

ORIGINAL

Professionalization and Artificial Intelligence in Family Businesses

Profesionalización e Inteligencia Artificial en las Empresas Familiares

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ABSTRACT

The central aim of this Final Degree Project was to analyze the key factors' trend in the process towards professionalization of family businesses. Using an exploratory research method with a qualitative approach and non-experimental and transversal design, with the semi-structured personal interview technique, data were collected from four family businesses located in the Province of Tucumán. Based on entrepreneurial nature of their owners, analysis of collected data indicates that local family businesses are comparable to similar organizations worldwide. Nevertheless, processes towards professionalization of family businesses in Tucumán are partially implemented. There is great interest in including digital solutions and leveraging artificial intelligence to address continuity challenges and drive business success. However, this effort is hampered by fast pace of technological change, highlighting the need of adopting strategic measures to ensure the long-term sustainability of these family commercial organizations.

Keywords: Family Businesses; Professionalization; Artificial Intelligence; Technological Change.

RESUMEN

El objetivo central de este Trabajo Final de Grado fue analizar la tendencia de los factores claves en el proceso hacia la profesionalización de la empresa familiar. Mediante un método de investigación exploratorio con enfoque cualitativo y diseño no experimental y transversal, con la técnica de entrevista personal semi estructurada, se recogieron datos de cuatro empresas familiares ubicadas en la Provincia de Tucumán. Basado en la naturaleza empresarial de sus propietarios, el análisis de los datos recopilados indica que las empresas familiares locales son comparables a organizaciones similares en todo el mundo. No obstante, los procesos hacia la profesionalización de las empresas familiares en Tucumán se encuentran parcialmente implementados. Existe un gran interés en incluir soluciones digitales y aprovechar la inteligencia artificial para abordar los desafíos de continuidad e impulsar el éxito empresarial. Sin embargo, este esfuerzo se ve obstaculizado por el rápido ritmo del cambio tecnológico, lo que destaca la necesidad de adoptar medidas estratégicas para garantizar la sostenibilidad a largo plazo de estas organizaciones familiares comerciales.

Palabras clave: Empresa Familiar; Profesionalización; Inteligencia Artificial; Cambio Tecnológico.

INTRODUCTION

Much has been researched and written about family businesses, their importance and place in the global and national economic activity, their contribution to the GDP, their characteristics, their life cycles, their challenges, the founder's imprint, etc.

Likewise, the professionalization of these family businesses has been the object of study because it is considered an essential factor in their development project and continuity for their transcendence.

Although family SMEs are not the most important ones to take into account when major decisions are made in the world economy, they are the engine that drives any economy. In Argentina, 9 out of 10 SMEs are family businesses. They generate 68 % of the GDP and move 70 % of the private employment level.⁽¹⁾

Regarding SMEs, to whose group family businesses belong, there are statistics from the Secretariat of Small and Medium Enterprises and Entrepreneurs (Sepyme), which depends on the Ministry of Economy, indicating that throughout the country there are 1 695 881 companies, self-employed, cooperatives and mono-taxpayers. Only 0,2 percent of the companies in the country are large companies. The rest is divided between micro-enterprises (83 %) and SMEs (16,8 %).

According to data from the Argentine Confederation of Medium-sized Companies (CAME),⁽¹⁾ SMEs are one of the most important productive forces in the country, where more than 95 % of these companies have an average of 100 employees.

The data also show that 51 % of formal private employment is driven by SMEs.

Aguilar, V. G. & Briozzo, A.⁽²⁾ in the Administrative Research Family Businesses: capital structure and emotional wealth, point out that although there is abundant literature on business culture, from the family dimension there is another perspective since family values and business values tend to overlap at different times of the family business and to different degrees and this study states that for the family business to transcend after the first generation, the culture in the family business is one of the fundamental elements.

Velasco C et al.⁽³⁾ in their research The evolution of the family business literature as a scientific discipline, states that research on family businesses does not yet constitute a consolidated scientific discipline, although there is a growing interest in this field of study as evidenced by the increase in the number of articles published in prestigious journals related to business management.

