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Study cases of two small medium size enterprises (SMEs) in the southern metropolitan region of Buenos Aires[1]

Abstract

The main purpose of the paper is to understand which specific strategies Argentinian small medium-sized enterprises (SMEs) adopted during the second half of the 20th century to adapt to and confront economic cycles, and how the learning process allowed them to endure over time. To do so, we focus on the learning paths of two metallurgy firms established in the Quilmes District, south of the Buenos Aires Metropolitan Region: SINPAR (1931), and Gora (1958), which have accumulated experience and recognition at the local level, for more than sixty years. By studying those companies, we aim to a twofold result. The first is to show that the strategies of the SMEs in the manufacturing sector are based on internal capabilities of meeting demand and responding to the domestic economy. The second one associates the long-term endurance of companies with a strong family management structure over more than one generation. Based on those results, we will argue that the SMEs lasted over time because their founders and successors developed the ability to adapt and of learning how to respond to and take advantage of the uncertainty, restrictions and opportunities of the Argentinian economy.

Keywords: Small Businesses; SMEs; Family Management; Metallurgical Industry; Technological Capabilities.

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Introduction

In Argentina's history of industrialization, small and medium-sized enterprises (SMEs) have had, and still have, a significant place in the productive structure (Barbero and Donato 2009; Russo 2011). They exercise a positive synergy, creating employment, disseminating and contributing to the training of the workforce, and have a distributive socioeconomic effect in terms of both income and productive capabilities.[2] However, SMEs in Argentina—and especially in Latin America, as a result of their high structural regional heterogeneity—have also a low level of performance in terms of productivity, weak or no participation in exports and limited technological capabilities (Kulfas 2008; Ferraro and Stumpo 2010; CEPAL 2015). Thus, the main objective of this article is to understand the learning processes of SMEs in Argentina, that is, which specific strategies they adopted in the course of the second half of 20th Century to adapt to and confront the economic cycles so as to endure in the long run.

We will focus on the trajectory of two companies established in the Quilmes District, south of the Buenos Aires Metropolitan Region (RMBA): *SINPAR S.A.*, founded in 1931 and *Gora Hnos.*, founded in 1958. Both SMEs[3] are small enterprises in the metallurgical industry and are more than sixty years old and have accumulated experience and recognition at the local level. They are also nuclear family businesses whose partners belong to the same family, a feature through which their trajectories show continuities (Almaraz and Ramírez 2018). They are outstanding cases of the local industrial structure representing family-run companies. They have incorporated technology into their production processes and learned to dominate

[2] In 2017 there were 609.000 companies with at least one employee registered as dependent worker. 99.5% were SMEs that accumulated 48.5% of formal private employment (Datos Argentina 2020; OEDE 2020).

[3] We consider here the criterion of the number of employees as defined by the Secretariat of Entrepreneurs and SMEs of the Ministry of Production of the Argentine Republic (companies with up to 235 employees are considered small industries, Resolution 215/2018).

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market niches through specialization. These elements partly explain how they have overcome many critical periods in the history of the Argentine economy. Based on the existing literature on the topic, we would like to show how the performance of these enterprises in the long term is related to the business ability to adapt to the national and international context, as well as to transformations in the current techno-productive paradigm (Fernández Pérez and Lluch, 2016; Lluch and Fernández Pérez, 2019).

Our working methodology combines the historical perspective with organizational analysis, allowing the reconstruction of the trajectory of the SMEs. In this sense, we will analyse different aspects, such as business behaviour, organization, structure and management processes, and technological capabilities, as well as the training of human resources, through the history of these enterprises.

The present paper is divided in five parts. The first part is related to methodology and how mixed methods can help to study learning, behaviour and business trajectories. The second part establishes the periodization of the enterprises' trajectories. The third section analyses technological capabilities as one of the factors that explain their performance in the long run. The fourth section presents the analysis of the results obtained in this paper, with emphasis on similarities and differences among research topics. In the last part, we offer some conclusions in terms of learning process, family business, and adaptive models in SMEs in Latin America.

I. Strategy of methodology

The current research is carried out following a mixed type methodology based on the multiple case method and the biographical method. Those will be the main tools we use to reconstruct the trajectory and business strategies, both explicit and implicit (Jones et al. 2011). On the one

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hand, the research followed the design of the “holistic multiple case study” type (Yin 2014). This model allows us greater validity by contrasting the results because it implies a deep analysis of the whole individual cases. On the other hand, the biographical method enables a global grasp of the phenomenon studied (“comprehensive research”), by incorporating the point of view of the social actors through semi-structured interviews (Desmarais 2009). Thus, the story of the interviewees —the businessmen in this case— provides the basis for this work. One may observe that, in the process of producing meaning, the oral narrative swings between singularity and universality, subjectivity and objectivity, implication and distancing. Hence, the biographical method articulates micro and macro explanations. This reduction of scale in the observation —provided by the case studies and the biographical method— makes it possible to focus on aspects that appear not only on a macro scale, but also in the analytical unit. The attributes of the companies studied are common to other cases and, to some extent, can be generalized to the Argentine industrialization process. Hence, the privileged sources of the present paper are semi-structured interviews and complementary documents.[4] Being aware of the potential and limitations of the oral source we not only contrast it with other sources**,** but also with the history of companies that would share similar characteristics.[5]

In the two analysed cases, the periodization follows three criteria. Firstly, the *productive-technological* criteria—that is, what they produce and under what conditions, identifying some significant milestone in the long-term construction of technological capabilities. Secondly, the *commercial* criteria—that is, how under what conditions they enter the market and market their products. And thirdly, the *organizational* criteria, which concerns the

[4] We consult publications of the Association of Metallurgical Industrialists of the Argentine Republic.
[5] The cases of Gora and *SINPAR* are inserted in a research project on the industrial history of the Quilmes District, south of the RMBA.

