



Developing a Materiality Matrix for a Health Institution

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Abstract

The third sector plays an important role in Brazilian society and, its essential characteristics such as promoting socio-environmental responsibility, developing social causes and, reducing inequality are in line with the fundamentals of ESG (Environmental, Social, and Governance): The materiality matrix is considered one of the main ESG management tools, helping organizations identify, define, and communicate actions related to the most relevant topics for the institution and its stakeholders. The objective of this study is to develop a Materiality Matrix for a third-sector health institution based on the priority topics defined by the organization and its stakeholders, alongside the guidelines of GRI and SASB. The result identified that the most relevant topics were Information Security and Privacy, Expansion/Democratization of Access to Health Services, Support for Public Health Management, Quality of Care and Patient Satisfaction, Health and Safety of Employees, and Human and Professional Development. This article contributes to enhance the health institutions in driving their efforts in a strategic way, aligning their activities with the social and environmental agendas and, at same time, raise the awareness of on critical material topics/issues for their stakeholders' expectations

Keywords: Materiality, Materiality Matrix, GRI, Sustainability Report, Stakeholders, SASB, ESG

INTRODUCTION

Materiality is a concept emerged in the financial accounting literature and practice, in which it is used to differentiate between financially influential activities and those that carry no financial risk. Materiality assessments are about determining which information is relevant to an entity and hence must be conveyed in the entity's general purpose financial report. Materiality depends on the nature and magnitude of information and, must be judged in the particular circumstances of the entity (IFRS International Accounting Standard Board, 2015).

Over the time, the debate around the materiality matrix has become more and more intense and stimulating (Formisano, et al., 2018) and has evolved from the financial accounting boundaries into sustainability literature.

In sustainability reporting SR, materiality, as a conceptual framework, faces different challenges. Because SR encompasses a wide range of issues, when designing its SR, a company always faces dilemmas with regard to what to report about and what is important to communicate (Ortar, 2018). In implementing materiality analyses in sustainability report SR, companies are expected to choose the issues that are most material in terms of their sustainability implications and then act accordingly. If an issue is identified as material, it should be included and explained broadly in the sustainability report and in the company's allocation of resources and efforts (Khan et al., 2016).

For Ortar (2018), public criticism has been raised by

stakeholders and the media, who suggested that these reports are no more than public relations efforts, and portray only the positive aspects of corporations and not their material influences.

The question remains: how can/should a company decide what is materially important to report? This is the issue of materiality, on which the present research is focused.

According to Morcerf (2006), ESG *Environmental, Social, Governance* principles are perceived by the organizations as a possibility to generate profit and have a sustainable role at same time. Together, these elements seek to strengthen the business good practices resulting in less impacts and risk mitigation for the organization.

One way to build, align and communicate ESG actions with the interested parties is through the Materiality Matrix, in which the most important topics are defined by the company (GRI 3, 2021). The idea behind this matrix is to consider the economic, social and environmental aspects that are priority for the organization and the interested parties, helping to focus its efforts and resources in those areas that really matter (GRI 3, 2021). Within this context, the building of a materiality matrix emerges as a strategic tool, enabling the organizations to drive their efforts in an efficient way (CALABRESE et al., 2019).

Previous studies on ESG address aspects such as its relation with corporate sustainability (OLIVEIRA and ZANONI, 2023), or the impact of ESG in the value and cost of capital of the corporations (MACEDO, et. al., 2022). Yet, they do not

address the materiality matrix and its topics in depth nor the importance to identify these topics for the strategic planning of a company.

The institution, object of this case study, already publishes a sustainability report, however it does not address material topics nor does have a formal materiality matrix. The research question is: what are the material issues/topics to be included in a materiality matrix in sustainability reporting. The objective of this article is to develop a materiality matrix for a health institution based on the material issues/topics chosen by the stakeholders and the company.

In understanding the topics that should be considered in a materiality matrix in a health institution, this article contributes to enhance these institutions in driving their efforts in a strategic way, aligning their activities with the social and environmental agendas.

Just for illustration, the health segment in the third sector in Brazil has generated a growth national product of R\$67,1 billion and was responsible for 1.3 millions of jobs (FIPE, 2022). The entities of third sector, which comprise a wide range of non-profit institutions, foundations and associations, play a crucial role in finding solutions to complex challenges, promoting collective well-being and providing public services.