It is also said that, although the most researched topic has been succession, it is necessary to continue exploring the connection between succession planning and strategic planning to ensure a comprehensive management of this issue. It also indicates that, despite the fact that strategic management has become one of the four dominant areas in the literature on family businesses, the works related to this topic are predominantly descriptive in nature, and their impact on business performance has not been analyzed.⁽³⁾

Likewise, the growing relevance of financial management, the need to take comparisons of family businesses to the international level in order to measure the impact of different national cultures and to study their relationship with the process of succession and family control, and the fact that culture, professionalization and corporate social responsibility have not yet been sufficiently examined.⁽³⁾

Omaña et al.⁽⁴⁾ in the research Management of family and non-family businesses: comparative analysis. point out that the ownership and management of the family business are two fundamental aspects to consider in relation to its continuity, understanding that the process of family succession - one of the main and most critical that every commercial family organization has to assume in order to achieve its continuity - concludes with the transmission of decision-making power and ownership to the next generation.

In the professionalization of family businesses there can be two equally dangerous extremes for the normal development of the organizational climate, which refer to the creation of privileges versus unfair situations for family members in the company.⁽⁴⁾

Arista Zavala⁽⁵⁾ in the research Innovation in the family business: theoretical and empirical observations for future research mentions the so-called entrepreneurial innovation stance, which Rondi, De Massis and Kotlar define as the strategic orientation that the owner family imprints on the family business by shaping the climate, philosophy and practices of entrepreneurial innovation from risk taking and attachment to tradition.

Rondi et al. argue that the risk-taking tendency is treated as the predisposition to make use of resources to exploit opportunities and engage in behaviors with uncertain outcomes, while the attachment to tradition relates it to the extent to which the family business is anchored in its past and wants to carry it into the future.

Well, going into the present research on family businesses, it can be said that one of the best ways to describe the world of family businesses is through the diagram of the three circles devised by Renato Tagiuri and John Davos of the Harvard Business School, which are: The Company, The Family and The Property.⁽⁶⁾

Echezárraga Martínez J.⁽⁶⁾ highlights as strengths of family businesses -among others- a more long-term vision, greater speed of decision making, a stronger business culture, greater dedication to the company, willingness to sacrifice, more concern for quality and image before consumers. Among their main weaknesses are the overlapping of family and business roles, lack of planning, excessive distrust, control and secrecy, resistance to change and professionalization, lack of a results-oriented mentality, overly long leadership and strategic stagnation.

For his part, Imanol Belausteguigoitia Rius⁽⁷⁾ expresses in a simple way that a family business is an organization controlled and operated by the members of a family and that - from a different, spiritual perspective - they are businesses with soul, given that the heart of the families is in them.

According to research - and even though they are longer-lived and more profitable than non-family SMEs -

one in three family businesses makes it to the next generation. According to Salvato and Aldrich in research on economics, organizations and institutions, abundant information can be found on social sciences in family businesses where it is stated that their study responds to a need of the population.⁽⁷⁾

Likewise, Belausteguigoitia Rius⁽⁷⁾ divides the causes why family businesses fail to survive into two large groups. Structural causes, on the one hand, which have to do with the company; that is, administrative factors such as possessing an inadequate administration system, inefficient resource management and the absence of control measures. On the other hand, there are environmental causes, associated with the market, the economy, financing and taxes. However, it is important to emphasize that family businesses are affected - to a large extent - by the lack of responsibility and attention of their governing bodies.

Imanol Belausteguigoitia Rius⁽⁷⁾ proposes -in addition- a model of strategic planning of the family business according to which it starts from who it is (its Identity), followed by where it is (the Diagnosis); then, where it wants to go (the Course); continuing how to get there (the Strategy), and -finally- what to measure, how to do and how to go (the Implementation and Monitoring).

We can also cite a study carried out by CAME Magazine⁽¹⁾ that indicates that family businesses manage to successfully insert themselves in the market because they are visionary, entrepreneurial and have another appreciation of risk. The members of these organizations commit their wealth to expand the business and -thus- provide employment and income to all family members. Not only are they concerned with profitability, competitiveness and market survival, but they are also obliged to achieve family harmony and unity in order to ensure the continuity of the business for generations to come.

