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Sustainability-oriented innovation in the hospital environment

Inovação orientada à sustentabilidade no ambiente hospitalar

Innovación orientada a la sostenibilidad en el entorno hospitalario

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Marisol Silveira de Oliveira

<https://orcid.org/0000-0002-4951-0816>

Analyst at the Hospital de Clínicas de Porto Alegre (HCPA)

Master of Business Administration from Feevale University
marisol.sol@gmail.com

Cristiane Froehlich

<https://orcid.org/0000-0001-7198-6469>

Professor at the Feevale University
PhD in Business Administration from University of Vale do Rio dos Sinos (UNISINOS)
cfroehlich@feevale.br

Cristine Hermann Nodari

<https://orcid.org/0000-0003-0397-337X>

Professor at the Feevale University
PhD in Business Administration from Pontifical Catholic University of Rio Grande do Sul (PUC-RS)
cristinenodari@gmail.com

ABSTRACT

This research aims to analyze which internal and external factors related to sustainability-oriented innovation (SOI) are present at Hospital de Clínicas de Porto Alegre-RS (HCPA). A descriptive and qualitative case study was carried out. The main results show that sustainability drives innovation, SOI is related to internal and external factors to the organization, and, in this specific case, we observed that three factors (safety, financing, and cost/price) were considered barriers to SOI development. Finally, an SOI framework is presented for the researched hospital organization.

Keywords: sustainable innovation; health management; sustainability; hospital; hospital organization.

RESUMO

Esta pesquisa tem como objetivo analisar quais os fatores internos e externos relacionados à inovação orientada à sustentabilidade (IOS) estão presentes no Hospital de Clínicas de Porto Alegre-RS (HCPA). Foi realizado um estudo de caso, descritivo e qualitativo. Os principais resultados mostram que a sustentabilidade impulsiona a inovação, que a IOS está relacionada a fatores internos e externos à organização e, no caso em questão, observou-se que três fatores (fatores de segurança, financiamento e custo/preço) foram considerados barreiras para o desenvolvimento da IOS. Por fim, apresenta-se um *framework* da IOS para a organização hospitalar pesquisada.

Palavras-chave: inovação sustentável; gestão em saúde; sustentabilidade; hospital; organização hospitalar.

RESUMEN

Esta investigación tiene como objetivo analizar qué factores internos y externos relacionados con la innovación orientada a la sustentabilidad (IOS) están presentes en el Hospital de Clínicas de Porto Alegre-RS (HCPA). Se realizó un estudio de caso descriptivo y cualitativo. Los principales resultados muestran que la sustentabilidad impulsa la innovación, que la IOS está relacionado con factores internos y externos a la organización y, en el caso en cuestión, se observó que tres factores (factores de seguridad, financiación y costo/precio) fueron considerados barreras para el desarrollo de la IOS. Finalmente, se presenta un marco de la IOS para la organización hospitalaria investigada.

Palabras clave: innovación sostenible; manejo de la salud; sostenibilidad; hospital; organización hospitalaria.

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1 INTRODUCTION

Sustainability-oriented innovation (SOI) has attracted the attention of organizations and researchers in recent decades, being developed from environmentally and socially accepted aspects, which involves making intentional changes in the organization's philosophy and values, as well as in its products and processes or practices to serve the specific purpose of creating social and environmental value in addition to economic return (Adams et al., 2016).

Knowledge about the dynamics of sustainability-oriented innovation projects is growing (Maier et al., 2020; Godin & Gaglio, 2019) and requires expansion, for example, in the field of administration (Pinsky & Kruglianskas, 2017), especially in Brazil (Carvalho et al., 2018). The expansion of its importance in the field of management is a reflection of the increased perception of organizations concerning its benefits, such as differentiation, qualification, development of new products, processes and services, access to new markets, efficiency in the value chain, compliance, cost, and risk reduction (Carvalho et al., 2018; Bocken et al., 2015; Frondel et al., 2010; Nidumolu et al., 2009; Schot & Geels, 2008), which contributes to the growth of legitimacy, reputation and organizational performance (Varadarajan, 2015).

Most of the empirical studies dealing with the topic of SOI were carried out in the context of manufacturing, in segments such as the chemical sector (Cidón et al., 2020; Menezes et al., 2012), the sugar-energy sector (Sehnm et al., 2020; Carvalho & Barbieri, 2010), the industrial (Kneipp et al., 2018; Medeiros et al., 2012), the agribusiness (Oliveira & Ipiranga, 2011), the electrical and electronic (Kuhl et al., 2016), the mineral (Ghassim & Bogers, 2019), automotive and mechanical metal (Severo et al., 2017), and textile (Koszewska, 2012). On the other hand, studies that address SOI in services are recent and with more theoretical approaches than studies on manufacturing (Martin-Rios et al., 2021; Calabrese et al., 2018). Research in tourism and hospitality has shown an important effort to broaden the discussion on the subject (Bressan & Pedrini, 2019; Horng et al., 2018; Warren et al., 2018; Volpi & Paulino, 2018).

In the health services segment, an important role and strategic aspect stand out, due to the strong relationship with research and development (R&D), especially in recent decades, with the emergence of new technological platforms related to biotechnology, nanotechnology, and information and communication technologies (Costa, 2016). These aspects are related to the interactions between scientific research and innovations in the sector, such as the construction of arrangements and networks that foster innovation development (Costa, 2016; Pádua et al., 2015; Barbosa & Gadelha, 2012; Albuquerque et al., 2004).

In addition, health services have a relevant social and economic impact on the Brazilian labor market. According to data from the General Registry of Employed and Unemployed (CAGED), in 2019, health services and social

services represented about 2.5 million jobs in the country, representing the economic activity that most employs in Brazil, with about 56.70% of all formal employment relationships (BRASIL, 2021c). In this social condition, we highlight the integral, universal and free system of Brazilian health services; about 70% of the population has access to health care exclusively through the Unified Health System (SUS). At the same time, under the environmental condition, health services are responsible for 0.76% of all urban solid waste collected in the country, representing 552,948 tons in 2019, according to Panorama of Solid Waste in Brazil 2020 (Abrelpe, 2020).

Furthermore, the health sector occupies a *sui generis* position as a link between national innovation systems (to drive technological progress that sustains the growth and wealth of nations) and social welfare systems (to enhance the quality of the population and mitigate social inequality), which makes scientific research in this field relevant (Albuquerque et al., 2004), and the advances generated in the health innovation system reflect on the economy and society as a whole (Proksch et al., 2019; Gadelha et al., 2012; Cassiolato & Lastres, 2007).

In this sense, the association of innovation with the sustainability precepts proposed by the SOI represents a possible way for health care organizations to develop in line with a sustainable agenda and with the potential to generate benefits both for the organization and the actors and environments in which they are inserted. As a result, according to Kneipp (2016), the SOI must be related to a strategic and systematic posture concerning economic, social, and environmental aspects and not just isolated actions, which involve its incorporation into the business model adopted by the organization.

Therefore, analyzing the SOI-related factors adherent to health organizations can point the way to its strengthening and consolidation in this context. Understanding how the health organization develops SOI in its operating context is the focus of this study. To this end, the research question is: how and in what way is sustainability-oriented innovation developed in a hospital organization?

