

Unraveling the Materiality Analysis of the Brazilian Health Industry Players: Proposal of a Reference Table

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Abstract

The current study proposes a practical and structured approach for performing materiality analysis that results in a reference table with 8 dimensions and 13 material topics. The models of SASB Standards and Sustainable Development Goals as well as requirements of the health industry key players were used as references for this reference table. The key players were divided into producers, intermediaries, and providers besides the regulatory agency. This reference model takes into account a breakdown of the dimensions and topics that are transversal to all groups of players and classifies those that have an impact and are relevant under each group of players. In unraveling the materiality analysis of Brazilian health industry players, it becomes evident that success in this competitive landscape requires a holistic understanding of factors influencing decision-making. The contribution of this article is to delve into the intricate details of the materiality analysis, shedding light on its significance and impact within the Brazilian health industry.

Keywords: materiality topics, materiality analysis, health industry, SDG, SASB.

1. Introduction

Brazil is the largest healthcare market in Latin America and spent 9.59% of its GDP in 2019 or \$853 per person, which represents US\$161 billion. Brazil's connected healthcare market is projected to grow from \$1.66 Bn in 2022 to \$13.04 Bn by 2030, registering a CAGR of 29.4% during the forecast period of 2022-30. Brazil's health spending as a proportion of GDP rose between 2000 and 2019 despite significant recent volatility. Brazil has one of the largest and most diverse healthcare marketplaces in Latin America and has a developed healthcare infrastructure with a mix of public and private healthcare providers in addition to demographic variables (Davda, N., 2023).

According to the Brazilian Federation of Hospitals (FBH, <https://fbh.com.br/>) and the National Confederation of Health (CNSaúde, <http://cnsaude.org.br/>), of Brazil's 7,191 hospitals, 62% are private. As of 2022, there are 427,097 hospital beds (FBH), 710 health insurance providers (Agência Nacional de Saúde – ANS, <https://www.gov.br/ans/pt-br>), 546,000 physicians (Conselho Federal de Medicina-CFM, <https://portal.cfm.org.br/?lang=en>), 402,000 dentists (Conselho Federal de Odontologia – CFO, <https://website.cfo.org.br/>) and 90,9000 drugstores (Associação Brasileira de Distribuição e Logística de Produtos Farmacêuticos – Abradilan, <https://www.abradilan.com.br/>).

The Brazilian health system is divided into two sectors: public and private. The public sector comprises state funding; the private sector is financed by public and private resources, mostly for profit, and comprises different modalities of insurance and private health plans (Paim et. al., 2011).

In the public sector, there is the Unified Health System SUS, created from the Federal Constitution of 1988, and is based on the principle of health as a citizen's right and duty of the state. Currently, approximately 75.5% of the Brazilian population is served solely and exclusively by the Public System (Brazil Ministry of Health, 2021). The other 24.5% of the population has access to health through private health, which is strongly linked to the care of people through individual or family contracts (19%), business (68%), and collective (13%) (National Health Agency, 2021). Private health operates through more than one corporate typology of a legal entity, called “modalities” (National Health Agency, 2021): group medicine (40%), medical cooperatives (36%), health insurers (13%), self-management (9%) and philanthropy (2%) (Cruz et.al., 2022).

Two regulatory agencies operate in the private health sector in Brazil, the Brazilian Health Regulatory Agency (Anvisa, <https://www.gov.br/anvisa/pt-br>) and the National Agency of Supplementary Health (ANS). Anvisa is responsible for sanitary control of goods subject to health regulation, including pharmaceuticals, and ANS regulates private companies offering health insurance in Brazil. Individual (or family) plans are subject to stricter regulatory controls and Operators in this market are subject to strong controls in price adjustments submitted by the ANS.

Consequently, it has been increasingly difficult for a large part of the Brazilian population, especially those who do not have private health care through an employer, to have access to

health plans or to afford them.

In Cruz et.al. study (2022), they perceived an intense trend of concentration in large institutions that have capitalized and have a great appetite for growth through mergers and acquisitions, whether from smaller operators or health institutions that integrate their health networks. This concentration projects a market with fewer options and competitiveness, a reduction in transaction costs and an increase in the operational effectiveness of health care. The obvious concentration of the market in fewer operators and the absence of change in the overall number of beneficiaries creates “giants” in the market. Among them, the market leader in 2020, is Bradesco Health followed by Notre Dame and Amil.