However, statistics estimate that 65 % of the companies die in the transfer to the second generation, 25 % collapse before reaching the third generation, 9 % reach the third generation and only 1 % reach the fourth generation. As main causes of this high rate of disappearance of family businesses, the lack of planning and the poor relationship between family members are pointed out.⁽¹⁾

On the other hand, in Manpower Group's research states that when organizations consider functions that require Artificial Intelligence (AI) skills, three recurring challenges arise: Creating new jobs originating from AI, Training staff to leverage AI in their roles, and Defining roles that can take advantage of AI.

Similarly, 73 % of future family entrepreneurs interviewed, believe that generative artificial intelligence will be a key lever in business transformation in the coming years, but question the ability of founding members to capitalize on all the opportunities offered by this new technology. The report indicates that 49 % of family businesses are not yet contemplating the use of AI in their companies, 30 % are in the analysis phase and only 7 % have pilot projects or are in the testing phase. This conservative approach to AI in particular, and to the latest technologies in general, is explained by the investment requirements linked to the implementation of new technologies and the profile of prudence that characterizes family businesses.

However, 50 % of the next generations believe that their companies should lead the use of generative AI in a responsible way. At the moment, and given the low level of development, only 6 % of family businesses have good corporate governance policies in relation to generative AI, although 62 % say they will implement them in the future.

In the light of the background information provided in this research, the professionalization processes then only take place when family businesses are reaching a point of consolidation of their activity, a point of reasonable expansion, a point of sustained increase in production and sales.

It is striking that there is a contradiction between the matrix of these family businesses, born to transcend vs. the high mortality rate they have today in the face of the vertiginous advance and development of AI.

METHOD

Design

The scope of this research has been exploratory in nature, since it sought to find new paradigms for the beginning of the path of professionalization in family businesses in the province of Tucumán, in view of the challenges of the present times.

The approach was qualitative since it inquired about the situations and states that motivate decisions on the implementation of professionalization processes, without numerical data.

Its design was non-experimental since it aims to collect data without manipulation of variables for subsequent analysis and it is cross-sectional because data were collected at a single point in time.⁽⁸⁾

Participants

The population consisted of 12 290 companies in Tucumán, data obtained from a report by the Secretary of State for MSMEs and Employment of the Ministry of Productive Development of the Government of Tucumán, from which four companies were taken as a sample. This form of sampling has been non-probabilistic and accidental since the sample was not chosen randomly, but was made up of those companies that could be accessed at the time of the research.

The participating family businesses selected were the following:

- Family business A: a company dedicated to housing construction.
- Family business B: a company dedicated to the sale of construction materials.
- Family business C: public passenger transportation company in San Miguel de Tucumán.
- Family business D: company engaged in the production of bakery products.

Since the interviews were conducted with natural persons, their written consent was requested, the model of which is attached in Annex I of this research.

Instrument

The technique used to collect data was a semi-structured personal interview with the owners of the companies.

This semi-structured interview was conducted on the basis of an instrument, in particular, the guideline guide attached in Annex II of this research, which was used to conduct the interview and in which the following variables were discussed: professionalization, strategic planning and the application of Artificial Intelligence.

Data analysis

The data collected have made it possible to inquire about possible new paradigm indicators to initiate the path towards the professionalization of family businesses.

The information obtained from the interviews carried out has made it possible to analyze how family businesses face the challenge of their own professionalization and what role the owner of the SME plays in the development of the professionalization process, what definitions they have about their mission, vision and long-term values and how these family businesses react to the incessant advance of technological development and Artificial Intelligence.

