



The organizational culture of family enterprises and their relationship with innovation in the municipality of Cajeme, Mexico.

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Summary. Family businesses are increasingly calling attention to entrepreneurs, academics and organizations. This is largely due to their contribution to GDP, as well as being a source of employment. Family enterprises have very peculiar characteristics, such as shared identity, privacy, very close and emotional relationships; however, they also face various problems related to the internal and external barriers in innovation. Among the internal barriers are the excessive risk, lack of trained personnel, high costs, and lack of expert staff; therefore, it has an impact when it comes to innovation, and the organizational culture must be added as a fundamental factor. The objective of the study is to analyze the relationship and influence of the organizational culture with the innovation in the family enterprises in Cajeme, México in order to generate new cultural models. The proposed hypotheses are: H1. The organizational culture is positively and significantly related with the innovation; H2. The educational level is related and influences, positively and significantly, innovation within the family enterprise.

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PALABRAS CLAVE
Cultura organizacional, Innovación, Familia, Pequeñas y Medianas Empresas

La cultura organizacional de las empresas familiares y su relación con la innovación en el municipio de Cajeme, México.

Resumen Las empresas familiares son un tema de interés creciente para empresarios, académicos y organizaciones. Esto se debe en gran parte a su contribución al PIB, además de ser una fuente de empleo. Las empresas familiares tienen características muy peculiares, tales como su identidad compartida, privacidad, relaciones muy cercanas y emocionales; sin embargo, también enfrentan diversos problemas relacionados con las barreras internas y externas en la innovación. Entre las barreras internas se encuentran el riesgo excesivo, la falta de personal capacitado, los altos costos y la falta de personal experto; por lo tanto, existe un impacto en relación a la innovación, y la cultura organizacional es otra variable fundamental. El objetivo del estudio es analizar la relación e influencia de la cultura organizacional con la innovación que aplican las empresas familiares en Cajeme, México, para generar nuevos modelos culturales. Las hipótesis propuestas son: H1. La cultura organizacional está relacionada positiva y significativamente con la innovación en las empresas familiares analizadas. H2. El nivel educativo está relacionado e influye, positiva y significativamente, en la innovación dentro de la empresa familiar.

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Introduction

According to FUNDES (2011), family enterprises are essential to the economy of countries, an example of which is France with family businesses making up 60.5% of its GDP, Italy with 75%, Germany with 82%, and Spain with 89%; however, in 2018, it is expected that 70% of the companies in the world will be 5 family enterprises. In Latin America, Davis (2006) mentions that family enterprises represent 70%, create 50% of the employment and 40% of the GDP.

Family enterprises have a strong entrepreneurial activity over time. On average, and throughout history, these families controlled 6.1 enterprises, created 5.4 firms, added 2.7 signatures through mergers and acquisitions, separated 1.5 firms and changed the industry's focus 2.1 times. These families exhibit a significant level of business activity over time, in terms of rearranging the portfolio of activities through foundations, mergers and acquisitions, as well as divestments (Conway Center for Family Business, 2018).

On the other hand, El Economista web portal (2015) points out family enterprises have powerful internal cultures in the United States. Through a study of 114 family enterprises and other 1,200 large companies, it was found that family enterprises get significantly higher scores in aspects such as motivation and leadership of employees. 74 percent of the family enterprises believe they have stronger culture and values than non-family enterprises; 72 percent measure success in a different way, not just growth and profits. Most of these companies (60 percent) believe that their ethical standards are more rigorous than competing firms. They also report that ethical standards are always or often discussed in meetings with employees, in conversations with clients and during board meetings.

According to San Martín and Durán (2017), family business in Mexico generates 67% of the employment in the country. The states in Mexico where the most active family enterprises are located, in terms of incursion into new markets, are: Chihuahua, Nuevo León and Tamaulipas; in addition, the states with the most generation of new products or services are: Tamaulipas, Baja California Sur and Sonora.

Similarly, Iannarelli (1994) notes that the family enterprise offers two separate but interconnected family and enterprise systems with uncertain limits, different rules and roles. Family enterprises are different from other companies because of the inclusion of family and relational ties between the family members. Therefore, the integration of family and commercial cultures exists.