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condition of family-business —that is, who founded the business, what kind of management it has, when following generations join the business. The SMEs were intentionally selected because of their family structure, their centralized business management and their size of no more than sixty stable employees. Also they were both created before the 1970's, their founders and successors combine formal and informal knowledge, including important technical knowledge, their customers were usually large companies with much bargaining power and, finally, the two companies followed a tendency to expand their production *mix* in response to recurring crises.

Since the last quarter of the 20th Century, the Argentine economy has taken steps forwards and backwards. Along this road, uncertainty has determined the companies' operations. To endure in the long term, SMEs must internalize uncertainty by developing the capabilities necessary to adapt to macro and micro economic conditions. Although globally this may be a general feature of business strategies, in the case of Argentina it has become a defining feature. Hence, our hypothesis is that the strategies that SMEs adopt in different contexts depend on the possibilities they have for the develop of innovative capabilities. In what follows we will analyse the specific form this adaptive behaviour acquires in the chosen study cases.

In this sense, we would like to address the following questions: How do SMEs innovate and how do they last in the long term? Why do they adopt certain strategies in each time period? When do they invest, how do they finance these investments and what conditions them? What have the learning paths been that allowed them to expand and define their entrepreneurial culture? And finally, what variables determined or influenced the ability to adapt to changing macroeconomic conditions?

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II. The trajectory of the companies

Based on the *productive-technological*, *commercial* and *organizational* criteria, we establish four stages to facilitate the comparison of the business's trajectories. These are based on the testimonies collected in the field and give an initial contrast between the two selected SMEs. Both have a family origin and, throughout their trajectories, they remained in this group of family businesses even though in one of the cases there were two changes of ownership. With more than sixty years of dedication to the metallurgical industry, these are small companies with a simple management structure, run by family members who currently represent the second and third generation of descendants. In the following sections these two case studies will be presented in depth.

II.A. The *SINPAR* Case

SINPAR S.A. is a metallurgical company dedicated to the production of circular saw blades, industrial blades and other cutting and machining tools. However, the manual saw blade is its base product and was the first product manufactured by the company during its start-up phase. Different family groups have managed *SINPAR*. Alberto Kurz started a metallurgical workshop at the back of his family home in 1931. The name "*SINPAR*" was acquired in 1932. Since then, and until today, the facilities are located at the centre of the Quilmes District, in the Southern Metropolitan Region of Buenos Aires.

(1) The first stage of this SME runs between 1932 and 1971. From the beginning, the firm produced manual saws for cutting metals but also a wider range of products of the same sort. All the production machines used at that time were self-manufactured and the company was not modernized until the end of the 20th Century. The sales catalogue of this first period

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included, alongside with the manual saw, also circular saws, tools for lathes, bands and industrial blades. This rapid diversification allows us to confirm that, in a favourable economic context, some SMEs such as *SINPAR* have accelerated their growth since the beginning of their trajectories.

At the end of the 1930's, *SINPAR* had a general-partnership-based structure that lasted until 1952 when it became a limited liability company. Alberto Kurz directed the business with the strict criteria of austerity and reinvestment of profits, which explains the entrepreneurial trajectory in these years. This first stage ended in 1971 when the founder of the company died. Four decades of a management style concluded with a consolidated brand in the market for special cutting tools.

(2) The second stage of *SINPAR* runs between 1971 and 1992 and is characterized by a more erratic process of business management. In the absence of heirs, the accountant Carlos De Marchi took over the management of the enterprise for a brief period until 1974, when Pedro Wedekindt, a friend of Kurz, became the temporary new director. Soon after, his son Carlos Wedekindt became the director of *SINPAR* for more than nearly two decades. These first adjustments in the ownership and management of the firm undoubtedly affected its productivity. In these years there were many changes in the business strategy, the most outstanding is the importation of saws in the 1980's and 1990's. In order to remain in the market, many Argentine SMEs had to adopt this behaviour in a context of macroeconomic policy open to importations. It is important to highlight the fact that the productive stagnation of *SINPAR* during these years was the consequence of disinvestment and machinery obsolescence.

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(3) The third stage extended between 1992 and 2005 and is defined by another change in the ownership of the company. Manfredo Arheit bought *SINPAR* in a context marked by the two quasi-hyperinflationary experiences of 1989 and 1990 and the implementation of orthodox economic reforms. These policies had two outstanding aspects: one monetary-fiscal and the other structural. The monetary-fiscal reforms may be summarized in the "Currency Convertibility Law", which lasted between 1991 and 2001. The structural aspect of the orthodox reforms was the opening to the foreign market, the privatization of state-owned companies and the deregulation of the markets. In this context, Manfredo Arheit initiated a difficult restructuring of the company. It should be noted that Mr. Arheit knew *SINPAR* because he had been production manager between 1971 and 1974 —the year in which he resigned to start his own company under the name of *Herramar*. The purchase of *SINPAR* allowed Manfredo Arheit to integrate the family businesses into the new logic of the Herramar/*SINPAR* industrial group.[6]

The acquisition of *SINPAR* by Arheit signified the beginning of the third stage for the company. A modernization process characterized the years between 1992 and 2005, with investment in machinery, participation in international exhibitions and the obtaining of ISO certifications. Manfredo Arheit bought the company with his own resources and financed the equipping and the new infrastructure with credit. The profile of the new *SINPAR* owner contrasts with the previous two owners. Manfredo Arheit obtained a degree in mechanical engineering at the Karlsruhe Institute of Technology, and participated actively, for almost thirty years, in the business chamber of the sector —the Association of Metallurgical

[6] Herramar produces special tools for metal work: lathe blades, drilling systems and precision tools.

