Università
Ca'Foscari
Venezia

**Department
of Management**

Working Paper Series

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Sustainability Accounting and Reporting: Searching for a Viable Framework in Public Healthcare Organizations

**Working Paper n. 10/2023
December 2023**

ISSN: 2239-2734

Sustainability accounting and reporting. Searching for a viable framework in public healthcare organizations

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(December 2023)

Abstract:

Context. Public healthcare organizations (PHOs) have recently been involved in measures to promote sustainability and bear witness to their work. Hence, accounting has become a handy tool for reporting and informing stakeholders.

Aims. From a theoretical perspective, the paper focuses on the analysis of sustainability factors in public healthcare organizations. Considering the current gap in the literature on the application of sustainability measures in the health sector, the paper aims to offer an advancement in this field and to put forward a proposal for the construction of a possible sustainability reporting model capable of reporting on the public value created. In particular, it investigates how sustainability practices can influence the accounting aspects and are declined through actions aimed at balancing different levels ranging from governance to social and environmental factors.

Methodology. The paper consists of two parts, one on a theoretical basis and the other on an empirical basis. The theoretical basis includes a literature review for constructing a framework related to sustainability advancement in healthcare. The second part is devoted to a case study of building a sustainability report in a public hospital.

Results. A sustainability report, with its stakeholder-centred approach and materiality analysis, can help to understand the needs and improve communication with patients, their families, employees, society and institutions. This is even more accurate for the hospitals that integrate research and teaching into the assistance activity and, consequently, must also interface with the needs of prominent stakeholders such as universities. Sustainability reporting also allows for better management of environmental, social, and governance risks, granting a deeper understanding of the impact of its internal processes and strategies and creating a corporate culture intended as a "real" emancipatory change in thinking and performing activities.

Keywords: Sustainability Reporting, Healthcare, Accountability

JEL Classification Numbers: M41, H75, H83

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1. Introduction

Over the past years, several companies and other institutions have increasingly adopted the practice of sustainability reporting. Typically, compared to the private sector, the public sector is still developing when using sustainability reporting and accepted standards to report disclosures.

According to the literature, sustainability reporting still needs to be more widespread in the health sector, even though some attempts are being made [1]. In recent years, many companies and institutions have started following the practice of sustainability reporting. Although the private sector is ahead in this practice, the public sector is gradually catching up in using accepted standards for reporting disclosures. However, sustainability reporting is still not very prevalent in the healthcare industry, even though some efforts are being made. This indicates that public healthcare organizations are also interested in incorporating sustainable practices and being accountable for their actions. This demonstrates that even public healthcare organisations may be interested in activating sustainability practices in line with the expected accountability responses. In fact, both the issue of accountability and sustainability in the healthcare sector (and its organizations) are not particularly popular topics and much can still be done to fill this gap. Healthcare accountability regimes encounter several challenges. These challenges include defining clear mandates in the form of specific goals and objectives, attributing these mandates to skilled providers or organizations, and designing incentives to support the accountability relationship and improvement [2]. Improved accountability is often called for as an element in improving health system performance and this means that increased accountability at system level can reflect positively on operational units and actors, enabling the conditions for enhanced sustainability.

As previous studies have pointed out, the issue of accountability has been tackled by developing accounting systems that can cover various aspects, including management control and performance management. This approach has also been applied in healthcare organizations by integrating accounting and clinical information systems [3]. Accounting in its manifold manifestation has proven to be a solid bridge to link accountability and disclosure of sustainability practices in an organisation. Whereas initially, the profiles of accountability were drawn from the financial, performance and democratic/political perspectives, the need to identify new aspects related to accountability and results has emerged over time. Sustainability is certainly a concept that requires next explorative steps [4].

The healthcare industry itself is a major contributor to pollution and greenhouse gas (GHG) emissions, which are responsible for global warming. In addition, the healthcare sector is a major consumer of natural resources, contributing to some imbalances [5] [6].

Studies on sustainability disclosure in the healthcare sector needs to catch up too. Several papers have examined how and why certain hospitals have undertaken sustainability reporting. In these cases, such analysis adopted both theoretical and empirical approaches. Nevertheless, as also pointed out by various of the papers above, more research is required to improve our understanding of why hospitals decide to disclose sustainability information or not. However, there are some healthcare organizations that have attempted to engage in sustainability and social reporting, but these efforts are often isolated and short-lived. Institutions and bodies responsible for monitoring and evaluating the activity of health organisations generally require the disclosure of non-financial information. Still, they have not issued any recommendations or guidelines that could steer organisations towards disclosure on sustainability accounts.

Healthcare organisations account for a significant share of public spending in the European Union; the average health expenditure of states amounts to around 8% of their GDP. Their core mission is to provide high-quality services; consequently, they owe an implicit duty to communities. In this regard, hospitals have undergone substantial changes and reforms, increasing the demand for greater accountability. To operate, they require high resource-consuming and energy-intensive facilities running night and day seven days a week, hurting the environment. Therefore, healthcare organisations are called upon to contribute to a more sustainable society and socially responsible accounting. From this perspective the paper aims to answer mainly two questions.

In what ways have public healthcare organizations increased their accountability? Can sustainability reporting contribute to improving this accountability?

In the first part of the paper, the concept of sustainability will be analyzed in relation to the tools that can be used to support organizational sustainability awareness and sustainability reporting. The primary standards adopted for disclosing impacts will also be described.

In the second part, the paper will explore the factors that can influence and impact the quality and significance of sustainability accounting and reporting in healthcare organizations. It will delve into the motives that drive these organizations to disclose impacts, as well as the actual and potential effects of implementing sustainability reporting on the organizational sphere. Additionally, this section will illustrate the results of a research project conducted in an Italian university hospital.

2. Conceptual approach to sustainability accounting and reporting

In recent years the topic of sustainability has become very popular due to a growing corporate culture based on responsibility and acting in an accountable manner, above all in the private sector. From the global standpoint, 2015 was a landmark year for multilateralism and international policy, shaping a major contribution to the path to sustainable development with the adoption of the "2030 Agenda for Sustainable development". It consists of a comprehensive set of 17 Sustainable Development Goals (SDGs) and 169 targets. The SDGs are inclusive, far-reaching goals, adaptable to each national context and strongly interconnected. They cover topics ranging from basic livelihoods, such as the fight against poverty and hunger, to more complex areas such as responsible consumption and production, decent economic growth, and climate action [7] [8]. The focus has mainly been on dialogue with stakeholders and the most appropriate tools to fit to new requirements for regulatory compliance.

Sustainability accounting and reporting

Initially, sustainability was seen as a concept that required companies to be mindful of the environment and reduce their negative impact on it. However, this approach has evolved over time to advocate for a balanced consideration of a company's economic, environmental, and social objectives. It has been realized that focusing solely on economic sustainability is not enough to ensure the overall sustainability of a corporation. This departure from orthodox management theories marks a significant shift in the concept of sustainability [9].

With the triple bottom line concept introduced by John Elkington in 1997 for the first time, traditional accounting was expanded to include financial performance as well as social and environmental performance. A single-minded focus on economic sustainability can succeed in the short run; however, in the long run sustainability requires all three dimensions to be satisfied simultaneously, the neglect of one of these three areas will endanger all company operations and future [10]. As the three dimensions of the 'triple-bottom-line' concept are interrelated, they may influence each other in multiple ways [11].

According to stakeholder theory, companies strive to meet their stakeholders' expectations () and would use the disclosure of sustainability information to satisfy the expectations of its most powerful stakeholders and it would help to manage the relationships with them. Freeman (1984) [12] defines the concept of stakeholder as "any group or people that may affect the company in

achieving its objectives or that may be affected by the company's achievement." Thus, the stakeholder concept encompasses all groups that affect business activities [13]. Stakeholder approach is a philosophy that takes care of employees, customers, suppliers, and shareholders and takes their expectations and needs into account. In line with stakeholder theory, a company's stakeholders have rights to the information about the company's sustainability performance. Furthermore, Freeman et al. (2000) argue that stakeholder theory helps position sustainability management in a bigger picture and sustainability enters the debate on "values-based capitalism." Therefore, stakeholder theory provides an important support for business persuasion, which is why companies should adopt a corporate sustainability approach and why companies should disclose their sustainability performance information with their stakeholders.

In terms of the rights of stakeholders as mentioned in the stakeholder theory, Gray et al. (1996) [14] have taken account of this from the perspective of accountability. The accountability model places a significant responsibility on companies to share their activities or inactivity with society. This responsibility extends beyond the demands of stakeholders seeking information. According to the model, companies are obligated to disclose information to society, regardless of whether society demands it or not. It should be noted that the accountability model is more complex than simply being based on the concept of social contract. The model recognizes two types of social contract: explicit terms and implicit terms. By fully embracing the accountability model, companies can demonstrate their commitment to transparency and accountability, which can help foster trust and goodwill with their stakeholders. While the explicit terms are the laws, implicit terms are society's expectations. Thus, companies view corporate reports as a communication tool disclosing their accountability information to society both for explicit and implicit terms.

In accordance with institutional theory companies disclose their sustainability performance information because of institutional pressures. Institutional theory explores the external pressures that influence the behavior of companies to adopt certain organizational practices. Basically, this theory investigates the forms of companies' practices and clarifies why companies within a particular field have similarities in practices owing to the institutional pressures. Institutional theory supports legitimacy theory, but while legitimacy theory argues companies' strategies for achieving legitimacy, institutional theory considers companies' practices adopted to achieve it. The main reason why research on corporate sustainability reporting uses institutional theory is that it complements legitimacy and stakeholder theories by ensuring insights for how companies react to institutional pressures. In the meantime another

significant reason for adopting institutional theory in corporate sustainability reporting studies. This reason is that the theory integrates organizational practices to the expectations of the society. There are several reasons for adopting accounting models that can measure an organisation's efforts to counteract negative environmental attitudes and the negative social impacts of its behaviour. The devastating effects of biodiversity loss mean that individuals, organisations and countries around the world are working on ways to protect plant and animal species and reduce the rate of extinction.

In addition to the increasing social pressure from regulators, policy-makers, lawmakers and governments, the rapid and widening uptake of sustainability practices and the associated reporting stems from increasing social pressure from other corporate stakeholders such as consumers, investors, employees, and communities. But it needs also to be mentioned the global environmental megatrends such as climate change and loss of biodiversity and ecosystems that are forcing response from companies to greater disruptions, scarcity, and higher costs. The world of finance also participates in this process, thanks to the efforts of regulation and direction at the level to guide financing in activities that support sustainable development and through initiatives such as the United Nations' Principles for Responsible Investment. In 2019, the Business Roundtable called for radical change when it released a new Statement on the Purpose of a Corporation [15].

Commitment to sustainable enterprise is not limited to publicly traded companies. Many private companies, nongovernmental organizations (NGOs), and public sector entities like universities and municipalities now seek to demonstrate good corporate citizenship via environmental and social disclosures. According to the Survey of Sustainability Reporting 2022 by KPMG there is a growing momentum worldwide towards mandatory disclosures of certain types of information, such as climate-related risks and resilience strategies. Scrutiny over sustainability and ESG data from financial stakeholders, especially asset owners and managers, has become markedly more intense and demanding over the last 3 years.