The research aims to analyze which internal and external factors related to sustainability-oriented innovation are present at Hospital de Clínicas de Porto Alegre (HCPA). Therefore, it is necessary to identify the factors and the SOI practices developed by the hospital. To this end, a research was carried out that qualitatively and descriptively addresses the problem through the case study strategy (Yin, 2015) from three sources of data collection: the semi-structured interview, the documental research, and the participant observation, whose data were analyzed through content analysis, according to the theoretical bases of Bardin (2016), with the help of Microsoft Office Excel.

The option for a single case study is associated with the fact that the SOI theme has not yet been fully analyzed in hospital health care services, so we sought a case that could reveal the phase of this theme in the hospital context,

seeking an organization with representation in the segment. The Hospital de Clínicas de Porto Alegre (HCPA), located in the state of Rio Grande do Sul, presents this representation and, as a university hospital, it is open as an organization to academic-scientific research with the approval of this work in its own Research Ethics Committee (CEP) and later, ratified by the CEP of Feevale University.

Among the study's contributions, we can mention identifying factors related to the adoption of SOI in the hospital context, highlighting the main and necessary aspects for developing SOI in this segment. The case study method, as well as the procedures used for its analysis, can be replicated in the future in other hospital organizations to expand the analysis, carry out comparisons and expand the theoretical framework relevant to the viable strategic development toward the sustainability of universal health care systems, as well as the incorporation of sustainability into health innovation systems, given that it is a segment with a strong relationship and impact throughout the world. In the academic-scientific dimension, the research adds to the construction of knowledge on the subject, based on an empirical study, within the scope of service organizations, especially among those working in the health area. In addition, it makes it possible to understand and expand how this concept can be reinforced and consolidated by health organizations.

2 THEORETICAL FRAMEWORK

2.1 Sustainability-Oriented Innovation

Sustainability was incorporated into the organizational debate, seeking to question companies' contribution to sustainable development. For Hansen et al. (2009), sustainability challenges offer significant potential for innovation and possibilities for generating competitive advantage because (a) new socio-environmental regulations increase the pressure for innovation capacity and (b) there are new opportunities for business arising mainly from cost reduction through increased efficiency, risk reduction, planning reliability, legitimacy, the attraction of new customer segments, and the development of new products and businesses.

This vision changes a restrictive concept, which some companies still adopt concerning sustainability as another expense, to associate it with the success of sustainable initiatives in large organizations, demonstrating that sustainability is a new frontier for innovation (Adams et al., 2016; Nidumolu et al., 2009). The role of sustainability in innovation has aroused the business community's interest in transforming challenges into business opportunities and new markets (Delmas & Pekovik, 2018, Bocken et al., 2015, Boons et al., 2013).

Melane-Lavado and Álvarez-Herranz (2018) reinforce the idea that sustainability can drive innovation. The association of innovation and sustainability with business performance has been discussed in several studies (Maier et al., 2020; Garlet et al., 2017; Santos &

Silva, 2016; Lopez-Valeiras et al., 2015; Gunday et al., 2011; Wagner, 2010), making it essential for the survival of companies (Provasnek et al., 2017). Although innovation, from the perspective of sustainability, has received increasing attention over the last few years, in the administration field, Pinsky and Kruglianskas (2017) claim that there is an incipient production of innovation for sustainability, which reinforces the demand for new research.

The academic literature on SOI is recent, dating back to the last two decades. Authors point to the need for research that investigates how organizations can innovate in order to contribute to sustainability (Martin-Rios et al., 2021; Figuera et al., 2019; Melane-Lavado & Álvarez-Herranz, 2018; Delmas & Pekovik, 2018; Boons & Lüdeke-Freund, 2013; Seebode et al., 2012; Andersen, 2008; Hellström, 2007; Hall & Clark, 2003). For this purpose, the economic, environmental, and social pillars of sustainability must be included in the organizational management model and applied to products, processes, services, technologies, structures, and business models of organizations, to create value, ensure longevity and incorporate stakeholder concerns (Szekely & Strebels, 2020; Bos-Brouwers, 2010; Charter & Clark, 2007).

Amid these concepts, the present research explores and describes the adoption of SOI in the organizational environment, as it reinforces the combination between innovation and sustainability and highlights sustainability as an important driver of innovation in organizations (Godin & Gaglio, 2019). The choice for the concept of SOI resides in the fact that it focuses on innovation from the relationship it establishes with the tripod of sustainability. The importance of each of these tripod dimensions in innovation development is treated without preference or neglect, highlighting the benefits and results, the greater the interrelation between them. In this sense, the first assumption of this study is: A1 - Sustainability drives innovation in organizations, establishing certain conditions for it to occur and inserting it into management due to external aspects related to sustainability, such as pressure from legal and social agents.

The SOI model of Adams et al. (2016) started as a response to regulatory stimuli translated through incremental change at the company level and has been triggering an increasing radical change at the level of large-scale systems. The change in structure requires a radical change in the philosophy, values, and behavior of organizations, which is reflected in the company's innovation activity. However, Adams et al. (2016) establish a context-based classification that addresses the need to extrapolate organizational boundaries to assess SOI. In this sense, they established three contexts (reactive, incorporation, and system change). In the context of SOI management, it is important to understand which factors contribute to its adoption and development in the organizational environment.

Petrini and Eisele (2018) reinforce the importance of investigating which organizational elements internal to the organization are manifested in each type of sustainable, innovative organization. In addition to the internal factors, it is important to assess which aspects external to the organization influence this process and identify the relationships established by these factors throughout the development of SOI in organizations.

In a review carried out in the Scopus® database, scientific publications on SOI-related factors in organizations date back to 2016 and show the recent and growing interest in academic research on this topic. From these researched publications, it was possible to list the factors in Table 1.