In the dynamic landscape, described above, of the Brazilian health industry, understanding the materiality topics of key players is crucial for stakeholders aiming to navigate the complex web of challenges and opportunities. Calabrese et.al. (2019) state that the building of a materiality matrix emerges as a strategic tool, enabling organizations to drive their efforts efficiently. At the heart of the matrix lies the material topics to be considered by the organizations. The idea behind the materiality matrix is to consider the environmental, social and governance (ESG) aspects that are a priority for the organization and the interested parties, helping to focus its efforts and resources in those areas that matter (GRI 3, 2021). It should reflect the real business strategic demands.

Materiality analysis serves to evaluate the relevance of the economic, environmental, and social issues and ensures that sustainability strategies and reporting address those that pose significant risks and opportunities to the company business and to its stakeholders (Font et al., 2016).

In this analysis, this article contributes to delving into the intricate details of the materiality analysis, shedding light on its significance and impact within the Brazilian health industry. Materiality, in the context of this industry, refers to the significance and relevance of certain factors that influence decision-making processes within organizations. The research question is what are the material topics considered by the players of this industry? The current study proposes a practical and structured approach for performing materiality analysis that results in a reference table with 8 dimensions and 13 material topics. The models of SASB Standards and Sustainable Development Goals as well as requirements of the health industry key players were used as references for this reference table. This model takes into account a breakdown of the dimensions and topics that are transversal to all groups of players and classify those that have an impact and are relevant under each group of players.

Calabrese et al. (2019) proposed a similar method for the practical application of materiality analysis; however, it does differ because they used zone matrices based on scaled rankings.

2. Literature Review

2.1 Major players in the healthcare sector in Brazil

Large domestic players and foreign enterprises operate in the healthcare sector in Brazil, and these companies play an important role as buyers and sellers of health goods and services in

the country.

When it comes to pharmaceuticals, major players are subsidiaries of large multinational companies and Brazilian players that have been expanding significantly in recent years and that focus mainly on the production of over-the-counter medicines and generics.

Concerning health services providers, the most relevant players are companies that operate hospitals and clinics and large groups engaged in medical diagnosis. Although the major players are domestic companies, many of them received significant amounts of foreign investments. A significant degree of diversification is taking place in the segment, with medical diagnosis companies having acquired hospitals and hospital chains offering diagnostic services (Finland Embassy, Brazil. 2023).

An important aspect related to major players in the healthcare sector in Brazil is the intense activity of mergers and acquisitions taken place in recent years. This activity involved mainly operations between hospital/clinic chains and health insurance providers.

Examples of major mergers and acquisitions transactions in the sector include the acquisition of health insurance provider Sul América by hospital chain Rede D'Or and the merger between health insurance providers Hapvida and Notre Dame Intermédica. Before the merger, both Hapvida and Notre Dame Intermédica had been involved in acquisitions of health insurance providers, hospitals and clinics. The intense level of activity is explained by the high volume of cash held by major players after they initially floated their shares (Finland Embassy, Brazil. 2023).

In addition, companies specializing in diagnostic medicine have also been involved in recent consolidation processes. In April 2023, Brazil's antitrust body approved the merger between Fleury and Hermes Pardini, the second and third largest companies in the segment, respectively.

It is also worth noting the interest of private equity funds in the healthcare sector. For instance, Patria Investimentos, a major fund in Brazil, established a group called Athena, which owns hospitals, clinics, and health insurance operators (Finland Embassy, Brazil. 2023).

Finally, the presence of two government regulatory agencies - the Brazilian Health Regulatory Agency (Anvisa) and the National Agency of Supplementary Health (ANS).

The key players can be grouped into producers, intermediaries and providers as seen in figure 1.