In this perspective, companies' attention lies on aspects related to accounting and reporting practices linked not only to economic and social factors but also to environmental factors. Sustainability accounting and reporting refers to a set of techniques, tools and practices used to measure, plan, monitor and report organisations' environmental, social and economic performance. Like financial and management accounting, sustainability accounting has the potential to be an effective tool for both the individual company and its various stakeholders to

better assess the environmental, social and economic aspects of its operations. In Europe the regulation that has given high rates of adoption of sustainability disclosures is the EU Non-Financial Reporting Directive. It currently applies to large public-interest companies with more than 500 employees. This covers approximately 11700 large companies and groups across the EU, including: listed companies, banks, insurance companies, other companies designated by national authorities as public-interest entities. In this context, analyses and studies do not always converge toward a unanimous judgment in the movement toward sustainability accounting. There are scholars who critically question the kernel of truth on which sustainability accounting relies [16].

3. Effects in adopting sustainable reporting

The adoption of sustainable behavior by companies and their supply chains does not only result in higher costs for management and control but also in an increase in terms of value. The Business and Sustainable Development Commission has actually estimated growth of approximately $12 trillion and the creation of 380 million jobs thanks to the achievement of the SDGs globally (UN Secretary-General António Guterres' remarks at the International Organization of Employers 2020). Most of the reasons of the potential benefits of sustainable reporting stem from materiality analysis, which rely on identifying the most significant impacts of the organization on the economy, society and environment. Materiality is key "to both reaching conciseness and to identifying the relevant issues in the companies' value" creation process. should identify, prioritize and disclose information on sustainability issues that are considered material [17].

From the "internal" point of view it may lead to overcoming fragmentation, the external benefits result from involving different stakeholders in the process of accountability [18]. A proper materiality analysis carried out according to the criteria and principles of international standards, could be a strategic tool for defining opportunities, risks and trends with a view to sustainability. Furthermore, it is believed that companies capable of carrying out a good materiality analysis are also those capable of informing investors, authorities and other stakeholders on social, environmental and governance issues in the best possible way (KPMG, Sustainable Insight: The essentials of materiality assessment, 2014).

Considering the opinion of stakeholders means opening up to new opportunities that are useful for strengthening the value chain but also for increasing relational capital and the level of trust.

The practice of stakeholder engagement has led in many cases to improving the quality of relationships and starting innovative partnerships besides gaining social legitimation. Inside the organizational sphere, the adoption of sustainable reporting could lead to a profound change in the value and norm system of the organization shaping its corporate culture. Many organisations publish sustainability reports, major accountancy firms have dedicated departments working with corporate responsibility and sustainability accounting and assurance, while in everyday life one can encounter all kinds of products and services labelled as "sustainable" or "carbon-neutral" [19] [20].

Potential benefits for an organization in adopting sustainability reporting are well acknowledged, and they will be further highlighted both in the next chapter when related to sustainability reporting of healthcare services, and in the next paragraphs that deals with the majors reporting standards. However, it is also important to report some caveats that have arisen in the last years in order to not "Oversell" sustainability reporting. In 2020 five major non-financial reporting organizations (GRI, SASB, IIRC, CDSB and CDP) have published a Statement of Intent, committing to work together towards comprehensive corporate reporting. Last year International Integrated Reporting Council (IIRC) and the Sustainability Accounting Standards Board (SASB) officially announced their merger to form the Value Reporting Foundation (VRF). In 2021, the European Commission adopted a proposal for a Corporate Sustainability Reporting Directive (CSRD), which would amend the existing reporting requirements of the NFRD and envisage the adoption of EU sustainability reporting standards. The draft standards would be developed by the European Financial Reporting Advisory Group (EFRAG) and the first set of standards would be adopted by October 2022. This is why it is important for organizations to know the context of guidelines, standards and other frameworks that can influence the form and content of their sustainability report. In the proliferation of conceptual schemes capable of guiding the best , the following have developed.

Among the international reporting standards, the most widely adopted by organizations is the Global Reporting Initiative (GRI). The Standards have been first issued in 2016 and in their recent 2021 version (which will be in effect from January 2023) are designed as a modular set (see annex /figure from "A short intro to gri.."): The *Universal* Standards that apply to all organizations ("GRI 1 Foundations", "GRI 2 General Disclosures", "GRI 3: Material Topic"); The *Sector* Standards to develop sector-specific impacts (if applicable, there is still no sector standard for healthcare sector) standards will be developed for 40 sectors and released over time (GRI 11, 12 etc. double digit numbers); the *Topic* Standards contain disclosures for providing

information on a broad range of topics related to economic social environmental impact. Examples include Standards on waste, occupational health and safety, and tax. Each Standard incorporates an overview of the topic, disclosures specific to the topic and how an organization manages its associated impacts. An organization selects those Topic Standards that correspond to the material topics it has determined and uses them for reporting (GRI 201, 301 etc. triple digit numberIn regard to the reporting process, the GRI describe a series of 4 steps that the organization should undertake in order to determine topics that "represent the organization's most significant impacts on the economy, environment and people, including impacts on their human rights" i.e: the "material topics". The GRI Standards allow an organization to report information in a way that covers all its most significant impacts on the economy, environment, and people, or to focus only on specific topics, such as climate change or child labor. Under this approach, the organization reports on all its material topics and related impacts and how it manages these topics.However, if an organization cannot fulfill some of the requirements to report in accordance with the GRI Standards or only wants to report specific information for specific purposes, such as when complying with regulatory requirements can use selected GRI Standards or parts of their content, and report "with reference" to the GRI Standards.

In the national and international context, interest in integrated reporting is now increasingly consolidated, although the approaches adopted are still varied and based on experimental paths. As for sustainability reporting, also in this case there is an international body, the International Integrated Reporting Council (IIRC) which has the purpose of defining both methodologies and principles for preparing the *integrated report*. The IIRC defines integrated reporting as a process based on integrated thinking. The latter is described as the active consideration by an organization of the relationships between its various operating and functional units and the capitals that the organization uses or affects. Integrated thinking leads to integrated decision-making and actions that consider the creation, preservation or erosion of value over the short, medium and long term. The report represents the final stage of this process, it is a concise communication that illustrates how an organization's strategy, governance, performance and prospects allow to create value in the short, medium and long term. The <IR> Framework, proposed by the IIRC, is the framework on integrated reporting which today represents the methodological reference for most of the integrated reports published internationally. The framework is based on the principle according to which the success of an organization depends on various types of "capital", i.e. stock of value that increases, decreases or transforms through the activities and business model of the organization.

The IIRC model proposes that an organization's capital can take many forms, including financial, productive, intellectual, human, social, relational, and natural. These elements are essential to the concept of value and serve as a guide to ensure that the organization considers all the forms of capital it uses or impacts. Integrated reporting helps organizations improve the quality of information they provide to financial capital providers, such as investors and shareholders. It promotes a more cohesive and efficient approach to corporate reporting by drawing on different reporting elements and transmitting a wide range of factors that significantly affect an organization's ability to produce value over time. Integrated reporting also strengthens accountability and responsibility for managing the various forms of capital and addresses the interdependence between them. It supports integrated thinking, decision-making, and actions aimed at creating value in the short, medium, and long term. Additionally, it fosters greater integration of sustainability strategies within the broader corporate strategy. The preparation of an integrated report involves a process of evolution of the management and reporting mechanisms of the group's performance and requires a high commitment on the part of the whole organization, which can only be achieved through a clear process of organizational change [21] .

4. Public healthcare organizations and sustainability reporting

Sustainability in healthcare

It is also important to understand how sustainability can be read in the healthcare sector and particularly in health care delivery providers. It is useful to briefly describe health and healthcare sector's contribution to sustainable development. Apart from the close connection between healthcare and sustainability of innovations, in which several limitations are noted, studies in general tend to observe that sustainability is not a very common feature in healthcare systems [22] [23]. The healthcare sector is believed to be responsible for about 4-5% of global greenhouse gas emissions therefore it has a key role to play in efforts take actions aimed at ensuring sustainability under different profiles and meanings that are normally assigned, starting with the environmental one. It is therefore expected that there can be substantial reductions in co2 emissions over time, while at the same time developing better patient care, with greater staff satisfaction and cost savings [4] [25].

Traditionally the issue of sustainability is rooted in the use of tools capable of making stakeholders aware through which projects and methods a company has activated the necessary measures to be economically, socially, and environmentally sustainable. Research and studies about sustainability accounting are very often focused on for-profit, business organizations. [26] [27]. Several studies have shown that the main effort of organizations, which practically activate sustainability practices, is concentrated in the production of accounting measurements and external reporting. The most common practice has been to comply with *Global Reporting Initiative* (GRI) standards, or other frameworks such as the one given for *Integrated reporting* (IR) and ESG, the orientation towards Environmental, Social, Governance logics that inspire companies towards environmentally responsible conduct leads to conscious and consistent practices. The spectrum of analysis in the healthcare sector seems to be quite broad and covers for example lean management patient satisfaction employee satisfaction; continuous improvement, corporate social responsibility (CSR); brand and accreditation [28]. For example, an issue seen is that even when health sector organizations implement sustainability practices , they do not always communicate them [29].

A wealth of research has shown why companies choose to disclose their sustainability performance information to their stakeholders, even when it is not required by law. Many of these studies use a theoretical perspective that describes the motivations behind such disclosures. In light of the healthcare industry, these analyses can provide insights into why healthcare organizations should also prioritize sustainability reporting. According to legitimacy theory, companies would like to legitimize their existence to society. Sustainability disclosure is a powerful legitimizing instrument because it recalls the idea of accountability, which is considered the right thing to do [30]. Organizations establish their legitimacy based on society's perception of their contribution to the public good [31]. The relationship between organizations and society, then, is viewed as a "social contract" in which their continuing existence relies upon adapting to the social norms, values, and expectations of organizations and their activities [32]. Many organizations will prioritize their sustainability management activities that increase and secure legitimacy, whereas profit orientation will be emphasized much less. In line with legitimacy theory that social contract is used for regulating the relationship between a company and society. Considering this contract, the company has to meet some requirements toward society in return for gaining the approval of the society. For instance, to enable the society to assess the company's sustainability performance, the company would provide information about its sustainability performance to society; otherwise, the society would assume this action

as a breach of the “social contract”. “Social contract” in turn led to the development of stakeholder theory [10]. Other research suggest how public entities could adopt non-financial reports to increase their degree of legitimacy to stakeholders. In this sense, the increase of transparency by public entities will improve the stakeholder’s awareness of SDGs. Finally, the positive effects are not limited to SDGs consciousness, but it could be extended to other aspects such as manager’s reputation and competition. In fact, the increase of information about non-financial activities represents in healthcare a strategic driver to improve the quality of the services. In this sense, the introduction of common rules about non-financial reporting in the SSN could be a way for policymakers to improve citizens’ satisfaction and encourage managers to adopt best practices.
In fact, the disclosure of non-financial information impacts positively on several aspects such as a firm's reputation, financial performance, and stakeholder engagement [33].

Some authors have criticized that legitimacy theory provides a partial explanation of why organizations adopt sustainability disclosure practices [34]. Thus, a more sophisticated approach to legitimacy is required to understand the role of sustainability disclosure [35]. There are two strategies to gain legitimacy from stakeholders through the disclosure of sustainability information. First, hospitals could simply use symbolic actions through images, symbols or metaphors to project an appearance consistent with society's expectations. Thus, sustainability disclosures aimed at symbolically managing their legitimacy. Second, hospitals could adopt substantive practices to introduce real changes in organizational goals, structures or processes to meet the performance expectations of their most influential stakeholders. Thus sustainability disclosures could be a response to the demands from key stakeholders that are scrutinizing their activity [36]. Institutional theory indicates that organizations are influenced by broader social structures, such as public and private rules, and the presence of nongovernmental and other independent organizations that monitor corporate behaviors affecting a company's activities and mode of operation [37].

Two drivers, New Public Management and competition, that can negatively affect the adoption of sustainability disclosures at the same time could be positively correlated with the adoption with sustainable reporting.