Table 1
Internal and external factors for sustainability-oriented innovation

	Description	References	
Internal Factors	Behavioral intention	The relationship between intent and end-use. The founder intends a specific method (practice or technology) to develop a sustainable business model.	Bag (2018); McCosh et al. (1998); Wagner (2010); Peralta et al. (2019); Bressam and Pedrini (2019); Varadarajan (2015); Aka (2019); Bag and Gupta (2017).
	Organizational culture	Composed of traditions and values communicated in the organization, it influences how it behaves in the business environment. Positive values result in innovations and advances, being a strong determinant of the organization's innovation strategy.	
	Leadership skills	Leaders drive the sustainability project across the company and are accountable for any deviations in progress.	
	Development team effectiveness	In-house research and development team for new products (or services) focused on creative developments.	
	Motivation for pleasure/accomplishment	The entrepreneur perceives pleasure in using a method or technology to facilitate the development of a new sustainable enterprise.	
	Habit	The extent to which an individual believes the behavior is automatic, with previous experiences being an indicator for the habit, as they form beliefs and influence behavior.	
	Agility	Agility in decision making and response (adaptation and improvisation).	
	Financing	Need for financial resources to start or develop something.	
	Safety	The way the company faces the degree of uncertainty.	
	Motivation for a sustainable entrepreneur lifestyle	The business originates from its founder's motivation for a more sustainable life.	
	Company size	The bigger the company, the more likely it is to adopt.	
	Manager role	Adoption of synchronous processes that suit their ways of doing things (e.g., managerial commitment, external collaborations, organizational flexibility, proximity to actors, and limited time).	
	Flexibility	Handle product mixes and volume changes, flexible procurement systems, and flexible workforce skills.	
	Green purchasing practices	It considers environmental, social, and economic parameters in the acquisition decision.	
Employee motivation	It drives continuous improvement of work practices and personal efficiency.		
External Factors	Performance expectation	Degree of belief about how using the system will help performance gains.	Peralta et al. (2019); Varadarajan (2015); Bag and Gupta (2017); DiMaggio and Powell (1983).
	Effort expectation	Ease of use of the system captures the feeling and experience of entrepreneurs about the complexity of sustainable business model innovation.	
	Social influence	The degree to which the entrepreneur perceives that significant business stakeholders believe he or she should adopt sustainable practices.	
	Facilitating conditions	The degree to which the individual believes that an organizational and technical infrastructure exists to support the systematic use.	
	Cost/Price	The cost or economic burden along the stages of development of the new sustainable business model.	
	Level of company globalization	The more globalized, subject to a greater list of institutional pressures arising from operations in different countries.	
	Regulatory pressures	The company adopts a certain way of proceeding because it is considered right and true.	
	Coercive pressures	The company complies with legal and regulatory requirements, which oblige it to adopt a certain practice by legal imposition.	
	Mimetic pressures	The company adopts a practice, even if not consciously, of something understood as a good example.	
	Buyer-supplier relationship	Organizations invest in strategic suppliers for the development of new products or components, for example, through annual contracts aimed at reducing costs, thus giving greater opportunity and confidence to suppliers for greater innovative results.	
Buyer-supplier satisfaction	A good buyer-supplier relationship generates satisfaction for both and strengthens the relationship and investment.		
Reputation	Companies enjoy a favorable reputation in several areas such as innovation, product quality, customer trust, and progressive organizational practices in the pursuit of sustainability.		

Source: Prepared by the authors.

The factors were segregated into internal, originating from actions and characteristics arising from the organizational environment, and external, resulting from elements beyond the organization's limits. The diversity of factors and approaches to SOI demonstrates the complexity surrounding the adoption of this perspective by organizations.

The diversity of factors about SOI demonstrates the complexity surrounding the adoption of this perspective by organizations. Furthermore, the different sources, theoretical and empirical, on which these factors were raised, give evidence and, to some extent, justify this variety. The review of factors supports the second assumption of this study: A2 - The adoption of sustainability-oriented innovation comes from construction based on different factors, internal and external to the organization.

2.2 Sustainability-Oriented Service Innovation

The approach related to innovation and sustainability in service organizations is a topic that requires further investigation and research, as noted by Calabrese et al. (2018) in a literature review covering publications between 2004 and 2015. When associated with the three pillars of sustainability, innovation in services emphasizes the dimension of innovation linked to innovation systems, demonstrating the importance of developing and orchestrating partnerships and value creation networks through sustainable services (Kindström et al., 2013), which may be one of the reasons that makes it a more challenging context to analyze compared to industries. Furthermore, it demonstrates that developing SOI in services is strongly linked to the organizational dimension of innovation, permeating processes, products, and business models.

Calabrese et al. (2018) propose an umbrella called "Sustainability-oriented service innovation" (SOSI) as a multidimensional concept that captures the different elements of new solutions in services that address environmental, social, and economic issues, seeking to gather and share under the same name and guiding concept, something that can stimulate research on the topic.

Regarding the 17 Sustainable Development Goals (SDGs) and the contributions of organizations to achieving them, a study proposed a tool to support the transition to sustainability in companies based on the SOSI concept (Calabrese et al., 2018). The research distinguished the innovation process through a tool specifically focused on the assumption that sustainability transitions are valuable opportunities to stimulate innovation in services (Martin-Rios et al., 2021). The study was derived from the engineering design process, considered one of the important types of innovation to holistically consider environmental, social, and economic issues (Enquist et al., 2015).

In the research developed by Calabrese et al. (2018), SOSI proved to be a practical guide to identifying in which component(s) of a business model there are more possibilities to develop this type of innovation, thus aiming

to serve new markets and new customer segments and consequently gain a competitive advantage. Calabrese et al. (2018) concluded that the tool improves the current understanding of innovation guidelines in services with a sustainable bias but still needs more empirical studies for its validation on a larger scale.

From the user's point of view, another study addressed this perspective as an important source of innovation, especially in services, called user innovation, driven by users (Trischler et al., 2020). The article conceptualizes the diffusion of user innovations from a service ecosystem perspective, considering this a possible theoretical basis for the adoption and diffusion of user innovations. The service ecosystem, in this sense, contributes to innovation as a multilevel phenomenon, in which there is no attribution of specific functions because all actors are integrators of resources for the co-creation of value, and the diffusion of innovation is focused on changes that can create value by integrating existing resources rather than seeking new ones. The study concludes that the adoption of innovation diffusion from the user perspective is still little explored and complements that innovation policies, regulations, and the financing structure are barriers to developing an innovation ecosystem from these bases.

However, the analysis and discussion are still centered on the theoretical field in an attempt to bring together what has been produced so far on sustainability-oriented service innovation under the same umbrella of concepts. The difficulty of identifying publications that detail the discussion based on the empirical bias confirms the need to develop research in this sense. Since the theory helps in the empirical analysis and the empirical helps in the development of the theory, the imbalance of publications from these two angles hinders the development of knowledge about SOI.

However, one cannot fail to highlight the effort that some segments, such as tourism and hospitality, have made in this direction. New perspectives for the theme development are also identified, such as the publication by Trischler et al. (2020), which sheds light on the user role, a fundamental element for service-based organizations, as well as the effort to bring characteristic elements of research on services to the discussion of incorporating sustainability-oriented innovation in this universe.

Regarding health services, there is an expectation that they will act to improve the patient experience, improve the population's health and maintain or reduce costs. However, most organizations in this segment are not prepared to achieve these three goals (Fredriksson, 2018). Thus, an aspect relates to the idea that the more technology, interaction, and intervention, the better the health (Costa, 2016). This perception is related to a consumerist practice, which permeated health systems, documented by the dissemination of innovations without proven effectiveness, leading to increased costs of systems and the observation of iatrogenic effects (Lorenzetti et al., 2012). Demographic changes and the characteristics of health and disease

processes have raised concerns about the sustainability of universal health systems worldwide. Therefore, authors recognize that advances in the health innovation system have implications for the economy and society (Proksch et al., 2019; Gadelha et al., 2012; Cassiolato & Lastres, 2007; Albuquerque et al., 2004).

By studying the specific aspects of how the health organization is organized, it is possible to identify its ability to adapt to the environment in which it is inserted and integrate new management concepts. Health is particular due to the link between national innovation systems and social welfare (Costa, 2016).

On the other hand, in the field of sustainability, health services are permeated by strong legal regulation on environmental aspects, have a strong relationship and social impact in the region in which they are inserted, and, given the growing demand for services, in part resulting from aspects of demographic growth, longevity, and change in the epidemiological profile of the population, show its close relationship with sustainability. Moreover, intense technological pressure, which involves the context of innovation in these organizations, makes sustainability-oriented innovation an alternative that seeks to balance these forces.

