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# Priorities Determining Future Directions of Sustainable Development in Business Models of the Healthcare Industry—Findings and Framework

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**Abstract:** The private healthcare sector was chosen because of the fundamental importance of quality in this sector, the widespread understanding that sustainable development is part of hospital quality standards, and the compelling need for the supply chain components to work together in order to add value to the business models of private healthcare services. This study uses a qualitative methodology, striving to add value to and shed light on the relationship between private hospital communication modes and their stakeholders' needs and their stakeholders' expectations of business models in the marketplace and society. This research lists a range of actions and services for assessing the priorities of private hospital communication modes in business models with respect to stakeholder needs and expectations. Furthermore, the study links stakeholder needs and the expectations of business models in private hospitals, with respect to private hospital communication modes with stakeholders, and vice versa. It also provides directions for managers in the healthcare industry to determine the appropriate actions and services for addressing stakeholders' needs and stakeholders' expectations of business models in private hospitals considering sustainable development. This research contributes to framing the future direction of sustainable development in business models of the healthcare industry. The paper outlines the assessment of communication modes in relation to economic, social, and environmental performance in the context of sustainable development.

**Keywords:** sustainable development; sustainability; business model; supply chain; healthcare; Spain



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## 1. Introduction

The sustainable development of business models in the healthcare sector requires proactive interaction between hospitals and stakeholders [1]. Accordingly, stakeholder theory [2] has often been used to analyze healthcare supply chains [3]. Hospitals are active in an environment where their business models both affect and are affected by other actors.

According to Blass, da Costa, de Lima, and Borges [4], hospitals should seek to improve the relationship between patient health outcomes and monetary investments. An efficient hospital supply chain should thus contribute to improved clinic performance, high patient service standards as well as security, efficient resource use, reduced waste, and minimized costs [5]. Balancing such goals is central to Supply Chain Management (SCM), where a win-win situation should be sought through the combined efforts of supply chain partners [6]. In truth, this is not done easily and requires cooperation among many actors [7], who are often interconnected through a complicated network of connections [8].

Stakeholder demands are diverse, but it is essential for organizations to live up to expectations [9]. Currently, one such area of pressure from both individuals and organizations is related to the sustainability of business models. However, looking into work on the

future sustainable development of business models, no research was identified concerning the future directions of business models in the healthcare industry from a supply chain network perspective.

Research has already been conducted concerning the current status of sustainability and its evolution from the past to the present and into the future. For example, Rodriguez, Svensson, and Wood [10] identify multiple evolutionary directions for assessing organizational sustainability efforts and prioritizations over time in the healthcare sector. However, issues regarding the appropriate hospital configuration and necessary changes to business models for future challenges, remain unresolved [11]. One specific issue that, to the best of our knowledge, has not been addressed in the current literature, is how hospitals communicate sustainability efforts to different stakeholders. Understanding what is communicated and to whom, can provide insights into how hospitals perceive pressure from different stakeholders. It can also yield insights into how to further pressure hospitals in the direction of increased sustainability.

This study seeks to remedy these shortcomings in the literature regarding hospital priorities for the sustainable development of business models from a supply chain network perspective. The research question is, therefore, as follows: What priorities determine the future directions of sustainable development in the healthcare industry? At the core, this question seeks to increase our understanding of which stakeholders currently influence how hospitals work with sustainable development, to gain insight into how the work may develop in the future. This research specifically focuses on how the healthcare industry prioritizes between different stakeholders and sustainability dimensions. The priorities are important for the future competitiveness of hospitals' business models. It also has societal importance, due to the role hospitals play for the general population. The purpose of this study is, therefore, to examine priorities determining the future direction of sustainable development in business models of the healthcare industry.

The study also attempts to gain relevant and valuable insights by focusing on the expectations that stakeholders have of hospitals' business models. It also attempts to gain insights into how hospitals communicate with stakeholders to assess the priorities that determine the future directions of sustainable development. The study does so by focusing on private hospitals' business models, based on a supply chain network perspective. The value of this research lies in substantiation through the gathering and presentation of empirical findings. It also lies in contributing through insights into a specific subject area, and through theory building by presenting insights and knowledge about hospital supply chain networks [12]. The first step is to identify how different types of hospitals work with sustainability. In the greater scheme of things, this research seeks to improve sustainable development at hospitals by understanding the role of the business model.