The data analysis has been carried out on the basis of the following research variables:

- Professionalization: it occurs at the moment that the owner recognizes for himself and for the members of his company, the need for training so that his management is consistent, innovative and obviously with the purpose of orderly transcendence. It applies to a deep and critical inner look of the owner and that is overcoming the characteristic matrix of the founders with the purpose of starting the entrepreneurial literacy. This variable has been analyzed with guideline questions four, five, six, six, seven, eight, nine, thirteen and eighteen.
- Strategic planning: this is the challenge par excellence faced today by family-owned SMEs, always so prudent and conservative, which are affected by emotional management in their family-business relations. It is their guarantee of succession, of continuity. It is the way to achieve the vision together, the whole company. This dimension was analyzed with questions ten, eleven, twelve and fourteen.
- Artificial Intelligence: AI-based technologies are already being used to help companies benefit from significant improvements and enjoy greater efficiency in industrial, financial, service, etc. sectors. Their application and insertion today is already walking into the future. This dimension has been analyzed with questions fifteen, sixteen and seventeen.

RESULTS

Professionalization

The owner of company A with eleven years of trajectory expressed that he sees himself as the one who is in charge of the company, sells and markets the services offered by the company, closes the deals and intervenes in daily matters, especially if it is about economic issues, resolving issues, follow-up of works; he always has the last word. And a lot of the eventuality, he also has to solve.

On the other hand, family business B started 40 years ago and passed on to the next generation five years ago; they feel entrepreneurial and respectful of the hierarchy of the founder's authority. They have distributed roles among the partners, although he considers that they are not very well defined, which he attributes to the smallness of the company as a family business.

Company C, for its part, recalled in the interview that it has been in existence for twenty-three years and its children are in their second generation. They are proud to be pioneers in the transformation of provincial public transportation. They consider that they maintain quality standards in the provincial environment. Its mission and vision are perfectly clear and it enjoys the prestige of being the number 1 of the provincial SMEs. Its owners play the role of managers and its mission and function manuals are organized and implemented, as well as job descriptions, rewards and remuneration systems.

When asked about the changes implemented and in which areas they were carried out, Company C -as well as Company D- pointed out that all areas were subject to changes and updates mainly due to the national and provincial economic policy and in accordance with its work philosophy aimed at always improving the

quality of service rendering, citing changes in technology, IT solutions, legal and accounting consultancy, management systems and renewal of the transportation fleet in view of the better positioning year after year in the measurement of ticket cut-offs. He also pointed out that the Human Resources area carries out the recruitment, selection and hiring processes.

Regarding its transcendence, company C stated that they hope to maintain the quality they have achieved for many years and that they have organized the family protocol.

And family company D declares 55 years of activity and is now in its second generation. They are franchisers and added the cafeteria service to the original bakery business and currently have several branches.

When questioned about the role of the owners, company D answers that they are managers and take care of the commercial and financial activity of the family business.

As for the continuity of family business D, its owners state that they are working to ensure its continuity in future generations, for which they already have a family protocol and their governing bodies are organized.

Both companies A and B do not have manuals of functions and procedures or job descriptions, and yes, the major changes implemented were in the administrative, financial and accounting areas, through technological solutions. Not so in the Human Resources area.

Company A - as well as Company B - also stated that the national economic policy and its turbulence had a direct impact on the changes implemented in the economic-financial area as external factors. Yes, company B does not see internal factors, arguing that they are technology.

And the growth of the activity prompted them to make changes in the technical aspects of the activity, such as planimetry, real estate projects, etc.

Neither company B nor company A have modified recruitment processes in the last ten years; and both incorporate personnel by recommendation or using social networks more than anything else.

Family business B does not think about transcendence. He loves the company, but the time demands of the company are a problem that he does not want to pass on to his children. It thinks about the future of its children, but not about the importance of the company.

While company A would like the company to transcend it, it has not thought about how, with whom. It has not planned it, and expresses that it would change many things from the foundational stage: it would be more detailed and professional.

Strategic Planning

All the companies have been working for four years or more with alternative digital solutions to the original procedures, for sales, payments and collections; and in the case of companies C and D, for training, also an activity that is planned by the Human Resources area.

Companies A and B do not have training activities planned, although the idea is around, but it has not yet been implemented. The founder of family company A, felt the personal need to update himself and did a master's degree and a specialization in Human Resources; and he thinks that, in his role, he would change to stop being a manager. Not to be in the urgent or important without discernment.

While the founder and the children partners of the family business B do not think for the moment about updating, they feel very traditional and do not want to take risks.