For their part, Novak (1983) and Jaffe (1990) point out that companies that are controlled by the family also differ in certain characteristics of their corporate cultures. These include being more socially conscious, worrying about providing jobs to people, treating workers fairly, providing greater opportunities for women, and being preferred by consumers. Davis and Taguri (1982) argue that these characteristics are due to the existence of bivalent properties, which are characteristic of the inherent features of the family, property, and the way in which the administration is carried out. These peculiarities derive from such things as shared identity, mutual awareness, privacy, emotional participation, and ambivalence.

Problem

According to the Family Business Alliance (2014), 30% of all family enterprises last until the second generation, 12% will still be feasible/ operational by the third generation, and only 3% of these survive to the fourth generation. In addition, the Foundation of Sociological Studies (FUNDES, 2018) establishes that only 3 out of 10 family organizations pass to the second generation, and 7 out of every 100 to the third generation; this is caused by family problems and conflicts. Meza (2017) comments that family organizations belonging to the first generation represent 66% in Mexico; the second is 29%; and only 4% for the third. Moreover, the family business in Mexico lacks a strategic plan in 71% of firms.

Although, nearly/ approximately 70% of family enterprises want to pass their business to the next generation, only 30% succeed in transitioning to the next generation (Conway Center for Family Business, 2018).

In this regard, Biolcheva (2017) states that innovation has internal and external barriers that make it a challenge. Internal barriers include: excessive risk, lack of trained personnel, and high cost of maintenance for highly prepared personnel, among others. External barriers are: lack of government support, lack of marketing information, and lack of information about new technologies, among others.

In the case of Nečadová & Scholleová (2011), they mention that the five problems that are most present when it comes to innovation are: high costs, lack of experts, long periods of replacement, technical equipment issues, and finally, legislative and regulatory aspects.

Uyarra, Edler, Garcia, Georgiou & Yeow (2014) argue that there are some barriers that can prevent the public sector from innovation, which include early warning, lack of commitment between dealers and suppliers, and others.

One of the main barriers to innovation and the establishment of an innovative culture are the inertia and resistance to change. These obstacles can be eliminated; however, it is not possible without involving the members of the current project to the new one, especially if they feel disconnected to the new one (Souto, 2015).

The various barriers that can be found when implementing a culture of innovation are: lack of willingness to take risks and mistakes as an opportunity to learn, insufficient exchange of ideas and knowledge, uncertainty between managers and employees, among others (Vey, Fandel, Zipp & Schneider, 2017).

Therefore, being a small or medium-sized company, it faces various situations, which can have a drastic impact on the permanence of the market. As can be seen, organizational culture will lay the foundations of the organization, and to a great extent the guideline to follow. Consequently, it would dictate the openness towards innovation of the organization to a great extent.

The research question that arises is: What is the relationship and influence of the organizational culture with the innovation that is applied by the family enterprises in Cajeme, Mexico?

Justification

The wealth owners of family enterprises have a very important priority, and it consists in transferring, not only financially, but their values to the subsequent generations too. The main values taught include encouraging children to earn their own money, philanthropy, charitable donations and volunteering. Research shows that family enterprises are less likely to dismiss employees regardless of financial performance.

Innovation in SMEs is the primary factor for its consolidation and competitiveness, being able to be carried out in different ways in products, goods and services. Also, it includes the marketing processes and everything that impacts the design of the product, according to the Oslo Manual (Manual de Oslo, 2005).

To some extent, it is considered that the ultimate goal of the family enterprises owners is to optimize their utility; nevertheless, they usually have goals or minima that produce a satisfactory level of utility for a specific period. In addition, they also face resource constraints that limit their achievement. It is essential to take into account whether the enterprise has a clear idea of the importance of innovation or not and to promote innovation within the company.

The research related to family enterprises is increasing, largely due to the large number of companies that represent. It is indisputable that they behave differently to non-family enterprises

as commented by Chua, Chrismand, de Massis, Wangh (2018); henceforth, it is vital to identify its organizational culture and its influence in the innovation process, because they are fundamental factors in the consolidation and competitiveness in the organization. Finally, it is important to evaluate the effectiveness of the established strategies, monitor the fulfillment of their goals, and consequently their performance.

Objective

To analyze the relationship and influence of the organizational culture with the innovation that is applied by the family enterprises in Cajeme, Mexico to generate new cultural models.