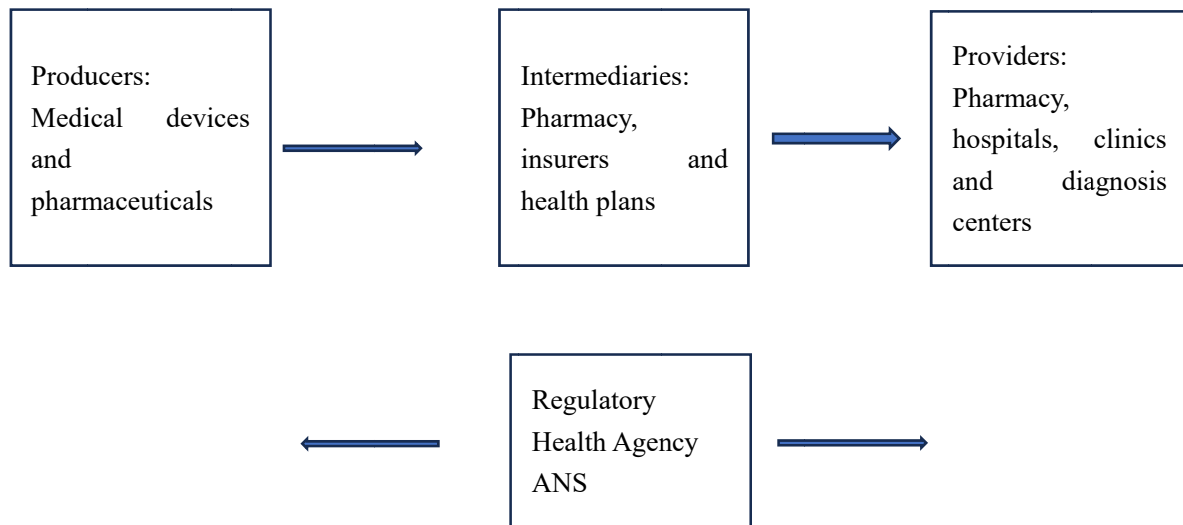


Figure 1. Brazilian Health Industry Players

2.2 List of Materiality Topics

According to Ching et. al. (2016), some of the organizations that guide sustainability reports and identification of material topics include among others Global Reporting Initiative (GRI), Sustainability Accounting Standards Board (SASB) and International Integrated Reporting Council (IIRC). For the purpose of this study, an initial list of material topics was drawn on the SDG 17 Goals, SASB Standards and SDG Industry Matrix for Health Care and Life Sciences.

2.2.1 SASB Standards

The research scope of SASB Standards (2023) encompasses a range of sustainability-related risks and opportunities and is divided in 5 dimensions: Environment, Social Capital, Human Capital, Business Model & Innovation and Leadership and Governance (see figure 2).



Figure 2. Materiality Map of SASB

Source: <https://sasb.org/wp-content/uploads/2021/11/MMap-2021.png>

The Sustainable Industry Classification System is designed to group companies based on shared sustainability-related risks and opportunities to enhance comparability for investor decision-making. As a result, the number of relevant sustainability-related risks and opportunities varies by industry.

The Health Care Delivery industry owns and manages hospitals, clinics, and other health care-related facilities. Entities provide a range of services, including inpatient and outpatient care, surgery, mental health, rehabilitation and clinical laboratory services. The sustainability topics for this industry are:

Energy management, waste management, quality of care, climate change impacts, fraud procedures, patient privacy, access for low-income patients, management of controlled substances, pricing and billing transparency, employee health, and employee recruitment.

2.2.2 Sustainable Development Goals SDG and Sustainable Development

In 2015, UN Member States translated their vision of sustainable development into a blueprint for achieving it: the 2030 Agenda for Sustainable Development. Its 17 Sustainable Development Goals, with ambitious targets to achieve by 2030, cover the three dimensions of sustainable development: the economy, social development, and the environment (United Nations, 2023). For the UN, sustainable development is how we must live today if we want a better tomorrow, by meeting present needs without compromising the chances of future generations to meet their needs. The survival of our societies and our shared planet depends

on a more sustainable world.

The 17 SDGs are as follows: no poverty, zero hunger, good health and well-being, quality education, gender equality, clean water and sanitation, affordable and clean energy, decent work and economic growth, inclusive and sustainable industrialization and foster innovation, reduced inequalities, sustainable cities and communities, responsible consumption and production, climate action, life below water, life on land, peace, justice and strong institutions and partnership for the goals.