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Industries of the Argentine Republic. In addition to this position of business representation, he has been a member of different committees.[7]

During the convertibility period, the business strategy was not modified. Arheit continued the import and became the representative of the Boehlerit, Fette and LMT brands. The relationship between imports and domestic production, in these years was 75% to 25%, respectively. With the end of the Convertibility Plan, Arheit strengthened the relationship with foreign suppliers, allowing him to cope with the economic and social crisis of 2001, apparently without too much trouble. During this period the company began a moderate growth process that lasted until the next stage.

(4) In the fourth stage, which runs from 2005 to the present, Arheit invested in the expansion of the installed capacity. At this stage, the owner incorporated computer tools and implemented a Quality Management System, which allowed the company to obtain the ISO 9001 certification standard by the year 2000. He also developed a technical training program aimed at the staff. This process corresponded to a stage of modernization and certification, which would later be reflected in a new corporate image.

The indicated changes led *SINPAR* to become a SME with high capacity for manufacturing all types of metal cutting saws. Its production is 100% directed to the domestic market, with coverage of 70% of the national consumption.[8] This is an indicator of the repositioning ability of Arheit, as well as his use of external supplier's networks during the convertibility period. Despite this, the biggest problem for Arheit was the shortage of qualified human resources.

[7] For twelve years, Manfredo Arheit was a member of the ADIMRA Committee and served as president between 2009 and 2013.
[8] He absorbed the company Augustín Duris S.A., producer of large circular saws and some assets of the company Juan Korth S.A., producer of manual closures for machines, which had stopped operating in 1995.

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Thus, SMEs face limitations not only resulting from organizational capabilities and entrepreneurship, but also those of a structural nature (external restriction, access to financing, concentrated markets, production scale problems, shortage of technical human resources, etc.). In the case of the other SME, *Gora*, this is a growing limitation. With the purpose of overcoming this difficulty, *SINPAR* has focused on the training of qualified personnel. Based on the German dual model, the firm promotes the degree of "Technician in Machining" and "Technician in Industrial Administration" together with the Argentine-German Chamber of Industry and Commerce.

The current organizational structure of *SINPAR* is still a family-based nuclear type: Manfredo Arheit is the main shareholder and chairs the board of directors, his wife is the second shareholder and has the position of vice president, and their oldest son is the deputy director. The management of the company is related to the role of the second generation since 2005. The modernization fell on Cristina and Rodolfo Arheit —Manfredo's children— both industrial engineers graduated from the Technological Institute of Buenos Aires (ITBA). They are in charge of the marketing area, and of the operation and administration area, respectively. Hence, the incorporation of marketing strategies is related to the new generation of the Arheit family. The last generation to have joined the company has a more dynamic vision of the commercial promotion as they consider it a central aspect to improve the positioning of the company. As part of this dynamic, since 2005 they have promoted the design and production of their own machinery.

In summary, in the first four decades of *SINPAR* the management structure was that of a family business with mediocre growth. When the founder died, there was no successful transition since he had no heirs. So, how did this small business last? It lasted, in the first

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place, because of the professional skills and knowledge of the new owner, who in 1992 regained the direction of the company. Secondly, Manfredo Arheit was an experienced engineer and an entrepreneur in the metallurgical industry. When acquired by Manfredo Arheit, *SINPAR* took another turn and based its performance on the professional skills and knowledge of the new owner, who recovered the company's track in 1992.

The dynamism of *SINPAR* equates with the needs of the nuclear family group that acquired it. The business group is composed of two generations of the Arheit family at the head of two small companies within the same industrial branch, both more than sixty years old. The management of the Arheit family guaranteed the recovery and growth of *SINPAR*, relying on investment and modernization, as well as being specialized in the technical, commercialization and marketing areas. This process also has the imprint of the second generation of the family.

II.B. The *Gora* Case

Founded in 1958 by an entrepreneur, the son of Ukrainian immigrants, *Gora* is an SME that belongs to the metallurgical industry and is dedicated to the development of products and services for industrial filtration. The pioneer of the company, Alejandro Gora, graduated from a technical high school, worked in the 1950's as a metalworker while also repairing refrigerator compressors in his spare time. Drawing on this training experience, he established a workshop at the back of his house, with only one lathe. Four years later, in 1962, Alejandro went into business with his brother Rodolfo, and established a *de facto* business association. As a nuclear family-type partnership, the history of the company and the Gora family were closely interwoven.

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(1) *Gora*'s first stage began in 1958 and extended until the end of the 1970's, in the context of the second Import-Substitution Industrialization (ISI). During these years, the company developed a dynamic link to the synthetic yarn multinational company, *Ducilo*.[9] This customer-supplier relationship opened the possibility for *Gora* to grow, learn and specialize in the manufacturing of industrial filters, oriented, at this stage, towards the textile sector. *Ducilo* demanded from *Gora* spare parts and filters that could not be easily imported. The family workshop was dedicated to manufacturing different types of cast parts and mesh filters on an old lathe. The challenge for *Gora* was to manufacture specific parts with simple machinery.

The customer-supplier relationship between *Ducilo* and *Gora* is an example of a productive configuration processes in which the customer belongs to a multinational corporation that unites management, contracting and commercial functions (Vázquez Barquero 1997). Within this trading scheme, SMEs located near the larger company are the basis of the local productive structure but are left out of the decision-making. For its part, the large company disseminates a productive dynamic to promote *technical knowledge*, *technological abilities* and *innovation*, which are spread around the dependent productive units, both horizontally and vertically (Veltz 2005).

At the end of the 1960's, the second family generation joined the business —the founder's nephew— and changes in the structure of the firm were introduced. During the 1970's, organizational transformations were deepened and the operational capacity was significantly expanded the acquisition of lots adjacent to the house-workshop. Thus concluded, at the end of the 1970's, the first stage of *Gora*'s trajectory.