LITERATURE REVIEW

Overview of Materiality Approaches

The term materiality has different meanings and concepts, it is far from being peaceful. For GRI (2013), material aspects are those that reflect the organization's significant economic, environmental and social impacts; or that substantively influence the assessments and decisions of stakeholders. To determine if an aspect is material, qualitative analysis, quantitative assessment and discussion are needed. Their materiality matrix depicts two axes. The horizontal one shows the level of importance of the specific sustainability issue/topic to the corporation's success, while the vertical one presents the importance of the selected issue/topic for the stakeholders.

For IIRC International Integrated Reporting Council (2023), an issue is material if it could substantively affect the organization's ability to create value in the short, medium and long term. SASB standards address sustainability topics that are likely to be material and to have material impacts on the financial condition or operating performance of companies (SASB The Sustainability Accounting Standards Board, 2023). The health segment can be found in the group *Health Care*, sub sector *Health Care Providers* and industry *Health Care Delivery*, and has 11 topics for assessment and report.

Different frameworks provide definitions that can be discussed by considering the intended audience and the

level of impact of the information. Fiandrino et. al. (2022) presented a synthesis of definitions of materiality provided by the standard frameworks.

The methodology and the application of the materiality matrix can be found in documents produced by organizations that promote sustainability and corporate responsibility. Some of these organizations that provide guidance on sustainability reports and identification of material issues/topics include, among others. Global Reporting Initiative (GRI), Sustainability Accounting Standards Board (SASB) and International Integrated Reporting Council (IIRC). They help organizations to understand and apply the materiality matrix in their specific segments.

GRI defines that material topics are those that represent the most significant impacts of the organization in the economy, environment, people and human rights (GRI 3, 2021). The materiality has as objective identify, select and prioritize the most relevant topics based on the pillars of sustainability and classifying them in a scale of importance. The scale, from the least to the most relevant, assures that only significant information is communicated to society and stakeholders enabling a precise assessment of the organization sustainable performance. (WHITEHEAD, 2016).

While SASB focus in communicating investors about the impacts of the sustainability in the financial performance, GRI seeks to report the organization's impacts in the economy, environment, people and other stakeholders (SOUZA, 2023).

Material Aspects and Development of the Matrix

In order to guarantee the effective achievement of sustainable performance, corporations must separate the material topics and justify the criteria adopted in their reports, clearly outlining the limits of each impact (CARPEJANI et al., 2017). The Global Reporting Initiative (GRI 3) proposes a structured method in four steps to define material aspects: understanding, identification, evaluation and prioritization. The first three phases are carried out separately from the sustainability reporting process. In the final stage, the organization identifies its most relevant impacts for the report, prioritizing them and thus determining their material topics (GRI 3, 2021).

In the understanding stage, the organization analyzes its activities, business relationships and stakeholders in the context of sustainability, analyzing all areas, with communication, human and legal resources being essential. In the second phase, the company must identify its economic, environmental and social impacts, real and potential, past and future, positive and negative, intentional and unintentional. Step three assesses the importance of these impacts in order to prioritize them for reporting, and may take into account the size of the impact, the probability of occurrence and the severity, in the case of negative aspects. Finally, the fourth stage involves prioritizing the most significant impacts for reporting (GRI 3, 2021).

Materiality addresses the sustainable context of an organization, highlighting the interconnected needs of all parties involved. Even companies in the same sector can have different material topics due to specific strategies and different stakeholders (CARPEJANI et al., 2018). According to these authors, these topics may include, for example, interaction with the community, combating poverty, eradicating child and slave labor, reducing pollutants, product life cycle, market participation and innovation, each of which represents a crucial component of the organization's sustainable commitment.

In the literature, there is a lack of research with materiality as a guiding theme (CARPEJANI et al., 2017). In their study, they concluded that each company defines materiality based on internal criteria and consultations with stakeholders, and that the topic is extremely relevant as it will guide the company's strategy, flows and processes. Soares (2023) proposes, for the construction of the materiality matrix, a consolidation of ESG themes from three sources: GRI 3, SASB and SDG (Sustainable Development Goals, of the United Nations) and, subsequent analysis of the company

and its stakeholders of which topics from these sources are priority.

According to Araújo (2021), in a study carried out with a sample of 26 Brazilian companies listed in the Corporate Sustainability Index (ISE) of Brazilian Stock Exchange (B3), 46% of them used the model GRI for their reports and, 54% combined this guideline with another for materiality analysis. Furthermore, all companies presented material topics in their reports, but only 49% presented the materiality matrix.