Few companies and corporate leaders recognize the importance of promoting a green economy and the need to reinvent the business dynamics that consider sustainability in their business strategy (Pinsky & Kruglianskas, 2014). In the area of health services, this is not different. Studies that seek to analyze organizations that are steps ahead of the others in this journey in health services can give clues on how it is possible to encourage the sector in this sense. For companies to contribute substantially to this issue, managers must better understand how to drive innovation towards sustainability (Luqmani et al., 2017).

In a study in a large private hospital in Porto Alegre (RS), Froehlich et al. (2018) sought to verify whether institutionalized innovations in the organization could be considered sustainability-oriented. The results showed that the organization develops innovative practices that contribute to sustainability. However, they did not occur systematically according to the pillars of sustainability. This finding demonstrates the current stage of SOI in health services, indicating the need to find ways of articulating practices, including them in the organization's management.

Another study analyzed the sustainable approach in health supply chains, proposing an evaluation guide focused on SOI and a decision-making framework for health managers seeking to improve sustainability (Elabed et al., 2021). The study concluded that adopting or creating innovative practices and solutions allows healthcare organizations to improve the performance and quality of patient care. The dynamic nature and complexity of the healthcare sector require the effective management of supply chains to achieve sustainability. The research highlights that (a) health managers consider environmental initiatives and awareness the most important criterion for

achieving SOI in hospitals. However, (b) there is a lack of clarity in the general understanding of the SOI concept in the health context, as it is limited to tangible products and technologies; (c) the SOI concept must be an approach that requires sustainability to be rooted in the hospital's culture, which is not yet presented as a reality and, finally, (d) the need for greater SOI knowledge in health supply chains.

Even so, under a focus on responsible innovation in health, Lehoux et al. (2019) sought to document what is known about the demand of health systems for innovations. Among the study's main conclusions is the need to reduce the costs of innovative production processes and address the requirements of the immediate clinical context of use and the vulnerabilities of the broader system in which the innovations are implemented. In countries with low- and medium-Human Development Index (HDI), these vulnerabilities reside in infrastructure, logistics, and equipment problems. In medium- to high-HDI countries, they are associated with growing demand for medicines, new technologies, cost management, and, in all countries, the need for flexible information technology solutions, which demonstrates the need to broadly and systematically incorporate the SOI concept into the segment since innovation on a sustainable basis is essential for the future of healthcare organizations to remain competitive and viable.

However, it is possible to verify that the research on SOI in service-oriented organizations reserves numerous possibilities for studies, approaches, and analyses with a range of probabilities for future research agendas, especially in health organizations. Studies focusing on the application of SOI in health organizations are even more scarce, with several points to be studied and deepened. The literature review carried out in this section leads to the third study assumption: A3 - The adoption of sustainability-oriented innovation in services is linked to the customer's contribution and the need to include it in this process, as well as the need to materialize in the services the elements of that adoption.

Studies that seek to analyze organizations that are steps ahead of the others in this journey in health services can give clues on how it is possible to encourage the sector in this direction. For companies to contribute substantially to this issue, managers must better understand how to drive innovation towards sustainability (Luqmani et al., 2017).

3 METHODOLOGY

The research is classified as a descriptive and qualitative case study. According to Yin (2015), unique cases may have relevant characteristics that justify their choice. The case may, for example, (a) meet all the requirements for testing a theory, (b) be unique or extreme, (c) be representative or typical, which aggregates circumstances and conditions common to other companies, (d) be a revealing case that allows the analysis of a

phenomenon inaccessible in other investigations, (e) be a study in time, with before-and-after transformation analysis.

In the work at issue, the option for a single case study is associated with the fact that the SOI theme has not yet been fully analyzed in hospital health services. Therefore, we sought a case that could reveal this theme's phase in the hospital context seeking an organization with representation in the segment and with the availability of access.

The Hospital de Clínicas de Porto Alegre (HCPA) shows this representation. As a university hospital, it is open as an organization to academic-scientific research, including the approval of this work by its own Research Ethics Committee (REC) and later ratified by the REC of FEEVALE University. The hospital is a public company created by Law No. 5.604 of September 2, 1970. From the publication of the institution's statute, in the Official Gazette (DOU), on July 19, 1971, which is considered its birth certificate, the hospital got off the ground and began its 51-year history. The HCPA is one of the main high-complexity healthcare centers in the state of Rio Grande do Sul (Brasil, 2021a). As a general public and university hospital, it is part of the Ministry of Education (MEC) network of federal university hospitals. It is academically linked to the Federal University of Rio Grande do Sul (UFRGS), acting as a field of practice for academics in courses in the area of university health.

The choice of HCPA is also based on the fact that (a) it presents innovation and sustainability as elements of organizational strategic planning (Brasil, 2021a); (b) it is accredited by the Joint Commission International (JCI) (the first university hospital in Latin America to be certified) (Brasil, 2021c), which is the main certification of health services in the world, and considered a catalyst for innovation in the context of health organizations (Iacuzzi et al., 2020); (c) it is a reference university hospital of the Ministry of Education for the network of university hospitals linked to the agency, being also a parameter for the creation of the Brazilian Company of Hospital Services (EBSERH), which aims to qualify the structure and processes of these hospitals (Brasil, 2021b); and, finally, (d) it presents a relationship with international research and teaching organizations in the health area, which, together with quality and safety, strengthen the development of innovation (Brasil, 2021a).

It is worth mentioning that, during the Covid-19 pandemic, the HCPA became a reference in the state of Rio Grande do Sul for the care of serious cases of this disease and in the development of studies related to the fight against Covid-19. Moreover, clinical trials evaluated the effectiveness of drugs to treat the disease, other treatment alternatives, such as the use of blood components (such as stem cells and convalescent plasma), and research involving vaccine testing (Brasil, 2021a).

According to the characteristics pointed out by Yin (2015) for a single case study, all the elements presented concerning the HCPA qualify it as a representative or typical case of a hospital organization, which aggregates

circumstances and conditions common to other hospitals because it brings together dimensions of healthcare, teaching and research in a single organization and, in addition, is a prominent part of the network that makes up the SUS.

The units of analysis are composed of the areas in strategic management of the institution, monitoring of strategic management, represented by the areas of Internal Audit and Risk Management and Corporate Integrity and, finally, the area of promotion of innovation in the institution, the Nucleus of Innovation and Technology Transfer (NITT). The choice of analysis units was based on the fact that these areas have a fundamental role in the hospital management process and from which organizational issues of innovation and sustainability are managed and deliberated for the other areas.

Data were collected through twelve semi-structured interviews, internal documents, and unsystematic participant observation. The choice of interviewees was based on previous research on the hospital's organizational structure and the understanding that it is the participants who consciously, *a priori*, act in the formulation and monitoring of the organizational strategy and its transposition to the strategic management of the hospital. In this sense, the SOI is a dimension of the company's behavior embedded in the collective cognitions of its managers as a result of the institutional pressures exerted on the company (Varadarajan, 2015), which justifies the choice of managers, given their potential to learn how and in what way the SOI is incorporated into the organizational routine and how they perceive and participate in its application.