#### *Literature Review: Healthcare Supply Networks*

In the healthcare industry, hospital supply chain networks are characterized by technological complexity, which is a factor closely related to business model innovation needs [13], rapid shifts in technology and medical innovation, and the existence of multiple stakeholders [3]. In the healthcare industry, as in many others, there is constant pressure to improve business models through innovation, to fulfil customer expectations and compete for market share [14,15]. The healthcare industry sources a large variety of products, based on the many and varied needs and expectations of patients [16]. Due to increased competitive pressures, and the associated high contribution to costs, hospitals are attempting to improve efficiency in their supply chain networks [17,18].

Hospitals use a wide assortment of high-value materials and equipment, which are sensitive to relatively rapid obsolescence. For these reasons, healthcare supply chain networks become more complex and knowledge-intensive business models than supply chain networks in other industries [19].

It is generally recognized that there is a need to improve the business models of healthcare supply chain networks and also that these supply chain networks have their

own peculiarities that distinguish them from business models in other industries [3,20]. Related to the business model, there are significant differences between services and manufacturing organizations [21]. Highlighted traits include the distinct characteristics of the services offered by the healthcare sector, technology complexity, dynamic external environment, continuous internal changes, and the diversity of stakeholders. This includes factors which have been identified by Anning-Dorson and Nyamekyep [22], page 605, such as those that determine that “building a flexible organization is instrumental in creating competitive advantage out of innovation capabilities”. All this calls for an interdisciplinary approach to healthcare supply chain networks [3].

It is quite evident that private institutions’ business models are facing compelling demands to be efficient, to provide the greatest amount of public service, while still adhering to cost restrictions. In the healthcare sector this is evidenced through the focus on the optimization of individual processes, such as inventory and procurement processes, and waste and energy efficiency [23]. These are efforts that not only have a cost focus, but also an environmental one. The attention devoted to purchasing-related costs is not coincidental. A large portion of expenditure in hospitals is connected to material supplies [24], which are needed to offer suitable healthcare services [25]. Suppliers are thus an important stakeholder, but not the only and probably not the most important one.

It is easy to focus only on the cost dimension of the Triple Bottom Line (TBL), as it is such a clear determinant of business success. In addition to cost pressure, however, hospitals are also facing demands to be socially and environmentally sustainable [26]. Pressure is being applied through regulatory means on operational, tactical, and strategic levels [27], pushing hospitals to implement sustainable SCM practices. Within the environmental dimensions, hospitals mainly react to regulations about waste reduction or engage voluntarily in a limited set of supply-chain network actions [28]. Balancing all three dimensions requires hospitals’ business models to consider not only their relationships with suppliers [29], stressing the importance of SCM even more [19], but also with other stakeholders, which are even more of a priority for the hospitals.

Looking for guidance on how to prioritize TBL is dubious. In SCM, approaches have been developed to create environmentally-dominant [30], or socially-dominant theoretical approaches [31]. However, the fundamental and overarching objective of an organization is still essentially to make a profit. This is reflected in the well-known framework by Carroll [32], which places economic responsibility at the base of the pyramid. This is followed by legal, ethical, and philanthropic. In that model, the economic dimension constitutes the foundation. One can debate where the other dimensions belong, but, through environmental and social legislation, it is clear that legal responsibilities include all three dimensions of the TBL. In the event of non-compliance, they might also have an impact on the profitability of the company. It is, therefore, possible to argue that all three dimensions are included (or should be) in the base of the responsibility pyramid, but the economic is the most obvious.

In relation to the business models of other industries, such as retail and manufacturing, healthcare supply chain networks are less developed [23]. This is not only a blind spot in the current research on sustainable development in business models, but also an important one for the future. Current approaches to improving hospital supply chain networks include both new technologies such as big data and artificial intelligence [33] and more conventional supply chain approaches, such as collaboration [34].