[9] *Ducilo Productora de Rayón S.A*, a subsidiary of the multinational company *Du Pont de Nemours*, settled in the Quilmes party in 1936, and in the 1970's developed into one of the largest companies in the southern RMBA.

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(2) In a different national scenario of commercial opening and changes in business rules, *Gora* began a second stage in 1977, which ended in 1990. In 1977, *Gora* participated for the first time in the Argentine Exhibition of Machine Tools, organised by Argentine Industry Association.[10] From that point on, *Gora* would expand its costumer portfolio and venture into other industries, thereby beginning to move away from the sales model to a unified company.

To that end, they would articulate a twofold strategy. On the one hand, they take part —for over twenty years— in the annual meetings of the Argentine Exhibition of Machine Tools, which allowed them to enter into the supply chains of different industrial sectors, enabling a greater opening to the domestic market. On the other hand, they participated in international fairs specialized in the manufacture of industrial filtration in Italy and Germany. For *Gora* these international scenarios become one of the principal ways to get to know and learn about, copy and buy new technologies.

In this second stage the integration of the founder's children marked the generational turn in *Gora*'s trajectory. Simultaneously, the company defined its specialization in filtration engineering. In 1981 the firm began to take part as *Gora* Public Limited Company [*Gora S.A.*] in large hydroelectric projects as contractors and as direct suppliers to state companies such as Gas del Estado (the state gas company) and YPF (the state oil company). At the 1984 Argentine Exhibition of Machine Tools, imitating what they have observed in other international fairs, *Gora* presented a brochure of new products: air filters, compressed air filters, liquid filters, hydraulics filters, and even filters that had not yet been manufactured but for which they had the capacity. For this brochure they made very careful use of paper and

[10] The first Argentine Exhibition of Machine Tools was organized in 1964 by the Argentine Association of Manufacturers of Machine Tools.

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graphic design, which was unusual in the marketing of this category of industrial suppliers. The brochure attracted new customers who demanded the products and services it displayed.[11] Marketing showed results in the short term: in the second half of the 1980's, the customer base and the profit were expanded, while dependence on *Ducilo* decreased.

During this stage, *Gora* also began to develop a domestic scheme of distributors and commercial representatives in Argentina's main industrial centres: Córdoba, Rosario, Neuquén, Mendoza and Bahía Blanca. This link is decisive for the company because the manufacture of industrial filters requires specificities that the supplier must learn. To support this marketing and distribution network, *Gora*'s managers had to offer training courses and carry out regular visits to customers and potential buyers. Until the 1990's, this network accounted for 20% of *Gora*'s turnover, and although the percentage has now dropped to 7%, it is still relevant.

(3) The third stage of *Gora* began in 1990 and extended until 2006. This period was characterized by the weight that the petrochemical and gas sector acquired in the turnover of *Gora*. The positioning of the *Gora* brand in industrial filters in these years is remarkable. As suppliers of state companies, *Gora* benefited from the privatizations of the 1990's.

It is pertinent to stress that the manufacture of filters depends on qualified manpower, which demands continuous training of human resources, this becoming a basic need for the company. The incorporation of younger workers trained in technical schools in *Gora's* the area of influence provided the skills needed by the firm during this period. From the early 2000's, the firm implemented its own quality system that facilitated the international

[11] During the 1980's, the factory facilities were still unattractive —"just a few sheds"— and the brochures. On the contrary, they offered a very modern image (Interview to Eduardo Fernández, May 20, 2018).

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certifications of management system standards. These conditions allowed them to compete for and win international tenders. However, in the last decade an important restriction in qualified human resources can be observed.[12] Given the conditions of the labour market, the company implemented a policy to train young people at their own plant, signing an internship agreement with the industrial school in Quilmes. This policy of training human resources became a very efficient way of renewing the workforce.

In the 1990's, *Gora* definitively dethatched itself from *Ducilo*, and consolidated its position in the domestic filtration markets by supplying the oil, gas, petrochemical, food and beverage industries. This process forced the company to develop new organizational strategies. One of them was outsourcing, due to restrictions in their own installed capacity. Another strategy was the increase in imported inputs and finished products. From the 1980's, and even more often in the 1990's, *Gora* started importing filters when producing them was not justified, or they acted as representatives of an international brand. These decisions were taken on the basis of the economic situation, due to the market opening or an unfavourable currency exchange rate. Under these circumstances, the company could not compete with the imported products. The mix between domestic manufacture and importations stabilized in the early 2000's at 70% and 30%, respectively. [13]

(4) The fourth phase of *Gora*'s trajectory extends from 2006 to the present and is characterized by the assumption of leadership in the domestic industrial filtration market — definitely oriented towards the petrochemical and gas sector, which is consolidated as one of

[12] The shortage of qualified operators is due to the deterioration of the technical secondary schools that until the mid-1980's fulfilled the role of training skilled labour force. In the 1990's, its decline was exacerbated, and many technical schools closed as a result of deliberate educational policies.
[13] According the interview to Eduardo Fernández, May 20, 2018.

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the main business units.[14] This leadership was possible due to increased productivity and organizational restructuring.

The need to grow and extend, anticipated in the previous stage, forced *Gora* to build a new plant and expand its productivity. This allowed them to avoid outsourcing, which had the risk of transferring technology to and encouraging the emergence of new competitors. In turn, these years coincided with the incorporation of members of the third generation of the family, that is, the grandsons of the founder.

The characteristics of filter production prevent us from identifying a "star product" that would define *Gora*'s positioning in the market. This is in part because the buyers themselves define the characteristics of the product. However, the three lines of production in which *Gora* has a presence are: (i) liquid filters; (ii) filters for compressed air and gas treatment; (iii) and ambient air filters. For each one of these lines there are twenty to twenty-five companies in Argentina that compete as suppliers. Overall, eighty-three companies registered in the country offer industrial filters.[15] They are mostly SMEs, although it should be noted that some of them are only importers, that is, they act as representatives of multinationals.

