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ISO 56002:2019 Certification. Implementation experience in an Ecuadorian company

Certificación ISO 56002:2019. Experiencia de implementación en una empresa ecuatoriana

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Abstract

This article presents an overview of the innovation management approach, a theme that is gradually gaining ground in the business field. The objective of this study is to analyze the implementation of the ISO 56002:2019 standard in an Ecuadorian agro-productive company to develop and deploy innovation capabilities, evaluate performance and achieve the expected results. This research is qualitative, of an exploratory-descriptive nature. For the organizational diagnosis, an internal audit was carried out through a checklist, which allowed evaluating the context of the organization, leadership and commitment, planning, support, operation, performance and improvement. On the other hand, to determine the strategic orientation, direct observation was carried out, as well as an empathy map, in addition, a focus group was carried out with the company managers. The instruments used were a checklist, the observation sheet, the focus group sheet, and the empathy map sheet. The organization investigated is an agricultural business group in Ecuador, where 8 clients, 12 final consumers, 169 collaborators, 11 suppliers, 2 government actors and 2 certifiers were investigated. The examined case study ratifies the low level of implementation of the standard in question, despite the fact that it contributes to achieving better levels of performance in the processes, improving quality and granting a greater position in the market.

Keywords: *Organization; Scientific innovation; Standardization; Norm.*

Resumen

Este artículo presenta una visión general del enfoque de la gestión de innovación, temática que poco a poco está ganando espacio en el ámbito empresarial. El objetivo del presente estudio es analizar la implementación de la norma ISO 56002:2019 en una empresa agroproductiva del Ecuador para desarrollar y desplegar capacidades de innovación, evaluar el desempeño y lograr los resultados previstos. La presente investigación es cualitativa, de carácter exploratoria-descriptiva. Para el diagnóstico organizacional se realizó una auditoría interna a través de una lista de verificación, la que permitió evaluar el contexto de la organización, liderazgo y compromiso, planificación, apoyo, operación, desempeño y mejora. Por otra parte, para determinar la orientación estratégica se realizó observación directa, así como un mapa de empatía, adicional a ello se llevó a cabo un focus group con los directivos de la empresa. Como instrumentos se han utilizado, una lista de verificación, la ficha de observación, ficha para focus group y ficha para el mapa de empatía. La organización investigada es un grupo empresarial agrícola del Ecuador, donde se investigó a 8 clientes, 12 consumidores finales, 169 colaboradores, 11 proveedores, 2 actores del gobierno y 2 certificadoras. El estudio de caso examinado ratifica el escaso nivel de implementación de la norma en cuestión, pese a que la misma contribuye a alcanzar mejores niveles de desempeño en los procesos, mejora de la calidad y otorga un mayor posicionamiento en el mercado.

Palabras Clave: *Organización; Innovación científica; Estandarización; Norma*

Introduction

Innovation has been a central theme in the economic and social development of modern societies. In recent decades, the acceleration of technological advances and globalization have increased the need for innovation to maintain competitiveness in international markets. Innovation has become one of the key factors in achieving a position in an increasingly demanding market, immersed in turbulent environments, with rapid technological evolution and customers with changing tastes and preferences.

Innovation is recognized as a key driver of economic growth and sustainable development. According to the World Economic Forum report (2019), "innovation is a trans- forming force that can improve quality of life, increase efficiency and productivity, and create new markets and jobs." In fact, innovation has been responsible for the creation of many of the products and services we use today, from cell phones to medicines to renewable energy.

On the other hand, an Innovation Management System (IMS) serves as a guide for the organization to de- termine its innovation vision, strategy, policy and objectives, as well as establish the necessary support and processes to achieve the expected results (ISO, 2019a), which gives way to develop the innovation culture that effectively, systematically and efficiently structures the complex innovation process.

Within the present study, the research problem can be defined as the little or null application of innovation management standards in Ecuadorian companies. Therefore, the following research question has been posed: How feasible is the level of implementation of the ISO 56000 standard in an Ecuadorian company?