2.2.3 SDG Industry Matrix for Health Care and Life Sciences

United Nations in collaboration with KPMG (2016) produced the SDG Industry Matrix opportunities – under each of the 17 SDGs – for companies to create value for their business whilst creating a more sustainable and inclusive path to economic growth, prosperity, and well-being. It also profiles practical company examples submitted through the consultation process.

The biggest opportunities for the Healthcare and Life Sciences industry to create shared value – i.e. where we see the coming together of market potential, societal demands and policy action – are grouped around the following themes: Preventive Healthcare, Universal Health Coverage, Resilient Healthcare and Environmentally Sustainable Healthcare.

3. Methodology

The structured approach for performing materiality analysis has 3 steps:

3.1 Selection of the dimensions and material topics/issues

To build the content of the reference table, the authors drew on the materials discussed above to populate initially the set of Dimensions. For example: the dimension Environment & Resources encompasses the goals of Clean water and Clean energy of SDGs; the dimension Wellness encompasses the goal of Well-being; the dimension Human Capital encompasses the goals of Gender equality and Inequalities; Innovation came from SASB Standards Business Model & Innovation.

For each dimension, the authors drew again on the megatrends documents from Euromonitor International (2023), PMI (2022) and MSCI (2023) to compile the respective material topics for each dimension for action in the Brazilian health industry. This became the initial draft of the reference table. See Table 1.

Clean energy – energy efficiency, development of new products and services focusing on clean energy infrastructure and use of renewable sources

Waste management – address water scarcity through the management of related issues and waste management

Climate change - eco-efficiency; climate adaptation.

Research & Development – R&D into existing and new products, innovation, sustainable products, and product safety

Wellbeing –encompasses physical, mental, spiritual, and emotional conditions, access to health care services, and worker health.

Digital security – use of Artificial Intelligence, confidentiality, integrity, and availability of data and information security/leaking, digital transformation and development

Transparency & Ethics – focused on disclosure and communication to the market, integrity and ethics, fraud and corruption.

Equity, diversity, and inclusion EDI – inclusion of women and ethical minorities in all the value chain, fair workplace

People management – human rights, talent attraction.

Table 1. Initial draft of the reference table

Dimension	Material Topics
Environment & Resources	- Clean energy - waste management - Climate change
Innovation	- <u>Research & Development</u>
Wellness	-Wellbeing
Digital Transformation and Security	digital security
Governance	-Transparency & ethics
Human Capital	-equity, diversity and inclusion EDI - people management

3.2 Gathering material topics from the key players

The material topics from two players representative of each group of players – producer, intermediaries and provider as well as from a regulatory agency (ANS) - were collected from their respective websites and summarized below.

3.2.1 ANS National Agency of Supplementary Health

This organization does not have a materiality matrix; however, it does produce a list of risks that are divided into two groups (ANS, 2022):

Operational risks understood as the estimate of direct or indirect losses resulting from the probability of occurrence of vulnerabilities combined with the perceived impact on five areas:

Performance: Interruption and Resumption, Legal and Compliance; Work Environment and Safety; Assets and Financial; and Media and Reputation.

Integrity risks that are actions or omissions that may favor the occurrence of fraud or acts of corruption and, may even be causes, events or effects of operational risks. They are inappropriate professional conduct, information leaking, conflict of interest, nepotism, frauds, no segregation of jobs etc.

3.2.2 Producer Players

The pharmaceutical sector holds a pivotal position in the value chain, with a focus on research, development, and manufacturing of drugs and medical products.

Brazil ranks sixth globally for drugs and pharmaceuticals (after the United States, China, Japan, Germany, and France). In 2022, there were sales of US\$20.67 billion), which represents an increase of 26.2% from 2021 (IQVIA, <https://www.iqvia.com/>). Sales in 2023 are expected to increase to US\$24 billion.