## 2. Materials and Methods

### 2.1. Research Context and Process

This study frames how the priorities determining future direction of sustainable development in business models are managed in private Spanish hospitals. The research strives to add value to and shed light on the relationship between private hospitals and their stakeholders in the marketplace and society as a whole. Since this research focuses on the directions of sustainable development in business models, the work departs from

the current understanding of the idiosyncrasies and current state of hospital supply chain networks. It proceeds from the conventional wisdom of inductively building knowledge on the current state and future development [35]. For this purpose, a sample of private hospitals was selected, using a judgmental sampling procedure [36]. A non-probabilistic technique was used, because sustainability initiatives are not widespread in Spanish private hospitals. In this sense, this research follows an inductive approach [37].

The following were the key reasons for using the inductive approach [38]: (i) compiling a resume with all the rough information collected from textual data and key informants; (ii) developing links between the information collected from in-depth interviews and input on the sustainability use by private hospitals in their relationships with their stakeholders; (iii) building new frameworks based on the information collected from the key informants and textual data.

The private healthcare sector was chosen for the following reasons: (i) the core importance of quality in the sector; (ii) the widespread understanding that sustainable development is part of hospital quality standards; (iii) the need for the supply chain components to work together to add value to private healthcare services; (iv) the lack of knowledge in existing literature about the direction of sustainable development in private hospitals in connection with their stakeholders

## 2.2. Information Sources

The research team conducted in-depth interviews with the key informants in each private hospital. In particular, the first interview at each hospital was with the Chief Executive Officer (CEO), who knows the strategy and sustainability initiatives in general terms. In all the studied hospitals, the CEO delegated further participation in this study to communication staff. Key information about the hospitals is found in Table 1.

**Table 1.** Sample characteristics.

Hospital	Typology	Number of Hospitals	Total Number of Beds
PriHosp1	Individual	1	120
PriHosp2	Individual	1	85
PriHosp3	Individual	1	41
PriHosp4	Individual	1	40
PriHosp5	Group	3	445
PriHosp6	Group	5	258

Three main subject areas were addressed during the interviews, namely, (i) stakeholders' needs and expectations of private hospitals, (ii) private hospital communication modes with stakeholders, and (iii) priorities with regard to the economic, social and environmental performance of sustainable development. We asked each hospital to what extent different stakeholders are prioritized on a scale from 'high priority' (5) to 'low priority' (1). The description of the main needs and expectations of each stakeholder of the private hospitals' business models is reported in Table 2.

Based on the ratings provided (i.e., from 5 to 1) by the key informants during the interviews, we revised the content of each interview to verify that the levels of priority across economic, social, and environmental performance of sustainable development were reasonable and justified, in order to provide an overview of priorities regarding stakeholder needs and the expectations that they have of private hospitals, as well as private hospital communication modes with stakeholders.

**Table 2.** Framing stakeholder needs and expectations of business models in private hospitals and private hospital communication modes with stakeholders.

Stakeholder Needs and Expectations from Private Hospitals		Private Hospital Communication Modes with Stakeholders	
Stakeholder	Actions and Services	Actions and Services	Regularity
Patients	Healthcare assistance (e.g., health and patient security, data protection) More assistance services Increase and improve contracts with public healthcare system	Suggestions box Satisfaction questionnaires Patient information system Internal complaint sheets Internal TV Screens Hospital website CSR report	Daily Yearly Daily Daily Daily Weekly Yearly
Employees	Economic situation of the organization Labor conditions Improving internal communication Achieving a collective agreement Water management Installation maintenance (e.g., waste management, biological stocks)	Suggestions box Intranet Email Online message groups (top staff, intermediate management, areas) Job environment questionnaires Meetings CSR report	Daily Daily Monthly Daily Yearly Semi-Annually Yearly Yearly
Public administration	Healthcare local government (disability labor integration, healthcare divulgation, social dimension, legal accomplishment, patient health and security, ethic) Local council: (legal accomplishments, patient health and security, ethics, increase the hospital participation in public health programs, maintenance of the healthcare assistance services, increase the healthcare services offered)	Regular meetings Email Phone Online messages CSR Report	Monthly Monthly Monthly Monthly Yearly
Society	Healthcare assistance (health and patient security, data protection . . . ) Water management Waste management Energetic efficiency Ethics	Meetings Email CSR Report	Quarterly Quarterly Yearly
Healthcare public system	Assistance offers Legal accomplishments Patients' health and security Ethic Healthcare divulgation	Meetings Contracts with specific assistance areas Email Web platform CSR Report	Monthly Yearly Monthly Weekly Yearly
Investors	Increase the scope of contract with public healthcare system Caring hospital business strategy Economic viability of the organization Patient health and security Legal accomplishment Labour conditions	Frequent meetings Performance reports Emails CSR Report	Monthly Monthly Monthly Yearly