Hypothesis

The research hypothesis is as follows: **Hi**. The organizational culture is related and positively and significantly influences innovation within the family enterprise. Based on the foregoing, it is proposed to verify the following specific hypotheses:

H1. The productive sector is related and influences positively and significantly with the innovation applied by family enterprises.

H2. The educational level is related and influences, positively and significantly, innovation within the family enterprise.

H3. The organizational culture, the productive sector and the educational level positively and significantly influence innovation within the family enterprise.

Literature Review

Ouchi (1982), who is one of the principal scholars of culture, establishes that the cultural characteristics would be: trust, friendship, teamwork and administration by direct participation; that is to say conditions of humanized jobs. These increase the profit and productivity, and employees own estimation, achieving greater emotional wellbeing.

For its part, Schein (1988) mentions that culture is the basis of basic assumptions and beliefs that are shared by members of an enterprise, who work unconsciously and define the vision that the company has of itself and its environment. This author considers that the culture can be intervened by the direction of direct mechanisms. Similarly, Hofstede (2011) believes that the shared perceptions of everyday practices are more relevant, since it is more feasible to intervene in everyday practices than to modify the already embedded values of people.

The main contributions related to innovation belong to Nonaka (1991), and Nonaka and Takeuchi (1995); they comment that the generation of knowledge is the way of acting by the worker or the entrepreneur. This is accomplished individually or in a group, through knowledgeable people and organizational routines; there are no hierarchies, however the high level of the hierarchy in the organization knows where they want to go. Aktouf (2002); Murillo, Calderón and Torres (2003); Hellriegel and Slocum (2009) operate similar dates in terms of the study of

organizational culture. According to Aktouf (2002), the organizational culture has grown in a dizzying way since the end of the 70s. He mentions that the most important authors in the area are the following: Barnard (1938), Fucini (1964) Ouchi (1981), Deal and Kennedy (1982), Peters and Waterman (1982), Pettigrew (1979), Weick (1979), Schein (1985), Pscake and Athos (1981).

Some other authors who refer to the family enterprises, innovation and organizational culture are presented in Table 1.

Table 1 Definition of family enterprise, organizational culture and innovation.

	Author	Definition
Family Enterprise	Miller, D., Le-Breton-Miller, I., Lester, R. H., Cannella, A. A. (2007).	Family enterprises are the ones in which multiple members of the same family are involved as owners or principal managers, either at the same time or eventually.
	Sciascia & Mazzola (2008).	Family enterprises are those in which the family controls the business through the participation in property and administration positions.
	Corona y Téllez Roca, R. (2011).	It is the one in which a family group designates the maximum executive of the company to set the business strategy, with the objective of generational continuity. This based on the joint desire of founders and successors to maintain control of the ownership and management in the family.
Organizational culture	Okoroafo & Koh (2010). Hofstede (1991)	The family business is the one that the owner identifies as a family enterprise. Cultural universe formed by assumptions, values and beliefs that are shared by the members of an organization and derived from a specific social environment, which is learned through social practices and occur at an organizational level.
	Schein (1988)	It is the basis of basic assumptions and beliefs shared by the members of a company, which unconsciously work and define the vision that the company has of itself and its environment. It considers that the culture can be intervened through direct mechanisms by the management.
	Arboleda & López (2017).	Sum of beliefs and values shared by members of the same organization that influences their behaviors.
Innovation	Marulanda & López (2013).	Behavior pattern that can be observed within a community or organization that emanates from the shared values, beliefs and thoughts of the people who integrate it.
	Manual de Oslo (2005).	The introduction of a product (good or service) or a process, new or significantly improved; or the introduction of a new marketing or organization method, applied to business practices, work organization or external relations.
	Pla-Blader (2007)	It is the transformation of an idea into an improved product, an improvement in a process, or the development of a new one. That is to say, it is like a successful process of exploiting new and creative ideas, which require two characteristics that are novelty and use.
	Cáceres & Aceytuno, (2008)	It is a competitive advantage in which it helps to develop other business opportunities over rivals.

Note: Own elaboration.

According to Athwals (2017), some advantages of the family enterprises are:

Stability: Generally, it is the family position that leads the business and, as a result, there is usually longevity when it comes to leadership, which results in overall stability within the organization.

Commitment: Because the needs of the family are at stake, there is a greater sense of commitment and responsibility. This level of commitment is almost impossible to generate in non-family companies.