In relation to domestic and foreign suppliers *Gora* has a long-term strategy respecting conditions, delivery times and payments despite the recurring crises that affect the Argentine economy. Although it has not been and is not yet a privileged destination for its filters, the foreign market occupies a place in this strategy. Since the 1990's, they have exported to neighbouring countries and from 2000 on they have increased sales to other countries in

[14] In 2005, Pablo *Gora* became one of the founding partners of the Argentine Chamber of suppliers of the petro-energy industry and he is still part of the Board of Directors.

[15] Yellow Pages. http://www.paginasamarillas.com.ar/b/filtros-industriales/p-4/ Accessed May 7, 2018.

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South America. The economic recession of 1998-2001, the implementation of the Convertibility Programme, and the resulting depression of domestic consumption offered a favourable context that encouraged *Gora* to intensify exports and thus compensated for the fall in domestic demand. By the years 2005-2006, the foreign market came to represent 18% of total turnover.[16]

As for financing, one of the main characteristics of a family businesses founded with almost no initial capital —and in this sense *Gora* is an example— is that profits tend to be reinvested in its own growth.

Another strength of *Gora* is its flexibility and resilience to context changes and determination to maintain the growth path. Indeed, during times of crises, investment with their own resources increases —a policy that arises during the interviews as an explicit aspect of the business strategy. Its offensive nature does not respond, they argue, to economic cycles. In times of crisis, the production and growth of the company is prioritized, so they invest in infrastructure, technology and human resources and develop new markets. While competitors are reducing their production and withdrawing from the market, *Gora* deploys an offensive strategy that prepares them to meet the demand for the recovery phase of the cycle.

In summary, *Gora* is an SME that has not exceeded a hundred employees. The organization has been based on family management over three generations and its members have achieved the specialization and positioning of the brand in the filter markets after becoming independent from the first buying company that was their single customer for over three decades. *Gora*'s organization has become increasingly complex. From being a family

[16] In the 2000's, through *Tecpetrol* of the *Techint* group, *Gora* took part in large oil projects in Bolivia and Peru.

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workshop, it later became a limited company that operates with the following board of directors: Alejandro Gora —founder and president—; Pablo —son and manager of the commercial section—; Patricia Gora —daughter and administrative manager—; Eduardo Fernández —nephew and technical manager. The endurance of *Gora* —according to family dynamics and the testimonies of its current managers— seems to be guaranteed by Patricia Gora's family branch.

The members of the second and third generation have defined a family-based business culture with an adaptive behaviour to domestic economic uncertainty. Adaptive strategies have been based on what can be called the "culture of effort", which is typical among immigrant families. And the investment strategy has responded to the initial "productive vocation". However, the *single customer-supplier* relationship delayed the process of change.

The second generation of the family aimed to locate itself in networks of suppliers of entrepreneurs, negotiate contracts so as to ensure recognition. The current business management can be decisive in the future of *Gora* due to the changes made in the second and third stages. The different generations of the Gora family have defended the strategy of keeping a niche market based on a productive investment policy. In this sense, the productive vocation of the original enterprise is preserved and it is the identity of the family business.

Finally, it should be noticed that not all SMEs with structures adaptable to changes succeed —and survival is even lower among those SMEs inserted in industrial chains. But the ability to respond is perhaps one of the most important assets of *Gora* and explains why they have lasted over time. The values of the company have passed from generation to generation, allowing the original small home workshop to become a thriving family business.

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III. Technological capabilities: keys in the entrepreneurial trajectories of *Gora* and *SINPAR*

In the second part of the paper we analysed the main stages of the Argentine SMEs *Gora* and *SINPAR* without detailing the technological capabilities that influenced the trajectory of the family business. According to Almaraz, the continuity of the families and the endurance of the companies are interdependent processes (Almaraz 2019). However, it is important to understand how the companies built technological capabilities and incorporated technological changes. Hence, this section addresses the technological capabilities of different developing processes, linked to the organization of the two SMEs studied. As will be seen, each company has had a greater or lesser predominance of technical capabilities, which were relevant for the endurance of the businesses.

During the early stages, both companies privileged the absorption of external technological capabilities, while in advanced stages they focused on innovation, seeking to develop new knowledge and to incorporate new technologies. This is because capabilities are not a constant factor, but rather reflect the learning process of owners and workers. Altogether, this implies the accumulation of capabilities along an active trajectory and, as long as companies and their owners experience different levels of development, they also acquire different capabilities (Narula 2004; Giuliani and Bell 2005; Bell 2007).[17]

The accumulation of technological capabilities is also the result of investments made by entrepreneurs in response to external and internal *stimuli*. Hence, we must recognize the importance of interaction with other economic agents, private and public, local and foreign

[17] There are some exceptions, as those of technology-based companies or those based on knowledge (Martin and Moodysson 2013).

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(Lall 1992). Therefore, in order to analyse technological capabilities it is necessary to identify specific factors of the company and others of the environment (such as the incentive system, institutional structure and endowment of resources, among others). Almaraz considers that in a start-up phase, internal and external factors influence the entrepreneurs —where the former correspond to the organizational, administrative and business management—, and the latter correspond to the institutional, technological and socio-cultural dimensions (Almaraz 2019).

In sum, it can be argued that the learning path of companies is based on the building and accumulation of technological capabilities. The main learning paths may be distinguished as follows: (a) *learning by doing* —through the process of organizing production (Arrow 1962) —; (b) *learning by using* —through the marketing process (Rosenberg 1982) —; (c) *learning by interacting* —through the interaction between producers and users—; and (d) *learning to learn* —through the ability of employees and managers to learn, as developed from the evolutionary and systemic perspective (Lundvall and Borrás 1998).