It is worth mentioning that during the last decades and with the intention of guiding organizations in the process of innovation management in a systematic way, some standards have been established such as: UNE 166002 developed by AENOR, BS 7000-1:2008 proposed by British Standards Institution and the Bogota Manual developed by RICYT and OAS. However, it is from the month of July 2019, that the ISO 56000 standards will be published under the direction of the Technical Committee ISO / TC 279 Innovation Management, whose edition is the first that provides the vocabulary, concepts and fundamental principles of innovation management, and is useful for organizations that want their innovation management activities to be visible and credible.

In this sense, Tidd (2021) comments that "the innovation standard, when developed by a wide range of stakeholders, constitutes a high-level guide that addresses indispensable elements of management: strategy, organization, leadership, planning, support, process, performance evaluation and improvement" (p. 3). 3) However, despite the organizational benefits of applying innovation standards, the use and adoption of this particular type of standard is still incipient since, as pointed out by Mir et al. (2016), the guidelines of the Standardized Innovation Management Systems (SIMS), regardless of the country or territorial scope of focus, share a common objective: to systematically and efficiently manage the processes of innovation management in a systematic and efficient manner.

of innovation of firms to improve innovative capacity and business performance, however, this objective has not been studied empirically prior to the present study, a fact ratified by Martínez-Costa et al. (2019) when they state that due to the lack of research in this area, their study conducted in Spanish manufacturing firms has an exploratory approach.

Furthermore, Di Luozzo et al. (2020) argue that this fact constitutes a gap that makes it difficult to assess the real benefits and detriments that could result in problems for adoption by standards developers and stakeholders (companies and policy makers).

The main result of the research carried out is that the implementation of innovation management systems is at an initial stage; companies are still unaware of the existence of these systems that allow them to update their business management and improve the competitiveness of their organizations.

In such virtue the present research has its contribution to the business sector showing that there are tools that allow them to develop and deploy innovation capabilities, evaluate performance and achieve the expected results, as well as this study provides guidance to organizations to apply/implement the innovation management standard within their daily activities.

Finally, it is necessary to mention that the article is structured as follows: this introductory section is followed by a second section that provides a theoretical framework. The third section presents the methodology. Then the results and discussion sections are presented, and the last section corresponds to the conclusions.

Theoretical framework

Innovation

Innovation is the process of creating value through the introduction of new ideas, products, services, processes or business models that improve people's lives (Gassmann et al., 2018). Alvarez and Barney (2018), meanwhile, mention that innovation is the creative use of knowledge and resources to satisfy needs and solve problems in a more efficient and effective way than existing solutions. Innovation is the ability of an organization to create and apply new ideas and concepts that provide value to its customers, improve operational efficiency and generate competitive advantage (Tidd et al., 2018).

However, fostering innovation within organizations is no easy task. There are currently many challenges that must be overcome by companies and governments to achieve an environment conducive to innovation. One of the main challenges is the lack of financial and human resources needed to carry out innovative projects. According to Rothwell et al. (1994), "the success of innovation depends on the ability of firms to acquire and apply knowledge and know-how in order to develop and implement innovative projects.

and market, which requires significant investments in research and development". In addition, companies face difficulties in identifying innovation opportunities, measuring results and protecting their innovations from competition.

Another important challenge for innovation is the need for a regulatory framework that fosters creativity and experimentation without jeopardizing the safety and well-being of society. In this regard, governments should establish policies and incentive programs that promote innovation and technology transfer through collaboration between industry, business and government.

Finally, it can be said that innovation is a key force in the economic and social development of modern societies. However, fostering innovation requires significant investments in research and development, as well as policies and incentive programs that promote collaboration among the different actors. Innovation can be an engine for sustainable growth and improved quality of life, provided that the challenges faced by companies are addressed, hence it is important for organizations to initiate innovation management processes.

Innovation management

Innovation management is a key process for companies seeking to remain competitive in a changing and demanding business environment. According to Chesbrough (2018), in- novation has become a fundamental source of competitive advantage for companies. Innovation management involves a series of activities that enable companies to de- velop and launch new products, services and processes, as well as improve existing ones. To carry out this process, it is important for companies to establish a framework that enables them to identify and develop new ideas and turn them into business solutions.