Some Examples of the Materiality Matrices

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 and the latest version was constructed through an assessment of the strategic scenario, online consultation with stakeholders to prioritize the most relevant topics and an in-person panel with stakeholders to capture the perception of the most evaluated topics. The group's 2022 sustainability report is available on its investor relations website.

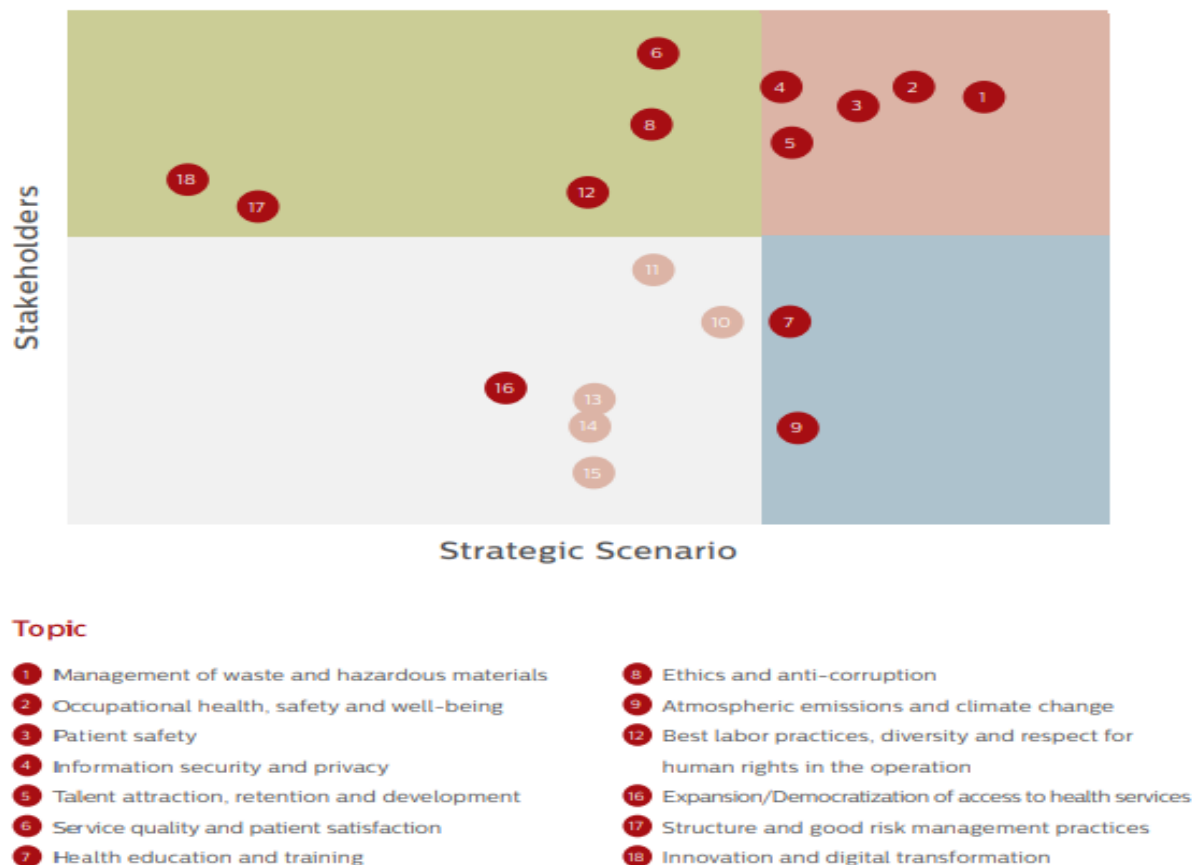


Fig. 1. Group Fleury Materiality Matrix 2022.

Source: Group Fleury (2023).

According to the pattern described by Carpejani et al. (2017), the x-axis (horizontal) of the materiality matrix represents the most important aspects for the company, while the y-axis (vertical) represents the aspects of greatest relevance to stakeholders. Group Fleury considers 13 material aspects, 5 of which are in the upper right quadrant. Rede D'Or, in turn, used the GRI 3 guidelines to build its materiality matrix, according to the sustainability report released in 2022. This organization is the Brazilian's largest health care integrated network, with a presence in many states and owns 73 hospitals.