Flexibility: Family members are willing to take on tasks outside of their formal jobs to ensure the success of the company.

Long-Term perspective: Non-family enterprises think about reaching their goals this quarter, while family enterprises think of the years and sometimes decades that are looming. This allows for a good strategy and decision-making.

Reduced cost: Unlike typical workers, family members working in family enterprises are willing to contribute from their own finances to ensure the organization's long-term success. This could mean taxpayer capital or pay cut.

Similarly, Athwals (2017) points out the disadvantages of family enterprises:

Lack of interest among family members: sometimes family members are not really interested in joining the family business, but they do it anyway because they are expected to.

Family conflict: Because family members are involved, conflict may be more difficult to resolve and may result in difficult endings.

Unstructured governance: Governance issues such as hierarchies and internal rules, as well as the ability to follow and adhere to external corporate laws, tend to be taken less seriously in family enterprises, owing to the level of trust inherent to family enterprises.

Nepotism: Some family enterprises are reluctant to allow external people to enter the upper

level, and the result is that people/ employees lack skills, education or experience for different kinds of jobs.

Succession planning: Many family enterprises lack succession plans, either because the leader does not want to admit that one day he or she will have to quit, or because there is too much trust in the family to work on this.

Methodology

In order to achieve the objective of the study, a quantitative methodology was applied, using a non-experimental cross-sectional design, in a specific time (Creswell, 2009). Also, the research population consisted of the small and medium-size family enterprises (SMEs) of the commercial, industrial and services sectors in Ciudad Obregon, Sonora, Mexico. From this, a sample was selected using a non-probabilistic method of intentional type sampling. In order to analyze the data, these were represented by numbers, which were then analyzed using descriptive and inferential statistics (Hernández, Fernandez & Batista, 2014).

Table 2 Enterprises classification according to their size.

Size	Sector	Number of employees range	Annual sales (million pesos) range	Combined maximum limit*
Small	Commercial	Up to 10	Up to \$4	4.6
	Industry, Service, Commercial	From 11 to 30	From \$4.01 to \$100	93
		From 11 to 50	From \$4.01 to \$100	95
Medium	Services	From 31 to 100	From \$100.01 to \$250	235
		From 51 to 100		
	Industry	From 51to 250	From \$100.01 to \$250	250

*Combined x = (Employees) X 10% + (Annual sales) X 90%.

Note. Official Journal of the Federation (Diario Oficial de la Federación), June 30th of 2009.

Participants

The participants in the research were small and medium-sized enterprises in Cajeme from different sectors (see Table 3).

Table 3 Productive sector of the family enterprises.

Sector	Frequency	Percentage
Service	25	17
Commercial	78	54
Industrial	42	29
Total N	145	100

In order to collect data from the population in the study, the database of the National Institute of Statistics and Geography (INEGI 2009) was consulted in its *National Statistical Directory of Economic Units (DENUE)*, which totaled 1.409

organizations. Subsequently, applying a non-probabilistic sampling of purposive type, a sample of 300 enterprises was selected, who voluntarily agreed to participate in the investigation; 48% are classified as family SMEs and these were the ones that were analyzed for the present project in relation with the initial approach. It is important to mention that, at all times, the adequate sample size was maintained for relevant statistical analyses (Levin and Rubin, 2004). The conformation of the family enterprises was based on the characteristics of family: son (a), brother, (a), spouse and others (uncles, cousins, etc.).

In consideration with the above, it can be noted that the total number of employees are around 2.320. These workers were the ones integrated into the family enterprise; whose main

characteristics are differentiated through gender.

Table 4 Gender in the family enterprises.

Gender	Frequency	Percentage
Men	1355	58
Women	974	44
Total	2320	100

It shows a fair behavior in relation to the members of the family, and a difference not so significant according to the percentages (see Table 4). According to gender equity, it is perceived that women within the organizations in Cajeme have generated an increase in relation to other studies. Additionally, it is becoming

It is important to note that, within the organization, other relatives have a high level of prominence, for example: uncles, cousins, etc. They are close relatives and partners of the family SMEs.

Instrument

Table 6 Variables and items.

