

CORPORATE SUSTAINABILITY IN BRAZILIAN PUBLIC HEALTH UNITS WITH HELP OF ENVIRONMENTAL ENGINEERING: ANALYSIS OF ACTIONS AND PRACTICES BASED ON CASE STUDIES

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A B S T R A C T

Although its mission is to preserve and promote life, the public health sector generates significant environmental impacts due to high consumption of natural resources and the large volume of waste produced by healthcare services. Growing sustainability concerns reinforce the need to incorporate sustainable practices into public health management, with help of safety and environmental engineering. This article investigates how public health units develop sustainability initiatives and how these actions contribute to achieving the Sustainable Development Goals (SDG). The study is justified by the increasing relevance of corporate sustainability and the need for more efficient natural resource management, with help environmental engineering. Despite the expansion of sustainability debates, the literature still lacks comprehensive empirical analyses on how corporate sustainability principles are incorporated into public health management. This gap is particularly evident in Brazil's Unified Health System (UHS), where fragmented approaches prevail and municipal-level analyses remain limited. A descriptive qualitative methodology was adopted, combining a literature review of corporate sustainability (2018–2024) with case studies conducted in public health units in a municipality in the Paraíba Fluminense Midfielder region. The research assessed the implementation of sustainable practices with help of environmental engineering and proposed recommendations based on best practices identified in the literature and observed in loco. Comparative analysis revealed significant short-comings, including the absence of sustainability-focused strategic planning, weak monitoring mechanisms, and limited institutionalization of socio-environmental practices. Although isolated initiatives exist, sustainability has not been consolidated as a strategic axis. The study advances the literature by applying corporate sustainability principles to public health management and offers practical recommendations to strengthen governance, transparency, and alignment with the SDG.



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1. INTRODUCTION

The healthcare sector, although its mission is to preserve and promote life, has contributed significantly to environmental degradation. Thus, if it were a country, the healthcare sector would rank fifth among the world's largest emitters of greenhouse gases. This impact stems from the intensive use of energy, water, disposable materials, and the production of hospital waste, much of which is hazardous to human and environmental health. In addition, the growing demand for healthcare services has intensified the consumption of resources and increased the volume of emissions associated with medical activities. Hospitals and healthcare facilities therefore face the challenge of balancing high-quality care with environmentally responsible practices. For this reason, the adoption of sustainable management strategies, with help safety and environmental engineering, has become increasingly important in reducing the environmental footprint of the healthcare sector (Campillo-Sánchez et al., 2025; Jin et al., 2025; Karliner et al., 2023).

The primary mission of the healthcare sector is the prevention and cure of diseases, but it can also have an impact on the environment, including pollution, ecosystem degradation, and excessive consumption of natural resources, with the help of environmental engineering. Healthcare activities often require significant amounts of energy, water, medical supplies, and technological equipment, which can intensify environmental pressures when not properly managed. These practices can harm the health of the population and cause damage to the environment due to the waste produced and the technologies used in infrastructure improvements. In addition, inadequate disposal of medical waste and the use of chemical substances may contribute to environmental contamination, reinforcing the need for sustainable management practices in healthcare systems (Aldosari, 2026; Je et al., 2026; Shu et al., 2026).

The World Health Organization (WHO) states that health systems need to go beyond treating diseases and must operate in an environmentally responsible manner. As highlighted by the WHO, a sustainable system is one that promotes, preserves, or restores health while minimizing negative impacts on the environment and seeking opportunities to restore and improve it, aiming at the well-being of present and future generations. Faced with various social, environmental, and health challenges, the United Nations (UN) created the Sustainable Development Goals (SDG) in 2015, aiming to ensure decent living conditions for all while preserving the integrity of the environment (Corvalan et al., 2020; Degavre et al., 2022; Kiang & Behne, 2021; Popkova et al., 2024).

In this context, organizational performance evaluation, anchored in the triple bottom line concept, has

established itself as a relevant analytical benchmark for measuring sustainability in an integrated manner. This approach considers the economic, social, and environmental dimensions simultaneously and interdependently, encouraging practices based on transparency, accountability, and the adoption of formal auditing and reporting mechanisms (Talapatra et al., 2022; Nica et al., 2025; Nogueira et al., 2023, 2025). From this perspective, sustainability ceases to be a peripheral element and begins to guide strategic and operational decisions. This rationale should extend beyond the private sector to the public sector, especially the Unified Health System (UHS). By incorporating the fundamentals of the triple bottom line, public health management strengthens administrative efficiency, social and environmental responsibility, and institutional governance, expanding its commitment to social and environmental equity (Berniak-Woźny & Rataj, 2023; Jayashree et al., 2021; Kusmendar et al., 2025; Sultanova et al., 2024).

In this context, this study aimed to analyse how public health units have incorporated corporate sustainability practices into their management models. The empirical investigation was conducted in a municipality located in the Paraíba Fluminense Midfielder region, an area characterized by a strong steel industry cluster whose activities generate significant environmental pressures, particularly related to air quality and population health. This territorial context provides a relevant setting to examine how sustainability principles, aligned with the SDG, are translated into public health governance within environmentally sensitive regions. The research focused on the municipal level, where a diversified health network operates across primary, outpatient, and high-complexity care, serving both residents and users from neighbouring municipalities. Four public health units with distinct care profiles were selected due to their representativeness within the local system: a general hospital (Unit A), an emergency care facility (Unit B), a specialized infectious disease center (Unit C), and a women's health unit (Unit D). This configuration enabled a comparative assessment of how sustainability-oriented management practices are embedded across different levels and specialties of public healthcare delivery.

2. LITERATURE REVIEW

Sustainability, by its very nature, is an ambitious and complex goal that serves as inspiration for policymaking, encompassing environmental, economic, and social aspects, all of which are equally indispensable to society. When conceived as a set of principles that govern systems, sustainability allows us to shape a development model that is a social choice and encompasses diverse objectives, based on different scales of values and contexts that evolve over time and continuously feed back into each other (Elkington, 1998; Lozano, 2020; Witjes & Lozano, 2016). The term sustainable development is described in the document entitled "Our

Common Future,” commonly referred to as the Bruntland Report, and refers to an approach that ensures current needs are met without compromising the ability of future generations to meet their own needs.

This principle is based on three interconnected dimensions: environmental, which involves the preservation of natural resources and the protection of ecosystems, reducing the negative impacts of human actions; the social dimension, which refers to justice, the well-being of society, and inclusion. And the economic dimension, which proposes sustainable development that recognizes the limits of resources and promotes innovation and efficiency (Murmura et al., 2021; Asante-Darko et al., 2025; Hourneaux Jr et al., 2018; Rodrigues et al., 2020; Azevedo et al., 2019; Mouazen et al., 2025).