The research team had access to a substantial amount of internal and external data from corporate resources, such as internal reports. The themes of sustainability, supply chain and business model innovation that we introduced to the interviewees, provided insights into hospital priorities for the sustainable development of business models from a supply chain network perspective in the private hospitals that we studied.

We structured the interview process and organized the content of the interviews as follows: Notes were taken during interviews. We structured and summarized the data gathered after each interview into numbered reports, which enabled us to identify and outline the key pieces of information at each interview. Attention was paid to structuring and organizing the gathered data in a table, to facilitate comparisons of the ranked priorities by the key informants for each dimension of TBL related to each stakeholder. The average scores of priorities by the key informants were then calculated per stakeholder across social, economic, and environmental dimensions. Each average score was truncated to the closest integer, all of which are displayed in Table 3. It also offered the opportunity for the



research team to test and verify the accuracy of the data that we gathered before and after each interview.

**Table 3.** Framing private hospitals' priority of TBL performance with stakeholders regarding sustainable development of business models (high priority 5, low priority 1).

TBL Performance of Sustainable Development in Business Models	Priority of Private Hospitals Regarding Stakeholder Needs and Expectations			Priority of Private Hospital Communication Modes with Stakeholders		
	Economic	Social	Environmental	Economic	Social	Environmental
Patients	5	5	4	5	5	5
Employees	5	5	5	5	4	4
Society	3	5	5	3	5	5
Public administration	4	5	5	3	5	4
Public healthcare system	5	3	5	4	2	4
Investors	5	3	1	5	3	4
Environment	3	3	5	3	1	5
Suppliers	5	1	3	5	1	3
Healthcare collaborators	5	4	1	5	2	1
Insurance companies	3	1	1	3	1	1
Communication media	3	4	1	2	1	1
Universities, training and research centers	1	4	1	2	3	1
Average	3.92	3.58	3.08	3.75	2.75	3.17

We also followed the process of setting hospital priorities for the sustainable development of their business models from a supply chain network perspective during a two-year period in two private hospitals. The research team attended five meetings in which the hospitals' priorities of sustainable development for business models (three meetings in one of the hospitals and two in another) were discussed. The research team observed their meetings without interference, only taking notes about comments and decisions that the research team witnessed [39]. The data that we collected in this manner reduced bias potentially caused by any potential misinterpretation related to the data collected, offering a pillar for the validation of results.

All the hospitals studied are general hospitals, which means that they attend to patients with a variety of diseases and conditions. They also offer healthcare services in medicine, surgery, obstetrics and gynecology, and pediatrics.

### 3. Results

Private hospitals undertake multiple actions and perform various services in their business models within the healthcare industry. In doing so, the hospitals interact with different entities and individuals, that is stakeholders, in a reciprocal manner. These stakeholders affect the ability of hospitals to successfully develop and implement sustainable business models.

In turn, this impacts how the hospitals' business models affect their stakeholders. One way in which this is communicated is through sustainability reports, which are dedicated to transparently communicating the actions and services of sustainable development in business models at the hospitals. The sustainability reports have been developed by the hospitals so that the business models cater for the needs and expectations of their stakeholders.