Variables	Items
<p>INNOVATION Company's ability to create, apply and market technologies. (Bernardez, 2007).</p>	<p>INNO 1. It worries about innovating in products or processes. INNO 2. It has technology that responds to their needs. INNO 3. It relies on social media. INNO 4. It manages their business with the support of technology. INNO 5. It invests in technology. INNO 6. It uses technology when handling information.</p>
<p>CULTURE The way things are done. Habitual and traditional way of thinking and doing things, by all the members of the enterprise, to a greater or lesser degree. (Carleton and Lineberry 2004; Jaques 1951).</p>	<p>CUL 1. Work and operational teams are frequently established. CUL 2. Habits and organizational values are important. CUL 3. Their own cultural patterns have developed throughout their history that affect the behavior of their members and impact the implementation of the changes. CUL 4. There are established ceremonies, rituals or prescribed ways to manage behavior in the organization. CUL 5. There are some employees who share stories, news related to the organization. CUL 6. It is directed by some family member with the intention of continuing from generation to generation. CUL 7. Authority is exercised by the higher levels of the organization. CUL 8. They reward and promote the achievement of results. CUL 9. Support among employees is encouraged. CUL 10. You can tell the difference between its members by the generational gaps.</p>

Note. Own elaboration

For the above, the internal validity of the instrument was carried out through the application of various tests of normality. In the

more prominent with time, which is outstanding when observing the percentages that are presented within the study sample. The conformation of family enterprises was based on the characteristics of family: Son or Daughter, Brother or Sister, Spouse, and others (see Table 5).

Table 5 Relationship in the enterprises.

Relationship	Frequency	Percentage
Son or Daughter	57	39
Brother or Sister	35	24
Spouse	36	25
Others	17	12
Total N	145	100

The instrument consists of two measuring scales of Likert scale consisting of five points and categorical variables that supported the analysis of the general and family aspects. Each topic addresses various items, for example innovation relates to its elements that come from items 1 to 6, emphasizing the technology dimension. On the other hand, the culture is approached from the organizational area with a number of ten items, which are indicated from item 7 to 16 with the dimensions of values, beliefs, market and leadership, which are shown below (see Table 6).

same way, the reliability test of the data was applied, in which the items of both variables

exceeded the parameters established by Cronbach (see Table 7).

Table 7 Reliability of variables.

Variable	Number of elements	Cronbach alpha
Innovation	6	.94
Culture	10	.80

Note. Own elaboration.

Procedure

The elaboration and the previous design took as reference a timetable of activities of the project, which consisted of various steps. Theoretical information was sought in order to support the topics of study. A Likert type scale was selected because, from the point of view of the researcher, it was simple to build and gives the interviewee the opportunity to graduate his opinion with various options. After the structure, each of the items was formulated with their respective theoretical and empirical sustenance that was sent to the validity of experts.

For the pilot study, 30 questionnaires were applied to SMEs in different sectors. Of the most outstanding data in the pilot study was a change in the structure and the drafting of items since respondents detected conflicts. Considering the results of the pilot, the process of applying the rest of the sample went forward, thus obtaining the 300 questionnaires answered.

With the collected data, the base was built in the statistical package IBM SPSS (version 21), which was captured carefully, avoiding typographical errors in order not to generate any lost values. Therefore, with the sample applied, the analysis and statistical tests were initiated.

Results

Table 9 Linear Regression between CUL e INNO.

Variable	B	95% CI	β	t	p
Innovation	.333	[.376- 1.040]	.347	2.71	.001

Note. Own elaboration. $R^2 = .21$ (N = 145, $p < .001$). CI = confidence interval for B.

In particular, the results shown in the previous table reflect that the organizational culture predicts/ is responsible for 21% of innovation within the family enterprises in Cajeme; consequently, it is estimated that the remaining percentage is scattered in other variables that are not contemplated for this study. In this, it is

In the first instance, it is decisive to mention the results on the following scenarios. The hypotheses proposed in the theoretical section of the project were accepted: *H1*. The research hypothesis mentions a relationship between the two variables, for which a Pearson correlation test was applied (see Table 8).

Table 8 Correlation of Culture and Innovation.