When asked about changing something in the growth stage, the son-partner of the founder of family business B, denies the amount of time he spends on his business. He would like to take risks and venture into new technologies, but the founder's experience weighs heavily.

On this point, company C responded that from the beginning, its founder took risks in the company, and they would not change anything they had done.

On this topic, company D states that, although it was in the growth stage, the moment when they decided to systematize and professionalize the company to increase the productive capacity of the business and expand the offer in terms of variety of products, in response to the question, they consider that the personal and professional position as owners of the business could be improved from that moment.

Artificial Intelligence

In relation to the applicability of Artificial Intelligence to the activity of the family business, company A says that in principle it believes that AI is not applicable to the activity of the company (construction), although it has its doubts.

While company B says that AI is not very developed yet. And it says that it can be applied to its activity since it takes data for the future and reduces times, providing an example of calculation of pipe stock.

And company C is already dabbling in AI simulations. All of them, except company B, consider that AI will have an impact on the continuity of the company.

While company D expresses that it looks favorably on the arrival of Artificial Intelligence in the business world without respite.

When asked about their expectations for the next five years, companies B and A say that they would maintain what they have achieved. And the latter, to transcend local limits. The others plan to work on the consolidation of new paradigms of service quality and technologies.

CONCLUSIONS

The purpose of this research work is to show the degree of adhesion that family businesses in Tucumán have to professionalization processes and to the application of Artificial Intelligence in the life of the organizations.

In order to analyze the factors that converge and intervene in the fluidity and effectiveness of the professionalization processes, whose materialization is considered necessary and mandatory for the continuity and renewed success in the times of the companies, both companies with little journey and those with more than forty years in the local business market have been selected for the study.

Molinari⁽¹⁸⁾ dedicated the book *The Owner's Leap* to the quality leap that professionalization implies, considering it also the construction of a new professional identity. There is no change in companies if the owners do not change.

From this research it can be inferred that the role played by the founders in their companies has few differences among company owners and -in general- they share the same management pattern with a high degree of verticalism in the functional structure and only differ in the degree of risk they take, supported on the basis of their personal and professional training and biased by limiting beliefs, in the case of the second generation with the founder's mentoring on their shoulders.

Another important point that emerges when analyzing the results obtained in this study is the methodological and professional poverty that underlies the recruitment, selection and hiring of personnel in young companies. It seems that this is a practice that is inherited (the case of companies that are several decades old); but that is currently being confused with the option for social networks. Although pragmatism usually brings its benefits, healthy habits are being left aside in companies, those habits that nurture the life processes of an organization, guaranteeing its continuity with quality, excellence and profitability, also generating space for creativity.

This can be related to what Molinari⁽¹⁸⁾ raises for the four stages that companies go through throughout their development, where each of them is characterized by a particular form of governance, which affects the role and agenda of the entrepreneur. The companies surveyed in the present research work are basically involved in the first two stages and, typically present the following characteristics as pointed out by Molinari:⁽¹⁸⁾

- Stage I, Foundational. This is the typical owner-operated enterprise. The entrepreneur works 24 hours, seven days a week. Both information and decisions are centralized and intuitive. The culture of the organization is familiar and informal. It is centered on the entrepreneur and values such as trust and loyalty predominate.
- Stage II, Foundational. The company has orderly processes and defined functions in charge of professionals. They have access to certain sensitive information and make decisions based on parameters. However, the owner still actively participates in most of the decisions.⁽¹⁸⁾

Also, it is worth bringing to the discussion in the absence of decision and motivation for professionalization, what is expressed in *IT Digital Magazine* (October 2023), about that in the problems of the professionalization of a family business, three aspects coincide: 1) the barriers that are established by the differences in training between family and non-family managers. 2) the type of actions to be carried out in a professionalization process, in which use is made of logical and rational analysis together with economic indicators. This differs from the decisions of family members, which are usually not based on detailed analysis but on the pattern taught to them by their founder. 3) the style demarcated by the owner's own style of power.