Table 2

List of Strategic Level Managers of HCPA Administrative Areas

Strategic Position	qty	Areas
Administrative Director	1	Administrative Board
Coordinator	1	Center for Innovation and Technology Transfer Administrative Coordination Communication Coordination Accounting Management Coordination Internal Audit Management Coordination
Coordinator	10	Coordination of Management of Agreements and Individuals People Management Coordination Risk Management and Corporate Integrity Coordination Financial Management Coordination Hospitality Coordination Supply Coordination

Source: Personnel Management Coordination – HCPA (2021).

Regarding the participants, the time in the company varies between 5 and 37 years, with an average of 20 years. The exercise time in the function varies from 1 year to 35

years, with an average of 6 years and 3 months. They have been in the role for 1 to 6 years, except for one who has been in it for 35 years. Regarding the time in the role, one aspect draws attention: most interviewees have been in the role for 6 years or less. When investigating this issue, the information obtained is that, in recent years, there has been a significant renewal in the strategic positions of the institution, largely resulting from two main causes: the retirement and separation of the former occupants of these functions, whose permanence dates back to long periods

compared to the hospital's existence, and the creation of new governance and management structures in the institution, such as the Risk Management and Corporate Integrity Coordination and the NITT. The education levels are graduate, master's, or specialization, and two interviewees have a doctorate. For reasons of confidentiality, the names and functions were replaced by codes. For example, Respondent 1 was coded I1 and so on, until Respondent 12, who was assigned code I12.

Table 3

Profile of Strategic Level Managers of HCPA Administrative Areas and interview data

Company time (years)	Time in function (years)	Training	Number of pages transcribed	Interview time	Date of	Company time (years)
37	5	Postgraduate (specialization)	8	00:45:15	04/22/2021	Virtual
28	5,4	Postgraduate (specialization)	14	00:54:30	04/23/2021	Presential
25	4	Postgraduate (Master's)	15	01:03:41	05/03/2021	Virtual
10,8	1,5	Postgraduate (specialization)	24	00:53:15	04/27/2021	Presential
35	35	Postgraduate (specialization)	23	01:12:42	04/26/2021	Presential
12	4	Postgraduate (Master's)	10	00:47:32	05/04/2021	Virtual
5	1	Postgraduate (Master's)	12	00:52:23	05/05/2021	Virtual
25	5	Postgraduate (Master's)	21	01:24:26	05/05/2021	Virtual
7,5	2,5	Postgraduate (PhD)	23	01:26:24	05/06/2021	Virtual
33	2,6	Postgraduate (PhD)	12	00:55:38	05/28/2021	Virtual
16	2	Postgraduate (specialization)	11	00:58:25	05/28/2021	Virtual
33	6	Postgraduate (Master's)	13	01:11:00	06/16/2021	Virtual

Source: Prepared by the authors.

The interview script was prepared from the theoretical framework. Questions about the organization and its link with innovation and sustainability themes were prepared, along with questions about each of the internal and external factors related to SOI listed from the reference literature. In addition, the questions also explored the three theoretical assumptions previously elaborated based on the theoretical framework. The collection took place from April to June 2021. The interviews were recorded and transcribed with the prior authorization of the interviewees, totaling approximately 13 hours of recording.

The qualitative analysis of the data, resulting from the documents, transcripts, and observations, was carried out from the content analysis, following pre-analysis, exploration of materials, treatment, and interpretation of the results proposed by Bardin (2016). For data analysis, categories of organization of the collected data were created: innovation and sustainability in the hospital context; internal SOI factors identified; external SOI factors identified; and SOI development practices. Once the categories were established, the data collection material was identified and associated with each category. Microsoft Office Excel was used to organize the data. The inferential step was carried out in the succession of the categorization step. In this step, the causes or antecedents of the message and probable effects were identified, whose efforts are

directed to understand the conditions of production (context) of the texts in a deductive work of association between semantic and psychological, social, or historical structures, thus producing inferred variables, a moment in which communication is given significance or interpretation (Bardin, 2016).

4 ANALYSIS AND DISCUSSION OF RESULTS

Innovation is a frequently present theme in the health area, largely due to its role in developing medicine and other knowledge in prevention, promotion, and healthcare. Some interviewees report below that innovation manifests itself differently in the hospital context. For I12, given the difficulty of keeping up with all the innovations that emerge, it is necessary to value the organizational structures that are available and the people who work in the organization, to capture and analyze ideas that may be useful. He mentions the NITT creation as an internal structure that seeks to identify, within the institution, innovative people and processes, as well as to be attentive and capture what is happening in terms of innovation outside the institution, also aiming at the establishment of partnerships. I10 adds that innovation at the HCPA was not born with NITT. The hospital has always been innovative. However, especially when it comes to innovation from a relationship with other

institutions, whether public or private, until the creation of the NITT, the HCPA did not have a structured project focused on promoting the relationship and strengthening the generation of innovations in partnership with other organizations.

During the interviews, it was possible to hear reports that the HCPA is being accredited to be an incubator of technological innovation and the strategic importance of these partnerships covering startups, universities, and other entities, as reinforced by Interviewees I10 and I12. For I11, the HCPA should increasingly pursue this objective. He mentions that “[...] innovation is not about chasing, updating; innovation is about running ahead, seeking”, reflecting the need to establish and reinforce these relationships proactively. The idea that the search for innovation is something constant is defended by I1, who highlights that, in the hospital context, innovation “[...] is not always at the same level of dynamism, but I understand that we are always looking for an opportunity to make a change, an improvement”.

Regarding innovation in the case study, some issues can hinder the development of innovation, and I6 warns about the fact that the hospital is a reference in the segment in which it operates, and this anesthetizes the conscience of the internal community of the HCPA by the search for development, improvements and many other ways through which innovation can contribute. From another perspective, I10 draws attention to the fact that the reference attributed to the hospital is not something associated with the aspect of innovation: “This is a huge need, we have it in the hospital, and the private sector highly covets it because we are a unique hospital, we have assistance, we have teaching, and we have excellent research, but we do not have excellent innovation”. In other words, in terms of innovation, according to the interviewee, there is still a long way to go to become a reference in innovation. However, it is possible to neutralize this issue, and one of the ways to do so is to observe examples of how other hospitals and universities, especially from outside Brazil, use their potential for innovation to generate results for the organization, as reinforced by I12.

This information obtained during the research data collection shows that innovation is a theme that has been around at the HCPA for a long time and that it has recently been reinforced with the creation of the NITT, which seeks to articulate, internally, organizational structures and people and, externally, seeks partnerships for its development as a technology incubator. Although this action is not visible to a portion of the HCPA's internal community, it is an important step toward incorporating the topic into an integrated and systematic agenda for innovation development. Therefore, there is an important emphasis on teaching and research as the two hospital businesses with the greatest chance of driving the future of innovation in the institution. As a warning, the reference condition of the hospital in the

segment in which it operates and how much this can generate a false idea that there are no improvements to be made is highlighted. According to the data collected, the antidote to this may be expanding the HCPA's view to international models and parameters, from hospitals and universities in countries where this aspect has generated significant value for organizations.