To achieve effective innovation management, companies must be open to co-working and co-creation. According to Lindgren and Bandhold (2018), open innovation involves working with suppliers, customers, competitors and other market players to develop innovative solutions. In this way, companies can access knowledge and resources that would otherwise not be available.

Another key aspect of innovation management is company culture. According to Bessant and Tidd (2018), a company's culture can be a driver or a hindrance to innova- tion. Companies that encourage creativity, experimentation, and risk-taking are more likely to generate innovative solutions and attract top talent. On the other hand, companies that maintain a hierarchical and conservative culture can stifle creativity and innovation.

In other words, innovation management is a crucial process for companies seeking to remain competitive in a changing and demanding market. In order to implement it effectively, companies must be open to collaboration and co-creation, foster a culture of innovation and promote a culture of innovation.

The company's innovation management systems and the establishment of a framework that allows them to identify and develop new ideas.

If reference is made to innovation management systems, in general some research focused on the study of standards applied in the organizational environment has mainly addressed the ISO 9000-9001 standard (Domínguez et al., 2017; Du et al., 2016; Javier et al., 2014; Lenning, 2018; Gallego and Gutiérrez, 2021; Shi et al., 2019; Tang et al., 2015; Wang et al., 2021), ISO 14001 (Aravind, 2012; Domínguez et al., 2017; García-Quevedo et al., 2020; Heras-Saizarbitoria et al., 2020; Mamedova et al., 2022), ISO 22400 (Luozzo et al., 2020) and ISO 26000 (Hemphill, 2016), while, in particular, studies that have used innovation management standards are relatively new and have not been discussed in depth, this is mainly due to the lack of data collection to date and the scarce research in some domains such as: implementation methods, impact, parallel analysis of SIMS and other management systems, as well as the development of empirical studies in different economic sectors (Idris and Durmusoglu, 2021; Mir et al., 2016).

In this order of ideas, the implementation of the SIMS constitutes one of the main aspects addressed by ISO 560002, which refers to the analysis of the internal and external environment. Thus, Irmer et al. (2017) state that the organization must periodically evaluate the external and internal environment, both current and prospective, where the organization is recommended to take into account: market issues, legislation, specific innovation regulations, including those in the field of intellectual property law, economic, social and technical aspects, namely, standards, state of the art and development of science, etc. In addition, the standard stresses the importance of understanding the needs and expectations of stakeholders.

In this sense Maier et al. (2012) argue that one way to meet these expectations is to develop innovation microsystems, which must be supported by advanced tools and methodologies for innovation and mechanisms external to other systems, which are subject to a complex set of constraints and conflicts (technical and administrative) that must be addressed without compromise. In addition, the organization must determine its innovation purposes, limits and applicability of the system to establish its scope (ISO, 2019b), a fact that entails in addition to understanding its environment and the needs and expectations of its customers to interact with other systems, aspects that give way to self-certification.

Self-certification is obtained through a first-party audit, called an inter- na audit, which is conducted by "employee auditors" of the audited company. It is important to discuss the theoretical concepts of self-assessment because the practice of assessment is a key part of the self-certification program (Kim and Hwang, 2014).

On the other hand, for the establishment of the innovation management system it is essential to have an innovation strategy, which must be supported by a culture of innovation and collaboration. Innovation culture, conceived as something that needs to support, enable and maintain along the organization's value chain the spirit of innovation management (De Casanove et al., 2017) and collaboration as a means to facilitate sharing and access to knowledge, competence, other intellectual assets and resources (ISO, 2019a).

It is this line of reasoning that Lazarenko et al. (2019) argue that it is necessary to: create a corporate culture and leadership that supports innovation, overcomes the traditional mentality and contributes to changes in conservative attitudes towards innovation...furthermore, define innovation objectives, design appropriate innovation strategies according to the types of innovation to be adopted and align them with a corporate strategy. While collaboration in innovation involves participation in joint innovation projects with other organizations, which allows companies to access knowledge and technologies that they would be unable to use on their own (OECD; Eurostat, 2005), a collaborative management approach is needed internally and externally. Mol and Birkinshaw (2009), state that: increases in the capacity for innovation in management can occur by using the knowledge already available internally and the knowledge dispersed through networks of professionals across markets.