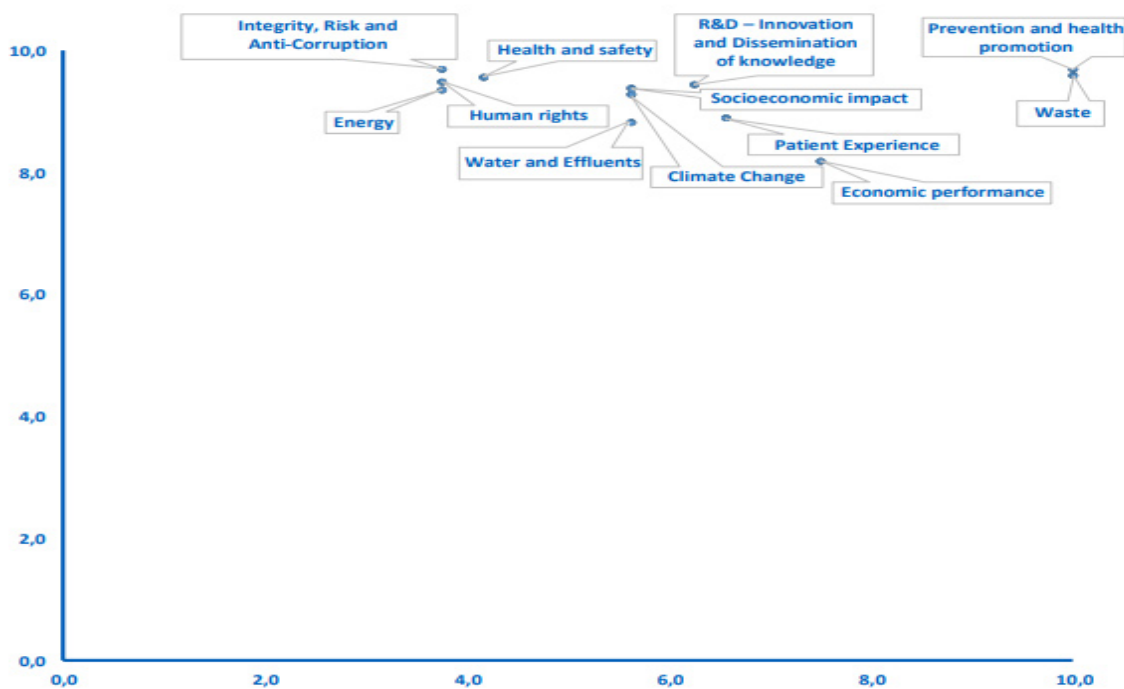


Fig. 2. Rede D’Or 2Materiality Matrix 2022.

Source: Rede D’Or (2023).

In this example depicted in Figure 2, Health and Waste Prevention and Promotion are an issue of great relevance both for the company and its stakeholders, due to its location in the top right corner. In common between the two publications, the concern with Waste occupies the same level of importance, even though this is a material topic with a negative impact on companies. Furthermore, for Rede D’Or, the Economic Performance also has significant importance compared to the others, while at Grupo Fleury it is not listed.

Carpejani et. al. (2017) state that each company defines its most relevant material themes. according to their own criteria. Thus, Group Fleury chose themes with different levels of priority: as can be seen from the points spread across the x and y axes. Topics 7 and 9 are further away in the matrix compared to the others, and consequently, have a lower level of importance than those that are in the upper quadrants. Rede D’Or focuses its reporting only on topics that occupy the top of the Matrix, disregarding possible issues that may have been addressed in its construction, but were not considered as priorities.

METHODOLOGY

Organization Object of the Case Study

Private, non-profit and philanthropic organization, founded in the 1970s by health professionals, university professors and researchers. Its main objective is to offer financial support for teaching activities, scientific research and medical care to the community, especially in the public health service. It employees around three thousand people, and the management is centered on a president, two vice-presidents

and three directors. In the services pillar, it focuses on the area of diagnostic medicine and is present in more than nine Brazilian states (data taken from the institutional website). It offers more than 3,000 types of exams in its portfolio, performs an average of 6 million exams per month and has the capacity to analyze 10 million exams per month. In the State of São Paulo, the organization accounts for 90.1% of home care for neuromuscular diseases, in addition to being responsible for 72% of immunogenetic tests to identify organ recipients and 52% of immunogenetic tests to identify organ donors. Annually, the institution consults its main stakeholders and carries out internal mapping based on indicators, employee satisfaction survey, main customer survey, supplier satisfaction survey and customer evaluation (Net Promoter Score), and synthesizes the data in an analysis report. of value.

Identify Stakeholders

The first step in building a materiality matrix is to identify the stakeholders that the company needs to engage with. Stakeholders are individuals or groups that can affect, or be affected by, the company’s activities and performance. In discussion with the members of the company, they reckoned that employees, clients and suppliers play the most crucial roles in the materiality assessment process (see item 3.4).