The different forms of knowledge in the productive structure may be reduced to two learning modes, which synthesize the transition companies undergo between innovative processes: (1) the DUI mode —learning by *doing*, *using* and *interacting*— and (2) the STI mode —*Science-Technology-Innovation*— (Jensen et al. 2007). The DUI mode is based on the *learning-doing* and *using-interacting* experiences, while the STI mode is based on innovation related to science and technology —that is, creating new knowledge by using scientific knowledge through R&D (research and development)—, and by interacting with research institutions. Therefore, technological capabilities reflect the ability of the business members to *absorb*, *use*, *adapt*, *improve* and *create* new technologies (Lall 1992; Bell and Pavitt 1993).

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What we are interested in discussing in the two selected study cases is whether the learning processes were enhanced, if this happened through formal or informal means and, in addition, if that knowledge allowed them to increase their competencies —that is, increase development capabilities, improve products and processes, implement organizational changes and develop new ways of relating to other market agents. From this perspective, both the technology incorporation phase and the building of the companies' own technologies are reflected in the strengthening of specific assets of the companies. The absorption of available technology is a critical component in the business capabilities —especially in the early stages of participation in the market— and implies a process of identification and assimilation of knowledge, which will later be exploited to create new knowledge. Although this knowledge is initially part of the external environment, it will become valuable for commercial use (Cohen and Levinthal 1989). These capabilities depend on initial knowledge within the company as well as the unique *dependency path*. The absorption capacity in this case is considered an intangible asset that is difficult to measure, because there is rarely a unique relationship between the actions taken to increase these absorption capabilities and a given result (Gutti 2008). However, it is possible to think of both organizational changes and market positioning as expressions of those processes. The development of new or improved products or services is part of the *innovative capacity* —obtained thanks to the agents' developed skills to combine existing factors, internal and external, to the organization (Lundvall 1992; Edquist 1997; Freeman and Soete 1997).

IV. Building technological capabilities in *Gora* and *SINPAR*

The trajectories of *Gora* and *SINPAR* may be interpreted from the perspectives of different development models of technological capabilities. Each company has differentiated decisive

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conditions and experiences that require greater knowledge of their particular learning and technological evolutionary contexts. In this sense, belonging to the same productive sector is not conclusive. Hence, it is necessary to discuss the development of the SMEs' capabilities to see what allowed them to remain in one or several markets, and what allowed them to become benchmarks of the metallurgical industry or simply followers in the supply sector. Based on the results achieved by our research, what emerges as a premise is that explicit and implicit business strategies are conditioned by macroeconomics and by the learning paths privileged during their trajectories.

Table 1. From the Workshop to the Factory, the case of two Argentinian SMEs. *SINPAR* and *Gora*. Period: 1932 – 1977

Company	**Technological capacities**		
	Absorption capacity	**Innovation capacity**	**Learning Mode**
SINPAR 1932-1971	Prior technical knowledge (tools and machines)	Local adaptation of the company's flagship product: saw blade, manual use.	*Learning by doing*
	Wholesale Supplier	Marketing: creation of the brand *SINPAR*	*Learning by using*
Gora 1958-1977	Prior technical knowledge (tools)	Local adaptation of different products	*Learning by doing*
	Supplier of large companies	Specialized in industrial filters for textile sector	*Learning by using*

Source: prepared by the authors on the basis of the cases studied.

The start-up stage of every company begins with a series of strategic assets. Founders of manufacturing organizations start with simple industries, using artisan tools and machines, implementing their tacit knowledge. The prior technical training of the founders is the basic condition of this process but the absorption of new knowledge becomes vital to make the first cycle of the start-up feasible. Thus, it is important to take into account the *entrepreneurial agents* and *knowledge agents* (Almaraz 2019). In terms of the organization, the start-up stage

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can be characterized in a good number of cases as "from the workshop to the factory". As shown in Table 1, both *Gora* and *SINPAR* had a professional training and accumulated knowledge that allowed them to start their own workshops and become suppliers of differentiated products. This led them to experience significant growth and, in *Gora*'s case, also under the protection of a large company. The technological capabilities of this stage are rooted in learning processes through practice and use (see Table 1).

(2) The second stage, between the 1970's and the beginning of the 1990's, is characterized by specialization and positioning in vacant niche markets, mainly in the domestic market. Ideas for new products are obtained from the incorporation of technology through investment in machinery and equipment (especially from Italy and Germany), and from the participation in international fairs. Thus, learning is emphasized by practice, use and also by the willingness of employees and managers to learn (see Table 2). In terms of the organization, this period can be characterized as "From factory installation to specialization".

Table 2. From Factory Installation to Specialization, the case of two Argentinian SMEs. *SINPAR* and *Gora*. Period: 1971-1992

Company	**Technological capacities**		
	Absorption capacity	**Innovation capacity**	**Learning Mode**
SINPAR 1971-1992	Continuity of productive activity without investment	Management: Asset valuation in the financial market	*Productive Stagnation*
Gora 1977-1990	-Participation in the EMAQH -Investment in machinery -Codifying specific knowledge: registration and digitization of plans	-Management: computerization -Outsourcing with technology transfer.	*Learning by doing* *Learning to learn*

Source: prepared by the authors on the basis of cases studied.

During much of this phase, Argentina's macroeconomic context was adverse for the manufacturing sector and favourable to financial speculation. The productive restructuring of the 1980's led to the shutdown of many factories and companies. While *Gora* —which had just incorporated the second family generation— deepened specialization, invests in infrastructure and machinery and modernizes its organization, *SINPAR* changed owners and, although it continued to produce saws, it did not sustain productive investment and turned to the financial management of its assets.