In 2015, heads of state and representatives from 193 UN member countries met and approved a document entitled “Transforming Our World.” Based on this trajectory, the United Nations General Assembly created the SDG, which consist of a set of 17 (Figure 1) international goals designed to promote a more sustainable future for the

planet. These SDGs have 169 targets to be met by 2030, as part of the “2030 Agenda for Sustainable Development.” The main objective of this agenda is to achieve sustainable development in the economic, social, and environmental areas in a balanced and integrated manner (Hales & Birdthistle, 2022; Rahman, 2021; United Nations, 2020). The SDG were created by the United Nations in 2015 as part of the 2030 Agenda. These goals consist of 17 interconnected targets that follow on from the Millennium Development Goals (MDG) and aim to end poverty, protect the environment, and promote adequate living conditions by 2030. The SDGs represent a global commitment involving governments, organizations, and civil society in the pursuit of sustainable and inclusive development. These goals involve areas such as education, gender equality, health, combating climate change, basic sanitation, renewable energy, work and income, sustainable consumption, and environmental preservation. By integrating social, economic, and environmental dimensions, the SDG provide a comprehensive framework for guiding policies, investments, and actions toward long-term global sustainability (Gómez Pescador & Arzadun, 2025; Hák et al., 2016; Huaccho Huatuco & Ball, 2019).



Figure 1. Seventeen sustainable development goals. Source United Nations (2020)

In the health sector, SDG 3 sets targets related to reducing maternal mortality, eliminating preventable deaths among new-borns and children under five, eradicating epidemics, controlling infectious diseases, and expanding universal access to health services. It also covers initiatives aimed at reducing exposure to toxic substances, air pollution, and water contamination (United Nations, 2020). Although SDG 3 focuses on health, other goals also address the social and environmental determinants that influence health. SDG 6, which addresses access to safe drinking water and sanitation, and SDG 13, which addresses climate action,

directly impact the environment and the structural conditions that influence public health (Campillo-Sánchez et al., 2025; Mouazen et al., 2025; Thomas, 2022).

In organizations, the SDG have been adopted as guidelines for aligning institutional strategies with sustainable parameters. Goals such as the fight against poverty, gender equality, tackling climate change, and the efficient use of natural resources are integrated into strategic planning, aiming to generate environmental, social, and economic value (Khaled et al., 2021; Thun et

al., 2024; Vázquez et al., 2025). The adoption of the SDGs in organizational strategies represents a significant shift in companies' perception of their social and environmental responsibilities. Beyond complying with legal and institutional requirements, these initiatives encourage organizations to integrate sustainability into strategic decision-making and long-term planning. This approach promotes more efficient resource management, strengthens organizational resilience, and supports innovation through environmentally and socially responsible practices. Furthermore, the alignment of corporate strategies with the SDGs enhances transparency and accountability, fostering greater trust among stakeholders. In addition to improving organizational reputation, such initiatives attract investment, strengthen relationships with consumers who increasingly value sustainable criteria, and generate competitive advantages that contribute to long-term value creation and sustainable development (Thun et al., 2024; Troy et al., 2025; Vázquez et al., 2025).

The Unified Health System, established by the Federal Constitution of 1988, is Brazil's public health system that guarantees universal, comprehensive, and free access to the population. Based on the principles of universality, comprehensiveness, and equity, the UHS has a decentralized, hierarchical, and regionalized organization, with social participation and collaboration between the federal government, states, and municipalities (Ministério da Saúde, 2022). The formation of the UHS resulted from the Health Reform movement, which emerged in the 1970s with the purpose of overcoming a discriminatory and restrictive health model, consolidating itself as a historical milestone with the promulgation of the 1988 Constitution and regulation by the Organic Health Laws. These norms established health as a right for all and a duty of the State (Costa et al., 2024).

The system's operation is based on fundamental guidelines. Universality guarantees access to services for all; comprehensiveness ensures care across all dimensions of healthcare, from health promotion and disease prevention to treatment and rehabilitation; and equity seeks to reduce inequalities by prioritizing the most vulnerable populations according to their specific health needs. Structured into levels of increasing complexity, the UHS delegates the management of primary healthcare to municipalities, while states and the federal government are responsible for coordinating and financing medium- and high-complexity services, requiring continuous intergovernmental cooperation. This decentralized governance model aims to improve service accessibility, optimize the allocation of public resources, and strengthen regional integration within healthcare networks. Effective coordination among government levels is therefore essential to ensure continuity of care, improve service quality, and enhance the efficiency, responsiveness, and long-term

sustainability of the public health system (Instituto de Pesquisa Econômica Aplicada, 2022).

3. EXPERIMENTAL

The research is classified as an exploratory and descriptive field study, facilitating a better understanding of the problem and allowing for its scientific explanation through data collection and analysis (Figure 2). In terms of approach, this is a qualitative study, as it favors interpretive and contextualized analysis of information, seeking to understand the meanings attributed by the subjects and institutions involved. Through this type of investigation, we seek to understand the complexity of phenomena, events, and processes that are unique and specific (Kothari & Garg, 2019; Reis et al., 2021; Yin, 2017). To ensure the reliability and validity of the study, data collection methods were used in accordance with Yin (2017). Data collection was carried out through a field study aimed at obtaining results that could be directly used in solving problems involving sustainability, which are faced in the daily routine of public health services. The field research was carried out through joint investigation with bibliographic or documentary studies, involving the collection of information directly from individuals and/or groups, using various types of approaches.

With this methodological approach, events and phenomena can be observed in their actual manifestation through the collection of information. This data was then analyzed and interpreted based on a solid theory, since the investigation took place at the location where the phenomenon occurred, analyzing documents and conducting interviews and direct observation. With this methodological approach, events and phenomena can be observed in their actual manifestation through the collection of information. This data was then analyzed and interpreted based on a solid theory, since the investigation took place at the location where the phenomenon occurred, analyzing documents and conducting interviews and direct observation. According to Yin (2017), three steps must be followed to conduct field research: 1) conduct a literature review; 2) determine the data collection methods and techniques and the sample; 3) analyses the data and interpret the results to meet the research proposal.

Regarding the technical methods used, multiple case studies were employed, which provided the researcher with data that enabled the simultaneous analysis of different contexts, using various sources of evidence, which made the research more robust Kothari and Garg (2019). The case study included a thorough investigation of the subject, carried out through the collection of data from multiple sources of evidence, such as document analysis, semi-structured interviews, and on-site observations, aiming to ensure detailed research in terms of knowledge and credibility.

This study was conducted in accordance with the order of the project stages, as illustrated in Figure 2, which shows the methodological flow of the research, emphasizing the activities performed. The methodological structure was organized to ensure a logical sequence of procedures, allowing each stage of the study to contribute systematically to the development of the research objectives. This approach facilitates the understanding of how the different analytical and experimental phases are interconnected throughout the

investigation. In addition, the flow presented provides greater transparency and reproducibility of the research process.

The starting point for the development of the research consisted of identifying the fundamental elements for its elaboration, including the choice of theme, objectives, scope delimitation, justification, theoretical framework, and re-search methodology.