Regarding the second specific objective of the study, its results have asymmetry with those obtained for the first specific objective, since the older companies are the ones that have clearly defined their mission, vision and long-term values, fulfill them and live them on the road to professionalization. While the two young companies still do not have clarity about the vision of their company, even resembling the vision and mission of their own person and family, in one of the cases.

It can even be deduced that there is no need to update the original vision and mission of the company. In general, the members of the companies surveyed have not realized when or how much the company's vision needs to be renewed, when new challenges need to be taken up, and they do not realize that the cycles may be satisfied and that the vision of ten or twenty years ago needs to be changed.

This is striking if we take into account the low percentages of longevity that family businesses already have, leading us to think that what is observed in this study is an effect of the current times where the horizons of the future have become narrower and today and immediacy govern actions and thoughts.

Notwithstanding what has been expressed, it should not fail to point out what Belausteguigoitia Rius⁽⁷⁾ points out regarding the life of these family organizations, that family businesses are born with a founder who had the talent to make an idea come true and make it prosper in the foundational stage. Then he goes on to demarcate

the roadmap of the family business with successive growth crises starting with the crisis of leadership, followed by the crisis of management, the crisis of autonomy, the crisis of delegation, the crisis of control, the crisis of bureaucracy. And once this last stage has been overcome, we would be at the gates of the crisis with a question mark for the author, why would we not be at the moment of succession.

Braidot N.⁽¹⁹⁾ in his book *Neuromanagement* already asks: How to prepare ourselves to generate the best solutions to each challenge. First of all, he points out that the modern world demands instantaneity in decision making and that this means, fundamentally, “creating the neural framework” necessary to do it successfully. Secondly, he focuses on the importance of knowledge about the senses, in order to act intelligently in an environment characterized by the advance of sensory sciences, which is changing not only the working environment, but also the way of negotiating, planning and deciding. And, thirdly, it visualizes how higher cognitive functions, together with the development of intuition, creativity and individual and social intelligence, can help generate the brain potential needed to face such a challenge.

Braidot N.⁽¹⁹⁾ recommends that in order to be successful one cannot apply formulas generated by others; even when changing companies, the same function is not for life; and finally, anchoring oneself in a position or position is to relax not only the development of one’s own intelligence, but also one’s own evolution.

It is evident then, to rethink the current structures and forms of business organization of family businesses, revaluing merit and values, the rules, their scope and their application, bearing in mind what future is being built today in the organization.

Between the foundational stage and the professional stage, family businesses must overcome a major crisis which, if the entrepreneur delays in making the right decisions, will become an obstacle to growth. At present, Artificial Intelligence and the great technological revolution are conditioning any professionalization that companies may propose. This is the third specific objective, given the topicality of the subject and the transition that the business world is undergoing.

All the participants of the sample in the present research work emphatically assert the use of digital devices and although they do not have conceptual clarity about Artificial Intelligence and there is a high percentage related to the deep ignorance of the subject, they assign a superlative character to its presence.

This that is observed in the local companies surveyed in this research, also coincides with the feeling of the companies and their members in the world, since even being essential to talk about the implementation of digital solutions as part of the professionalization in family businesses, it is said that the different generations that are part of the Spanish family businesses also come into play, where the older generations between 43 and 58 years, are less open to innovate in their business, implement new technologies, methods or processes. For 60 %, those members of family businesses between 27 and 42 years old are the most willing to implement new solutions to improve their business. In the case of these family companies, points out the study *European family SMEs in the digital economy* published by Mastercard, that convincing family members who are part of the company of the need to modernize and finding the right digital tool are key challenges they face.

As it emerges from the results, companies and their members show ignorance and insecurity in the face of the huge paradigm shift that is being touted with the implementation of Artificial Intelligence. It is important to highlight that the limitations of the understanding of the complementary use of AI are related to the delegation of repetitive tasks, the completion of tasks in planning sectors (in the case of the real estate company), the execution of activities tending to recurrent stock and operability (in the case of the company selling construction materials and industrial bakery), the conduction of public passenger transportation among many others that exist and that will continue to be added, until reaching a vast and extensive list of tasks.