A presence in broader, international markets adds to this capability, as do well-trained employees, who bring the analytical skills needed for management innovation and the knowledge base abroad. In addition, Gursoy et al., (2015) posit that partners must have a strong sense of ownership and commitment, collaborative culture and experience, good interpersonal relationships, trust among them, domain similarity and organizational compatibility, must be carefully chosen, have political and social acceptance and support, decisive leadership, appropriate management style and organizational culture, knowledge, experience and ideas, sufficient and adequate financial and human resources for implementation, among others.

Methodology

In order to respond to the proposed research objective and ensure its relevance in relation to the structure of the ISO Innovation Management standard, it will be a qualitative research, which, in the words of Hernández Sampieri et al. (2014) uses data collection and analysis to refine the research questions or reveal new questions in the process of interpretation.

The type of study is exploratory - descriptive, since the first step is to establish a baseline that identifies the organizational situation of the firm with respect to ISO 56002:2019, and descriptive because "the purpose is to describe and characterize the reality" (Real Deus, n.d.). The Agricultural Business Group under study is a family business that has been operating for 66 years, focusing its operations on the production and export of organic bananas. It holds the following certifications: organic (NOP, EU and CHN), Fairtrade International, Global G.A.P, Biosuisse and soon Rainforest Alliance.

The farms and companies that make up the Agricultural Business Group are dedicated to a specific activity: 4 farms; Farm A of 90 hectares, Farm B of 47 hectares, Farm C of 18 hectares, and Farm D of 47 hectares, in order to increase their administrative efficiency, the 4 farms produce, 1 company commercializes and 3 additional organizations are considered as Annex firms. However, all activities are related and interact in a coordinated manner to keep their processes aligned with the corporate value chain.

This section is called "research planning" in an atypical way, since its purpose is to comprehensively describe the stages, activities and research tools used in each phase of this study. These are detailed in Table 1.

Table 1
Stages, activities and tools for the investigation

Etapa	Actividad	Herramienta	Uso
Diagnóstico organizacional	Auditoría interna	Lista de verificación	Evaluar: Contexto de la organización, liderazgo y compromiso, planificación, apoyo, operación, desempeño y mejora
Orientación estratégica	Reuniones con Altos Directivos y Responsables de Procesos	*Focus Group* Observación directa Mapa de empatía	Sistematizar: Cuestiones internas y externas, necesidades y expectativas de las partes interesadas, alcance del SGI, cultura y colaboración.

Source: Own elaboration.

As a first step, it is necessary to diagnose at the organizational level the innovation management carried out in Grupo Empresarial Agrícola, so through the Internal Audit, information is collected through the checklist.

This tool was developed based on the requirements of the standard, structured by the following columns: a) Section ISO 56002:2019, which describes the numbering to which each requirement corresponds, b) Innovation system requirements, posed to each one as a question subject to evaluation according to the reality of the organization, c) Compliance, which provides numerical information from the previous section. It is placed on a scale of 100%, 75%, 50%, 25% or 0%.
d) Findings are the comments collected while the audit is being carried out, the purpose of which is to justify or explain the weighting assigned. An N/A column is also considered for those requirements that have no applicability to the company's activity or orientation, or for the level of maturity.

Subsequently, stage two "Strategic Orientation" is developed, where information is collected through Focus Groups, direct observation and Empathy Map. This last tool, as an appropriate way to "put oneself in the shoes of the customers" in order to identify the characteristics that allow improving products and processes adjusted to their needs and interests (Prim, 2016).

Table 2 shows the number of people and companies that were included in the information gathering for this stage, which will govern the innovation management system.

Table 2
Population and sample

STAKEHOLDER	CANTIDAD	TIPO	POBLACIÓN O MUESTRA
Clientes (importadores)	8	Empresas	Población
Consumidores finales (supermercados)	12	Empresas	Población
Colaboradores	169	Personas	Muestra
Sociedad – Comunidad	1	Institución	Muestra
Proveedores de insumos	8	Empresas	Muestra
Proveedores de fruta	3	Empresas	Muestra
Gobierno	2	Instituciones	Muestra
Certificadoras	2	Empresas	Población

Source: Own elaboration.