When dealing with the economic dimension of sustainability, the fact that it is a public company redoubles the concern regarding the use of the resource, as mentioned by I1: “[...] we deal with public money, this money has to be the best applied and controlled” and then adds “[...] I see this as a guideline”. The responsibility for public resources is fundamental and recurrent in the interviewees' speech. Unlike a private company, in which this speech is focused on costs and profits, for a public company, such as the HCPA, the speech addresses a rational use bias to be reversed in favor of greater results for society. As I1 puts it, the hospital focuses on giving back to society: “As the hospital is a public company, we always have to have a return for the greatest number of people and, then, if we manage to contemplate patients, clients and other people in society that we can help”. More recently, the following issue was intensified, as I8 puts it: “[...] there has never been so much talk about the fact that public bodies themselves have to create their sources of sustainability”, which reinforces the need for management that is increasingly attentive to the application of resources, as it calls on the hospital to seek innovation in attracting new forms of investment.

Concerning environmental aspects, it is clear that the issue of waste disposal is an extra concern in the hospital context. According to I1, several protocols guide the internal community on the correct disposal and destination of each waste to avoid any environmental action. There is a view that the environmental management of the hospital is under the responsibility of a certain area. Some of the testimonies mention the role of professionals who work more directly on environmental issues, currently composed of an environmental engineer and an environmental technician. I2 mentioned the new buildings, which were built using sustainable technologies, with rainwater reuse, energy efficiency, and renewable energy sources, as important issues related to the impact of the organizations' production process concerning the environment. He also mentioned the investment over the years to replace machinery in hygiene, laundry, and sterilization in search of more efficient equipment in terms of energy and water consumption, besides the intelligent elevator systems, aiming at the economy and rational use of energy.

I3 highlighted sustainability at the HCPA based on procurement processes, such as the one carried out by the Nutrition Service, which purchases products from family farmers to prepare meals the hospital serves to patients and employees. “Within social sustainability, we then sought the Nutrition Service to bring up this issue of incorporation, there

was a law, which is very old, but it was not given much importance” (I3). The law mentioned above, which encourages the acquisition of products from family farming, was rescued by the hospital to adopt a sustainable practice, whose volume of acquisitions resulting from this action has been growing substantially year after year, as stated in the 2020 Management Report. Also, in this practice, an environmentally-sustainable product, by encouraging the purchase of organic products, since the HCPA is a company of significant dimensions, with an internal community of approximately 10 thousand people (Brasil, 2021b), with a 7-day operation per week and 24 hours a day.

Given the above, it is possible to verify that the economic issue is present in the speeches and the different examples of practices addressed by the interviewees and focused on the commitment to this dimension. Examples show different levels of impact on the economic issue of the hospital. Regarding the environmental aspect, there is a perception in the interviewees' testimonies that link the coordination and development of this issue to responsible people who occupy specific positions and not something that permeates management and makes all areas co-responsible. Moreover, on the social aspect, there is a consensus that this is part of the HCPA's role in health and its participation and relevance in developing public policies.

However, sustainability drives innovation in organizations, establishing certain conditions for it to occur

and inserting it into management due to external aspects of sustainability, such as pressure from legal and social agents. After analyzing the data, we observed that sustainability positively influences the promotion of innovation (Godin & Gaglio, 2019; Melane-Lavado & Álvarez-Herranz, 2018), challenging it to innovate in aspects that address the issue of sustainability. However, the issue that deals with innovation inserted in management from sustainable precepts, such as legal and social pressures, still represents an aspect to be developed in the context of the HCPA. Although the economic aspect is more present in the management process, the social and environmental dimensions still have a way to go, which to a certain extent indicates an earlier stage of adoption of SOI in the researched institution.

From the data collection instruments, we sought to verify the internal and external factors in the researched organization and corroborate the development of SOI in the HCPA. In the literature review, it was possible to identify factors internal to the organization and external factors. The data collected deal with these aspects, and the factors were categorized into (a) present in the organization and related to the development of SOI; (b) present in the organization and requiring SOI-associated development; (c) not identified in the organization; (d) considered barriers. From the data analysis, different stages were observed concerning the factors, expressed in Table 4:

Table 4

Categorization of internal and external factors related to SOI

Factor Categories	Internal Factors	External factors
Present at the organization and related to the development of SOI	Leadership skills Company size Flexibility Agility	Regulatory pressures Coercive pressures Mimetic pressures Reputation
Present in the organization and requiring development associated with SOI	Manager role Behavioral intention Development team effectiveness Organizational culture Habit Green purchasing practice Employee motivation Motivation for pleasure/accomplishment	Social influence Facilitating conditions Buyer-supplier relationship Buyer-supplier satisfaction Level of company globalization
Not identified in the organization	Motivation for a sustainable lifestyle	Performance expectation Effort expectation
Considered barriers	Safety Financing	Cost/Price

Source: Prepared by the authors.

From the results shown in Table 4, it is possible to empirically identify the relationship of factors with the development of SOI in the organization studied. We observed that the factors present different situations and stages of development. In the HCPA, most of the factors listed in the literature require development by the organization to enhance the presence of SOI, which, in a way, demonstrates that the HCPA approach concerning SOI is in an operational optimization phase, according to the

conceptual model of SOI by Adams et al. (2016), as it still focuses on doing the same things better, with the presence of incremental improvements more frequently than the development of ideas that radically change, for example, services, processes, structures, and business models (Szekely & Strebel, 2020; Bos-Brouwers, 2010).

Regarding how the SOI is developed in the institution, practices were identified through data collection instruments that portray and translate its application (Table 5).

Table 5

Summary of identified practices

Practices	How are they developed?
Confirmation of access to the hospital and presence in consultation	By electronic reading of the SUS card in the access turnstiles and clocks.
Reception area for the patient and companion	Creating an area for patients to prepare and eat meals and wait.
Image monitoring center	Sharing experiences with positive results for society; in this case, concerning the issue of public security.
HCPA and UFRGS (ZENIT) partnership	Partnerships with other institutions are based on developing innovative solutions resulting from the conciliation of knowledge and the integration between them.
Decentralization of reception	Review processes to adapt to changes that offer improvements to the organization and its customers.
Permanent campaigns (caps, cooking oil, batteries, and others)	Environmental sustainability actions incorporated by the HCPA and driven by it are based on the mobilization of the internal community.
Attracting donors and investors through new forms of counterparts	New value creation practices in the relationship with other organizations expand sustainable practices.
Public notices for the purchase of food through family farming	Adoption of practices that encourage regional development based on the relationship with sustainable suppliers.
Boomerang Project	Articulating new practices to optimize resources for expanding and developing a sustainable articulation of different processes, including seeking sustainable ways since their feasibility.

Source: Prepared by the authors.

To understand how SOI is developed in the HCPA, practices that portray the SOI application in the institution were listed. Among these practices is the reduction of paper consumption from the computerization process of patient access to hospital facilities through the SUS card.

To offer more comfort and conditions to the patient and their companions, the physical expansion of the hospital provided a welcoming and supportive space for patients and their companions, as I4 recalled, with an area destined for a pantry, with chairs and armchairs and an air-conditioned environment. I4 emphasizes that this action “demonstrates a humanization, a concern for well-being”, the result of the application of a broader concept of care and the social role played by the organization based on knowledge of the reality and profile of the people served. This example demonstrates innovation and highlights the possibility that the HCPA has of producing positive effects aimed at sustainability issues, in this case, under the social bias, with ideas and actions implemented from the conception of the SOI, through the performance of managers in favor of sustainable innovations that have a positive influence on the company’s performance (either environmental, economic or social performance), as Varadarajan (2015) highlights in the literature on the subject.