The first because there have been different levels of implementation of NPM implementations in Europe due to the varying administrative traditions; that is in a country characterized by a

consolidated NPM reform sustainable reporting can enhance its impact on the efficiency, transparency and accountability of hospitals [38]

With reference to competition, a prior study [39] denoted how the competition between hospitals could increase the quality of the services because of the major attention paid by the public managers to the average quality of their services. Moreover, further studies denoted how in a context characterized by a higher level of information, entities with a low level of information disclosed loose patients more than the other [40]. In public sector organizations, the adoption of integrated thinking may lead to internal and external benefits to the organization: internal benefits such as overcoming fragmentation due to compartmentalized services and a silo mentality; and external benefits such as involving different stakeholders in the process of accountability. It has already been pointed out that climate change is driving a response from companies to greater disruptions, scarcity, and higher costs; and also institutions are starting to pressure organizations on declaring and maintaining their consumption at efficiency levels. Moreover, climate emergency is a health emergency [41] it threatens the foundations of good health, with direct and immediate consequences for patients, the public and national health systems. Many Hospitals are energy and resource intensive enterprises that, as they operate today, contribute substantially to climate change while inadvertently contributing to respiratory and other illnesses. Procurement, resource use, transportation and other policies and practices contribute to the health sector's significant climate footprint. By reducing this footprint and moving toward carbon neutrality, the health sector can demonstrate the path forward in response to climate change, thereby playing a leadership role in advocating for a healthy and sustainable future (WHO and Health Care Without Arm, 2009).

Delivering well-being can also be improved to the stakeholder engagement in the process of reporting. Participation is a "driver of health equity", one of the factors fundamental to creating more equitable societies and creating and sustaining a healthy life for all . A participatory approach that engages people and communities in policy development and implementation processes is recognized as key and to deliver multiple benefits. There is growing evidence that people's health and well-being is improved when they feel like they have a greater say and are able to influence decisions that affect them. Participatory approaches thus have a key role to play in addressing the link between exclusion, powerlessness, and health equity (WHO Regional Office For Europe 2019, "Evidence and resources to act on health inequities, social determinants and meet the SDGs").

For public sector organizations value creation consists of public value creation, where public value is discussed as ecological, political, economic, social, and cultural value and refers to the possibility of enabling stakeholders to be active participants in the co-production of services as well as to contribute to their own welfare [42]. The attainment of public value is an intricate process, where a multitude of factors interplay, including the social environment, strategic choices, and structures. Hence, the utilization of IR can prove to be an effective instrument that brings these interconnections to light, enabling us to make informed decisions.

What constitutes materiality is relevant for investors and for stakeholders' decision making and needs to be clarified especially in the public healthcare sector, where the institutional shareholders are the main recipients of the management commentary as they represent local communities [43]. This is particularly true in public sector organizations where information that is not strictly financial can assume major relevance for stakeholders and may deserve to be included in the report [44].

Other scholars stated that especially in nonprofit organizations, such as healthcare organizations, the Intellectual Capital (composed by human, relational, structural capital) has been claimed to help these entities in both achieving financial sustainability in front of diminishing public funding, and complying with their social mission, in particular nurturing the relations with stakeholders that count on healthcare professionals' competences [45]. Since sustainable reporting is a tool to foster corporate culture and create a better work environment, it is possible to create a positive feedback loop by adopting principles of sustainability and investing in IC.

5. The research

The research had two main objectives. Firstly, it aimed to investigate sustainable practices in a large, autonomous hospital (University Hospital) that had previously experimented with social accounting and reporting. Secondly, it aimed to report and describe the findings, drawing inspiration from existing sustainability reporting models. The goal was to form a working group that would promote sustainability and monitor organizational attitudes and behaviors during the creation of the hospital's first sustainability report.

The work team preparation involved two central figures, an academic and the other belonging to the hospital's strategic board, with the participation of two researchers who worked within

the hospital. In this sense, the methodological approach was based on participant observation and interviews in developing a case study [46] [47] [48].

From a business/economic prospective university hospitals are complex organizations where specialized care, research, and teaching activities are performed. Given the link with a university, these hospitals integrate different activities and employ different actors (academics, physicians, hospital physicians, health professionals, students etc.). Patient care involves both academics and hospital staff and is directed to the provision of high quality treatments and specialized paths developed through research activity. Due to the specialized activity performed and the integration of teaching and research, the university hospital is a knowledge-based organization whose intellectual capital is one of the main drivers of value creation. As the hospital and the university are highly interdependent, the university is a relevant shareholder to consider when investigating the kinds of services that are provided by the hospital.

Among the hospitals, the university hospital is publicly financed through the diagnosis-related group system (i.e. activities performed) and not through capital-weighted systems like for the Local Health Authorities. The role of tariffs represents a share of financing for a university hospital while in LHAs hospitals they have the mere purpose of allowing the accounting of activities and better management control, but do not perform any financial function (Russo 2012).

Context

The University Hospital of Padua (UHP or AOUP) (North Italy) has been acknowledged as a national referral hospital of high specialization and by the regional health and social plan as "Hub" hospital of excellence of regional reference. The UH hosts multiple centers and structures of inter-companies, district and regional reference set by regional law. Transplantation activities are carried out for adult and pediatric patients of solid organs (heart, lungs, liver, kidney and pancreas) and, currently only for pediatric patients, also of hematopoietic stem cells, with expected short-term extension also to adult patients. Overall have been recognized 52 specialized regional centers: 24 in the medical area, 14 in the surgical area, 7 in the maternal-infant area, 7 in the diagnosis and care services area.

In the international arena, UHP has proved to be one of the most important Italian healthcare providers by number of patients with rare diseases taken care. At a European level, in fact, UHP

possess the highest number of centers of expertise in this area with 22 out of 24 center recognized.

According to the Memorandum of Understanding between the Veneto Region and the UHP concerning the contribution of the School of Medicine and Surgery to the assistance activities of the Regional Health Service, AOUP is reference company for the realization of the institutional collaboration between the Regional Health Service and the University of Padua.

This last information can be found in whose purpose is expressing the company's missions and vision as well as its principles and the system of values and defining the general principles of organization and the configuration of the organizational structure and governance.

The organization of AOUP is divided into Departments; Complex Operating Units (UOC, "Unità operative Complesse"); Simple Departmental Operational Units (UOSD, "Unità Operative Semplici Dipartimentali"); Simple Operating Units (UOS, "Unità Operative Semplici")

Regarding UHP mission, the Regulamentory Chart claims that the hospital realizes the integration among the assistance, teaching and research activities, contributing to the achievement of welfare objectives of the Regional Health System and favoring the achievement of teaching objectives e research of UNIPD and its School of Medicine and Surgery. UHP guarantees all welfare activities in a process that inseparably includes teaching and research activities. Inclusion in European networks and participation in international collaborations give AOUP a supranational dimension and recognition.

Values and principles of UHP are described in the following points: Centrality of the person. Equity; Quality of care; Teaching and training; Research and innovation; Transparency; Sustainability.

It's important to briefly describe UHP organizational. The current general director, and consequently the health and administrative director, was nominated in March 2021 with a three year mandate with the possibility of extension for two more years. A peculiar choice as all the directors were previously holding the same role in another local health authority of the region, not the LHA for Padua area, and their career has not seen them occupying prominent roles in the structures of UNIPD/UHP or Padua local health authority. At least one, if not all three of the previous directors of UHP had strong ties with Padua university and/or the UHP itself.

Regarding the difference in the management of the hospital in respect to previous directors a particular attention was dedicated by current directors, especially the DG, to the implementation of communication and promotion of UHP activities to the external stakeholders. In addition to an implementation of activities on social media, was decided to hold a press conference every week at which were present local media and sometimes also regional and national media depending on the topic of the conference.

Sustainability reporting project

The process of a sustainability report started in November 2021, when an active research project between AOUP and the department of Management of Ca' Foscari University was launched, and concluded in June 2022. The project consisted in an internship to be held in the Management Control Unit of AOUP (UOC Controllo di Gestione) and at the same time a research activity on the current state of sustainability reporting. From AOUP's perspective the initiator of the project was the administrative director (AD), wishing to research and eventually disclose the impact of AOUP not only at the financial level but also from the social and environmental point of view.

In November two meeting were arranged with the AD to clarify the objectives of the research project and define the steps through which come to a final proposal. At the second meeting were also present the director of the Management Control Unit (UOC Controllo di Gestione) and the director of Budget and Accounting Unit (UOC Contabilità e Bilancio). Their presence was required by the AD in order to inform them on the project, asses the eventual presence of similar past experiences, like the social report issued by AOUP 10 years ago, and the current state of knowledge regarding the matter of sustainability and reporting within these two units.

Regarding the objectives, it was made clear by the AD that one of the main goals was the desire of a better understanding of the whole impacts generated by AOUP and for which AOUP is responsible and then the feasibility to produce a sustainability report where disclose such impacts. The two directors informed that the experience of social reporting had concluded ten years before, during a time when both of them were non at the head of their units, and any lasted knowledge from this past project would be assessed; concerning the current state of knowledge of sustainability reporting in the two units, it was assessed that after that experience of social reporting, no similar project took place, thus there was a lack of skills and competencies regarding such themes.

For these reasons it was decided to start an internship to both recover documents and procedures from the experience of the social report and to better understand the norms and practices inside UHP's organization, in order to be facilitated in identifying the impacts and then translate them into a report through their disclosure. The choice to collocate the internship in the Management Control Unit was made for its positioning inside the organization, as a structure reporting directly to the General Director, well suited to understand the strategies and necessities of the directors of the UHP and also the norms, routines and practices of the units one level below (Human Resource, Procurement, Budget and Accounting, IT, Health direction and medical departments) with which the unit relates periodically i.e. to deepen knowledge of the organizational context of the UHP. At the same time research was performed to scope the current state of sustainability and sustainability reporting inside the healthcare organizations in order to identify the reason to adopt a sustainability report and if could be the same for UHP and its necessities. This first step was determined to last for 3 months and then the AD would have been informed by the research team with a proposal on what and how to report for the sustainability report of UHP. Eventually the meeting for the proposal was scheduled in late March, this because the hospital and the AD himself had to deal with the final tail of the pandemic wave thus slowing down the activities of the project.

In this meeting the AD was informed with the current situation of sustainability reporting both worldwide and at the local level, the institutional pressures, the standards used, how and if the healthcare sector responded, and were described to the AD the potentials benefits for AOUP in adopting the tool of sustainability report as described in the first two chapter of this work:

- better knowledge of processes inside the organization;
- better risk management;
- development of corporate culture;
- stakeholder engagement and better communication;
- gain in legitimacy, from society and institutions.

It was also reported that in these months inside AOUP the research assessed a low level of knowledge by AOUP's personnel towards the theme of sustainability in general and sustainability reporting. However, it was recognized the presence of some practices that could be traced as "sustainable" and thus be included in a sustainability report, such as the social reports submitted ten years before and existing requirements for the accreditation of the hospital services, the quality certifications, the clinical studies, medical waste, clinical and employee risk and the management commentary through which disclose also non-financial information.

At the same time a necessity was highlighted: it was stressed that to submit a comprehensive and institutionalized report, the bottom-up initiative of AOPD would have needed the top-down support of the Veneto Region in order to set common standards and thresholds, thus the report could be correctly evaluated and be meaningful for all the stakeholders.

The AD acknowledged the pressures towards organizations to disclose social and environmental impacts, coming not only from the institutions but also from society as a whole. Moreover, he showed interest for the potential benefits resulting in the adoption of a sustainability report particularly the engagement with the stakeholders, hence the possibility of improving the communication towards them, an important aspect for the current leadership.