Group Eurofarma

Founded in 1972, the Eurofarma Group is the first multinational pharmaceutical company with 100% Brazilian capital. The company operates in the healthcare sector, developing research, producing and commercializing innovative products and services to improve people's quality of life and promote access to healthcare. Headquartered in Brazil, the company has own operations in 20 countries and covers 100% of Latin America.

List of material topics (Group Eurofarma, 2022):

Waste management: reduction in generation, reverse logistics, circular economy, hazardous waste management;

Supply chain management: quality of supplies and products, safety and regularity of supply, traceability;

Approach in the report: governance/relationship with suppliers, customers and end consumers;

Human capital management: attraction, retention, engagement, health, safety and well-being of employees, working conditions, inclusive and diverse environment;

Innovation applied to health: research and development, partnerships, intellectual property management, generation and management of knowledge, technology and digital development;

Access to healthcare: research and development, fair and transparent price policy, distribution strategies, medication donations, neglected diseases and essential medications;

Consumer safety and well-being: quality and safety in drug production, monitoring and reporting of adverse effects, pharmacovigilance, consumer education;

The market size for medical equipment in 2022 was approximately US\$12.1 billion, an

increase of .02% from 2021. (Source: ABIIS).

3.2.2.2 Philips

Philips is a company with strong market leadership positions, an extensive customer base, a strong innovation portfolio, talented employees, and a global purpose-driven brand with sales of EUR 17.8 billion in 2022. See in Figure 3 Philips material topics are divided into environmental, social and governance.

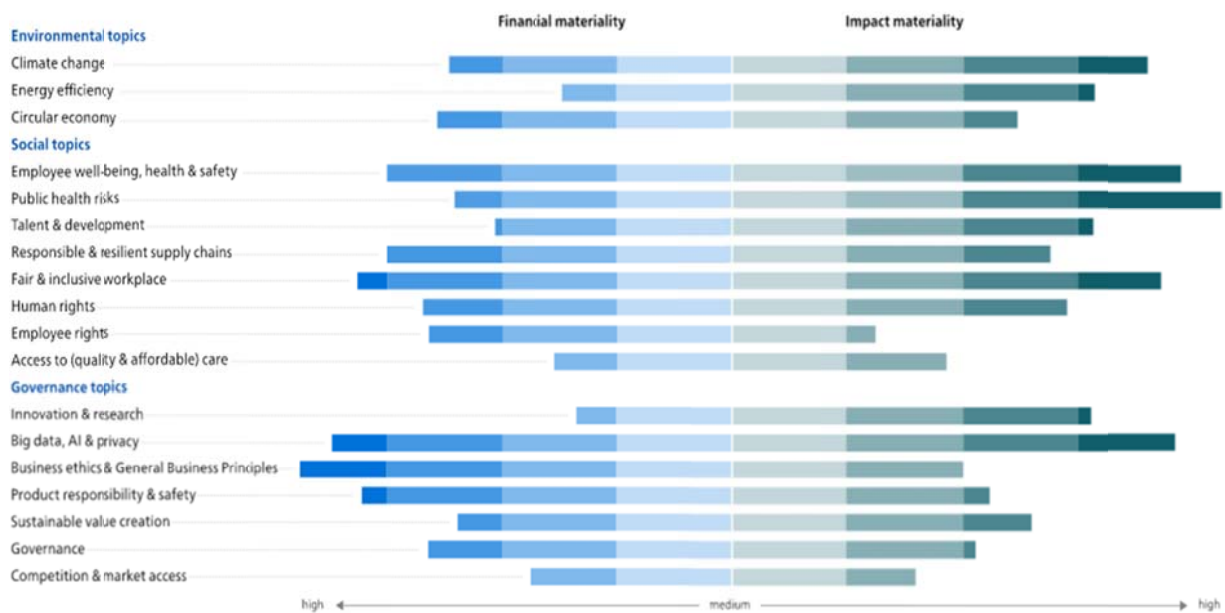


Figure 3. Philips Materiality Analysis

Source:

<https://www.results.philips.com/publications/ar22?type=annual-report#tx20401822-advertising-and-promotion>

3.2.3 Intermediaries Players

Raia Drogasil RD

This pharmacy company has a presence in every state of Brazil, with 2,490 Raia and Drogasil brand pharmacies and 40450 employees at the end of 2021. R\$ 25.6 billion in net revenue R\$ 1.8 billion EBITDA in 2021.