For data analysis, a weighted average matrix is used for internal and external analysis, as well as for stakeholders' needs and expectations. The data obtained from the Internal Audit are subject to the structure of the checklist, previously exposed, therefore, we proceed to calculate an arithmetic average of the groups of requirements considered in the ISO 56002:2019 standard, which gives way to obtain a quantitative reference of the level of implementation.

Results

Understanding the organization and its context is of fundamental importance to guide the strategic thinking of its managers; and in terms of innovation, it allows the identification of opportunities as a starting point in the generation of ideas and structure of processes that will help the organization to achieve its sustainability objectives. Having said that, the results obtained are shown below in order to the structure presented in the ISO 56002:2019 standard.

Analysis of internal factors

In order to systematize the information obtained, and as described in the methodological section, Table 3 shows the results obtained in relation to the internal factors that make it possible:

1. to obtain a quantitative indicator as a starting point for the process,
2. to know the degree of importance given to each of the factors, and
3. determine the orientation of the strategic objectives of the Agricultural Business Group.

It should also be mentioned that results higher than 2.5 indicate a preponderance of strengths in the company, while values lower than the detailed indicator denote a predominance of strengths.

weaknesses. At this point, it is worth mentioning that a similar handling and reading will be given in the rest of the sections that make up this section.

Table 3
Matrix of weighted averages. Internal factors

FACTOR	PONDERACIÓN	CALIFICACIÓN	RESULTADO
Dirección	0,25	3	0,75
Talento Humano	0,15	4	0,60
Recursos Financieros	0,10	3	0,30
Producción	0,10	5	0,50
Suministros e Insumos	0,05	4	0,20
Comercialización	0,25	3	0,75
Infraestructura	0,10	2	0,20
		Global	**3,30**

Source: Own elaboration.

Based on the results obtained, it is clear that the most important factors within the business group under study are the areas of management and marketing, which are responsible for defining the strategic orientation of the organization. The area of human talent stands out slightly among the rest of the organizational areas such as: financial resources, infrastructure and the production area itself, a fact that allows us to affirm that the objectives related to personnel have not yet been achieved, unlike what has occurred with the production process, which has shown sustained and controlled improvements thanks to the investment in basic infrastructure both at the field and packinghouse levels. The area that shows the greatest weakness is supplies and inputs, which includes the relationship with suppliers.

Analysis of external factors

Identifying those aspects that are beyond the organization's control and knowing how they can influence the firm's performance is fundamental, especially considering that the year 2020 was characterized by high uncertainty as a result of the COVID-19 global pandemic, generating direct repercussions in the year 2021. The results obtained are shown in Table 4.

Table 4
Matrix of weighted averages. External Factors

FACTOR	PONDERACIÓN	CALIFICACIÓN	RESULTADO
Político	0,30	2	0,60
Económico	0,40	2	0,80
Social	0,15	2	0,30
Ambiental	0,10	3	0,30
Tecnológico	0,05	4	0,20
		CALIFICACIÓN:	**2,20**

Source: Own elaboration.

Of the factors analyzed, the economic factor is the most worrisome; the generalized uncertainty caused by the pandemic means that the commercial horizon does not show a positive outlook. The effects on the economy of consumer families in the European Union (the group's main market) are not yet known, nor are changes in consumer habits, which makes it difficult for importers and supermarkets to manage the situation, especially in the case of products with preferential prices due to their organic and Fairtrade status.

On the other hand, the electoral event of 2021 is an element that increases the uncertainty about the political orientation that Ecuador will have in the next 4 years, especially on issues related to: state presence in the territory, rates, taxes, tariffs, trade liberalization and the operation of public services. With regard to the social factor, aspects such as the increase in crime rates and drug trafficking put the company's personnel and assets at risk. Environmental and technological factors are weak.