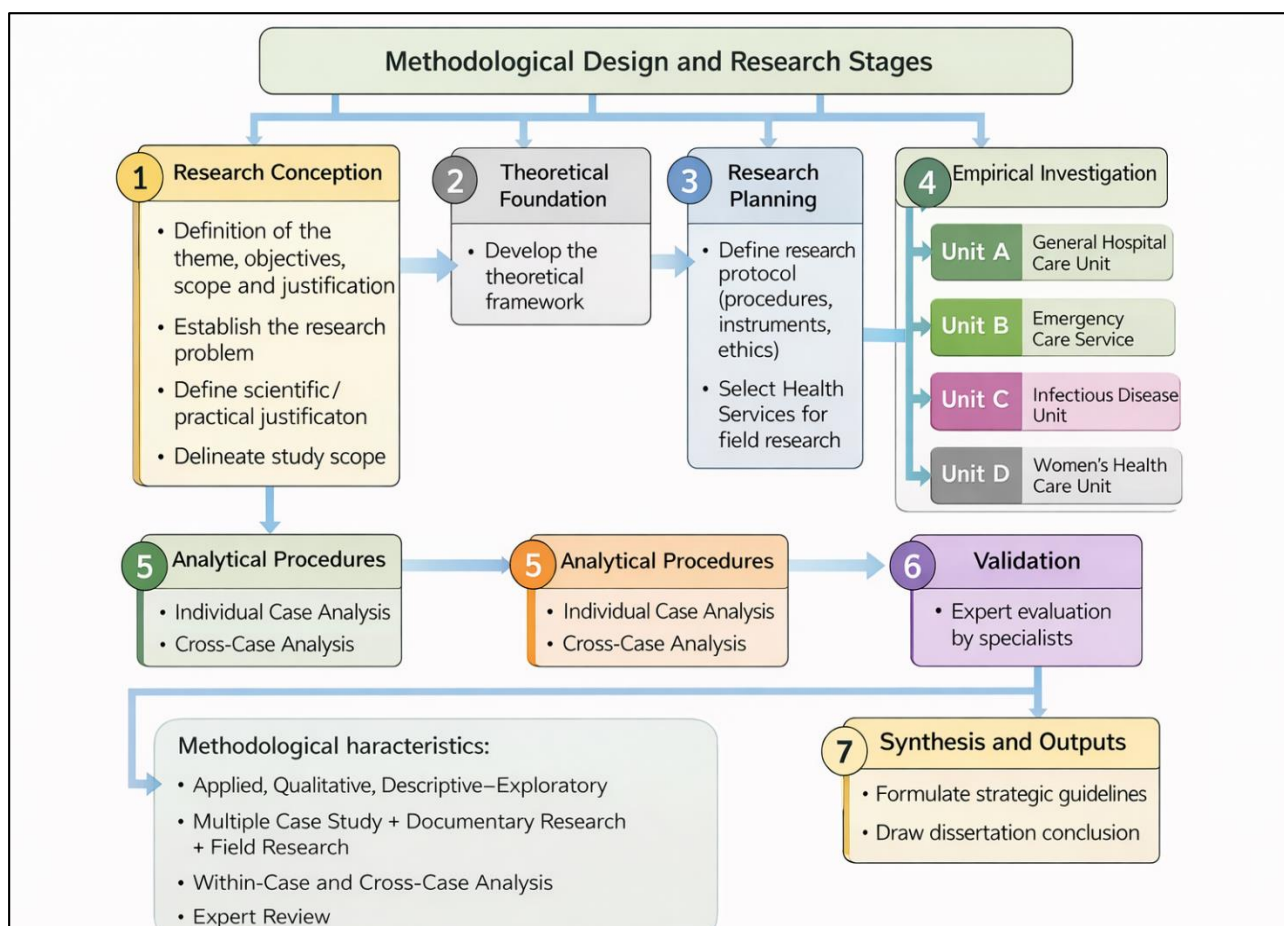


Figure 2. Methodological classification of research, with emphasis on the types applicable to the study

Table 1. Criteria for selecting articles during research on platforms

SELECTION	DESCRIPTION
Type of Review	Bibliographic Literature Review
Databases	Scopus, PubMed/MEDLINE, and LILACS Library Portal
Keywords	"Corporate Sustainability" and "Public Health"
Initial Number of Studies	34 articles containing the descriptors
Inclusion Criteria	Systematic review publications and theoretical and empirical articles in English and Portuguese between 2018 and 2024, containing the descriptors.
Exclusion Criteria	Studies not correlated with the research topic or published in journals not indexed in reliable databases were excluded.
Article Analysis	A total of 31 publications were analyzed with the objective of identifying actions and best practices that may contribute to advancing the SDGs within the public health system.

. Next, the theoretical framework was expanded, focusing on the relationships between the SDG and the UHS in the context of corporate sustainability, in addition to organizing the re-search protocol. The selection of articles for the construction of the theoretical framework

was carried out through a search on the Scopus, PubMed/MEDLINE, and LILACS Library Portals using the expressions "Corporate Sustainability" and "Public Health".

The criteria for inclusion in the analysis of the articles were systematic reviews found in English or Portuguese, published between 2018 and 2024, which presented the terms of interest, excluding those that did not address content related to the descriptors. To consolidate the information, Table 1 was created, summarizing the fundamental criteria used in the selection of articles that could support the theoretical framework.

The quality of the case study described in Table 2 was maintained through three fundamental criteria: construct validity, external validity, and reliability Yin (2017). Construct validity was ensured using multiple sources of evidence, while external validity was enhanced by the careful selection of the public health services examined. Reliability was ensured by implementing a protocol for data collection.

In this context, the study adopted a methodology, beginning with the identification of the main components and a review of the literature. The use of the adaptation strategies suggested by Yin (2017) reinforced the research, ensuring the validity and credibility of the conclusions reached.

Table 2. Testing the design of multiple case studies

Tests	Tactics applied to the case study
Construct validity	a) Use of multiple sources of evidence; b) Chain of evidence; and c) Case study protocol reviewed by an expert.
External validity	a) replication of multiple case studies.
Reliability	a) use of the case study protocol; and b) development of a database for the case study.

This study aimed to explore how public sustainability policies related to the SDG influence the functioning of public health units. To ensure research validity, a triangulation strategy was adopted, combining semi-structured interviews, direct on-site observation, and documentary analysis, following. This methodological integration allowed for a deeper understanding of institutional practices focused on service standardization and quality improvement. Four public health units were selected, in accordance with Yin (2017), recommendation for multiple case study designs requiring at least four distinct cases. The triangulation of evidence strengthened the interpretation of the studied reality and enhanced analytical rigor. Prior to field application, a structured methodological flow was developed to guide the research process. This approach ensured systematic and reliable data collection across all units analyzed.

The protocol incorporated three integrated instruments within a single document: a semi-structured interview guide, a documentary analysis script, and an on-site observation checklist. Its objective was not to tailor assessment criteria to each unit, but rather to identify patterns, best practices, benefits, and challenges across cases. The protocol contributed to standardizing data

collection procedures, minimizing omissions, and enhancing the reliability and consistency of the evidence collected throughout the study. The integration of multiple data collection techniques also facilitated methodological triangulation, allowing information obtained from different sources to be systematically compared and cross-validated. This approach strengthened the robustness of the analytical process and reduced the likelihood of bias associated with relying on a single source of evidence. Furthermore, the protocol ensured that all case studies followed the same analytical structure, improving comparability among the investigated public health units. It was reviewed by two PhD professors with expertise in sustainability and by a specialist with over ten years of experience in sustainability policy implementation. This validation process strengthened methodological consistency, enhanced the content validity of the research instrument, and ensured alignment between the protocol, the theoretical framework, and the study objectives.