In fact, defining concepts related to AI is still very new. There are no papers and there are few books available on the subject. So far it is known that AI - in its different presentations and very new applications - optimizes processes related to calculations, rows that optimize repetitive calculations, i.e., by loading Excel spreadsheets to the application, it is configured so that when downloading the database it does it automatically and in a minimum time, with a detail of analysis and precision, so far unknown.

However, this fear or insecurity of the unknown, observed in the results of the sample of this research work, is justified by the non-existence -at date- of a legal framework to protect against inconveniences or conflicts of jurisdiction that may arise from its use.

It is well known that the whole world can communicate through an application. And the regulations should be different, clear and known by individuals and companies, since the data lost the character of private and today in one way or another, are housed in the digital world, no one is exempt from this reality.

The vast majority of people and companies have a certain fear of the use of AI. The reality is that AI does not come to replace people, but rather it comes to do the tasks that people know how to delegate to a machine to focus on acquiring new knowledge that allows them to develop new skills and competencies in pursuit of individual and collective growth, either within an organization or society.

AI comes to quantify all the processes that today are operationalized in the company. Everything that is repetitive, it transforms, automates and measures. It will automate those processes for which the person is not

necessary, assigning him tasks that require his creativity, his critical capacity, and the machine will take care of the repetitive tasks.

Related to the above, it is worth quoting Sosa Sierra, M. del C. who points out in his book *Artificial Intelligence in business financial management*, that: with the rapid progress of computer systems and the creation of large databases, new Artificial Intelligence techniques emerge ascribed to expert systems such as Data Mining or Data Mining. This technique is considered a previous stage in the generation of knowledge. Advances in systems have grown along with the need to extract valuable information for decision making in a globalized world. Thus, establishing a competitive strategy becomes an issue of vital importance to ensure the sustainability of a business against its competitors.

It is stated in the book *Artificial Intelligence*, that the impact of Artificial Intelligence will be greater than that of electricity or fire.

The strength of this research work lies in focusing within the processes of professionalization to Artificial Intelligence to analyze its applicability in organizations, since it is a subject that -despite there are no papers or books that describe or conceptualize it- is placing the world in the biggest transition in the history of all times and facing an imminent and digital future.

It is predicted for the next five years, that the changes generated by the use of Artificial Intelligence will be abysmal with a significant influence on the capabilities that will have to count not only employees involved in operational activities but also the middle and upper management of organizations. Therefore, training, learning to learn and learning processes will be key to adapting to the new times ahead.

As for the limitations of this scientific manuscript, although they are given by the smallness of the sample analyzed, which represents 0,5 % of the total number of family businesses in Tucumán, the response of 100 % of them allows us to deduce the cultural characteristics, as well as the difficulties and limiting beliefs that do not help them to grow and make the leap in quality that professionalization implies with the complementary application of AI.

Another limitation to the present research work is the limited time given by the participants to the interviews, as well as the profound lack of knowledge of the subject applied to the organization, so it was necessary to carry out a small training in two of the companies surveyed.

These limitations open new lines of research on those issues that were not addressed in the present study, such as the profound lack of knowledge of the professionalization processes observed in the members of family businesses, the accumulation of limiting beliefs and cultural and traditional characteristics of the founders, and the adaptation and adaptation of these family businesses to the digital technological revolution of these times, including the advance of AI.

As a conclusion, it is worth mentioning that family businesses -in general- are characterized by a strong emotional component of their owners, who must learn to manage. In particular, there is a certain detachment from the structuring of procedures for competitive improvement and the weakening of the vision, mission and values as the axis where the objectives and goals to be achieved by the company are based.

As a recommendation, it is suggested that family businesses should review the professionalization of their organization and within it, strive for a solid organizational culture that helps to fulfill the mission of the company, open to new ideas, to continuous learning and to promote innovation, formalize the governing bodies of the company, redefine the goals to be achieved, taking into account that the evolution of AI is by leaps and bounds and makes obsolete the jobs and procedures in use; while the complementary implementation of AI will generate greater value and profitability to the company by reconvert the capacity of Human Resources and substantially modifying the times and results of the operative processes.

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