Their seven material topics are (Raia Drogasil, 2022):

Employee health and safety; Health community; Promoting diversity and inclusion; People management; Products and services; Ethics integrity and transparency and Waste management and reverse logistics

Ensuring financial accessibility to healthcare services is integral to the value chain. Brazilian health industry players in insurance and financing work towards creating models that balance

affordability with sustainability.

Bradesco Seguros (Insurance Group)

This company is the leader of the national insurance market (auto, residential, health, life and capitalization) with 7512 employees, 309 branches, and net revenue of R\$95 billion.

The material topics were organized into 4 major pillars (Bradesco Seguros, 2023):

Governance & Transparency – solvency, risk management and information security

People and Communities – diversity and inclusion, customer value, insurance education and social investment

Climate Change – eco-efficiency; climate adaptation

Sustainable Business – innovation, sustainable products and services

3.2.4 Provider Players

At the forefront of the value chain are healthcare services, encompassing a spectrum from primary care to specialized medical interventions.

Group Fleury

Group Fleury is a leader in the Brazilian diagnostic medicine and healthcare market and publishes its results annually through its investor relations website. Its materiality matrix is reviewed every 3 years. The group's 2022 sustainability report is available on its investor's relation website.

Their main 13 topics are (Group Fleury, 2023):

Topic 1 Management of waste and hazardous materials; 2 Occupational health, safety and well-being; 3 Patient safety; 4 Information security and privacy; 5 Talent attraction, retention and development; 6 Service quality and patient satisfaction; 7 Health education and training; 8 Ethics and anti-corruption; 9 Atmospheric emissions and climate change; 10 Best labor practices, diversity and respect for human rights in the operation; 11 Expansion/Democratization of access to health services; 12 Structure and good risk management practices; and 13 Innovation and digital transformation.

Rede D'Or

This organization is the largest health care integrated network, with a presence in many states and owns 73 hospitals.

Their material topics are (Rede D'Or, 2023):

Integrity and risk; Economic performance; Patient experience; Innovation Research and Teaching; Worker health and safety; Training and Development; Impact on local communities; Health prevention and promotion; Social responsibility; Diversity and equal opportunities; Talent attraction and retention; Energy; Water and Climate change.

3.3 Comparing the key players' topics with those in the initial draft

By thoroughly comparing the above topics with those populated in the initial draft, health industry players can understand the factors influencing their operations and long-term sustainability in the dynamic Brazilian health landscape.

The criterion for the addition of a topic is that it should be considered by two or more groups of players. No existing topic was deleted from the initial draft. Its result can be seen in Table 2 which shows the cross-cutting topics in two or more groups of players.

4. Results and Discussion

4.1 Relevant material topics/issues to the key players

The nine material topics of Table 2 that have an impact and are relevant/common for each group of players were classified under each one of them.

We can notice the following:

- three of them are material/common to all four groups of players – Digital security, EDI and people management;
- six topics are material to three groups;
- only one topic – clean energy – is common to two groups

However, some topics are relevant to Eurofarma and Philips like supply chain or to only one player like, reverse logistics (to RD), customer value and insurance education (to Bradesco), health education (to Fleury) and patient experience and impact on communities (to Rede D'Or).

Table 2. Cross-cutting topics of the reference table

Dimension	Material Topic/Issue	Producer players	Intermed. players	Provider players	Gov. agency
Environment & Resources	-Clean energy	Energy efficiency	XXXX	Energy	XXXX
	-Waste managt.	waste managt.	waste management	waste management	XXXX
	-Climate change	Climate change	Climate adaptation / eco efficiency	Climate change	XXXX

Innovation	- <u>Research & Development</u>	innovation, product safety, eco design	Sustainable products / innovation	research	XXXX
Wellness	-Wellbeing	Wellbeing / access to health care	Employee health	Access to health service, occupational health	XXXX
Digital Transformation and Security	-Digital security	Digital development/ Artificial intelligence	Information security	Information security Digital transformation	Information leaking
Governance	-Transparency & ethics	Ethics and governance	Integrity & transparency	Ethics, integrity & risk	Fraud /corruption
Human Capital	-Equity, diversity and inclusion EDI -people management.	Fair workplace Human capital and management.	Diversity People management	Diversity Human rights, talent attraction	XXXX Work environment

4.2 Development of the final reference table of materiality analysis

Although the list of nine topics presented above came also from the seven players researched, nevertheless this list is not yet comprehensive, missing some material topics that provide a broader perspective. This led the authors to add 2 dimensions and 4 material topics to build the final reference table of materiality, now composed of 8 dimensions and 13 topics.