Semi-structured interviews were chosen due to their flexibility and adaptability, allowing adjustments during dialogue as new insights emerged. This approach enabled focused yet in-depth exploration of relevant themes, while maintaining a structured framework. Documentary analysis played a complementary role by providing objective evidence to support findings. The comparison between interviews, observations, and documents enriched the analytical process and reinforced credibility. Direct observation was particularly relevant for capturing operational dynamics not always revealed in interviews. Field visits to management, operational, and administrative sectors allowed verification of sustainability-related practices in real settings Yin (2017).

After data collection, similarities and differences among the four health units were systematically analysed to identify recurring patterns and effective practices. This comparative stage followed Yin (2017), methodological guidance for multiple case studies and was grounded in theoretical references and expert consultation. The analysis enabled the identification of organizational maturity levels regarding corporate sustainability integration. The concluding phase synthesized the principal findings and highlighted strategic recommendations based on observed best practices. It also clarified how sustainability policies associated with the SDG affect governance, management processes, and service quality in the public health system. Overall, the study provides empirical evidence on the challenges and opportunities of institutionalizing sustainability within public healthcare management.

4. RESULTS AND DISCUSSION

Here we present the results of the research conducted in public health units in a municipality located in the Paraíba Fluminense Midfielder region. The units were

classified as “Units A, B, C, and D” to preserve institutional identity and ensure the privacy of study participants. The units were selected according to the criteria set out in the research scope, productive segment (health units), in relation to the characteristics of the organizations (public health units), and in relation to the geographical area (health units operating in Brazil, in the Midfielder Paraíba region).

The main objective of the case studies was to identify good practices and key challenges in health, challenges and benefits related to the incorporation of sustainable actions, which in turn can assist the units analysed in meeting the SDGs in the context of the Public Health System with help of safety and environmental engineering. To this end, a research protocol (Appendix A) was used to guide the data collection stages. The first stage involved conducting semi-structured interviews with those responsible for public health units or representatives designated by them. This approach made it possible to explore perceptions, experiences, and initiatives focused on sustainability in institutional routines. In addition, whenever feasible, professionals from different categories, such as technicians, nursing assistants, and members of the administrative team, were also interviewed to broaden the understanding of the integration of sustainable practices into the daily routine of the services.

In Unit A, three (03) nurses, two (02) nursing technicians, and one (01) administrative professional were interviewed. In Unit B, two (02) nurses, four (04) nursing technicians, and three (03) administrative professionals participated. In Unit C, the interviews covered one (01) coordinator, three (03) nurses, two (02) laboratory technicians, two (02) nursing technicians, and one (01) receptionist. Finally, in Unit D, two (02) nurses, four (04) nursing technicians, and two (02) receptionists were interviewed. During data collection, an on-site observation stage was carried out with the objective of monitoring the daily work of the health teams and directly verifying the presence of sustainable practices in institutional routines. Aspects related to the physical structure of the units, the use of natural resources (such as water and energy), waste management, work routines, the behavior of teams in relation to sustainability, biosafety conditions, and the interaction between professionals and users were observed. Initiatives aimed at reducing environmental, social, and economic impacts, as well as any educational actions, were also evaluated.

Finally, a document analysis was conducted, which involved consulting various institutional records, including healthcare production reports, codes of ethical conduct, performance indicators, action plans, clinical protocols, health surveillance records, minutes of internal committee meetings, strategic planning reports. In addition, with satisfaction records, patient safety protocols related to the use and administration of

medications, hospitalization rate and bed occupancy time reports, as well as continuing education materials.

Additional documents, such as waste management plans, procurement records, environmental management procedures, and internal quality assessment reports, were also reviewed whenever available. This documentary evidence enabled the identification of formal policies, management practices, and operational procedures associated with sustainability and organizational performance. Furthermore, the analysis provided valuable insights into institutional governance, resource allocation, and compliance with regulatory requirements. The systematic comparison of documentary evidence with interview data and direct observations strengthened the reliability and consistency of the findings by enabling methodological triangulation. This process reduced potential biases associated with a single source of evidence, improved the validity of the interpretations, and contributed to a more comprehensive understanding of how sustainability principles are incorporated into the management practices of the investigated public health units Yin (2017), which increased the robustness and credibility of the research results.

4.1 Health unit A

The first case study was conducted in November 2024, through a technical visit to a small hospital linked to the SUS and part of the Urgent and Emergency Care Network. Data collection included interviews with the coordinating nurse and members of the care and administrative teams, as well as direct observation of the sectors and workflows. In-formal conversations were also held to deepen understanding of the institutional dynamics. Subsequently, a documentary analysis of reports, protocols, administrative records, and care indicators was carried out. The unit, accredited as a hospital in 2022, has 46 beds and offers clinical, psychiatric, and emergency care. It is municipally managed, with 259 professionals, and the structure has undergone recent operational improvements. The results were organized into six pillars (Table 3) of corporate sustainability. In Governance, there was support from management and regulatory compliance, but there was a lack of formal documented policies. In Sustainability Strategies, training and biosafety actions stood out, although environmental planning and sustainable procurement were lacking. In Human Resources, investment in training and safety was observed, but without structured valuation policies. In the Knowledge and Innovation axis, the use of electronic medical records and flowcharts favours organization, even though there are no innovation policies. Regarding the Management System, there are indicators and protocols, but low institutionalization of the IMS. Finally, sustainability measurement is limited to internal audits and healthcare indicators, without structured environmental monitoring.

Table 3. Analysis of the results found in unit A

Pillar 1 – Corporate Governance •Top management supports operational activities and adopts institutional measures. •Absence of formal codes of conduct or documented corporate policies. •ANVISA regulations ensure the protection and defense of public health. •Management transparency is ensured by the Municipal Health Council and collegial decision-making processes. •Lack of formal sustainability policies and corporate codes of conduct. •Governance is aligned with the Brazilian Unified Health System model.
Pillar 2 – Corporate Sustainability Strategies •Actions aimed at organizational restructuring and institutional adaptation were identified. •Training programs and protocol revisions are highlighted as primary strategic initiatives. •Risk management focuses on stakeholder safety through biosafety actions and training programs. •Absence of sustainable public procurement practices and strategic partnerships for service innovation. •Lack of environmental planning and territorial segmentation limits long-term sustainability strategies. •Absence of guidelines integrating natural resource management into institutional practices compromises sustainable.
Pillar 3 – Sustainable Management and Human Resources •Evident efforts toward continuous professional training supported by permanent education programs. •Employee well-being and safety are treated as management priorities. •Organizational culture incorporates sustainability principles in a structured manner, classified as 'moderate.' •Specific diversity initiatives are present. •Absence of institutional policies promoting local recruitment. •No integrated and continuous program for employee recognition and development. •Lack of articulation among sustainability initiatives compromises the promotion of human sustainability in management.
Pillar 4 – Sustainable Knowledge and Innovation Management •Electronic medical records and workflow charts contribute to efficiency and organizational structure. •Absence of innovation policies and formal partnerships with external institutions. •Dialogue among teams is documented through meeting records and internal improvement proposals. •Limited material reuse and innovation reveal underutilized potential in public health services.
Pillar 5 – Integrated Management System •Presence of indicators, workflow charts, and institutional protocols. •Limited professional awareness regarding the IMS. •Lack of integration compromises management effectiveness. •Occupational safety management focuses on accident prevention and training. •Low adherence to Protective Equipment usage reveals operational weaknesses. •Absence of certification and formal documentation confirms the lack of an institutionalized IMS.
Pillar 6 – Measurement, Disclosure, and Independent Assurance of Corporate Sustainability •Internal audit reports were identified. •Absence of environmental performance measurement systems. •Sustainability is assessed primarily through public health indicators. •Medical ethical evaluation is documented. •Ethical evaluation mechanisms for other professional categories are still under development.