Regarding the standards the GRI framework resulted to be the best suited for UHP as the modular system and the broad content index with a various range of topics, even without the presence of a standard for the healthcare sector, seemed to be easily adopted and understood also by the employees at the different level of the organization.

As a result of this meeting, the AD gave mandate to the evaluation and extraction of indicators in order to create a sustainability report for UHP that could be the starting point for further implementations of the report itself. This because were acknowledged time constraints, as the project was expected to be delivered in June, and also the need of a more thorough engagement with the stakeholder to deliver an inclusive report and a better definition of material topics, particularly with the Veneto Region for what said above. Thus it was clear that the report would not be considered "complete" in all of this parts but would be used as a tool to start a process of "practicalisation" towards sustainability reporting inside UHP.

The approach towards the creation of the sustainability report for UHP can be sum-up considering the following sources of information:

- GRI framework. GRI foundations give the possibility to organizations who chose its standards to report "with reference", thus not strictly complying with the disclosure of material topics like when an organization decides to report "in accordance". That said, this work use the content index containing all the topics that GRI consider to be disclosed as a blueprint for the disclosure of AOUP's standards. The standards in UHP's sustainability report will be divided in 4 dimensions (general information, economic, social, environmental).

- UHP Social Report. The past experience in social reporting has somehow performed a sort of rudimental materiality analysis and the identification of major stakeholders. Also some indicators are used in the social dimension of the sustainability report.
- Existing examples of sustainability reports and practices. Case studies reported in the second chapter like Cleveland Clinic Sustainability & Global Citizenship Report and the Integrated Report of "Azienda Ospedaliero Universitaria" of Ancona, are taken as reference to complement the other sources of information.
- Existing requirements for UHP. There are several requirements and internal reports that can be object of interest for a sustainability report. Among the others the managing commentary for the disclosure of financial and non-financial informations, the certifications for quality of services and accreditations of the hospital structures, etc.
- Direction indications. To complete the report with entity-specific indicators this work relates to the indication of the top management, and particularly the AD, to identify those indicator that can be considered material for the UHP activity.

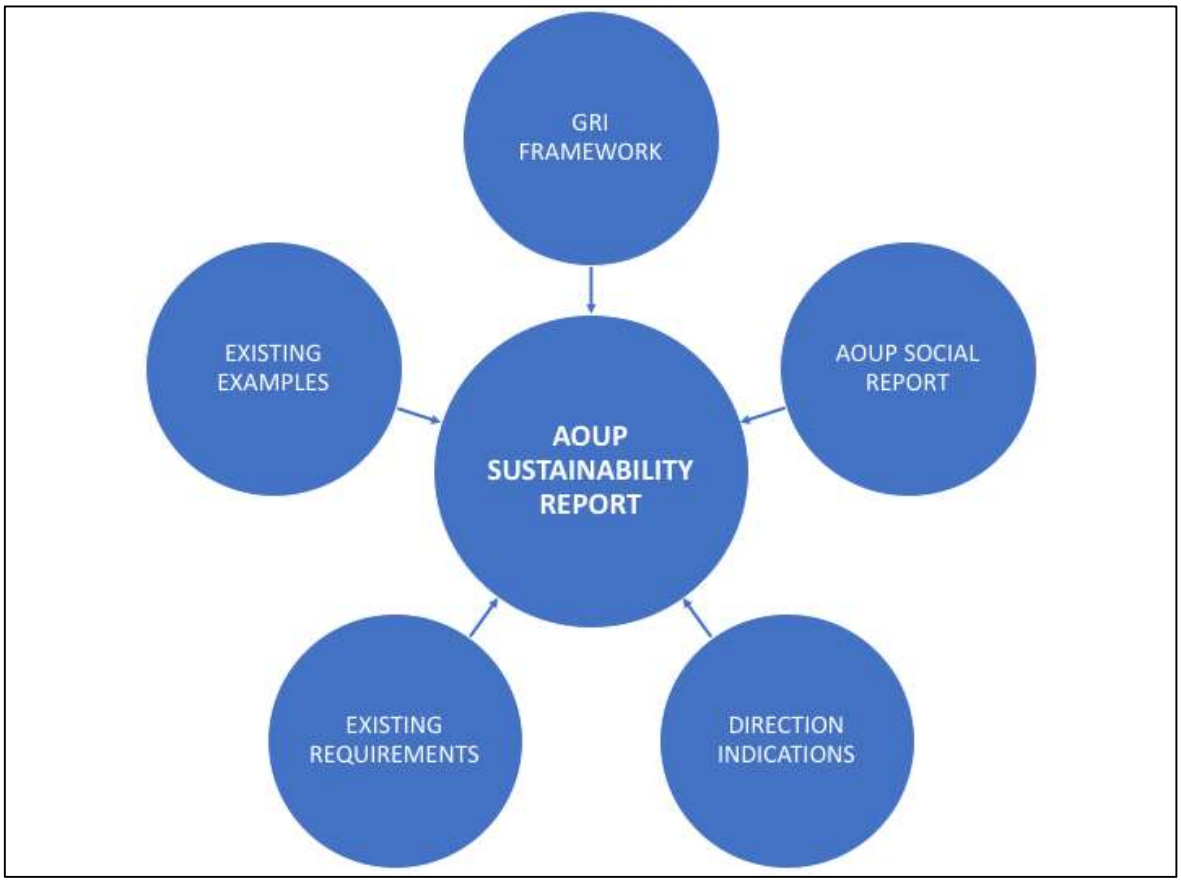


Figure 1: Enabling condition for sustainability report

General information dimension

This section takes as references the indications provided in GRI2 “General Disclosures” and contains disclosures for organizations to provide information about their reporting practices; activities and workers; governance; strategy, policies, and practices; and stakeholder engagement. Thus to give insight into the profile and scale of the organization and provide a context for understanding their impacts.

To report about its activities AOUP describes its value chain and the organization’s activities, products, services, and markets served; GRI Disclosure 2-6 “Activities, value chain and other business relationships" specifies that the organization is not required to provide a detailed description of each activity in its value chain. Instead, it can provide a high-level overview of its value chain.

For AOUP, and more broadly by a healthcare organization, that can be translated in a summary of the principal activities carried out by the organization: assistance (scheduled or for emergency hospitalizations; surgery; emergency room; outpatient) and, especially for university hospitals, research and teaching activities. The following tables displays the assistance activities with a time reference.

	2019	2020	2021
Hospitalizations	48.174	50.605	51.362
Day hospitalizations	12.136	10.434	10.415
Total hospitalizations	60.310	61.039	61.777
Value of hospitalizations	€ 273.282.197	€ 286.492.032	€ 298.225.092
Average hospital stay	7,64	8,03	8,00
% urgent admissions	60,52%	62,64%	64,47%
Outpatient services	6.299.531	6.305.207	6.789.443
Value of outpatient services	€ 102.836.941	€ 133.515.115	€ 131.882.735
Surgical acts performed	48.966	56.408	61.028
Emergency room accesses	117.439	107.923	129.153

Table 1: AOUP main activities over the last three years

The table shows the activities that occurred in the last 4 years. The increase in activities in 2020 is due to the acquisition of the other city hospital of the city of Padua, belonging to the local health authority. It can be noted the decrease in the daily hospitalizations because of the COVID pandemic as most of them are elective activities.

In some cases analyzing the provenience of the patients can also help understanding the healthcare context, especially what occurred in the pandemic phase. GRI disclosure 2-6 also requires to specify together with the activities the markets served. Grouping the last year

hospitalization by gender and classes of age (Table 2), and by the origin of the patient (Table 3) highlights that AOUP activities cover the entire healthcare sector and serve a "market" that goes beyond the city district.

	2019			2020			2021		
	Women	Men	Total 2019	Women	Men	Total 2020	Women	Men	Total 2021
0-14	5.061	5.975	11.036	4.092	5.321	9.413	4.631	5.363	9.994
15-64	14.652	11.736	26.388	13.676	11.952	25.628	13.698	11.865	25.563
65+	10.225	12.661	22.886	11.958	14.040	25.998	12.140	14.080	26.220
Total	29.938	30.372	60.310	29.726	31.313	61.039	30.469	31.308	61.777

Table 2: AOUP hospitalizations by gender and age class

	2019	2020	2021
Padua district	40.600	43.735	44.082
Veneto region	12.795	11.558	11.910
Italy	6.625	5.471	5.494
Foreigners	290	275	291
Total	*60.310*	*61.039*	*61.777*

Table 3: AOUP hospitalizations by provenience of the patient

Moreover, confronting the hospitalization with the complexity of the activities carried out (form A, more complex, to D less complex) can also highlight the nature of a national and regional referral hospital whose activities are considered "specialized". To evidence more this aspect can be considered the activities of similar university hospitals and/or a comparison with the nearby local health authorities.

Another activity that discloses the market served, is the one in the emergency room of the hospital. It also can be linked with social activities as AOUP ensures a mediation service for people with disabilities or who do not speak Italian or common languages.

	Adult	***Pediatric***
Italy	90.630	17.550
Romania	3.645	1.365
Morocco	1.537	485
Moldova	1.337	474
Nigeria	1.188	324
Albania	932	337
Tunisia	796	67
China	670	310
Bangladesh	629	227
Pakistan	448	77
Sry Lanka	336	121
Philippines	303	63
Ukraine	253	64
Senegal	244	23
India	211	68
Serbia	203	41
Others	3.631	564
Total	*106.933*	*22.160*

Table 4: AOUP Emergency room admission by provenience of patient (adult and pediatric) in 2021

Further analysis on those who were discharged with a withe code (i.e. patient with a minor ailment or injury and with mild suffering, whose conclusion of the clinical procedure can be

delegated to the General Practitioner) could give insights not only on the efficiency of the territorial health services but also on occurring social issues in the district where the emergency room is located, such as students from other regions not engaged with local healthcare services, foreigners temporarily present, etc.

According to its company's deed, AOUP is the organization of reference for the realization of the institutional collaboration between the Regional health service and the University of Padova (UNIPD). It is recognized that the assistance activity is inextricably intertwined with teaching and research, as institutional tasks of UNIPD. Therefore research is considered a strategic activity for AOUP, the Unit for the Clinical Research (UOSD Progetti e Ricerca Clinica) established for regional law, acts as a link between the University and the regional health system, thus favoring a continuous evolution of research and of the paths useful for supporting the "preclinical-clinical experimentation" chain. It has the task of providing adequate organizational and administrative/accounting support to AOUP, acting as a link between the ethical committee, researchers, sponsors, Operational Units involved and administrative structures.

As shown by the table there is a strong increase in the activity of the unit, as it has been upgraded by AOUP in 2020.

Studies can be divided into those who have a sponsor ("sponsored" or "profit" studies) for which the sponsor manages, finances and takes responsibility for the study, and those which do not have an industrial purpose and are aimed at improving clinical practice.

	2018	2019	2020	2021
Profit	100	75	69	204
Non profit	73	70	67	92
Total	173	145	136	296

Table 5: AOUP profit and non-profit studies approved in the last 4 years

The Ethics Committee issues an opinion for all studies, it can be suspended pending additions and changes by the promoter, following which the committee decides to express itself in favor or not, table 7 shows the opinions of the Ethical Committee regarding studies in the period taken as reference.

	2018	2019	2020	2021
Approved	106	106	114	179
Approved under conditions	61	37	17	16
Acknowledgment	7	2	5	101
Suspended	9	13	7	10
Not approved	6	2	1	1
Total	189	160	144	307

Table 6: activity of the Ethical Committee

The last table on research and clinical experimentation divides the studies that were started in the reference period into those promoted directly by AOUP and those in which it participates

in partnership with other entities. Further insights into this aspect can measure the impact of AOUPs research with respect to involvement with other public and private institutions.