Selection of the Issues/Topics of the Matrix

Following the steps of understanding (1), identification (2) and evaluation (3) to prioritize material topics from GRI 3 (GRI, 2021), not only the topics highlighted by SASB (2023) for the Health Care Delivery area were considered as well as those identified as materials in the annual value analysis

report prepared annually by the organization and, the sustainability reports of Rede D’Or and Grupo Fleury. These are displayed in table 1.

To help the selection of the material topics, the authors had access to three documents that analyze the megatrends and they verified those that are in syntony with the topics displayed in table 1. Frost & Sullivan (2023) and Euromonitor International (2023) raised topics such as Climate Control and the Future of Energy, associated with efforts to control and mitigate the impacts of climate change, Digital transformation, Cyber Security and Future Computing. These documents also discussed the importance of digital security in the face of technological innovations, as well as new ways of engaging with technologies.

In the Wellness area, trends related to precision medicine, products and services aimed at holistic health stand out, considering the mental, spiritual and emotional aspects of the patient. Furthermore, they pointed out that consumer perceptions are evolving to encompass broader dimensions of well-being, incorporating elements such as environmental awareness and economic inclusion, whose objective is to create an economic environment that is accessible and equitable for all individuals, promoting a fairer and more

sustainable society. In this sense, the topics Financing of Scientific Medical Research, Support for Public Health Management and, Expansion/Democratization of access to health services are directly related to this content.

One of 5 principles of IBGC (Brazilian Institute of Corporate Governance) Code of Best Corporate Governance Practices (2015) is Transparency, which addresses the importance of clear, assertive, complete and accessible communication of relevant information of the company, and which is related to the topic of Disclosure and communication to the market.

Governance and Management, Employee health and safety, Human and professional development, topics chosen in table 1, refer to the megatrend Labor shortage, highlighted by the publication of the Project Management Institute (2022). The topic is marked by the problems arising from the mass layoffs experienced by corporations and, their unsuccessful efforts to replace these employees with qualified labor. As a possible solution, PMI (2022) indicates that organizations will need to readapt their talent retention processes, aligning them with good social impact practices and providing greater recognition and rewards to the employees.

As result, 16 topics were selected and shown in bold in the table 1.

Table 1. Correlation of the material topics in the health segment

SASB	Organização A	Grupo Fleury	Rede D’Or
Energy Management			Energy
Waste management and hazard materials		Waste management and hazard materials	Water and effluents
		Atmospheric emissions and climate changes	Waste management
Data security	Planning and intelligence	Information security and privacy	
	Structure, Processes e Technologies		
Access e accessibility	Medical scientific research funding	Expansion/Democratization of access to health services	Socioeconomic Impact
	Support public health management		
	Philanthropic and charity activities		
	Access to human resources and investments		
	Relevance in Education and Research Networks		
	Private Nonprofit Organization		
Product Quality and Safety	Internal Integration and with Value Chain	Innovation and Digital Transformation	R&D, Innovation, and Knowledge Dissemination
	Innovation and Application of Knowledge	Structure and Best Practices in Risk Management	
	Excellence in Quality Management		

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Customer Well-being		Quality of Care and Patient Satisfaction	Patient Experience
		Patient Safety	Health Prevention and Promotion
Sales Practices and Product Labeling	Differentiated Portfolio of Health Solutions, Products, and Services		
	Pioneering and Longevity		
Employee Health and Safety	Human Resources	Occupational Health, Safety, and Well-being	Health and Safety
		Attraction, Retention, and Talent Development	
Employee Engagement, Diversity, and Inclusion	Organizational Culture	Good Labor Practices, Diversity, and Respect for Human Rights in Operations	Human Rights
	Human and Professional Development	Health Education and Training	
Physical Impacts of Climate Change		Atmospheric Emissions and Climate Change	Climate Change
Business Ethics	Governance and Management	Ethics and Anti-Corruption	Integrity, Risk, and Anti-Corruption
	Relationship with Stakeholders		Economic Performance
	Disclosure and Market Communication		

Source: SASB, Grupo Fleury, Rede D'Or, adapted by the authors

Questionnaire-based matrix

To prioritize the most material issues/topics (step 4 of GRI 3), two online questionnaires were elaborated to identify the relevance of the 16 issues/topics chosen to a sample of 12 managers, directors and vice presidents of the company (questionnaire type A) and 22 stakeholders (questionnaire type B).