4.2 Health unit B

The second case study was conducted in an Emergency Care Unit (ECU) linked to the Municipal Health Secretariat and integrated into the Emergency Care Network (ECN). Data were collected over an eight-hour technical visit through semi-structured interviews with managers, nursing staff, and administrative professionals, complemented by document analysis and direct observation of routines and infrastructure. The unit operates provisionally due to renovations and provides intermediate-complexity urgent care without hospitalization beds. With 159 professionals working under different contractual regimes, the UHS plays a central role in ensuring equitable and qualified emergency services. Institutional practices are guided by principles of quality, safety, humanization, and interprofessional cooperation. The triangulation of data allowed a comprehensive assessment of governance and operational dynamics.

The findings were organized according to the six pillars (Table 4) of corporate sustainability. In Governance, transparency mechanisms and regular audits were observed, though leadership turnover and the absence of formal sustainability policies limit continuity. Sustainability Strategies include isolated initiatives, such as LED lighting, but lack structured planning, environmental criteria in procurement, and performance indicators. In Human Resource Management, standardized protocols and risk management practices are in place, yet no Integrated Management System (IMS) has been implemented. Knowledge and Innovation practices involve monitoring health indicators, but without systematic sustainability reporting. The Management System contributes to SDG 3 and indirectly to SDG 10, though without explicit integration into the SDG agenda. Finally, Measurement and Disclosure remain limited, with no structured environmental metrics or formal inclusion and well-being policies institutionalized.

Table 4. Analysis of the results found in unit B

Pillar 1 – Corporate Governance •The unit maintains collaborative relationships with stakeholders, supported by management through semiannual meetings, institutional documents, and digital communication. •Institutional mission, values, and goals are formally established; however, high leadership turnover compromises policy continuity. •Occasional social initiatives are conducted, but no structured philanthropic responsibility program is in place. •User feedback is collected; however, no formal satisfaction assessment tool is strategically integrated into sustainability or institutional reputation management.
Pillar 2 – Corporate Sustainability Strategies •Medium- and long-term planning exists, including the use of LED lighting; however, no formal sustainability project has been implemented. •Sustainability is not yet integrated into institutional strategy. •Procurement processes are centralized by the Municipal Health Secretariat and do not incorporate environmental criteria. •Leadership discontinuity hinders the development of consistent sustainability strategies. •No sustainability performance indicators were identified.
Pillar 3 – Sustainable Management and Human Resources •Work processes are standardized through clinical protocols and multidisciplinary flowcharts. •Risk management is conducted by the Hospital Infection Control Committee and the occupational health sector, with annual training and provision of Protective Equipment. •No Integrated Management System is implemented. •Environmental management actions, such as selective waste collection and disposal training, occur in isolation without institutional articulation.
Pillar 4 – Sustainable Knowledge and Innovation Management •Morbidity indicators, patient safety metrics, and adverse events are monitored monthly. •Hazardous waste collection is outsourced to a specialized company. •Guidelines for proper waste disposal exist; however, sustainability performance reports are not produced. •A user satisfaction measurement tool is available but has not yet been consolidated as a strategic management instrument.
Pillar 5 – Integrated Management System •The unit provides intermediate-complexity care, including observation, medication administration, and diagnostic support. •It does not operate inpatient beds but includes services such as pharmacy, sterilization center, and multiprofessional care. •It operates within the public health network and contributes directly to SDG 3 and indirectly to SDG 10. •No structured sustainability innovations or SDG-oriented services were identified. •Clinical protocols aim at equality and safety but are not explicitly linked to the sustainability agenda.
Pillar 6 – Measurement, Disclosure, and Independent Assurance of Corporate Sustainability •Internal communication occurs through digital applications and face-to-face meetings to address operational changes. •Occasional professional recognition initiatives and internal social events are conducted. •Diversity is considered in local hiring practices; however, no formal inclusion policies exist. •There are no structured programs promoting well-being, quality of life, or occupational health. •Interdisciplinary meetings focus primarily on technical issues, without addressing sustainability as institutional priorities.

4.3 Health unit C

The third case study was conducted in a medium-complexity outpatient unit integrated into the SUS and recognized as a regional reference for the treatment of infectious diseases, including HIV, syphilis, hepatitis B and C, tuberculosis, leprosy, and sporotrichosis. The unit employs 45 multidisciplinary professionals and also provides immunization and laboratory diagnostic services, in addition to offering technical training for other municipal health units. Its activities extend beyond clinical care by supporting disease surveillance, epidemiological monitoring, and the implementation of public health policies aimed at preventing and controlling communicable diseases. As a regional reference center, the unit plays a strategic role in coordinating specialized care and disseminating technical knowledge across the municipal healthcare network. Data collection occurred over eight hours and included semi-structured interviews, direct observation of care routines, and informal conversations with staff. Documentary analysis covered institutional records, protocols, certifications, strategic planning documents, and public health indicators. The integration of multiple data sources enabled the

verification of evidence from different perspectives, strengthening the credibility and consistency of the findings. This triangulated approach provided a comprehensive assessment of organizational practices, governance mechanisms, and the degree of alignment between institutional management and the principles of corporate sustainability.

The findings, structured according to the six pillars (Table 5) of corporate sustainability, indicate that although governance mechanisms, ethical standards, and regulatory compliance are well established, sustainability is not formally institutionalized. The unit lacks a structured sustainability policy, long-term environmental planning, and integrated performance metrics. While electronic medical records, audits, and standardized protocols contribute to organizational efficiency, sustainability is not incorporated into risk management or strategic planning. Waste management complies with legal standards, but without broader environmental integration. Although the unit demonstrates technical excellence and innovation in healthcare delivery, no environmental innovation initiatives were identified. Overall, sustainability remains peripheral to the

organizational culture and management model. This situation suggests that sustainability practices are still fragmented and largely limited to compliance-oriented

actions. Consequently, there is an opportunity to integrate sustainability more effectively into strategic governance and operational decision-making processes.