	2018	2019	2020	2021
AOUP	51	28	26	137
Others	123	117	110	159
Total	174	145	136	296

Table 9: accepted studies sponsored by AOUP and by external institutions

Regarding the teaching activities, a sustainability report for a healthcare organization can report the attendance of the trainees (doctors in training) who have transited through the years, as knowledge gained during the daily assistance activities constitutes the teaching basis for students and graduates. This will be displayed later in this paragraph as GRI specifies to report the presence of not employed workers. For employees GRI Disclosure 2-7 "Employees" request to report the total number of employees (temporary, full-time, part-time) and a breakdown of this total by gender and by region.

	AOUP			UNIPD		
	Women	Men	Total	Women	Men	Total
Doctors (managers)	369	375	744	85	171	256
Non-doctors managers	53	6	59	52	12	64
Nursing staff	2.454	544	2.998	10	1	11
Health technicians	305	142	447	48	16	64
Professional managers	3	3	6	0	0	0
Professional staff	0	1	1	0	0	0
Technical managers	2	2	4	2	3	5
Technical staff	88	150	238	10	29	39
Social health operators	839	207	1.046	0	0	0
Administrative managers	7	3	10	0	0	0
Administrative staff	304	89	393	52	17	69
Total	4.424	1522	5.946	259	249	508

Table 7: AOUP permanent employees at 31/12/2020 (head count)

In a public healthcare organization, employees are divided into healthcare, technical, professional and administrative personnel. Table 10 divides also employee in managers (responsible of UOC or UOS) and staff, doctors of public hospitals are always classified as managers even if they are not responsible for a UOC/UOS. Particular of the university hospitals and AOUP is the presence of the university personnel whose half of its cost is covered by UNIPD. Data for 2021 are still not provided by the hospital, regarding temporary employees a there are 13 fixed-term contract employees, 26 with project contract and 84 with scholarships contract.

As previously mentioned, another peculiarity of public hospitals, especially the ones linked with universities, is the presence of doctors and other graduates with health related degrees (dentistry, pharmacy) specializing in specific schools of medicine or related high specialization schools. Those residents spend their time in AOUP wards and outpatients clinics for a period from 3 to 5 years, to gain knowledge and experience supported by AOUPs and UNIPDs doctors. From AOUP point of view they are not working employees as they are fully employed by university, and GRI Disclosure 2-8 requires to reports their total number.

Numbers in the table above show a relevant impact in numerical terms of residents of the different 47 schools of medical specialization and divided in the 4 AOUPs medical departments, thus highlighting the contribution to teaching by AOUP.

Data on residences can be relevant to evaluate how much a health organization in carrying out its activity is on the one hand held back by the presence of an excessive number of trainees in the first years (usually first and second) and on the other hand helped by the presence of doctors almost at the end of their specialization path and therefore able to replace a specialized doctor. Moreover, from both the health and superior education systems perspective this can help evaluate a correct allocation of trainees, in fact, recent trends show an ever-increasing need for doctors to cope with the generational turnover and an ever-increasing demand for healthcare assistance.

Relevant for the city of Padua can be the presence of first-year trainees from outside the province or region as competition to access specialization schools is organized on a national level. There are 487 trainees at first year of specialization coming from outside the Padova district that are likely to settle their residence in the city, giving an impact from a social and economic point of view.

General information about AOUP organization and governance are required to be disclosed by GRI2. It is specified that if the organization intends to publish a standalone sustainability report, it does not need to repeat information that it has already reported publicly elsewhere, such as on web pages or in its annual report. In such a case, the organization can report a required disclosure by providing a reference in the GRI content index as to where this information can be found (e.g., by providing a link to the web page or citing the page in the annual report).

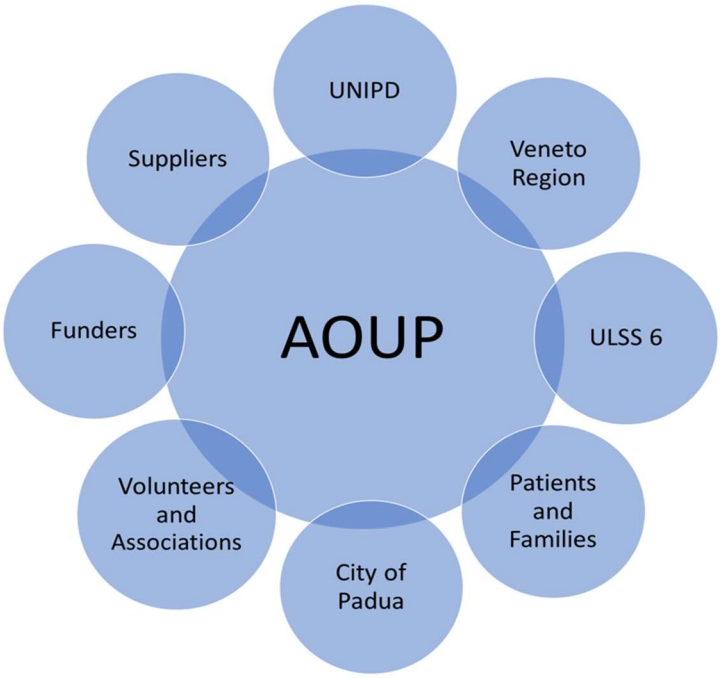
As exposed in other reports that have been consulted could be useful to disclose the number of Departments and Complex Operating Units as well as the company's organizational structure with the current organizational chart of AOUP.

According to UHP Regulamentory Chart and as the organizational chart show, there are 25 Units supporting the activities of the General, the Health and the Administrative Directors. Then in the health area 128 units (91 UOC and 37 UOSD) are divided into 4 Departments: Medicine, Surgery, Women and Child, Diagnostics. Besides the Director General, who is nominated by the president of Veneto region in consultation with the Rector of UNIPD, the other institutional bodies of AUOP are the Board of Auditors ("Collegio Sindacale"), the Directive Office ("Organo di Indirizzo") and the Board of Directors ("Collegio di Direzione").

The disclosures in the section of GRI2 regarding information about the organization's sustainable development strategy should be implemented once the management decides the methods and procedures for submitting AOUPs sustainability report. In this section are also required information about AOUP overall policies and practices for responsible business conduct. In this work such information is presented in the following paragraphs when addressing the topics.

The last part of disclosures in the general information dimension asks to provide information about the organization's stakeholder engagement practices, including how it engages in collective bargaining with employees (Disclosure 2-29 "Approach to Stakeholder Engagement"

and Disclosure 2-30 “Collective Bargaining Agreements”). AOUP external stakeholders have



been identified by the organization from the past experience with social reporting

As stated in the previous paragraph, deeper analysis of the stakeholders and new practices of engagements will need to be implemented in order to better identify AOUPs material topics and its actual and potential impacts.

Regarding the second disclosure of this section, AOUP employees are all covered by collective bargaining agreements. As stated by the Company’s Deed relations with trade unions represent, for the Company, an indispensable tool for the proper management and enhancement of human resources. The system of trade union relations is structured consistently with the aim of balancing the interest of employees in improving working conditions and professional growth with the need to increase and maintain the effectiveness and efficiency of the services provided.. Relations with trade unions are regulated by national collective labor agreements (CC..NN.LL). which identify the matters subject to negotiation, consultation, consultation and information.

Figure 3: AOUP external stakeholders

Economic dimension

According to GRI standard 201 “Economic Performance” an organization is expected to compile information for economic disclosures using figures from its audited financial statements or from its internally-audited management accounts. The reclassification of the income statement according to the “added value” method represents

the measure of the residual "wealth" that the institution has managed to create, once all the costs necessary for the production of health services have been covered, and where such value has been distributed. This method responds to GRI Disclosure 201-1 “Direct economic value generated and distributed” and has been used in several sustainability reports of Italian organizations.

	2019	2020	2021
A. PRODUCTION VALUE	605.334.640,39	661.956.904,97	705.508.428,34
Grants related to income (net adjustments)	103.903.675,74	121.440.615,33	134.426.602,07
Use of provisions for unused shares of tied contributions from previous years	1.229.938,74	1.368.222,09	14.334.558,58
Revenues from health services	456.569.636,44	514.058.767,20	532.965.958,59
Sharing of expenses for health services (Ticket)	11.131.663,25	9.141.642,13	9.568.469,96
Other revenues and incomes	32.499.726,22	15.947.658,22	14.212.839,14
B. PRODUCTION COSTS	345.412.117,61	374.823.547,46	418.024.888,57
Purchases of health goods	224.368.310,04	243.096.019,88	256.989.252,01
Purchases of non-health goods	2.850.715,93	3.308.591,51	3.175.744,24
Purchases of health services	46.628.056,58	47.099.018,15	58.046.422,70
Purchases of non-health services	48.790.791,39	56.665.072,88	63.654.685,23
Maintenance and repair	19.794.613,49	23.510.493,47	24.059.886,00
Cost of rents and leases	5.046.055,40	5.496.274,77	5.869.024,69
Other operating expenses	2.087.414,74	3.150.912,40	3.429.210,26
Change in inventories	4.153.779,96	-7.502.835,60	2.800.663,44
VALUE ADDED (A-B)	259.922.462,78	287.133.357,51	287.483.539,77

Table 8: Production and value costs for AOUP in the last three years, values in euros

The table above highlights that the value of the production, generated mainly from revenues for healthcare services and operating grants, covers production costs (mainly Goods, Services and Maintenance) generating value in 2021 for 287,5 million euros. Further analysis on on the reclassification of the financial statements of health companies can be useful to highlight how the added value is then distributed to the various stakeholders. The following table shows how the costs of personnel and then of the machinery for the operating management of AOUP impact on revenues. It must be said that it is not sure that this approach can really make “visible” the value creation process of a public healthcare organization.

	2019	2020	2021
VALUE ADDED	259.922.462,78	287.133.357,51	287.483.539,77
Personnel Cost	39.739.587,34	11.839.410,86	5.585.371, 15
EBITDA	39.739.587,34	11.839.410,86	5.585.371, 15
Amortization, Depreciation, Provisions	33.627.000,25	35.408.689,00	58.196.796,48
Amortization of intangible fixed assets	4.954.147,03	4.547.060,59	4.349.945,16
Depreciation of tangible fixed assets	14.136.943,83	15.016.076,41	17.990.629,13
Depreciation of fixed assets and credits	637.010,49	627.790,60	767.773,27
Provisions for the exercise	13.898.898,90	15.217.761,40	35.088.448,92

EBIT	6.112.587,09	-23.569.278,14	-54.611.425,33
RESULT NOT CORE BUSINESS	-736.227,72	2.043.895,85	-2.046.515,75
Total financial income and expenses	-117.262,35	-4.602,04	-1.498,07
Total extraordinary income and expenses	-618.965,37	2.048.497,89	-2.045.017,68
OPERATING RESULT OF COMPANY MANAGEMENT	5.376.359,37	-21.525.382,29	-54.657.941,08
Total taxes and duties	17.045.760,06	20.743.936,44	22.173.995,04
ECONOMIC RESULT BEFORE STERILIZATIONS	-11.669.400,69	-42.269.318,73	-76.831.936,12
Share of contributions to capital allocated for the year	17.306.460,64	17.894.136,55	20.087.082,37
NET EXERCISE INCOME/LOSS	5.637.059,95	-24.375.182,18	-56.744.853,75

Table 9: AOUP financial results of last three years, values in euros

Through cost accounting tools healthcare organizations can further analyze the value generated by their activities. Recently AOUP has analyzed its research activity, in order to applying for being acknowledged as a scientific research institute. Preliminary results are shown in the following table.