The method used in this study is based on setting a quantitative Likert scale of each issue/topic from 1 to 5, being 5 having high impact for the company and 1 the less impact (questionnaire type A). For the stakeholders, same scale, 5 being very important for the company to consider and 1 less important.

Forty questionnaires were sent electronically in November, 2023 via platform online *Survio*, with 34 responses, 12 type A and 22 type B. Table 2 shows quantity of questionnaires sent and received by each type of profile.

Table 2. Respondents and profiles

Profile	Sent	Received
Management	13	12
Employee	10	8
Suppliers	7	5
Clients	10	9

Source: created by the authors

Axes of the Matrix

Nestle materiality matrix (https://www.nestle.com/sustainability/responsible_business/materiality#:~:text=The%20assessment%20results%20are%20plotted,interest%20and%20potential%20business%20impact.) shows the degree of stakeholder interest (vertical axis) and potential business impact (horizontal axis). UPS materiality matrix shows importance to stakeholder and influence on business success (NYU New York University, 2019).

Fleury matrix considers importance to stakeholders and strategic scenario on horizontal axis (see figure 1). On the other hand, Rede D'Or matrix (figure 2) shows levels of importance for the stakeholders and for the company on both axes, the same as suggested by GRI.

Sepúlveda-Alzate et.al. (2022) state that the reason for separating the analysis between the company and the stakeholders pursues the goal of comparing material issues and their impact for the company, on the one hand, and material issues and their importance from the perspective of stakeholders, on the other. Having that in mind, we try to answer our research question: what are the material issues/topics to be included in a materiality matrix.

Our proposed matrix considers on vertical axis the importance of each issue/topic on the stakeholders' perspective and the impact of same issues for the company on horizontal axis.

RESULTS AND DISCUSSION

Table 3 shows the descriptive statistics of the results/scores for each topic separated by type of profile. In the profile A (vice-president and senior management), the topics Physical impacts of climate change and Energy Management are those that have the least impact on the organization, with average scores of 3.25 and 3.67 respectively. As for profile B Stakeholders (employees, suppliers and customers), all topics had average scores above 4, with Physical Impacts of Climate Change (average 4.06) and Pioneering and Longevity (average 4.14) being the less important for this group.

Table 3. Average score by profile

Theme		Research A (Company)	Research B (Stakeholders)			Overall Average
		Strategic Scenario	Employees	Customers	Suppliers	
		Average	Average	Average	Average	
1	Energy Management	3,67	4,75	4,00	4,20	4,32
2	Waste management and dangerous materials	4,25	5,00	5,00	4,60	4,87
3	Information security and privacy	4,67	4,88	4,33	4,60	4,60
4	Medical scientific research funding	4,33	4,88	4,00	4,00	4,29
5	Expansion/Democratization of access to health services	4,58	4,88	4,33	4,60	4,60
6	Support public health management	4,75	4,88	4,33	4,40	4,54
7	Relevance in Education and Research Networks	4,08	4,75	4,00	4,20	4,32
8	Innovation and Application of Knowledge	4,33	4,88	3,78	4,80	4,48
9	Excellence in Quality Management	4,42	4,88	4,11	4,80	4,60
10	Quality of Care and Patient Satisfaction	4,42	4,88	4,78	4,80	4,82
11	Pioneering and Longevity	4,33	4,63	4,00	3,80	4,14
12	Employee Health and Safety	4,25	5,00	4,56	4,80	4,79
13	Human and Professional Development	4,17	4,88	4,67	4,60	4,71
14	Physical Impacts of Climate Change	3,25	4,63	3,56	4,00	4,06
15	Governance and Management	4,08	4,88	3,56	4,40	4,28
16	Disclosure and Market Communication	3,75	4,88	3,78	4,00	4,22

Source: created by the authors

The Survey-Based Materiality Matrix

The x-axis (horizontal) corresponds to the company's strategic vision, the answers obtained in the profile of Employees A, who are responsible for the organization's decision-making and, for the y-axis (vertical), the responses from the Employee B, stakeholders. With this in mind, we cross the averages of the x and y axes in a graph, with each point in the matrix corresponding to a topic (see figure 3):