Another example of innovation from the point of view of sustainability is the work carried out by asset security analysts, from the Security Section, regarding the Image Monitoring Center, whose role is to monitor the various points of the hospital remotely with the use of a camera technology, expanding the scope of monitoring, facilitating

communication between teams and the response time to dangerous situations, from a strategic perspective of property security. This restructuring of security practices served as a benchmark for another public body related to public security. The relationship between the knowledge applied by HCPA in the constitution of its Image Monitoring Center and the exchange of experiences with the Military Brigade demonstrates the application of a novelty with social potential. At the same time that it uses technology to expand the monitoring capacity of the hospital space and its surroundings with an intelligent and economical solution, it also meets the social dimension of sustainability with positive results for society, sharing experiences that generate gains beyond the organization, being one of the roles of SOI to be developed by organizations (Barbieri, 2007).

Regarding the partnership with other institutions for innovation development, I12 reports the HCPA project with the Scientific and Technological Park of UFRGS, which elected health in 2021 as the focus of the work. This project aims to identify the major challenges in the hospital and seeks solutions for these through the integration with different innovation laboratories existing at the university. This practice reinforces the dimension of innovation linked to innovation systems, demonstrating the importance of developing and orchestrating partnerships and value-creation networks through sustainable services (Kindström et al., 2013), generated from collaboration and partnership development.

In this way, the perception of changes and the development of improvements are important for organizations. In the case of SOI, these improvements are linked to development based on sustainable precepts, configured as innovation drivers in organizations (Godin; Gaglio, 2019).

The hospital's reputation is important to leverage the SOI internally and externally. The institution's credibility allows it to mobilize to implement innovations in this direction. In this sense, I6 mentions the mobilization of the internal community in collecting plastic caps for social projects, for example. Furthermore, the conciliation between the reputation factor and economic sustainability is observed in a hospital project that translates the SOI concept's application. The project aims to attract resources and donations from companies and, on the other hand, donor companies will be able to enjoy the linking of their image to the hospital's image, thus exploring the positive impact of this action on their customers and potential customers, including seeking to implement the exemption tax to donor companies. This example reconciles innovation with sustainability from an economic point of view, which is a point of attention for managers of organizations (Aka, 2019).

The communication of practices aimed at sustainability is a strategy adopted by the HCPA to encourage the integration of this issue into the hospital's culture. According to I3, there is a constant search to inform these actions to the internal community through the institution's intranet. For the external public, disclosures occur through social media, such as LinkedIn and Facebook.

Another aspect highlighted about the development potential of the SOI is the workgroups. To I5, this type of form of organization is a signal in the sense of favoring work from multidisciplinary teams. Another way is the development of innovations using technologies, such as creating the Meu Clínicas application that allows the user to schedule and verify exams and the possibility of teleconsultation.

Another practice is the Boomerang Project, developed with another hospital in Porto Alegre. It is a project that encompasses the three dimensions of sustainability, as it aims to minimize the environmental impacts of hospital activity, linked to a network with local producers, and generates long-term savings for the HCPA. Among the actions linked to the project, according to I12, the aim is to use 100% of hospital waste, preventing it from being sent to special sanitary landfills, given the strict legislation regarding the treatment and disposal of this type of waste, whose cost to the organization is expressive. Medical waste goes through a process of decontamination, crushing, and compaction. The resulting material is burned in special equipment, which also prevents harmful particles from being expelled into the air, and this burning generates

steam, energy, and hot water for use in the hospital itself (Abrelpe, 2020). The project foresees actions, such as partnerships with companies, for example, paper recyclers, which return part of this waste in the form of toilet paper, and plastic recycling companies, which return part of this type of waste in garbage bags, as well as the food waste produced by the hospital, to be converted into organic fertilizer that is negotiated with small rural producers who, in turn, will offer food.

Given this, Calabrese et al. (2018) point out that SOI in services supports the organization for a transition to sustainability which, in turn, stimulates innovation in services, which is observed through the data collected and the practices reported, in which sustainability has been an element that leverages innovation movements aimed at this objective. However, there is still a way to go, as seen in some reports demonstrating the potential to be explored through SOI. For example, in administrative areas, with countless possibilities of application of this innovation for the hospital segment in the central areas to support processes related to health care demands, which make up the hospital's final area. Innovation is still concentrated in production processes (assistance), at the cutting edge, and little explored in management processes, as follows:

I6 - [...] in the administrative area, I see a certain... it's not fear, more a barrier to innovation. When improvements and innovations are proposed in the administrative part, many people think no, that it's fine, that we don't need to change, that we don't need to develop a new process, we don't need to invest in new technology.

I5 - Yes, I believe the pandemic accelerated a process that is through research that we'll face new challenges. If the person lives in the same process as they settle, they may have surprises and not be prepared. So, there must be a field of challenges, successes, and mistakes. Only through research will we identify what we got right, what we got wrong, and what we will discover or not. That's where I think the great innovations come in. And I think that's an area that administrators haven't discovered yet, haven't learned how to do that.

Regarding organizational processes, a recurring difficulty evidenced in the data collected is the lack of articulation between the areas for sustainable innovation in a systemic way, to enhance the generation of value from the SOI, partly attributed to communication issues. The difficulty of using previous management experiences to develop innovations that overcome future challenges is still an issue that is little capitalized on management actions. In the literature, this articulation is associated with the most advanced stage of SOI, in which its presence is linked to structured processes and its adoption in the most strategic stages in the organization, through integrated thinking, according to Adams et al. (2016).

Based on the research results, a sustainability-oriented innovation framework is presented (Figure 1):