Private hospitals communicate with their stakeholders in various different ways in order to meet their needs and expectations. PriHosp3 asserts that: "... our strategic compromise comes from aligning our compromise with stakeholders with our general strategy ...". Needs and expectations of business models are collected through the communication modes established by the hospital, and made available to stakeholders as shown in Table 2. The frequency of the communication modes is also displayed. The regularity of the communication modes is also displayed.

Table 2 summarizes the stakeholders' needs and expectations of business models in private hospitals. There are multiple stakeholders that influence the direction of sustainable development in business models of private hospitals, such as patients, employees, public administration, society, the public healthcare system, investors, and the environment. Furthermore, Table 2 also summarizes the private hospitals' communication modes with stakeholders, all of which take place with a certain regularity as follows: daily, weekly, monthly, quarterly, semi-annual, or yearly basis.

Furthermore, Table 2 also summarizes the private hospitals' communication modes of business models with stakeholders, all of which take place on a daily, weekly, monthly, quarterly, semi-annual, or yearly basis. The communication with stakeholders also influences the direction of private hospitals' sustainable development in business models. Consequently, it is necessary for private hospitals to match their modes of communication in business models with stakeholders in relation to the latter's needs and expectations, and vice versa.

#### 4. Discussion

Private hospitals assess their TBL performance, and evaluate how to meet their challenges regarding sustainable development in their business models. This is done in relation to what is requested by the stakeholders. It is reasonable to expect that this is also reflected in how the hospitals communicate their efforts. Table 3 shows the private hospitals' economic, social, and environmental priorities for sustainable development in business models regarding stakeholder needs and expectations. It also illustrates the private hospitals' priorities of business models regarding communication modes with stakeholders in relation to the sustainable development of actions and services in the healthcare industry.

Table 3 indicates that private hospitals' business models prioritize the economic, social, and environmental aspects of sustainable development regarding the needs and expectations of patients, employees, society, public administration, public healthcare system, and the environment (white colour). For example, PriHosp2 comments that: "... *image and sustainability activities are important for the relationship with local and regional government* ...".

The business models prioritize investors, suppliers, healthcare collaborators, and communication media to a lesser extent. The least prioritized stakeholders are insurance companies, universities, and centers training and research (black colour).

Similarly, private hospitals' business models prioritize the economic, social, and environmental communication modes regarding sustainable development with patients, employees, society, public administration, and investors. They prioritize to a lesser extent the communication modes with the public healthcare system, environment, and suppliers. The least prioritized communication modes are healthcare collaborators, insurance companies, and communication media, universities, and centers of training and research.

In their commitment to their stakeholders, the private hospitals' business models present a sustainability report on an annual basis. The sustainability report summarizes the sustainability initiatives of each hospital, which they prepare following the Global Reporting Initiative (GRI) standards. They report information on the integral management of the organization in the face of the great challenges posed by the Agenda 2030 and the sustainable development goals.

While there are some differences in terms of how the hospitals rate the importance of the different dimensions of the TBL together, as shown in Table 3, there are no *significant* differences ( $p > 0.05$ ). The sample is rather small, however, so it is important to take this into account in analyzing the results. If the findings stand up to further investigation, it might imply that all dimensions of the TBL are treated as if they were at the base of the responsibility pyramid [31]. This could be the result of outside pressure, such as legislation about waste management [27]. Given the competitive nature of the hospital industry, it would have been reasonable to expect a greater focus on the cost dimension. It is also

possible that the social and environmental dimensions can become more important, as non-compliance can have negative economic consequences.

### *Managerial Implications*

This study has addressed two perspectives, namely, (i) stakeholder needs and their expectations of private hospitals and (ii) private hospital communication modes with stakeholders. Both perspectives are interconnected and important for private hospitals in both the marketplace and society.

Private hospitals are business-driven, as are other companies in the marketplace and society, although they must follow the same healthcare regulations as public hospitals. Private hospitals need to consider different stakeholders, such as patients, employees, public administration, society, the public healthcare system, investors, and the environment. Clearly, some stakeholders are more important than others, but all affect the business model and the sustainability of private hospitals in the marketplace and society. In fact, some stakeholders demand certifications (e.g., public administration, through Royal Decree 1277/2003, 10 October) [40].