Table 5. Analysis of the results found in unit C

Pillar 1 – Corporate Governance •Internal communication mechanisms are implemented through messaging applications, calls, official notices, and periodic meetings. •Active Professional Code of Ethics and participation in external audits conducted by the Ministry of Health. •Institutional transparency reinforced by oversight from the Municipal Health Council. •Certified with a Best Practices Seal for reducing vertical transmission of HIV, hepatitis B, and other STIs, demonstrating regulatory compliance. •No institutional sustainability policy and no formal user satisfaction surveys.
Pillar 2 – Corporate Sustainability Strategies •The unit operates in a provisional facility with structural limitations and lacks long-term sustainability plans. •Receives funding from Ministry of Health programs (e.g., HIV/AIDS). •No strategic actions related to energy efficiency, water reuse, or sustainable procurement. •Sustainability is not formally or systemically integrated into the institutional strategy.
Pillar 3 – Sustainable Management and Human Resources •Use of Electronic Medical Records as a clinical and administrative management tool. •Internal and external audits conducted; clinical and administrative indicators monitored. •No sustainability reports available. •Patient protection protocols and waste management training provided to cleaning staff. •Risk management practices are present; however, sustainability is not treated as a strategic axis. •No IMS implemented.
Pillar 4 – Sustainable Knowledge and Innovation Management •Performance indicators monitored in a segmented manner, without environmental or social responsibility criteria. •Solid waste management complies with legislation, including separation of organic and conventional waste and outsourced disposal. •Cleaning staff receive training in proper waste disposal procedures.
Pillar 5 – Integrated Management System •Provides specialized care for HIV, hepatitis, syphilis, leprosy, tuberculosis, and sporotrichosis, with multidisciplinary services and laboratory diagnostics. •Acts as a technical reference for other municipalities and promotes internal and external training focused on clinical practice. •Despite innovative information management practices and team integration, no environmental innovation or structured sustainability initiatives were identified.
Pillar 6 – Measurement, Disclosure, and Independent Assurance of Corporate Sustainability •Regular meetings are held to organize work processes, aiming at quality and equity in care. •Actions focused on gender inclusion and humanized care, particularly for vulnerable patients. •No structured programs for employee well-being or quality of work life. •Local hiring occurs whenever possible, but without a formal institutional policy. •Sustainability is not yet integrated into the organizational culture.

4.4 Health unit D

The fourth case study was conducted in December 2024 at a public health unit specialized in comprehensive women's healthcare, serving as a regional reference for high-risk prenatal care and breast and cervical cancer screening. The unit employs 65 professionals and uses 4D diagnostic technology within the SUS, representing innovation in local public healthcare. Data collection lasted eight hours and included direct observation, semi-structured interviews, informal conversations, and document analysis. Clinical protocols, workflow charts, service records, and strategic planning documents were examined. Administrative management is centralized under the Municipal Health Secretariat, with no specific sustainability guidelines identified. Despite well-structured clinical organization, no formal sustainable development policies were observed. This indicates that sustainability considerations have not yet been systematically incorporated into the operational and strategic management of the unit. Furthermore,

environmental and social performance indicators were not identified within the administrative documentation reviewed. These findings reinforce the need for structured sustainability governance within public healthcare institutions.

The analysis based on the six corporate sustainability pillars (Table 6) revealed that sustainability has not yet been institutionalized. There is no environmental policy, public reporting, or integration of social, environmental, and economic dimensions. Infrastructure investments, such as LED lighting and acclimatisation, are isolated initiatives rather than components of a long-term strategic plan. Waste management complies with legal requirements, but recycling practices occur voluntarily and without institutional coordination.

The unit does not have an Integrated Management System or structured socio-environmental performance indicators. Although it demonstrates technical excellence and clinical innovation, sustainability remains peripheral

to its organizational culture and management model. This scenario indicates that sustainability-related practices are still reactive and fragmented rather than strategically integrated into decision-making processes. In addition, the absence of formal monitoring mechanisms limits the institution's ability to measure the effectiveness of sustainability initiatives, identify opportunities for continuous improvement, and support evidence-based management decisions. The lack of clearly defined sustainability objectives and performance metrics also restricts organizational accountability and reduces the

visibility of environmental and social outcomes. Embedding sustainability into strategic planning would facilitate greater alignment between institutional priorities, operational activities, and public health objectives. Consequently, there is a clear opportunity to establish formal governance mechanisms, implement integrated performance indicators, strengthen stakeholder engagement, and develop a long-term sustainability strategy capable of supporting organizational resilience, resource efficiency, and continuous improvement.

Table 6. Analysis of the results found in unit D

Pillar 1 – Corporate Governance •No institutional sustainability policy, public reports, or mechanisms integrating social, environmental, and economic dimensions. •Procurement management is centralized. It does not adopt sustainable criteria. •Absence of strategic partnerships for sustainable innovation or structural improvement. •Current management does not align public policies with sustainable organizational development strategies.
Pillar 2 – Corporate Sustainability Strategies •Investments in infrastructure included punctual actions such as air conditioning improvements and LED lighting installation for energy efficiency. •No long-term strategic sustainability plans identified. •Absence of guidelines prioritizing water reuse, circular economy practices, or conscious natural resource management. •Environmental and economic sustainability are not formally incorporated into institutional planning.
Pillar 3 – Sustainable Management and Human Resources •Standardized clinical protocols, SOPs, and flowcharts organize work processes. •Proper separation and disposal of common and biological waste in compliance with legislation, with outsourced collection services. •Paper recycling occurs voluntarily by staff, without integration into an institutional waste management plan. •No formal Integrated Management System (IMS) or consolidated ESG reporting.
Pillar 4 – Sustainable Knowledge and Innovation Management •The unit is a reference center for high-risk prenatal care and early detection of diseases, particularly breast and cervical cancer. •Uses 4D technology within the SUS, representing service innovation in public healthcare. •Electronic regulation system integrates levels of care and ensures continuity of treatment. •No environmental innovation, eco-efficiency initiatives, or systematic integration of sustainable practices into new services.
Pillar 5 – Management System and Integrated Management System (IMS) •No Integrated Management System (IMS) implemented. •Waste segregation and disposal follow current legislation, with outsourced services. •Paper recycling occurs voluntarily, without formal institutional policy. •No formal articulation between environmental, social, and economic management processes. •Identified good practices occur in isolation and lack systemic integration across sectors.
Pillar 6 – Measurement, Disclosure, and Independent Assurance of Corporate Sustainability •Monitoring healthcare indicators related to women's health and diagnostic exams. •No sustainability reports published and no specific socio-environmental performance metrics adopted. •Sustainability impacts are not used as evaluation criteria for performance measurement or continuous improvement. •Absence of formal evaluation and public disclosure mechanisms limits visibility of existing practices.

4.5 Cross-analysis of case studies

The cross-case analysis of the four public health units revealed specific advances, but also significant gaps in the implementation of corporate sustainability principles within public healthcare management. Although isolated initiatives were observed particularly in Unit C, which stood out for conducting external audits and obtaining certifications for best healthcare practices there was a widespread absence of strategic sustainability plan-ning. None of the units presented clearly defined institutional guidelines or a formal Inte-grated Management System (IMS). This structural limitation weakened the coherence and continuity of sustainability actions. In addition, the absence of structured environmental and social reports, as well as formal instruments to monitor and disclose socio-environmental risk indicators, reduced transparency

and limited social accountability. This deficiency compromised informed decision-making and hindered the integration of sustainability as a strategic organizational value. Without systematic measurement and disclosure mechanisms, sustainability initiatives remained fragmented and insufficiently institutionalized. These vulnerabilities restricted the effective consolidation of sustainable practices within the public health context.

