want, where new and expansive patterns of thinking are nurtured, where collective aspiration is unleashed, and where people continually learn to learn together”.

Given the above, this could be due to the differential quality of mentoring at the Arica center, where companies receive access to continuous learning, extended business networks, business-to-business connections and services based on their growth needs.

Importantly, unlike the gazelle firms examined, conventional assisted firms are less likely to act strategically in planning for the future and expansion. Therefore, the worst performers bring together lethal combinations of rigidity and lack of focus and tend to fail faster due to their lack of discipline and commitment to the actions mandated under the business assistance framework. They also participate in unprofitable regional markets.

Considering the above, the Centers must continue to provide entrepreneurs with long-term learning opportunities and assistance that help them anticipate and manage their business challenges and foster a conversation across different local industries to encourage the creation of more robust entrepreneurial ecosystems and more innovative and competitive regional leaders.

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