As the health industry evolves, proactive strategies are essential. It is important for healthcare organizations to future-proof their operations by embracing regulatory compliance, ensuring financial viability, prioritizing patient-centered care, and being prepared for crises.

Constructing and regularly updating the materiality list ensures players can effectively navigate the ever-evolving landscape, addressing challenges, and capitalizing on opportunities to pursue excellence and sustainable growth.

The characteristics of each one of the six dimensions are described below:

4.2.1 Characteristic of the Environment & Resources dimension – The environmental dimension of the proposed approach OR model is concerned with the firm's impact on ecosystem wellbeing. The three topics should give a balanced view of the environmental impact of the resources – Clean energy, waste management, and climate change. No topic was added.

4.2.2 Characteristics of the Innovation dimension

Morgon (2015) points to the absolute necessity for high-tech firms to keep investing in the innovation that drives productivity growth. He observes such initiatives all along the R&D and manufacturing value chain in the health-care industry. However, as Barei states (2015), the “cost” of innovation is the major consideration of policymakers and health system administrators. It is certainly true that an important investment of time, energy, and money is needed to pursue real innovation.

The topics of product safety, eco-design and sustainable products are part of this dimension. No topic was added.

4.2.3 Characteristics of the Wellness dimension

Access to healthcare programs and services is key to preventing diseases, shifting from a model based on curative care in hospitals to preventive care in local communities, reducing costs and pressure on clinics and hospitals.

A new area of concern that has emerged in recent times is *Patient-Centric Care*, which involves prioritizing patient satisfaction and experience, ensuring accessibility and affordability of healthcare services, and implementing patient-focused technologies.

4.2.4 Characteristics of the Digital Transformation and Security dimension

The Brazilian health industry is no exception as the world embraces digital transformation. The seamless integration of technology across all four groups of players enhances efficiency and improves patient outcomes. The integration of digital health solutions, and digital security, from artificial intelligence to information security, technology forms a connective thread, optimizing processes and fostering collaboration.

4.2.5 Characteristics of the Corporate Governance dimension

Corporate governance can be defined as the structures and processes by which companies are directed and controlled. Good corporate governance helps companies operate more efficiently,

mitigate risk, safeguard against mismanagement, and improve access to capital that will fuel their growth (IFC International Finance Corporation, 2014).

An additional topic in this dimension is concerned with *Regulatory Compliance*. Compliance with regulatory requirements is essential in the heavily regulated healthcare industry. It is important to adhere to health regulatory standards such as compliance with Data Protection Laws and Ethical Considerations in Clinical Trials, Adherence to Good Manufacturing Practices (for pharmaceutical organizations), and adherence to medical Device Regulations and Quality Standards (e.g., ISO 13485).

4.2.6 Characteristics of the Human Capital dimension

This dimension focuses on the impact of a company on social systems both inside and outside of its boundaries. It encompasses the company's treatment of its employees, which includes factors such as work conditions, human rights, talent attraction, and retention. No topic was added.

Another additional topic considered material by the authors but neglected by three out of four players is the *economic/financial viability*. This topic opens up a new dimension with the same name. It is aimed at evaluating the firm short and long-term financial stability and survival capabilities. To achieve these objectives, the focus is twofold: internal and external. On the internal side, the firm should focus on solvency and liquidity, Investments and Economic structure. On the external side, the focus is on Relationships with investors, risk management and mitigation (Ching et al, 2016).