Private hospitals are as business-driven as other companies and therefore need to consider different stakeholders such as: patients, employees, public administration, society as a whole, the public healthcare system, investors, and the environment. Consequently, it is vital for the survival of private hospitals to maintain appropriate modes of communication with stakeholders. A private hospital is not an island or isolated from the marketplace and society, but it is part of a network of stakeholder expectations, and thus needs to communicate with stakeholders.

This study shows (see Table 2) how companies are using traditional and obsolete communication modes with stakeholders. Nowadays, social media communication modes are more innovative and potentially more effective modes of communication with stakeholders. They enable online interaction between private hospitals and their stakeholders. It is important to keep in mind that private hospitals not only need to communicate with stakeholders, but need to know what is happening in the marketplace and society, and be aware of stakeholder expectations and the perceptions of private hospitals.

These communication modes can be private-oriented (e.g., messages and emails) and public-oriented (e.g., publicity and promotions). There are also communication modes, such as HubSpot and Clientify, all of which enable private hospitals to plan their communication modes and automatize the flows of communication, depending on the reactions and responses of the stakeholders. There are also Digital Health Communication Tools (DHCT), which Nanah and Bayoumi [41] define as “a device or virtual software/application created or used through digital technology and facilitates the transfer of information between individuals in the healthcare sector”. Therefore, we recommend updating the communication modes with stakeholders by means of the available digital communication modes (e.g., EVA chatbot [42], due to the current importance of these communication modes with stakeholders.

## **5. Conclusions**

This study points out the policy and managerial relevance of considering stakeholder needs and expectations of private hospitals and private hospital communication modes with stakeholders. Both perspectives are interconnected and important for private hospitals in the marketplace and society. Digital communication is changing the way in which private hospitals are communicating. This means it appears together with other actors, all of which influence the communication modes (such as social media influencers, chatbots etc.).

The study primarily adds to the literature with an empirical contribution, or substantiation of business models, which is an important part of theory-building [12]. This study contributes to existing theory and previous studies on priorities determining the direction of sustainable development in business models by outlining two frameworks relevant to both research and practice. One of the frameworks reported in Table 2 lists several stakeholders that may influence priorities determining the direction of sustainable



development in business models of the healthcare industry. The other framework lists several actions and services, in order to address stakeholder needs and expectations of private hospitals' business models, as well as several actions and services for addressing private hospitals' communication modes with stakeholders. The study also contributes to framing private hospitals' TBL performance priorities with stakeholders regarding the sustainable development of business models.

This study is limited to person-to-person communication modes. Future research could focus on the implementation of digital communications in private hospitals and the public healthcare sector in general. The framework reported in Table 3 cross-tabulates the list of stakeholders with the economic, social, and environmental performance of sustainable development, considering both the priority of private hospitals' business models regarding stakeholder needs and expectations and the priority of private hospital communication modes with stakeholders. The research finds that all three dimensions of the TBL are at the base of the responsibility pyramid, at least when it comes to how hospitals prioritize. Patients, employees, and society are the three most prioritized stakeholders in terms of communication. These are certainly important stakeholder groups, which implies that hospitals feel compelled to cater to their needs, and that these groups might be able to put pressure on the hospitals' sustainability prioritizations going forward. It is not clear how this finding will stand up to further scrutiny, but if it does, it is most certainly important to investigate these issues further.

We therefore conclude that the empirical findings reported in this study contribute to framing priorities determining the direction of sustainable development in business models of the healthcare industry. Nevertheless, this study suffers from some limitations, such as being restricted to private hospitals' business models, while the operational models of public ones are not taken into consideration. The work, thus, provides opportunities for further studies not only in the public healthcare industry on operational models in society, but also in other service-oriented industries, to verify the relevance of the outlined assessment frameworks of business models. Furthermore, following Valença, Sobral, de Andrade Lima, Telma, and Farias [43], a new procedure for measuring innovations in hospitals could be developed.

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