Customer needs and expectations

Knowing the needs and expectations of customers is relevant because it allows identifying opportunities and generating creative ideas, without ruling out the inclusion or participation of any of the stakeholders in the company's own innovation management system. In this regard Babin and Harris, (2018) and Kotler et al. (2018) mention that "Understanding customer needs and expectations is the basis for any successful marketing strategy, as well as allow to continuously improve the quality of products and services." (p. 8)

Table 5
Matrix of weighted averages. Stakeholder needs and expectations

STAKEHOLDERS	PONDERACIÓN	CALIFICACIÓN	RESULTADO
Clientes (Importadores)	0,3	4	1,2
Consumidores finales	0,05	4	0,2
Accionistas	0,2	2	0,4
Colaboradores	0,15	3	0,45
Sociedad / Comunidad	0,05	5	0,25
Proveedores	0,05	5	0,25
Gobierno	0,05	5	0,25
Certificadoras	0,15	5	0,75
		CALIFICACIÓN:	**3,75**

Source: Own elaboration.

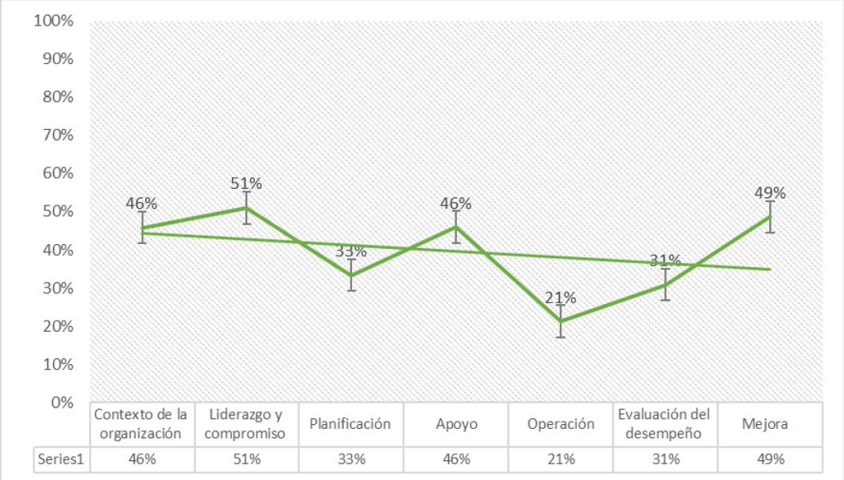
As shown in Table 5, Grupo Empresarial Agrícola responds assertively to most of the Stakeholders, however, with regard to shareholders and collaborators, they denote a call for attention, being necessary to review the current organizational strategy. When consulted,

These groups hope to resolve two specific issues: a) Orderly transfer of management to the third generation, and b) Growth opportunities. On the other hand, and despite the benefits of the Fairtrade Premium for the collaborators, it is important to work on the organizational strengthening of the Association of employees and workers of the group to generate greater participation and confidence for their representatives. The maintenance of relations with society, suppliers, government (national, provincial, cantonal and parish) and certifiers will continue within the framework of business ethics.

Internal audit

The development of the internal audit made it possible to easily identify the existing gaps with respect to: organizational context, leadership, planning, support, operation, performance evaluation and improvement of the innovation management system.

Figure 1
Level of implementation of ISO 56002:2019 by group of requirements.



Source: Own elaboration.

Figure 1 shows that of the requirements of the Innovation System the "Leadership and Commitment" has obtained a score slightly above 50%, considered as the highest of all, despite being a family type company, it should be considered that "Leadership and commitment are essential for the success of any organization. Leaders must establish a clear vision and motivate employees to achieve it" (Avolio et al., 2018, p. 2), from this perspective it is necessary that this issue is worked within the business group in order to have better results.

In this sense, the characteristics related to centralized decision making in a centralized

The fact that only one person has a vision of innovation and a focus on the realization of value, and that the organization has a defined structure and traditional organizational culture, means that many of the requirements are naturally evident. However, the weakest points in this group of requirements are manifested in the fact that there is still no way to effectively transmit the director's vision to future generations and staff.