(3) Argentina's macroeconomics of the 1990's was marked by economic stability and orthodox reforms, but it ended with an economic and institutional crisis. The way out of the 2001 crisis was anchored in the recovery of the domestic market and in policies favourable to the industrial sector. Therefore, the third stage (1990-2006) includes differentiated context conditions. During this period, the strategies of the companies were oriented to intensifying specialization, investing in knowledge and absorbing external technology. A novelty with respect to previous stages was the incorporation of qualified human resources and the relationship with technical institutions.

Furthermore, product innovations (of their own design and manufacture) and process certifications were milestones for positioning in the domestic market and even in some cases enabled them to export, especially to other Latin American markets (in particular in *Gora*'s case). Access to international markets and combining local production with importations were some of the factors that helped companies face the strong recession in the domestic market towards the end of the 1990's as the Convertibility Plan ended (especially between 1998 and 2002). In this context, the companies accumulated technological capabilities in learning

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processes such as practice, interaction with customers and by "learning to learn" (see Table 3).

Table 3. The stage of Specialization. The case of two Argentinian SMEs: *SINPAR* and *Gora*. Period: 1990-2006

Company	Technological capacities		
	Absorption capacity	**Innovation capacity**	**Learning Mode**
SINPAR 1992-2005	-Codifying knowledge -Production reorganization, (records and procedure manuals)	Process: certifications	*Learning by doing*
	-Investment in machinery -Participation in the EMAQH 1996	Representation of foreign products	
Gora 1990-2006	Engineering-intensive human resources	-Differentiated Products -Outsourcing with technology transfer.	*Learning by doing*
	-Exports (through third parties) -Expansion of productive capacity	-Specialization in filters for the petrochemical and gas industry. -Process: certifications	*Learning by interacting*

Source: prepared by the authors on the basis of cases studied.

(4) Finally, in the last stage, from 2006 onwards, the business strategy is oriented towards services, marketing and corporate image. These changes are associated with the arrival, or the effective involvement in decision-making, of the following generations of the families. This mainly has to do with the fact that unlike the founders —who were engineers or technicians— the new generations involved in the decision-making during this period have studies in business and marketing schools and management experience.

This change of perspective, combined with a market demand based on the specialization achieved in previous stages, seem to be the factors driving the company's activities, which now offers mainly services. Accordingly, companies are oriented to the integration of production, either by incorporating design and after-sales services or by developing new

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products or supplies complementary to the original products. Moreover, a modernization of the companies' image is imposed, renewing the brands established more than sixty years before.

Table 4. Services, Marketing and Corporate Image. The case of two Argentinian SMEs: *SINPAR* and *Gora*. Period: 2006 onwards

Company	**Technological capacities**		
	Absorption capacity	**Innovation capacity**	**Learning Mode**
SINPAR 2006/2018	Process Redesign	Process: certifications	*Learning by interacting*
	-Participation in business chambers	-Marketing: corporate image -Product: 1st design and own manufactured machine	*Learning to learn*
Gora 2006/2018	Investment in machinery	Marketing: technological filtering services	*Learning by interacting*
	-Human resources -Engineering-intensive	Custom made product	*Learning to learn*

Source: prepared by the authors on the basis of case studies

As these companies become modernized, they also advance in certification processes related to safety and environmental management; these certifications play a prominent role in attracting new customers or markets. During this period, technological capabilities are accumulated through learning processes in the interaction with customers and suppliers and by "learning to learn" (see Table 4).

V. Analysis of results for the study of two Argentinian SMEs

The first results of the research show that the strategies of SMEs in the manufacturing sector are based on their capabilities for developing adaptative behaviour to respond to macroeconomic conditions. In turn, the long-term endurance of companies is based on the strong family management of the successive generations that gives continuity to these processes. In our two study cases the founders and successors took advantage of the opportunities and identified internal and external restrictions, and this allowed them both to last over time despite their different trajectories.

We can identify, then, a series of similarities and differences through the strategies adopted in relation to the sector, the customers, the family organization and the vision of the firm in the long run:

-*Specialization*. The product differentiation and the specialization in market niches determines the absence —or low presence— of competitors in the domestic market, with imported products often being the main competitors.

-*Flexibility*. Although the family may impose limits on or obstacles to the company management, the cases studied share an agile organizational structure for decision-making. In this sense, the centralization in decision-making makes them flexible and adaptable to the unstable nature of Argentina's macroeconomics. We highlight, in this sense, the way in which companies adapt their strategies to the economic policies anticipating the recessive impacts they many times produce in the medium term. The example of the importation of final goods is representative of this strategy. The mix of imported and domestic production remains then at 30% / 70%, respectively. This proportion can be reversed in periods of external opening and exchange rate flotation, when entrepreneurs increase the importation of final goods to incorporate into their offer to the local market.

Likewise, we must emphasize that the flexibility related to the ability to adapt to changes of these companies is linked to the development of an innovative behaviour. This behaviour is observed throughout the company trajectory which combinates internal learning mechanisms,

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such as continuous training in the factory, and external mechanisms, among which participation in fairs and congresses so as to absorb technical knowledge is privileged. Furthermore, the incorporation of the following generations with new capabilities focused on improving the competitiveness of companies determines the organizational structures in the long-term.

-*Counter-cyclical strategies*. During periods of crisis, companies identify opportunities and deploy offensive strategies, which means that they invest in the contraction cycle phase —when competitors are withdrawing from the market and reducing their production— so that in the recovery phase, they are prepared to meet the demand. Another possible strategy involves putting together and offering a mix of products (local and imported) that changes according to macroeconomic conditions.

- *Linkages with suppliers (locals and foreign)*. Long-term relationships with suppliers (especially foreigners) combined with trust and credibility are a fundamental advantage for negotiating and solving problems in the payment chains. In political terms, participation in business union life (sector associations and chambers of commerce) allows the consolidation of a wide social and productive network.