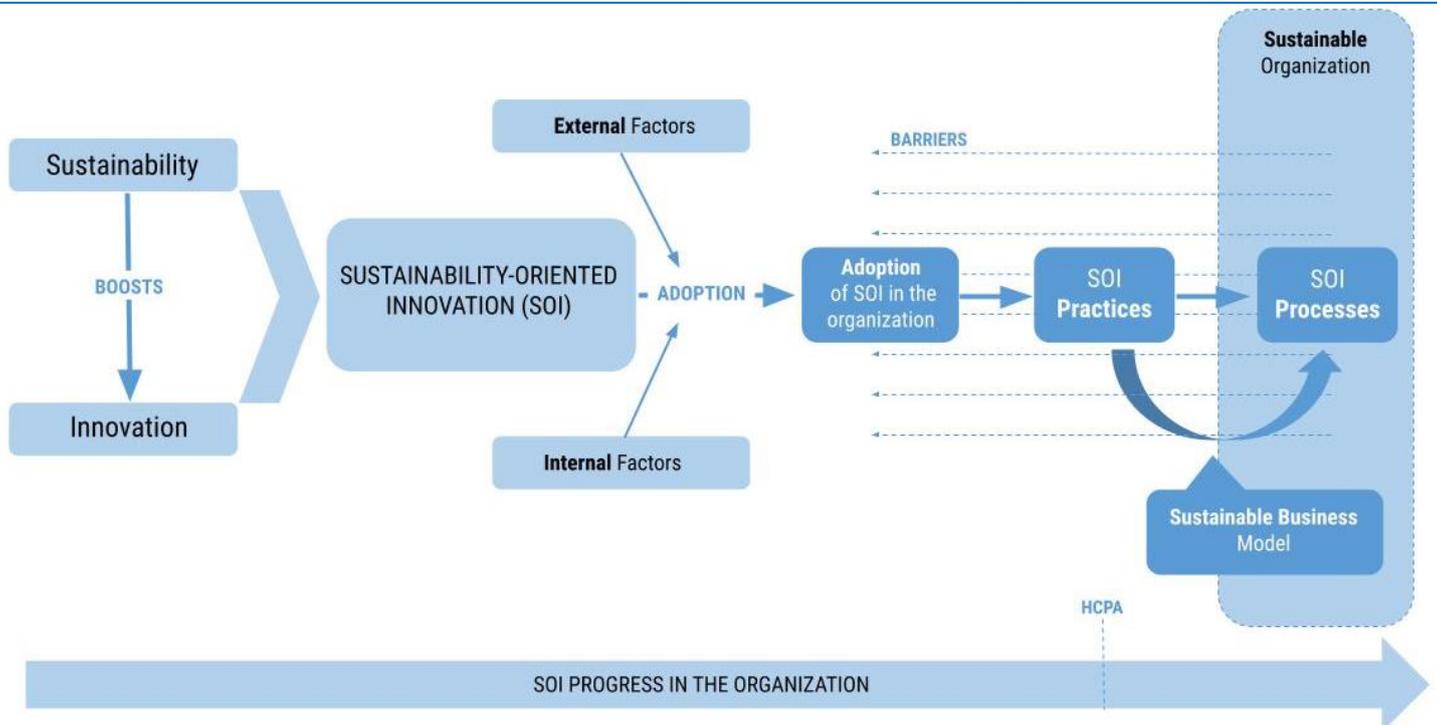


Figure 1. Sustainability-oriented innovation framework for the researched hospital organization.

Source: Prepared by the authors.

The initial stage of SOI comprises a set of practices stimulated by the factors. Articulating these practices in structured processes demonstrates the presence of SOI in the organization. It leads to stages of strategic adoption, in which the organization effectively becomes a sustainable organization (Schaltegger et al., 2016), resulting from the structuring in processes for SOI, arising from management possibly based on a sustainable business model that creates value from SOI (Calabrese et al., 2018).

The framework demonstrates the role of sustainability in driving innovation, as raised in the first assumption of the study, which, in turn, results in the concept of sustainability-oriented innovation. The organization's adoption of this concept results from a series of internal and external factors that are related and interconnected, initially, through SOI practices, as stated in the second assumption of the work. The most advanced stage of this adoption by the organization, in which the processes are articulated in order to configure the organization as a sustainable organization, leads to the need to implement a sustainable business model (Calabrese et al., 2018; Kneipp, 2016; Bocken et al., 2015).

We should state that the theory mentions that the adoption of sustainability-oriented service innovation is linked to the customer's contribution and the need to include it in this process, as well as the need to materialize the elements of this adoption in services (A3). However, we noticed that, in the case studied, this is not the practical experience found in the development of SOI in user-driven services (Trischler et al., 2020). As seen in Table 5, the practices listed do not start from the diffusion of innovation from the user's perspective. They start from the very origin

of the service providers in the health area, in which a prescriptive view prevails to the detriment of a collaborative view with the client.

The client, called a patient in this context (a name that gives the idea of the passive behavior expected from them), seeks the health service, in this case, the hospital, with the expectation of being attended by the health professional. Moreover, the healthcare model is provider-centric, leaving the user with a passive role (Gorman, 2015).

5 CONCLUSIONS

The research objective was to analyze which internal and external factors related to sustainability-oriented innovation are present at Hospital de Clínicas de Porto Alegre (HCPA). The first assumption of the study, which states that sustainability drives innovation in organizations, establishing certain conditions for it to occur and inserting it into management due to external aspects related to sustainability, such as pressure from legal and social agents, was observed in the researched organization.

In the stage of identifying the SOI factors present in the organization, related to the second research assumption, different stages were observed in relation to these factors, according to the following categories: (a) factors present in the organization and related to the development of SOI (skills leadership, company size, flexibility, agility, regulatory pressures, coercive pressures, mimetic pressures and reputation, and social influence); (b) factors present in the organization that require development associated with SOI (manager's role, behavioral intention, effectiveness of the development team, organizational

culture, habit, green purchasing practice, employee motivation and motivation for pleasure/fulfillment, social influence, facilitating conditions, buyer-supplier relationship and satisfaction, and the company's level of globalization); (c) unidentified factors in the organization (motivation for a sustainable lifestyle, expectation of performance and effort, and level of globalization of the company) and; (d) factors considered barriers to the development of SOI (security, financing and cost/price).

Concerning the SOI factors identified, there is something to be highlighted, the possibility of observing its development through practices. However, the practices identified in the HCPA do not portray a stage of institutional articulation of the SOI in the organization, demonstrating the need to adopt the SOI in more strategic stages, through integrated thinking, according to Adams et al. (2016) and guided by a sustainable business model (Calabrese et al., 2018; Kneipp, 2016; Bocken et al., 2015).

Moreover, the third and final assumption of the study, which says that the adoption of sustainability-oriented service innovation is linked to the contribution of the customer and the need to include it in this process, as well as the need to materialize in the services the elements of this adoption, was not identified in the organization, which differs from the literature on SOI in services that places the customer in a fundamental role in this process (Trischler et al., 2020). In the quest to understand this issue, the functioning of health organizations is observed, which sees the client/patient in a passive role (Gorman, 2015), far from the process that develops innovations for the organization, including those related to sustainability.

Among the research contributions are the identification of factors related to SOI in a hospital organization and how they are mobilized and found in this context from a method that can be applied in other organizations in the same segment, indicating a possibility for future comparative studies and advancing in the academic-scientific development of the theme, as advocated by Figuera et al. (2019), Melane-Lavado and Álvarez-Herranz (2018). Moreover, the proposition of a framework for the hospital organization researched from the theoretical-empirical findings, which demonstrated that the way to become a sustainable organization happens through the articulation of processes in a strategic way, which comes from the need to adopt a model of sustainable business that places the organization's value generation through SOI as strategic.

Among the empirical contributions is the identification of the stage of development of the SOI in the HCPA and the suggestion of a direction, which involves adopting a sustainable business model through which the organization can reach new SOI stages and become a sustainable organization. The absence of a clear association of the SOI with the creation of value by the organization makes it difficult to develop in a systematic and structured way, and

this finding can help the organization understand the issues it needs to work on to move forward in this direction.

The study's limitations are associated with the fact that it focuses on a case with impossible generalization capacity. This research is exclusively qualitative, carried out only with strategic managers and people directly linked to monitoring this management, without the participation of other audiences.

Regarding future studies, in addition to those mentioned above, it is possible to continue the theme with studies based on quantitative methods that can complement the qualitative analysis, as well as studies that identify how the organization can make the transition from the application of the SOI of practices and processes segmented for articulation through a sustainable business model.

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