Therefore, despite the isolated initiatives identified across all units, such as staff training, improvements in healthcare waste management, and the adoption of digital technologies the assessment indicates that the four institutions remain at an early stage of corporate sustainability implementation. Most initiatives are operational rather than strategic, with limited integration into organizational planning, governance structures, and

performance management systems. The findings also reveal the absence of standardized sustainability indicators and systematic monitoring mechanisms capable of evaluating environmental, social, and economic outcomes over time. This fragmentation limits institutional learning, transparency, and the capacity to incorporate sustainability into decision-making processes. Advancing sustainability in public healthcare therefore requires coherent public policies, stronger

intersectoral collaboration, and integrated systems for performance evaluation and disclosure. In addition, greater investment in institutional capacity building, leadership engagement, and strategic planning is essential to consolidate sustainability as a core management principle rather than a set of isolated practices. Table 7 provides a comparative summary of these results.

Table 7. Summary of results by corporate sustainability pillar in healthcare units

Pillar	Unit A	Unit B	Unit C	Unit D
Corporate Governance	Municipal Health Council monitoring; no formal sustainability policy.	Internal and external audits; stakeholder communication; high management turnover.	Active Code of Ethics; Ministry audits; best practice certification; no sustainability policy.	Centralized management; no sustainable policies; no alignment with public sustainability strategies.
Corporate Sustainability Strategies	Training and protocol revision; no formal sustainability guidelines.	LED lighting and isolated actions; not integrated into strategic planning.	Ministry programs (HIV/AIDS); weak integration into strategic planning.	Energy efficiency improvements; no long-term sustainability planning.
Sustainable Human Resource Management	Continuous training; diversity promotion; no structured employee development program.	Occupational safety training; PPE distribution; no Integrated Management System (IMS).	Electronic records; audits; indicator monitoring; no sustainability reports.	Standardized protocols; outsourced waste management; no formal IMS.
Sustainable Knowledge and Innovation Management	Patient safety monitoring; outsourced waste collection; no sustainability reports.	Monitoring of adverse events; no integrated sustainability reporting.	Waste segregation; audits; indicator monitoring; limited environmental integration.	4D SUS technology; paper recycling initiatives; no formal environmental indicators.
Integrated Management System (IMS)	Isolated actions; no formal IMS.	Punctual actions; no IMS implemented.	Audits without structured IMS.	Isolated initiatives; no formal integrated system.
Independent Measurement, Reporting, and Assurance	No sustainability-focused satisfaction tools.	Occasional user feedback; no structured sustainability evaluation tools.	Best practice certifications; no public sustainability reports.	No external audits; no institutional sustainability reporting mechanisms.

4.6 Best practices and challenges in implementing corporate sustainability

The analysis of field data revealed the presence of corporate sustainability best practices across all investigated public health units, although mainly in a fragmented manner. Continuous professional training, revision of clinical protocols, implementation of multi-disciplinary flowcharts, and adoption of electronic medical records were identified as measures that enhance process standardization and operational efficiency. Solid waste management also emerged as a consistent practice, generally conducted in compliance with current legislation and, in some cases, supported by outsourced services. Additional initiatives included the installation of LED lighting to improve energy efficiency, implementation of ministerial programs such as HIV/AIDS, and training focused on biosafety, risk management, and patient safety. In terms of governance, the role of Municipal Health Councils, internal and external audits, and certifications for best healthcare practices contributed to strengthening transparency and quality culture. These findings indicate that social, environmental, and governance dimensions are gradually

being incorporated into public health management, albeit at an early stage.

However, the study also identified structural and strategic limitations that hinder the consolidation of these practices. Sustainability initiatives, although relevant, remain isolated and weakly connected to institutional planning processes. None of the evaluated units had implemented a formal Integrated Management System (IMS), which limits the systematic monitoring of sustainability goals and indicators. High managerial turnover further weakens administrative continuity and compromises the maturation of sustainable initiatives. The absence of leadership stability and ongoing managerial training restricts the institutionalization of sustainability efforts. In addition, governance gaps were observed, including the lack of formal codes of conduct, institutional sustainability policies, and structured performance indicators to guide decision-making.

Moreover, sustainability has not yet been fully integrated into institutional strategies, being constrained by centralized procurement processes without socio-environmental criteria, absence of environmental

planning, lack of guidelines for water reuse or circular economy practices, and limited eco-efficiency innovation. Although mechanisms for social participation exist, they are not systematically linked to performance-based management models. These findings reinforce the urgency of developing institutional sustainability policies, defining measurable indicators, and fostering a sustainable organizational culture capable of transforming isolated good practices into integrated and long-term structures. Organizing the results according to the six corporate sustainability pillars enables a comprehensive visualization of both achievements and persistent weaknesses in public health management.

This study highlights how the lack of structured environmental planning compromises organizational maturity in public health units, preventing sustainability from becoming a strategic and institutionalized axis of management. The findings indicate that sustainability initiatives remain fragmented and reactive, limiting their long-term effectiveness. In response, it is recommended that the municipality develop a Municipal Sustainability Plan for Public Health, establishing clear goals, timelines, responsibilities, and monitoring mechanisms. Such planning would strengthen governance, accountability, and alignment between environmental, social, and economic dimensions. Institutional commitment and formal strategic instruments are essential to ensure continuity and coherence in sustainability actions. Without them, efforts remain isolated and insufficiently integrated into public health management.

Moreover, the creation of specific sustainability indicators aligned with an Integrated Management System based on ISO standards (9001, 14001, and 45001) is recommended to improve performance monitoring and decision-making. The absence of structured metrics and integrated reporting currently limits the capacity for systematic evaluation and continuous improvement. Implementing standardized processes would enhance transparency, operational efficiency, and institutional learning. Expanding social participation in strategic decisions and fostering partnerships with universities, research centres, and environmental agencies would further strengthen innovation and technical capacity. Additionally, incorporating sustainability actions into the Multiannual Plan (PPA) would secure financial resources and institutional continuity. Together, these measures would consolidate sustainability as a central pillar of public health governance.

The analysis of the Corporate Governance pillar revealed mechanisms such as active stakeholder communication, municipal oversight, and audits that contribute to institutional transparency and accountability. However, formal sustainability policies were largely absent, reflecting governance gaps. This aligns with research showing that strong governance structures are critical for

sustainability integration, particularly when supported by internal policies and stakeholder engagement. The lack of continuity due to managerial turnover also mirrors findings that leadership stability is essential for embedding sustainability in public organizations (Southard & Swenseth, 2008). Thus, while governance practices exist, they remain insufficiently strategic and not fully aligned with sustainability frameworks. Within the Corporate Sustainability Strategies pillar, capacity building, energy efficiency initiatives, and programmatic engagement represent operational commitments toward quality improvement. Nevertheless, the absence of a formal sustainability roadmap limits strategic integration. This resonates with studies suggesting that organizations often implement sustainability actions without embedding them into long-term strategic management systems. Without structured sustainability plans, actions tend to be reactive and fragmented, hindering substantial progress (Alibašić, 2022; Li et al., 2018; Vargas-Hernández, 2022).