	2019	2020	2021
Grants related to income from the Ministry of Health	840.486,08	1.159.851,94	1.770.248,17
Grants related to income from the Region	2.270.358,90	2.546.426,73	2.099.052,28
Grants related to income from other public bodies	2.099.590,30	1.007.345,93	735.419,38
Grants related to income from private	2.562.347,09	2.196.355,34	2.917.770,76
TOTAL RESEARCH CONTRIBUTIONS	7.772.782,37	6.909.979,94	7.522.490,59
Purchases of goods and services	419.218,81	424.235,68	419.327,74
Healthcare personnel	2.441.186,89	2.259.332,01	1.614.707,67
Administrative personnel	840.814,82	805.970,84	792.341,31
Technical - professional personnel	174.800,56	138.508,47	67.709,09
Amortization of intangible assets	160,31	5.678,68	17.935,55
Depreciation of tangible assets	56.144,50	120.893,80	143.119,98
Diagnostic equipment	2.923,88	5.115,84	10.907,37
Dcientific equipment	46.228,84	95.988,58	96.793,68
Other direct costs	6.991,78	19.789,38	35.418,93
Provisions	3.539.702,91	2.848.930,77	4.146.299,44
TOTAL DIRECT RESEARCH COSTS	7.472.028,79	6.603.550,25	7.201.440,78

Table 10: AOUP direct and indirect costs for research in 2021, values in euros

National legislation requires public administrations to publish indicators of timeliness of payments relating to purchases of goods, services and supplies. AOUP index is defined in terms of weighted average payment delay based on the amount of the invoices. The value of the payment timeliness indicator is calculated by multiplying the amount paid to the supplier for each invoice by the days of delay or advance with respect to the legal deadline set at 60 days from the receipt of the invoice. Compared to 2020, the value of the annual average index shows an improvement, passing from an annual average value of -10,44 to a value of -10,58. During 2021, the indicator reached the target required by the legislation both as a quarterly average and if calculated for the entire year, settling at values below zero. Translated into average payment

days, the indicator represents a situation that sees the average payment times in the year attested approximately to 50 days.

Further analysis related to suppliers and procurement practices can be the proportion of spending on local suppliers, as required by GRI Disclosure 204-1. By supporting local suppliers, an organization can indirectly attract additional investment to the local economy. Local sourcing can be a strategy to help ensure supply, support a stable local economy, and maintain community relations.

Social dimension

Regarding the Social dimension of healthcare organizations, most reports respond in this section to the issues coming from both employees (employment turnover, their health and security at work, training and equal opportunities) and patients (safety, complaints and satisfaction, privacy). Moreover, it can be shown the impacts of the organizations on the local communities, defined as individuals or groups of individuals living or working in areas that are affected or that could be affected by the organization's activities.

GRI Disclosure 401-1 "New employee hires and employee", requires organizations to represent the number of employees hired during the reporting period, grouped by age group and gender.

The following two tables display total employee of AOUP divided by gender and age and the total AOUP employees hired at the end of 2020, divided by gender.

	20-30		30-44		45-59		60+	
	Women	Men	Women	Men	Women	Men	Women	Men
Doctors (managers)	0	0	164	124	141	144	64	107
Non-doctors managers	0	0	15	1	26	3	12	2
Nursing staff	373	89	479	283	1.054	615	73	32
Health technicians	34	12	97	52	159	60	15	18
Professional managers	0	0	0	0	1	3	2	0
Professional staff	0	0	0	0	0	1	0	0
Technical managers	0	0	0	0	1	2	1	0
Technical staff	2	3	2	17	64	107	20	23
Social health operators	22	7	162	48	561	128	94	24
Administrative managers	0	0	0	0	4	1	3	2
Administrative staff	4	5	56	15	202	50	42	19
Total	435	116	975	540	2.213	1.114	326	227

Table 11: AOUP employees divided by gender and age classes at the end of 2020, head count

It can be observed in the table above that a consistent share of permanent employees is shifting towards more high age classes, especially nursing and administrative staff, thus in next years AOUP may need a substantial staff turnover that has already started as shown in the table below.

New Hires	Women	Men	Total
Healthcare	753	359	1.112
Professional	2	2	4
Technical	303	105	408
Administrative	41	11	52
Total	1.099	477	1.576
Turnover rate	24,84%	31,34%	26,51%

Ceased	Women	Men	Total
Healthcare	213	99	312
Professional	1	0	1
Technical	45	29	74
Administrative	22	6	28
Total	281	134	415
Turnover rate	6,35%	8,80%	6,98%

Table 12: employees hired and ceased at 31/12/2020 divided by gender, head count

Regarding employees' dynamics, a peculiar issue came out in the last months of 2021 as to tackle COVID pandemic mandatory vaccination was required for personnel working in the healthcare sector, thus resulting in a part of employees being suspended, as shows table 13.

	August	September	October	November	December
Suspended personnel	29	97	169	254	254
Returned personnel	0	7	14	21	28
Absent personnel	29	90	155	233	226

Table 13: AOUP suspended personnel in 2021, returned means vaccination/immunity after contagion

AOUP through its Prevention and Protection Office ("UOS Servizio Prevenzione e Protezione") promotes actions aimed at preventing and reducing risk for its workers.

	2019	2020	2021
Needlestick	173	170	121
Other injuries/sicknesses	217	212	303

Table 14: injuries of AOUP employees, reported in the last three years

Moreover, a recent assessment was made to monitor the agressions to health operators. AOUP reported 86 cases of aggression in 2021, about half of them happened in the Medicines Department in the afternoon, usually the period when familiars can visit the patient, and 73% of the total of the aggression (63 cases) are reported in the wards (corridors and rooms). The aggressor 74% of the time is identified as the patient and 19 times has been identified as a familiar/visitor, in 3 cases the aggressor was not identified. Also in 2021 were issued by AOUP 10 courses in 29 editions regarding employee security, for a total of 435 hours of training distributed to 1450 participants. Regarding employees training and education, GRI topic standard 404 requires to report information about employees training (in hours per employee) and education-related impacts, and how the organization manages these impacts. Internal training in AOUP is provided annually by implementing the activities reported in the Company Training Plan ("PFA - Piano Formativo Aziendale").

All the training activities listed in the PFA are organized into macro areas that are topics of interest declared by the Veneto Region: clinical-care outcomes, organizational models, organizational-welfare models, age/diversity management and safety of workers in the workplace.

AOUPs Training Plan is divided in two levels:

- strategic level, managed entirely by Training Unit (budget, accreditation, planning, delivery, final report);
- department /complex structure/operating unit level, promoted by individual units upon request from their Director responding to training needs of the specific structure. The budget used is the one available by the requesting Unit; the Training Unit remains responsible for accreditation checks payments.

In 2021 have been organized 97 training events and were involved 3571 employees resulting in average 30,6 hours of training per employee. Further implementation regarding training hours per employee divided per gender and employee category will be needed to fully comply with GRI standards.

GRI Disclosure 405-1 "Diversity of governance bodies and employees", requires organizations to disclose the percentage of individuals of diversity categories within the organization's governance bodies and the percentage of employees of diversity categories per employee

category. Gender and age class can be considered diversity categories considering AOUPs context,

To collect further details regarding the percentage of individuals of diversity categories within the organization's governance bodies will be needed the age of university personnel employed, most of which is in charge of AOUP UOCs. It could also be involved the Single Guarantee Committee ("CUG - Comitato Unico di Garanzia") for equal opportunities, workers wellbeing and against discrimination, AOUPs reference body for this topic. The body converges the competences of the previous Equal Opportunities Committees and Committee on the phenomenon of mobbing. The tasks of the CUG include the preparation of positive action plans to promote equality between men and women in the work environment. The "Positive Actions Plan 2022-2024" as well as the previous two years plan, in the action number 5, promotes training courses on equal opportunities and gender issues addressed to all staff.

Moving towards the social impacts of healthcare organizations, patients safety plays a primary role in guaranteeing an adequate quality of care. For this reasons AOUPs has instituted the Clinical Risk Office ("UOS - Rischio Clinico") whose mission is to develop a corporate risk management system aimed at increasing safety of patient and of all operators, supporting the professional activity of all operators, improving corporate image and patient confidence, reducing the possibility of litigation between the patient and AOUP.

GRI Disclosure 416-2 "Incidents of non-compliance concerning the health and safety impacts of products and services" substantially request an healthcare organization to report incidents of non-compliance within the reporting period.

	2017	2018	2019	2020	2021
Fallings of patient	444	495	426	431	675
Other incidents	504	676	1310	1326	1391

Table 15: AOUP trend of reported incidents in last 5 years

In 2021, 2066 incidents were reported by health professionals. The increase to the previous year is due to the introduction of a new procedure and the obligation to report incidents through the incident reporting portal. Incidents excluding fallings of patients, slightly increased too, resulting in 1391 cases reported.

For each report received, the type of error/criticality is defined in the following categories:

	n.	%
Fallings of patient	675	32,7%
Inaccuracy of data	466	22,6%
Infection	166	8,0%
Inadequate drug prescription	134	6,5%
Inadequate provision	106	5,1%
Aggressions	86	4,2%
Wrong device positioning/functioning	43	2,1%
Inadequate diagnostic procedure	28	1,4%
Delay of provision	18	0,9%
Reaction to drugs	17	0,8%
Delay of surgical provision	14	0,7%
Event related to blood administration	13	0,6%
Failure to provide diagnostic procedure	12	0,6%
Delay of drug prescription/administration	11	0,5%
Injurie from decubitus posture	6	0,3%
Failure to provide assistance	5	0,2%
Delay of diagnostic procedure	4	0,2%
Inadequate surgical performance	4	0,2%
Failure to provide drug prescription/administration	3	0,1%
Delay of therapeutic procedure	2	0,1%
Failure to provide therapeutic procedure	1	0,0%
Other	241	11,7%
Total	2.066	

Table 16: AOUP patients incidents in 2021

To fully comply with GRI standards in incident reporting, AOUP should also include in its disclosures incidents of non-compliance that resulted in a fine or penalty or in a warning.

GRI topic standard 417 requires customer access to accurate and adequate information on the positive and negative economic, environmental, and social impacts of the services they consume – both from service labeling and a marketing communications perspective. To comply with the issue healthcare organizations have designed in their structure the Public Relations Office (URP).

Besides complaints in 2021 AOUP received 339 praises given to 89 units of the hospitals by users.

The survey to determine AOUP perceived quality is carried out through the administration of a questionnaire, the following table shows the perceived quality index in recent years. It must be denoted that due to the pandemic the administration of questionnaires has been slowed down thus current index is not to be considered accurate.

	2017	2018	2021
Perceived quality index	81%	82%	85%

Table 17: AOUP perceived quality index

Environmental dimension

Hospitals are energy-intensive organizations operating without interruptions, their energy costs can constitute the second item of expenditure, after personnel. GRI topic standards 302-303-304-305-306 and 308 requires organizations to disclose its direct and indirect environmental impact regarding energy consumption, emissions into air and water stewardship as long as assessing the environmental impact of their suppliers.