- *Human Resources*. Technical knowledge —especially the tacit one— is the strategic asset for a company. Human resource training is a challenge for companies. The companies studied have developed close links with the secondary technical schools of the Quilmes district and have established training centres within the company. In general, management and business skills are incorporated when the new generations join the family business. This example shows the importance of establishing mechanisms for the transmission of knowledge and

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management, especially for SMEs. Both *Gora* and *SINPAR* have successfully overcome these limitations by incorporating the following generations naturally in positions and functions that replace and complement the role of the founders.

Furthermore, in both cases studied, the importance of management for the growth of the company has been verified, particularly *learning by directing*, in the early stages of the companies. The characteristics and strategies implemented by the business owners were key to their growth.

- *Financing*. The companies usually have difficulties accessing financing due to lack of specific government policies in a context of financial valuation with high interest rates. That is the reason why they privilege their own resources to finance investments and take credit only in very specific cases.

- *Commercialization*. The domestic market is the privileged destination of production. Export is a marginal activity. In this sense, from a more general perspective, it can be stated that Argentine SMEs do not have an outstanding export performance and therefore their presence in global value chains is very low. Indeed, in the cases studied here it can be verified that a process of building technological capabilities allows them to consolidate in the domestic market but gives them little or no projections in the international market. We must then consider the limitations that companies have to compete beyond the domestic market. This question opens up to a broader debate, which points to future research into the nature of these restrictions —micro and macroeconomic context, economic policy, institutional.

- *Ownership, enterprise organizational structure and strategy.* It should be emphasized that in both case studies the second and third generation guarantees not only family management

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continuity, but also has a synergistic influence on the modernization of business strategies and structures.

- *Technological capabilities*. The growth path of the companies was based on learning processes. In the early stages of their trajectories, *practice and use* is mainly explained in terms of the learning process. In this regard, progress is achieved by consolidating production and specialization. Then, *interaction* and *learning to learn* become more relevant in the learning processes. Thus, the trajectory of both studied cases seems to correspond to the DUI mode, *learning by doing, using and interacting* (Jensen et al. 2007).

The *learning by doing* mode is verified in each stage of the companies and even in the management capacity of the founders. The criteria of austerity and re-investment of profits adopted by the owners at the beginnings of the companies and then during periods of crisis, were one of the key factors that explain the entrepreneurial trajectory of these companies.

At the same time, it can also be noticed that the *absorption capabilities* of external technology —although they maintain their importance throughout the entire trajectory of these companies— are fundamental at the beginning, when the manufactured products were adapted from others already existing.

In addition, even though innovation capabilities are also present throughout the companies' histories, they acquire greater prominence and complexity as the companies become leaders of a particular product or market. Thus, in the early stages, innovation has a local scope and in the last stages, companies seek to innovate according to international standards. In the last stage, the generational replacement —with a strong entrepreneurial profile— seems to explain the modernization process characterized by flexible management, product innovations, design

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and manufacture of their own. A final element to highlight is linked to an underlying aspect of the story of the different generations. It refers to the imprint of those immigrant grandparents as referents of a "culture of effort". This inherited migratory experience is very present in the story of the founders of the companies and persists in the second and third generation. We leave this topic as an interesting feature to study in future research. The incidence of immigration waves (in the early 20th Century and between the two world wars) in the Argentinian industrialization process, is a problematic extensively studied by business economic history but exceeds the purpose of this paper.

Conclusions

The history of SMEs in Argentina is not straightforward. As we have seen, the two cases studied —located in the Quilmes District in the South Metropolitan Region of Buenos Aires— have not experienced the same performance despite the fact that both have a family imprint and underwent growth and specialization processes. Each company responded with different strategies to the particular challenges of complex scenarios in which there were periods of great economic instability.

The results obtained in this paper provide evidence to identify the learning path of some Argentine SMEs that managed to endure in the long term. A central feature of this path is the specialization of production based on the domestic market. In turn, this behaviour is complemented by a high capacity to adapt not only to changes in the local macroeconomic policies but also to the evolution of manufacturing processes worldwide. In this regard, the management skills and the formal and informal education of the owners proved to be a key feature for these adaptation processes over the business trajectory. The re-investment of

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profits is a counter-cyclical strategy that allows these companies to face the contraction and expansion phases of the economic cycle but, at the same, time limits their growth in the long run.

The training of human resources is another feature to be noticed. On the one hand, the training is a continuous process within the factory and within specific training institutions. On the other hand, the new generation have the incentive to achieve the higher education levels. The sum of these features determines the DUI model (learning by doing, using and interacting) as the learning path of these companies. In this sense, the accumulation of technological capabilities is a result of the learning processes that takes place in the factory rather than in the research and development laboratories. The capacity to absorb external technology, from participating in fairs, congresses and business trips, is one of the most important mechanisms for the acquisition of knowledge and innovations.

Finally, the study of individual cases allows us to identify these learning paths which constitute a starting point for further analysis. In this regard, the challenges of the present investigation and the directions it should take in the future are organized on two axes. On the one hand, to build a theory, we propose to deepen the study of each company and incorporate new cases to add evidence. On the other hand, the cases analysed seem to respond to a typical industrialization model of manufacturing production in the 20th Century. Therefore, if these companies could be compared with others which emerged in the 1980's, within the framework of a new model of production, it could provide a substantial difference for the research.

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Pablo Gora, Commercial Director (March 15th, 2018).

Patricia Gora, Administration Director (May 20th, 2018).

Nicolás Marques, Area for Administration, financing and commercialization (May 20th, 2018).

SINPAR

Manfredo Arheit, Owner & Chairman of the Board (April 14th, 2018).

Cristina Arheit, Marketing manager (April 14th, 2019).

Roberto Pertoczi, Former Marketing Manager, retired (May 15th, 2018).