For the rest of the requirements, all below 50%, the one with the lowest compliance is "Operation", due to the fact that it is at an initial implementation level, where projects that reach validated concepts that develop and deploy solutions have not yet been carried out. When calculating an overall average of the results by groups of requirements, it can be concluded that the level of implementation of the innovation management system in Grupo Empresa Agrícola in relation to the context of the organization is only 46%.

Discussion

Regarding the internal factors, it can be argued that the strength identified is the ability to implement the SIMS, since the commitment of managers and other members of the organization is a determining factor. As argued by (Di Luozzo et al., 2020), they are the ones who can considerably influence whether and how the standard will be successfully implemented. However, the weakness found in external factors is worrying, since in markets with high uncertainty, such as the case of Ecuador, characterized by an unstable and rapidly changing technical environment, the information asymmetries that increase the probability of a possible mismatch between regulations or formal standards and the underlying market technologies increase dramatically, which results in the use of standards having a negative impact on the efficiency of a company's innovation (Blind et al., 2017).

Likewise, "the family interest of the company" to implement ISO 56002:2019 should be recognized as a positive point, which is considered as a reason to participate in standardization alliances. This result contrasts with the findings made by (Blind et al., 2017; Ranganathan & Rosenkopf, 2014) who argue that in addition to defining technical speci- cations in standards documents, one of the most important objectives of standardization is to ensure that specific company interests are included in standards documents.

On the other hand, the analysis of the determinants of innovation management addressed in the Internal Audit shows its incipient development in the company analyzed and therefore the finding found constitutes a contribution to what is required by Williams & Shaw (2011) in terms of managing innovation using international standards and procedures. Likewise, according to Park and Lee (2019), "the adoption of the innovation standard can significantly improve the efficiency and effectiveness of innovation processes in companies, which in turn can have a positive impact on their competitiveness and profitability" (p. 63). Thus also Guo et al. (2018) refer that "the adoption of the innovation standard is essential.

to enable companies to maintain their market position and respond to changing consumer demands and expectations" (p. 220).

Da Silva (2021) suggests that the adoption of the ISO 56000 innovation standard can improve the innovation capacity of companies based on its determining but complementary factors, necessary for the constitution of systematic and sustained forms of innovation processes, whose capabilities are represented by the guidelines and processes of the standard, which are grouped in the PDCA cycle, aiming at the realization and distribution of value.

That said, it is evident that companies are beginning to recognize the importance of applying standards such as ISO 560002: 2019, as these help to train innovation professionals, providing the necessary guidelines to maintain and develop the innovation culture more effectively because they are quite objective and structured, in addition to providing guidance based on best practices on how organizations can establish a structured innovation management system.

Conclusions

- The most important internal factors within the business group are the management and marketing areas, responsible for defining the strategic orientation of the organization, which is of singular importance since it allows the establishment of clear and specific objectives for the organization, which guide the decisions and actions of the company at all levels and ensure that all efforts are directed towards common goals; it supports the identification of the target public and the design of products and services that meet their needs and expectations. This helps the organization maintain a competitive advantage by focusing on market demands.

- With respect to external factors, it is important to highlight that the economic and political factors are the ones with the highest scores, this is the result of a pandemic that generated uncertainty at an economic level in all sectors, as well as an electoral process that the country was going through. Political and economic factors are important for companies as they can affect their performance, profitability and long-term viability. Organizations must monitor these factors and adapt to changes in the political and economic environment to remain competitive and successful in the marketplace.

- In reference to stakeholders, although the organization responds adequately to certain stakeholders, it is also considered necessary to strengthen relations with groups that have not been considered in the company's management. Considering stakeholders in the management of the organization makes it possible to identify their expectations and needs, strengthen the reputation and brand, mitigate risks, improve performance and contribute to the achievement of the organization's long-term objectives.

- Because ISO 56002:2019 is still in an infancy stage in terms of implementation, the identified findings should be considered as a starting point for researchers interested in contributing to this line of research.

In addition, in the development of this research, access to quantitative data in the company under study is recognized as a limitation, as well as studies aimed at analyzing the implementation of innovation systems and their evaluation.

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