Finally, the last topic added was not considered in the materiality list of any of the seven organizations researched but rated as very material by the authors, that is *Emergency Response/Disaster Management*. This topic opens up a new dimension with the same name. It comprehends preparedness for public health emergencies and epidemics and Collaboration with Public Health Agencies, Rapid Response Plans for Drug Shortages (applicable to pharmaceuticals) and Financial Resilience (for insurance). Saving time and delivering fast access to high-quality treatment is an important investment in this topic (Barei, 2015).

Understanding and addressing these 8 dimensions and 13 topics are crucial for organizations aiming to navigate the complexities of the industry and make informed strategic decisions. The table 3 presents the final reference table of materiality analysis with several topics that are transversal to all groups of players.

Table 3. Final Materiality Reference Table

Dimension	Material Topic	Producer players	Intermed. players	Provider players	Gov. agency
Environment & Resources	-Clean energy -waste	Energy efficiency waste	XXXX waste	Energy waste	XXXX

	management -Climate change	managt. Climate change	managt. climate adaptation / eco efficiency	managt. Climate change	XXXX XXXX
Innovation	- <u>Research & Development</u>	innovation, product safety, eco design	Sustainable products / innovation	research	XXXX
Wellness	-Well being Patient-Centric Care PCC	Well being / access to health care PCC	Employee health PCC	Access to health service, occupational health PCC	XXXX
Digital Transformation and Security	-Digital security	Digital develop. Artificial intelligence	Information security	Information security Digital transformat.	Information leaking
Governance	-Transparency & ethics Regulatory Compliance	Ethics and governance Compliance to Anvisa	Integrity & transparency Compliance to ANS	Ethics, integrity & risk Compliance to ANS	Fraud /corruption

Human Capital	-Equity, diversity and Inclusion EDI -People management	Fair workplace Human capital and managt.	Diversity People managemen t	Diversity Human rights, talent attraction	XXXX Work environment
Economic/Financial viability	economic/financial viability	solvency and liquidity risk managt.	solvency and liquidity risk managt.	solvency and liquidity risk managt	XXXX
Emergency Response/ Disaster Management.	Emergency Response/ Disaster Management .	Response Plans for Drug Shortages	Financial Resilience	Collaboration with Public Health Agencies	Coordination of public health emergencies and epidemics

5. Conclusion

This reference table gives no weight neither to the dimensions nor to the topics in each dimension, stressing that each one of them has its importance. We leave it to each organization to prioritize the topics taking into account the stakeholders' perception and impact of each topic according to the decision-makers. An aspect is material if it is sufficiently important in reflecting the company's impacts or the stakeholders' assessments and interests. The threshold level for "sufficient" importance (i.e. materiality) is set at the mid position between level 3 ("low importance") and level 4, ("important"), of the Likert scale (Calabrese et.al., 2019 and Ching et. al., 2023)

The materiality analysis of the Brazilian health industry is a multifaceted construct,

encompassing regulatory compliance, strategic alliances, technological advancements, sustainability initiatives, economic viability, technological advancements, and the intrinsic human element. In unraveling the materiality analysis of Brazilian health industry players, it becomes evident that success in this competitive landscape requires a holistic understanding of factors influencing decision-making.

For Forstater et al., (2006) and Herzig & Schaltegger, (2011), companies can use materiality analysis to integrate strategic decision-making with corporate sustainability, where actions and reporting are aligned with current and emerging ESG risks and opportunities

It's important to note that the material topics in this table are not a comprehensive list, and the specific topics included in a materiality analysis will vary depending on the individual player, their size, location, and specific business model. It serves as a compass, guiding organizations in identifying key issues that can affect their operational efficiency, reputation, and overall success in the market.

Additionally, conducting a comprehensive stakeholder engagement process is crucial to identify the most significant topics for each player. This process should involve engaging with a diverse range of stakeholders, including employees, patients, investors, community members, and government representatives.

While the materiality analysis illuminates strengths, it also highlights challenges. Whether it be economic downturns, global health crises, or shifting consumer expectations, understanding and effectively addressing these challenges becomes imperative for sustained success.

The limitation of this study is the limited number of key players researched in each group – producers, intermediaries and providers. A suggestion for further study is to compare the Brazilian health industry materiality analysis with other developed countries.

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