In the Sustainable Human Resource Management pillar, practices such as training, PPE provision, and record keeping support operational performance. However, the lack of a formal IMS and sustainability-linked HR policies weakens long-term workforce engagement. Literature demonstrates that embedding sustainability in human resource practices, including recruitment, retention, and training enhances organizational resilience and alignment with socio-environmental goals. Absent systematic reporting and HR integration, sustainability remains peripheral (Al-Romeedy & Alharethi, 2025; Cachón-Rodríguez et al., 2022; Christina et al., 2025).

The Sustainable Knowledge and Innovation Management pillar showed strengths in monitoring clinical performance and implementing advanced technologies. Yet environmental and sustainability knowledge production remains limited. This reflects broader trends in public sector innovation, where socio-environmental innovation is often secondary to operational innovation. Sustainable knowledge management, including systematic sustainability reporting and internal learning mechanism, has been linked to better integration of environmental and social outcomes (Ceptureanu et al., 2025; de Almeida Couto & Natário, 2023; Le Grand & Roberts, 2018). Regarding the Integrated Management System pillar, multiple units demonstrated isolated actions such as waste segregation and performance monitoring. However, no formal IMS was implemented, hindering systemic sustainability oversight. The literature emphasizes that integrated management systems encompassing quality, environment, and occupational health standards (ISO 9001, 14001, 45001) provide structural support for sustainability in complex organizations. Without integrated frameworks, sustainability practices remain compartmentalized and lack cross-departmental cohesion (Francisco et al., 2024; Nunhes et al., 2016; Qu et al., 2019).

In the Measurement, Reporting, and Independent Assurance pillar, sustainability-related reporting remains underdeveloped. While some certifications and satisfaction mechanisms exist, comprehensive sustainability evaluation tools are absent. This mirrors findings that formal sustainability reporting is critical to transparency and accountability, especially in public institutions. Independent assurance and structured performance indicators have been shown to strengthen stakeholder trust and strategic decision-making (Delgado Sánchez et al., 2026; Pizzi et al., 2024; Yan et al., 2022). Overall, the assessment across the six pillars indicates that the units are in the early stages of sustainability integration. Although positive practices exist, they lack systemic alignment and strategic institutionalization. Research on sustainability maturity models suggests that organizations progress through stages from isolated initiatives to integrated, performance-driven approaches when supported by strategic frameworks and enabling policies. These findings reinforce the need for coordinated public policies, effective measurement systems, and cultural shifts that embed sustainability into core management practices (Housni et al., 2022; Sari et al., 2021; Witjes et al., 2017).

5. CONCLUSION

Although a conclusion may review the main points of the This study aimed to analyse how public health units in a municipality in Paraíba Fluminense Midfielder region have incorporated corporate sustainability practices within the management framework of Brazil's UHS.

Adopting a qualitative approach supported by data triangulation and a consolidated theoretical foundation, the research sought to identify both progress and persistent challenges in implementing sustainability-oriented management practices. The findings indicate that, although isolated initiatives are present, sustainability has not yet been institutionalized as a strategic axis within the analyzed units. Key weaknesses include the absence of structured planning, limited use of specific sustainability indicators, and insufficient cross-

sectoral integration. These gaps reveal structural constraints in embedding sustainability into routine decision-making processes. Consequently, sustainability remains more reactive than systemic in the local public health context. The study therefore underscores the need for governance mechanisms capable of aligning strategic planning, operational practices, and ac-countability instruments with sustainability principles.

The main contribution of this research lies in providing empirical evidence that rein-forces the importance of consolidating sustainability as a permanent guideline in public health policies, particularly in alignment with the United Nations SDG. By highlighting managerial bottlenecks and opportunities for improvement, the findings offer practical insights for municipal decision-makers seeking to strengthen institutional governance, socio-environmental responsibility, and administrative efficiency. However, the study is limited by its territorial scope, which may restrict the generalizability of the results. Future research should therefore expand the geographical coverage and incorporate quantitative approaches to develop specific sustainability indicators for public health systems. Comparative studies across municipalities with different levels of sustainability maturity would also help identify critical success factors. Additionally, investigating the perceptions of managers and health professionals, as well as the impacts of sustainable policies on health outcomes and operational costs, represents a promising avenue for advancing this research agenda.

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APPENDIX A

Pillars	PROTOCOL FOR RESEARCH DATA COLLECTION		DATA COLLECTION TOOLS				
	ELEMENTS OF CORPORATE SUSTAINABILITY	SDG	Interviews			in loco	Document
			Senior	Tactical	Op		
Pillar 1	Cooperative relationship with stakeholders	17					
	Management support	3					
	Codes of conduct/corporate governance/ethics	16					
	Regulatory compliance	16					
	Transparency in management	16					
	Philanthropic responsibilities	1					
	Reputation and brand value assessment	9					
	Publish a corporate sustainability policy	12					
	Customer ideas and needs	12					
	Promotion and sponsorship of projects focused on sustainable development	17					
Pillar 2	Ethical commitments in relation to second and third world countries	10					
	Long-term orientation	13					
	Risk management	11					
	Corporate adjustment, improvement, or restructuring	9					
	Consideration of sustainability issues in purchasing	12					
	Strategic partnerships to overcome market barriers and promote new products and services	17					
	Market entry or development planning	9					
Pillar 3	Geographic and marketing segmentation	15					
	Human resources program	8					
	Organizational culture focused on sustainability	12					
	Minority and diversity programs	10					
	Employee wellness initiatives	3					
	Multidisciplinary innovation meetings	9					
	Development of employee green initiatives	12					
	Teamwork and employee training	8					
Pillar 4	Recruitment of local workers	8					
	Measures aimed at eco-efficiency	12					
	Product design aimed at innovation in environmental performance	12					
	Promotion of flexibility, learning, and, if necessary, change in processes	17					
	R&D with multidisciplinary innovation project teams	9					
	Co-development with commercial partners	17					
	Environmentally and socially superior products and services	12					
	Discussion panel on innovation with customers	9					
	Use of waste for revenue and reusable packaging for material delivery	12					
	Process improvements	9					
Pillar 5	Open dialogue across management levels and functions	16					
	Inspiration from networking and conferences	17					
	Integration and balance of social, environmental, and business activities and responsibilities	12					
	Health and safety initiatives	3					
	Becoming an agent of organizational change	17					
	Best management practices to promote sustainable supply chain management	12					
	Energy and water saving projects	6 e 7					
	Integration of corporate sustainability with management systems	12					
	Voluntary environmental restoration	15					
	Reducing the likelihood of environmental accidents	9					
	Reducing operations in environmentally sensitive locations	15					
	Handling of toxic waste, effluents, used customer products, plastic waste, paper, and others	12					
Pillar 6	Occupational health and safety standards and human rights	8					
	Sustainability management system	12					
	Corporate sustainability performance measurement system	13					
	Inspections and audits	9					
	Corporate sustainability report	12					
	Corporate sustainability assessment	12					
	Sustainability indices and guidelines	12					
	Corporate governance, compliance, and ethics standards	16					
	Impact analyses for each stakeholder	17					