Regarding energy consumptions and emissions issues, after a confrontation demanded by the AD with AOUPs Technical Office ("UOC Servizi Tecnici e Patrimoniali") it appeared that such an approach had not yet been implemented. One of the engineer senior executives pointed out the need by the office to create a figure (i.e. "energy manager") for monitoring and implementing protocols for usage of energy besides fuel consumptions and water management. It was formulated a preliminary approach towards energy consumptions inside AOUPs facilities as shown by the following table:

	2019	2020	2021
Primary energy (kwh)	19.777.150	21.113.189	16.832.811
Self-generated energy (kwh)	18.045.354	16.059.000	15.047.400
Natural Gas (m3)	6.432.420	6.747.039	-

Table 18: energy consumed by AOUP in last three years (2021 without November and December data)

The total primary energy consumed for heating, cooling, lighting and the operation of electrical equipment in an area of about 219thousand square meters amounts to 16.832.811 kwh in 2021

(not considering November and December), while natural gas amounted in 6.757.039 cube meters in 2020.

GRI Disclosure 302-1 also requires to specify if energy is self-generated or purchased from external sources and if it comes from renewable sources (wind, hydro or solar) or from non-renewable sources (coal, petroleum or natural gas).

AOUPs is provided with a cogeneration plant, natural gas powered, capable of simultaneously producing electricity and thermal energy which can be converted into hot water, superheated water and/or steam. This solution can lead to significant energy and economic savings, as well as significantly reducing the impact on the environment in terms of CO2 emission. Thus the self-generated energy amounts to XX in 2021, 47% of the total.

Regarding the source of energy consumption the cogenerators are gas powered, the supply of electricity is decided through a national tender (CONSIP) thus limiting the actions available to AOUP whether to source renewable energies for its energy consumption.

Further steps will be required to asses AOUPs both direct and indirect emissions and to implement plans to reduce its environmental impacts. Moreover, in evaluating investments to be made to improve current environmental impact, must be taken into account that AOUPs is planning to move most of its activities in a new facility that will be built in another area of the city.

The disposal of waste in healthcare facilities is of considerable importance due to the complexity of the waste produced, especially hazardous ones and the potential risks that their handling entails for the health and safety of healthcare workers, patients and for the environment.

GRI topic standard 306 contains disclosures for organizations to report information about their waste-related impacts, and how they manage these impacts. The disclosures enable an organization to provide information on how it prevents waste generation and how it manages waste that cannot be prevented, in its own activities and upstream and downstream in its value chain.

For hazardous waste there are differentiated deposits that allow AOUP to constantly have an updated stock situation and consequently send the waste for disposal in accordance with the regulations in force. Hazardous waste produced by AOUP can be classified into medical waste with infection risk, chemical waste, waste of electric and electronic equipment, batteries and others. As the following table displays, hazardous medical waste represents the largest production waste, followed by chemical ones.

	2019	2020	2021
Hazardous medical waste with Infectious risk	904.186	1.303.274,13	1.521.721,50
Chemical waste	133.392	176.677,10	180.897,36
Waste of Electric and Electronic equipment	24.115	32.538,00	39.380,00
Batteries	644	1.923,00	1.517,00
Other	16.333	297,00	205,00
Total	1.078.670	1.514.709,23	1.743.720,86

Table 19: AOUP hazardous waste in last three years, measured in kg

Also for this issue further analysis are required, regarding for example other types of waste generated by AOUP and the description of the disposal also for hazardous ones. Thus to provide a holistic overview of waste generation and its causes, which in turn can support the organization in identifying opportunities for waste prevention and for adopting circularity measures. In this way, the organization can go beyond mitigating and remediating negative impacts once waste has been generated and move towards managing waste as a resource.

6. Preliminary conclusion

Considering this essential experience, several aspects emerge regarding the document's content and organisation. These can offer a valuable contribution to theory and practice while considering the limitations of the subject matter. It is an experience gained within a highly complex public health organisation but with previous experience in social reporting. This attitude is not always observable. By their nature, hospitals have a high social value, and, provided they are perceived as a primary good, they are to be accountable for their work to the community. This research and its implications have provided an overview of how sustainability report can be a tool to meet the needs of healthcare organizations. The results emerging from the research show how the development of a sustainability report can be an opportunity to survey the sustainability practices in use, the degree of involvement of the organization and the overall objectives.

As with all processes requiring stakeholder involvement, sustainability reporting must be inclusive, participatory and communicated internally and externally. Concerning content, the choice of going for more traditional versions, such as GRI or more innovative ones, such as IR, depends exclusively on the perspectives to be established, also in exposing governance itself to a broader analysis process. With its stakeholder-centred approach and materiality analysis, the report can help better understand the needs of and improve communication with patients and their families, employees, and institutions. This is even more accurate for AOUP and all university hospitals, which integrate research and teaching into the assistance activity and, consequently, must also interface with the needs of prominent stakeholders such as universities.

According to the World Health Organization, empowerment, accountability and participation are all drivers of health equity, and meaningful implementation of a sustainability report can enhance them. A healthcare organization can achieve greater institutional and social legitimation through a sustainability report. Sustainability reporting also allows for better managing environmental, social and governance risks, granting a deeper understanding of the impact of its internal processes and strategies and creating a corporate culture intended as a "real" emancipatory change in thinking and performing activities.

The implementation of sustainability report for an healthcare organization in Italy, as described in the last paragraphs of this work, can initially take place at no great expenses of resources and time. The preliminary indicators can be included in the management commentary attached to the financial statement of the year or included in its annual performance report, thus starting a "practicalisation" process, whereby sustainability rules and routines are adopted and spread inside the organization.

However, in order to maximize the result out of the implementation of a sustainability report, a broader involvement of stakeholders at all levels is necessary for AOUP, together with a constant dialogue with relevant experts.

It is important to engage with employees in order to avoid the risk that the implementation of the sustainability report be reduced to a short-term experience, matching the mandate of the three directors of the company, as happened for example to AOUP with the

experience of the social reports. This requires a high commitment by the whole organization, which can only be achieved through a well-defined process of organizational change. Indeed, as reported by studies on the feasibility of integrated reporting in healthcare organizations, employees at different levels appear not to be involved in the definition of value creation and, thus, in the integrated thinking process. Moreover, this change in attitudes is not likely to happen for entities that already have a strong organizational culture acting as a cultural control over personnel, results, and actions, so that integrated thinking clashes with the latter.

It is further necessary to engage with the Regional Authority, in the case of AOUP and Italian healthcare organizations, or with other relevant institutions and with major experts via so-called multistakeholder initiatives. This will help define common sector standards and thresholds without which it would not be possible to compare the impacts of the various organizations on communities; it will make filling the legitimacy gap in the hospital sector possible because the adoption of sustainability disclosure practices eventually matches the expectations of different stakeholders. This also to put in place an effective monitoring and enforcing mechanism. Finally, an important reflection must be devoted to how the information disclosed through the sustainability report should be best communicated. A synthesis work on the indicators should be performed to relay only what results are

essential to the understanding of all citizens. At the same time, institutions and more interested persons/entities ought to be able to investigate in more detail the impacts of an organization on the economic, social and environmental dimensions in order to evaluate its contribution to the achievement of the stated goals for sustainable development.

References

[1] Magnan, S., Fisher, E., Kindig, D., Isham, G., Wood, D., Eustis, M., ... & Leitz, S. (2012), Achieving accountability for health and health care. Minn Med, 95(11), 37-39.

[2] Denis, J. L. (2014). Accountability in healthcare organizations and systems. Healthcare Policy, 10,8.

[3] Grossi, G., Kallio, K. M., Sargiacomo, M., & Skoog, M. (2020). Accounting, performance management systems and accountability changes in knowledge-intensive public organizations: a literature review and research agenda. *Accounting, Auditing & Accountability Journal*, 33(1), 256-280.

[4] Brinkerhoff, D. W. (2004). Accountability and health systems: toward conceptual clarity and policy relevance. *Health policy and planning,* 19(6), 371-379.

[5] Hu, H., Cohen, G., Sharma, B., Yin, H., & McConnell, R. (2022). Sustainability in Health Care. *Annual Review of Environment and Resources*, 47, 173-196.

[6] Eckelman, M. J., Huang, K., Lagasse, R., Senay, E., Dubrow, R., & Sherman, J. D. (2020). Health Care Pollution And Public Health Damage In The United States: An Update: Study examines health care pollution and public health damage in the United States. *Health Affairs*, 39(12), 2071-2079.

[7] World Health Organization. (2019). World health statistics overview 2019: monitoring health for the SDGs, sustainable development goals (No. WHO/DAD/2019.1). World Health Organization.

[8] World Health Organization. (2023). World health statistics 2023: monitoring health for the SDGs, Sustainable Development Goals. World Health Organization.

[9] Galdwin T.N., Kennelly J.J., Krause T. (1995), "Shifting Paradigms for Sustainable Development: Implications for Management Theory and Research", *The Academy of Management Review*, 20 (4) pp 874-907.

[10] Aras G. (2020). Finance, Sustainability, and Business Legitimacy, Handbook of Business Legitimacy, Springer, pp 1131-1146.

[11] Dyllick, T. Hockerts K.(2002), "Beyond the business case for corporate sustainability", *Business Strategy and the Environment*, 11 pp 130-141.

[12] Freeman R. E. (1984), Strategic management: a stakeholder approach Pitman, Boston.

[13] Sandberg, M., & Holmlund, M. (2015). Impression management tactics in sustainability reporting. *Social Responsibility Journal*, 11(4), 677-689.

[14] Gray R., Owen D., Adams C. (1996), "Accounting and accountability: changes and challenges in corporate and social reporting", Prentice-Hall, London.

[15] UN Global Compact and Accenture (2021), "Climate Leadership in the Eleventh Hour. The 2021 United Nations Global Compact–Accenture CEO Study on Sustainability", CEO Study Special Edition on Sustainability.

[16] Burritt, R. L., & Schaltegger, S. (2010). Sustainability accounting and reporting: fad or trend?. Accounting, *Auditing & Accountability Journal*, 23(7), 829-846.

[17] Jørgensen, S., Mjøs, A., & Pedersen, L. J. T. (2022). Sustainability reporting and approaches to materiality: Tensions and potential resolutions. *Sustainability Accounting, Management and Policy Journal*, 13(2), 341-361.

[18] Bartocci, L., & Picciaia, F. (2013). Towards integrated reporting in the public sector. In Integrated reporting: Concepts and cases that redefine corporate accountability (pp. 191-204). Cham: Springer International Publishing.

[19] Bebbington, J., Unerman, J., & O'Dwyer, B. (2014). Introduction to sustainability accounting and accountability. In *Sustainability accounting and accountability* (pp. 3-14). Routledge.

[20] Ball, A., Grubnic, S., & Birchall, J. (2014). Sustainability accounting and accountability in the public sector. *Sustainability accounting and accountability* (pp. 176-196). Routledge.

[21] Pucker-Singer, J., Aichberger, C., Zupančič, J., Neumann, C., Bird, D. N., Jungmeier, G., ... & Tuerk, A. (2021). Greenhouse gas emissions of stationary battery installations in Two renewable energy projects. *Sustainability*, 13(11), 6330.

[22] Fleiszer, A. R., Semenic, S. E., Ritchie, J. A., Richer, M. C., & Denis, J. L. (2015). The sustainability of healthcare innovations: a concept analysis. *Journal of advanced nursing*, 71(7), 1484-1498.

[23] Crespo-Gonzalez, C., Benrimoj, S. I., Scerri, M., & Garcia-Cardenas, V. (2020). Sustainability of innovations in healthcare: A systematic review and conceptual framework for professional pharmacy services. *Research in Social and Administrative Pharmacy*, 16(10), 1331-1343.