Variable	N	M (%)	SD (%)	1	2
Organizational culture	145	4.02	.57	---	
Innovation	145	3.56	1.2	.347	---

Significant at .01 (two-tailed)

H1. *The organizational culture is positively and significantly related with the innovation applied by family enterprises.*

It is important to point out that an effective relationship is shown and is considered acceptable within the parameters established by Pearson since the percentage presented explains a 34% of the shared variance between its elements. Therefore, there are elements to be considered among the family enterprises. For example, items INNO 3 and 4 have an acceptable average and are aligned with the item CUL 1; hence, technology and the way to transfer it are done with a culture based on teamwork.

The second test is derived from the relationship, for which a linear regression test is analyzed, where the influence of the organizational culture on innovation in the family enterprises was analyzed (see Table 9).

emphasized the importance that the hierarchical levels reward and incentivize the behavior and the promotion of the results. It is from there, that it derives a constant influence and generation of new ideas and applications of promotions through the social networks; this is how the focused culture of the leader intervenes

in the process of innovating. There are factors that can intervene in the generation or the influence of one variable or another, which is why it is necessary to indicate other tests to check the relation of our study variables (see Table 10).

Table 10 Relationship and influence of Control variables versus Innovation.

Variable	N	B	R2
Productive sector	145	.534	.285
Educational level	145	-.170	----
Organizational culture	145	.333	.210

In the first subparagraph, the following specific hypotheses were pointed out to verify the mentioned above:

H1. The productive sector is related and influences positively and significantly with the innovation applied by family enterprises.

H2. The educational level is related and influences, positively and significantly, innovation within the family enterprise.

H3. The organizational culture, the productive sector and the educational level positively and significantly influence innovation within the family enterprise.

The foregoing notes that the first specific hypothesis is fulfilled because the productive sector is related and influences more than the organizational culture to innovation. What is noteworthy is that the predominant sector of the family SMEs is the commercial. There is a technological innovation as new trends are encouraging entrepreneurs to increase their level of innovation in this sector.

Therefore, innovation in the business sector, in particular in the 145 family enterprises, is influenced by the following:

$$\gamma = \beta_1 X_1 + \beta_2 X_2$$

Where:

γ = Innovation.

X_1 = Organizational culture.

X_2 = Productive sector.

Essentially it is the culture and the productive sector influence that positively and significantly in a. 388; their influence increases by 10 percent when directly comparing each variable. For this reason, the families SMEs in Cajeme are more innovative based on their culture and their line of business. As a result of the main findings presented above, it is necessary to detail the most outstanding debates from an empirical perspective. To this end, the main

elements of the researched variables are presented in other parts of the world, using different methodologies. A comparison study between family and non-family enterprises and their relationship with the generation of innovation is what Craig and Dibrell (2006) stand for in their research. It is focused on industrial SMEs in the United States, with a representative sample of 391 enterprises; they come to the conclusion that family enterprises can use their natural environmental policy more effectively in a strong competence of capacities that led to innovation and organizational performance. Similarly, the study has a related characteristic since the 42 analyzed companies of the industrial sector use their technological processes in order to increase their profits.

The family through its cultural values, collaboration and networks propitiates greater innovation, as raised by Cassia, De Massis and Pizzurno (2011). In a series of case studies focused on family enterprises, the authors established that the family impact on business and innovation activities occurs through a combination of interaction with family objectives, values and culture. Like the analyzed family enterprises in this document, they have developed throughout their history with their own cultural patterns that affect the behavior of their members and impact the implementation of technological changes. Likewise, they are directed by some member of the family with the intention of continuing from generation to generation.

Conclusions

It is concluded that within the pillars of the family SME the organizational culture and innovation are essential, because when analyzing the relationship and influence of these in the family companies in Cajeme, Mexico, the hypotheses are accepted. *H1. The organizational culture is positively and significantly related with the innovation that is applied by family enterprises; H2. The educational level is related and influences, positively and significantly, innovation within the family enterprise.*

It is verified that there is an effective relationship between the organizational culture and the applied innovation by the family SMEs; taking special care of technology and how to transfer it, which is supported by a culture based on teamwork.

It is established that the organizational culture predicts 21% of the innovation of the family enterprises in Cajeme; however, it is necessary

to unite/ compare, in subsequent studies, with respect to other variables not considered in the research since new proposals can emerge and positively impact the family SME.

Indisputably, the leaders of the family SMEs dictate the guideline regarding the behavior and achievements of the organization, constantly influencing the creation of ideas that impact in innovation.

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