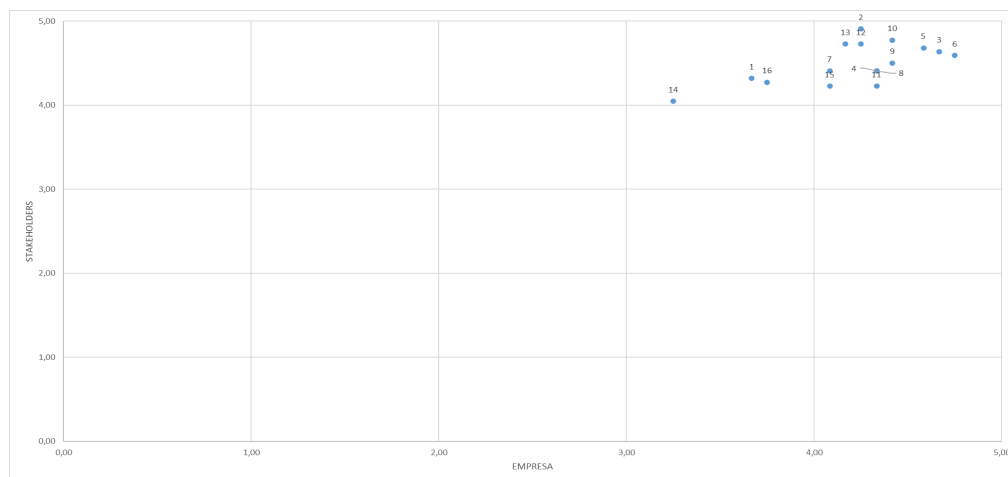


Fig. 3. Materiality Matrix

Source: created by the authors

We then made a zoom on the upper right quadrants of this matrix as per figure 4:

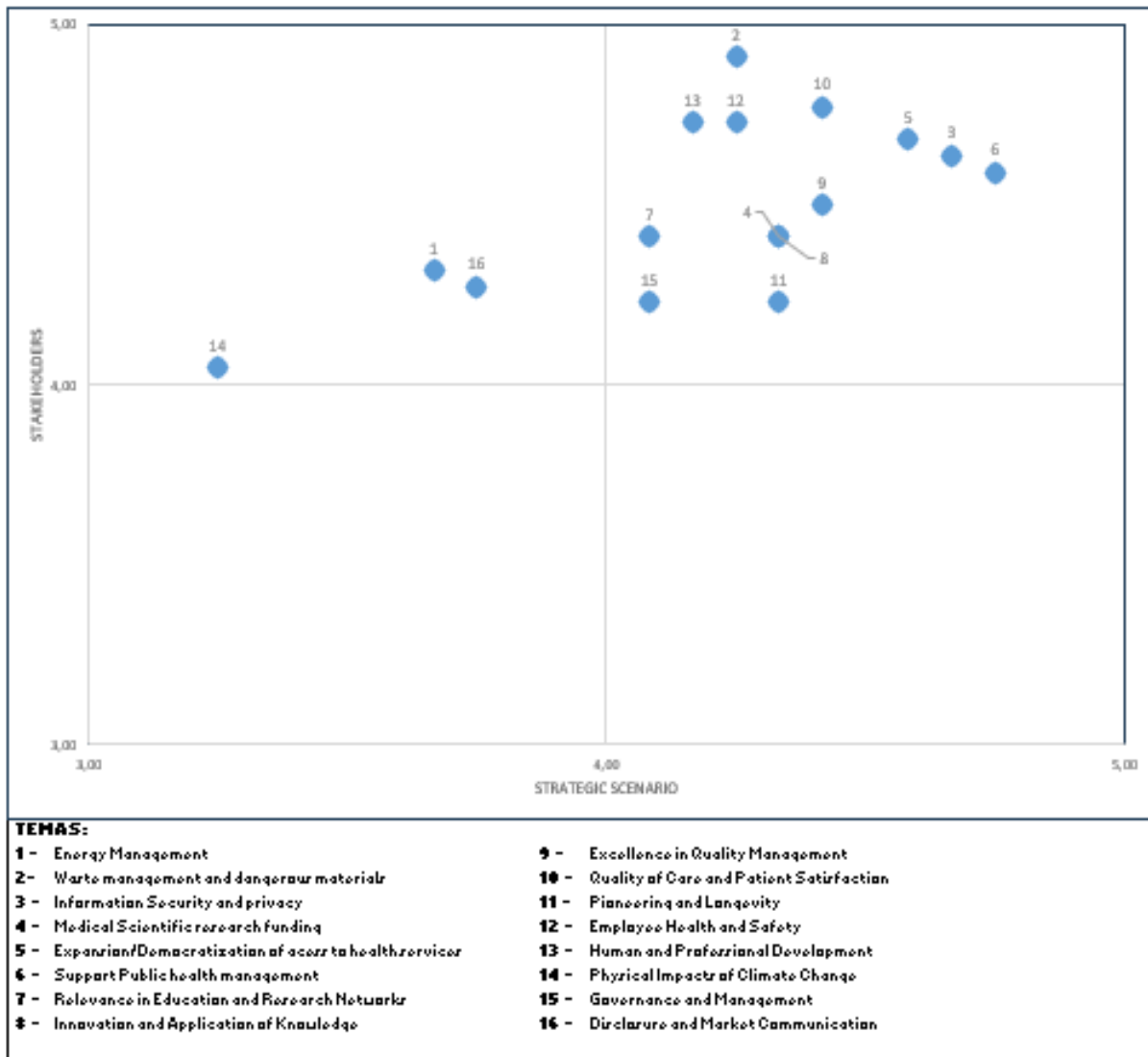


Fig. 4. Zoom of the materiality matrix

Source: created by the authors

The topics 1, 16 and 14, in the matrix, have less impact and are less important compared to the others. Physical impacts of climate change (item 14) and Energy Management (item 1) had already been highlighted in the group of respondents from group A with the lowest average scores, while Disclosure and communication to the market (topic 16) was the third lowest score for both groups (company and stakeholders). In the Fleury Group matrix, the topic atmospheric emissions and climate change, which are aligned with topic 14 of the institution under study, also are perceived as less impact/importance than the others. The topic Climate Change, in Rede D’Or matrix, is considered more important than topics such as Water and Effluents, Human rights and Energy.

The topic Waste occupies the first positions in the levels of impact and importance in the two example matrices, the more it is located in the upper right corner, the greater its relevance. Similar to these institutions, management of waste and hazardous materials (topic 2), in the matrix proposed in this study, is also of great relevance.

The topics support for public health management (item 6) and expansion/democratization of access to health services (5) are considered the highest relevance alongside with Information security and privacy (3). These topics reflect the main objective of a philanthropic health institution (FALCONER, 2021). When compared with Group Fleury, the topic 5 of our matrix is located in the lower left quadrant of their matrix as topic 16 and, has less importance among those evaluated. For Rede D’Or, Socioeconomic Impact is located in the middle of the matrix and, it is falls behind the topics such as Waste and Prevention and health promotion.

Finally, the topics 6, 3, 5, 10, 12 and 13, in order, in our proposed matrix have the greatest impact and importance in the perception of the company and stakeholders. Relating them to ESG, only one of them can be categorized with the acronym G – Governance (Information security and privacy), the others can be considered as S – Social (Expansion/democratization of access to health services, Support for health management public health, Quality of care and patient

satisfaction, Employee health and safety, and Human and professional development). However, none of them can be classified as E – Environmental.

CONCLUSION

The paper opens the debate as to whether the information disclosed response to the importance from the perspective stakeholders or whether, on the contrary, they reflect the impact for the company perceived by their management. There is no right or wrong, the importance and/or impact of each topic depends on the perception of the stakeholders and the company's management team.

However, according to Farooq et al. (2021) and Machado et al. (2021), several studies confirmed that companies did not disclose comprehensive and detailed sustainability information about their approaches to identifying material topics.

Nevertheless, the materiality matrix creates a multi-stakeholder context by which it is possible to involve them in the decision-making process. Together with the organization, they will be able to identify virtuous paths that are useful for the co-creation of a sustainable society. By focusing on the most critical issues, companies can make more informed decisions, improve their sustainability performance, and build trust with stakeholders.

We emphasize that, despite all the discussions about climate change, only the topic of waste management and dangerous materials, related to Environmental, was considered a priority or important in any of the groups surveyed vis-avis compared to the other topics.

Furthermore, the non-obligation to demonstrate a materiality matrix in the sustainability report discourages this construction by the company, even though it is a visual communication model that is easy to understand and perceived by the interested readers.

Though the findings are good enough, the case study is limited to a particular organization and so, the various underlying parameters may vary for different health institutions. However, the methodology proposed is viable in any institution and may be tested for any program.

We hope with this article raise the awareness of the health institutions on critical material topics/issues for their stakeholders' expectations and help them on how to build a matrix for sustainability reporting.

One limitation of this article was the limited group (three) of stakeholders. Suggestion for further research is to verify whether the actions proposed by the companies are aligned and coherent with the most priority topics in their materiality matrix.

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