[24] Tennison, I., Roschnik, S., Ashby, B., Boyd, R., Hamilton, I., Oreszczyn, T., ... & Eckelman, M. J. (2021). Health care's response to climate change: a carbon footprint assessment of the NHS in England. *The Lancet Planetary Health*, 5(2), e84-e92.ancet Planet Health. 2020; 4: e551-e553JAMA. 2019; 322: 1501-1509OVID_Recovery_2020.pdf

[25] Osorio-González, C. S., Hegde, K., Brar, S. K., Avalos-Ramírez, A., & Surampalli, R. Y. (2020). Sustainable healthcare systems. *Sustainability: Fundamentals and Applications*, 375-396.

[26] Adams, C. A., & Larrinaga-González, C. (2007). Engaging with organisations in pursuit of improved sustainability accounting and performance. *Accounting, Auditing & Accountability Journal*, 20(3), 333-355.

[27] Burritt, R. L., & Schaltegger, S. (2010). Sustainability accounting and reporting: fad or trend?. *Accounting, Auditing & Accountability Journal*, 23(7), 829-846.

[28] AlJaberi, O. A., Hussain, M., & Drake, P. R. (2017). A framework for measuring sustainability in healthcare systems. *International Journal of Healthcare Management* 13:4, 276-285, DOI: 10.1080/20479700.2017.1404710

[29] Senay, E., & Landrigan, P. J. (2018). Assessment of environmental sustainability and corporate social responsibility reporting by large health car, organizations. *JAMA* 1(4), e180975-e180975.

[30] Monfardini P., Barretta A.D., Ruggiero P. (2013). Seeking legitimacy: Social reporting in the healthcare sector, *Accounting Forum*, 37 (1) pp 54-66.

[31] Menicucci E., Paolucci G. (2018), "Forward-looking information in integrated reporting: A theoretical framework", African Journal of Business Management, 12 (18) pp 555-567.

[33] Malik M. (2015), "Value-enhancing capabilities of CSR: a brief review of contemporary literature", *Journal of Business Ethics*, 127 (2) pp 419-438.

[34] Soobaroyen T., Ntim C.G. (2013). Social and environmental accounting as symbolic and substantive means of legitimation: the case of HIV/AIDS reporting in South Africa, *Accounting Forum*, 37 (2) pp 92-109.

[35] Lodhia S., Jacobs K., Park Y.J. (2012), Driving public sector environmental reporting, *Public Management Review*, 14 (5) pp 631-647.

[36] Andrades J., Larrán M., Muriel M.J., Calzado M.Y. (2021), "Online sustainability disclosure by Spanish hospitals: an institutionalist approach", International Journal of Public Sector Management, (34) 5 pp 529-545.

[37] Farneti, F., Guthrie, J., & Canetto, M. (2019). Social reports of an Italian provincial government: a longitudinal analysis. *Meditari Accountancy Research*, 27(4), 580-612.

[38] Andrews R., Beynon M.J., McDermott A. (2019). Configurations of New Public Management reforms and the efficiency, effectiveness and equity of public healthcare systems: a fuzzy-set qualitative comparative analysis", *Public Management Review*, 21 (8) pp 1236-1260.

[39] Alejandra Gonzalez-perez, M., & Leonard, L. (Eds.). (2013). International business, sustainability and corporate social responsibility. Emerald Group Publishing Limited.

[40] Cutler, D. M., Huckman, R. S., & Landrum, M. B. (2004). The role of information in medical markets: an analysis of publicly reported outcomes in cardiac surgery. *American Economic Review*, 94(2), 342-346.

[40] Giorgiantonio, Cristina and Giovanniello, Valentina, Infrastructure and Project Financing in Italy: The (Possible) Role of the Regulation (November 13, 2009). Bank of Italy Occasional Paper No. 56, Available at SSRN: https://ssrn.com/abstract=1606248 or http://dx.doi.org/10.2139/ssrn.1606248

[41] Watts, N., Amann, M., Arnell, N., Ayeb-Karlsson, S., Belesova, K., Boykoff, M., ... & Montgomery, H. (2019). The 2019 report of The Lancet Countdown on health and climate change: ensuring that the health of a child born today is not defined by a changing climate. *The Lancet*, 394(10211), 1836-1878.

[42] Katsikas, E., Manes Rossi, F., Orelli, R. L., Katsikas, E., Manes Rossi, F., & Orelli, R. L. (2017). Setting the context for integrated reporting in the public sector. *Towards integrated reporting: Accounting change in the public sector*, 1-24.

[43] Simnett, R., & Huggins, A. L. (2015). Integrated reporting and assurance: where can research add value?. *Sustainability Accounting, Management and Policy Journal*, 6(1), 29-53.

[44] Bartocci, L., & Picciaia, F. (2013). Towards integrated reporting in the public sector. In *Integrated reporting: Concepts and cases that redefine corporate accountability* (pp. 191-204). Cham: Springer International Publishing.

[45] Cavicchi, C., & Vagnoni, E. (2017). Does intellectual capital promote the shift of healthcare organizations towards sustainable development? Evidence from Italy. *Journal of Cleaner Production*, 153, 275-286.

[46] Hockey, J., & Forsey, M. (2020). Ethnography is not participant observation: Reflections on the interview as participatory qualitative research. In The Interview (pp. 69-87). Routledge.

[47] Simonÿ, C., Specht, K., Andersen, I. C., Johansen, K. K., Nielsen, C., & Agerskov, H. (2018). A Ricoeur-inspired approach to interpret participant observations and interviews. *Global qualitative nursing research*, 5, 2333393618807395.

[48] Yin, R. K. (2002). *Case study research: Design and methods*. Thousand Oaks, CA: SAGE

[49]

[50] CNEL Relazione 2019 al Parlamento e al Governo

[51] Berrone, P., Ricart, J. E., Duch, A. I., Bernardo, V., Salvador, J., Pena, J. P., & Planas, M. R. (2019). Easier: An evaluation model for public-private partnerships contributing to the sustainable development goals. Sustainability, 11(8), 2339. https://doi.org/10.3390/su11082339

[52] Acerete B., Stafford A., Staplenton P., (2012) New development: New global health care PPP developments—a critique of the success story, Public Money and management, volume 32, Pages 311-314, https://doi.org/10.1080/09540962.2012.691315

[53] James Leigland, Public-Private Partnerships in Developing Countries: The Emerging Evidence-based Critique, The World Bank Research Observer, Volume 33, Issue 1, February 2018, Pages 103–134, https://doi.org/10.1093/wbro/lkx008

[54] Nundy S., Ghosh A., Mesloub A., Albaqawy G. A., Alnaim M. M., (2021) Impact of COVID-19 pandemic on socio-economic, energy-environment and transport sector globally and sustainable development goal (SDG), Journal of Cleaner Production, Volume 312, https://doi.org/10.1016/j.jclepro.2021.127705.

[55] Connolly, C. and Wall, T. (2011), "The Global Financial Crisis and UK PPPs", International Journal of Public Sector Management, Vol. 24 No. 6, pp. 533-542.

[56] M Filatova I., Nikolaichuk L., Zakaev D., Ilin I., (2021) Public-Private Partnership as a Tool of Sustainable Development in the Oil-Refining Sector: Russian Case, Sustainability, https://doi.org/10.3390/su13095153

[57] Kivila, J., Martinsuo, M., & Vuorinen, L. (2017). Sustainable project management through project control in infrastructure projects. International Journal of Project Management, 35(6), 1167–1183. https://doi. org/10.1016/j.ijproman.2017.02.009

[58] Hueskes, M., Verhoest, K., & Block, T. (2017). Governing public-private partnerships for sustainability an analysis of procurement and governance practices of PPP infrastructure projects. International Journal of Project Management, 35(6), 1184–1195. https://doi.org/10.1016/j. ijproman.2017.02.020

[59] Giddings B., Hopwood B., O'Brien G., Environment, economy and society: fitting them together into sustainable development, Sustainable Development, https://doi.org/10.1002/sd.199.

[60] Keiner M., (2005) History, definition(s) and models of sustainable development, ETH, Eidgenössische Technische Hochschule Zürich, https://doi.org/10.3929/ethz-a-004995678

[61] Guijt, I. and Moiseev, A. (2001). Resource Kit for Sustainability Assessment, IUCN, Gland, Switzerland and Cambridge, UK. Part A x + 83 pp., Part B viii + 172 pp., Part C iv + 92 pp.

[62] Gao, G. X. (2018). Sustainable winner determination for public-private partnership infrastructure projects in multi-attribute reverse auctions. Sustainability, 10(11), 4129. https://doi.org/10.3390/su10114129

[63] Fobil, J. N., Armah, N. A., Hogarh, J. N., & Carboo, D. (2008). The influence of institutions and organizations on urban waste collection systems: An analysis of waste collection system in Accra, Ghana (1985-2000). Journal of Environmental Management, 86(1), 262–271. https://doi.org/ 10.1016/j.jenvman.2006.12.038

[64] Ezebilo, E. E., & Animasaun, E. D. (2012). Public-private sector partnership in household waste management as perceived by residents in southwest Nigeria. Waste Management & Research, 30(8), 781–788. https:// doi.org/10.1177/0734242X11433531

[65] Yuan, J., Zhang, L., Tan, Y., & Skibniewski, M. J. (2019). Evaluating the regional social sustainability contribution of public-private partnerships in China: The development of an indicator system. Sustainable Development, 28, 259–278. https://doi.org/10.1002/sd.2001

[66] Chan, A. P. C., Lam, P. T. I., Chan, D. W. M., Cheung, E., & Ke, Y. (2009). Drivers for adopting public private partnerships-empirical comparison between China and Hong Kong Special Administrative Region. Journal of Construction Engineering and Management, 135(11), 1115–1124. https://doi.org/10.1061/(ASCE)CO.1943-7862.0000088

[67] World Bank, 2018.

[68] Khan, Z., Ali, M., Kirikkaleli, D., Wahab, S., & Jiao, Z. L. (2020). The impact of technological innovation and public-private partnership investment on sustainable environment in China: Consumption-based carbon emissions analysis. Sustainable Development. https://doi.org/10.1002/ sd.2086

[69] Rezaei, F., Bulle, C., & Lesage, P. (2019). Integrating building information modeling and life cycle assessment in the early and detailed building design stages. Building and Environment, 153, 158–167. https://doi. org/10.1016/j.buildenv.2019.01.034

[70] Rossiter, W., & Smith, D. J. (2018). Green innovation and the development of sustainable communities: The case of Blueprint Regeneration's Trent Basin development. The International Journal of Entrepreneurship and Innovation, 19(1), 21–32. https://doi.org/10.1177/1465750317751989

[71] Kiger M. E., Varpio L. (2020). Thematic analysis of qualitative data: AMEE Guide No. 131, Medical Teacher https://doi.org/10.1080/0142159X.2020.1755030

[72] Weston, C., Gandell, T., Beauchamp, J. et al. (2001), Analyzing Interview Data: The Development and Evolution of a Coding System. Qualitative Sociology 24, 381–400. https://doi.org/10.1023/A:1010690908200

[73] Nowell LS, Norris JM, White DE, Moules NJ. 2017. Thematic analysis: striving to meet the trustworthiness criteria. Int J Qual Methods. 16(1):160940691773384

[74] Giusti, M.; Cosma, C.; Simoni, S.; Persiani, N. The Contribution of Cultural Heritage Owned by Local Health Authorities in the Humanization of Care: The Point of View of Top Management. Int. J. Environ. Res. Public Health 2022, 19, 16632. https://doi.org/10.3390/ijerph192416632

[75] Piano sanitario regionale Toscana 2002-2004 http://www.sindacatosedi.it/piani_regionali/toscana.pdf

[76] www.regione.toscana.it/nuoviospedali (accessed on 23 September 2022).

[77] https://www.aulss7.veneto.it/ospedale-santorso (accessed on 15 October 2022).