

# Sustainable Financial Management for Hospitals: A Conceptual Framework

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**Research aims:** This paper aims to develop a framework for sustainable financial management in hospitals by integrating economic, social, and environmental sustainability principles. The study identifies best practices in financial management through a literature review and provides guidelines for healthcare administrators and policymakers.

**Design/Methodology/Approach:** This study uses a qualitative approach with literature analysis to develop a framework for sustainable financial management in hospitals, drawing on theoretical frameworks like Triple Bottom Line (TBL) and integrated reporting.

**Research findings:** Findings highlight the importance of value-based care, green hospital initiatives, and equity-driven financial models for long-term financial viability while supporting global sustainability goals, including the United Nations Sustainable Development Goals (SDGs).

**Theoretical contribution/Originality:** Theoretical contributions include adapting sustainability frameworks, such as the TBL and integrated financial reporting, to the hospital sector and aligning financial planning with sustainability objectives. This originality bridges gaps in the existing literature by presenting a unified approach that addresses the complexities of healthcare operations.

**Practitioner/Policy implication:** Practitioner implications suggest that adopting sustainable financial practices can improve hospitals' efficiency, reduce ecological footprints, and promote equitable access, particularly in low-resource settings. Policymakers are encouraged to support these efforts through financial incentives and standardized sustainability frameworks.

**Research limitation/Implication:** The study acknowledges limitations such as the lack of standardized sustainability reporting tools and financial constraints in implementing green and equitable practices. Future research should focus on developing universal sustainability metrics, real-time monitoring tools, and strategies for stakeholder engagement.

**Keywords:** Hospital; Sustainable Development Goals; Sustainable Financial Management

## Classification

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## Introduction

Sustainable financial management is increasingly recognized as a critical component in ensuring hospitals' long-term viability and efficiency globally. As healthcare systems worldwide face rising costs, ageing populations, and increasing demand for services, hospitals face the complex challenge of balancing financial stability with delivering high-quality care (Kourtis et al., 2021; Sharma, 2022). Traditional approaches to hospital finance, which primarily focus on cost reduction and operational efficiency, are being augmented by new models of sustainability that incorporate economic, social, and environmental factors (Liaropoulos & Goranitis, 2015). Hospitals are responsible for delivering patient care and must manage their operations in a way that aligns with broader sustainability goals, including those articulated in the United Nations Sustainable Development Goals (SDGs) (Nations, 2015).

The economic sustainability of hospitals is inherently linked to their ability to generate revenue while controlling costs (Dion et al., 2023). With escalating healthcare expenditures, especially in public health systems, many hospitals are exploring strategies such as value-based care, financial performance optimization, and alternative payment models (Milojević, 2024; Sun et al., 2019). These approaches aim to improve patient outcomes while reducing unnecessary spending, ultimately contributing to the hospital's long-term financial sustainability (Galstian et al., 2018; Manik et al., 2024). Hospitals, especially those in low- and middle-income countries, must prioritize financial management strategies that ensure equitable access to care while maintaining fiscal responsibility (Das et al., 2021). The growing recognition of these factors shapes policy frameworks and best practices within the hospital sector.

In addition to economic considerations, hospitals are increasingly tasked with integrating environmental sustainability into their operational models (Sherman et al., 2020). Hospitals consume substantial resources, including energy, water, and raw materials, contributing significantly to their carbon footprint (Annura et al., 2022). As part of their commitment to global environmental goals, healthcare facilities are adopting green hospital initiatives that seek to reduce waste, enhance energy efficiency, and minimize the environmental impact of hospital infrastructure (Tomanek, 2024). Initiatives such as sustainable procurement, waste reduction strategies, and using renewable energy sources are becoming more common as hospitals seek to fulfil their environmental obligations (Dion et al., 2023). Green hospitals contribute to environmental sustainability and realize long-term financial savings through more efficient operations (Annura et al., 2022).

Social sustainability is another crucial aspect of hospital financial management, especially in ensuring equitable access to healthcare services. Hospitals' financial strategies should account for underserved populations' needs, addressing social determinants of health such as income inequality, education, and access to healthcare services (Andrades et al., 2024). Financial models prioritizing equity-driven policies, such as subsidies for low-income patients and programs to reduce health disparities, are essential for fostering socially responsible healthcare (Asante et al., 2020). Furthermore, hospitals need to balance the need for financial sustainability with their ethical responsibility to provide care to marginalized communities (Lee et al., 2023). Sustainable financial management models must incorporate cost-effective care delivery and social inclusivity.

Integrating sustainability principles into hospital financial management is still in its infancy, with many healthcare institutions struggling to incorporate these dimensions into their standard financial planning processes (Marasca et al., 2024). One of the barriers to adopting sustainable financial practices is the lack of standardized frameworks and tools for sustainability reporting in hospitals (Sherman et al., 2020). While models such as the Triple Bottom Line (TBL) have been successfully employed in other sectors, adapting these frameworks for hospitals remains challenging due to the complexities involved in healthcare service delivery (Alim & Sulley, 2024). Integrated financial reporting, which combines financial and sustainability metrics, has been proposed to bridge this gap, allowing hospitals to better align financial management with sustainability goals (Sharma, 2022). Such reporting systems have the potential to improve transparency, enhance accountability, and provide stakeholders with a more holistic view of a hospital's performance across economic, social, and environmental dimensions.

This paper seeks to develop a framework for sustainable financial management in hospitals, integrating economic, social, and environmental sustainability principles into a cohesive strategy. The paper proposes actionable guidelines for healthcare administrators and policymakers to incorporate sustainability into hospital financial systems by reviewing current literature and identifying best practices in financial management. The adoption of such a framework has the potential to not only improve the long-term financial viability of hospitals but also contribute to the global efforts to meet the United Nations SDGs and foster healthcare systems that are not only economically efficient but also socially inclusive and environmentally responsible. Based on the discussion, this study aims to answer the following questions:

**RQ<sub>1</sub>:** *How can economic, social, and environmental sustainability principles be integrated into hospital financial management?*

**RQ<sub>2</sub>:** *How does implementing sustainability principles in hospital financial systems affect achieving United Nations Sustainable Development Goals?*

**RQ<sub>3</sub>:** *To what extent does adopting a sustainable financial management framework affect economic efficiency, and what obstacles do hospitals face?*

## Literature Review

### Economic Sustainability in Hospitals

Economic sustainability is crucial for the long-term viability of hospitals. With the increasing demand for healthcare services, particularly in the face of ageing populations and rising costs, hospitals must maintain financial health while enhancing care quality. Traditional approaches focusing on cost reduction are evolving to include models integrating economic sustainability into financial practices. Studies suggest that hospitals must balance cost containment with long-term financial viability, using value-based care models, which focus on quality outcomes rather than volume (Salvatore et al., 2021). Value-based care models aim to reduce unnecessary expenditures while improving patient satisfaction, ultimately promoting financial sustainability (Ross et al., 2019). These models have shown promise in hospitals across both high- and low-income settings, where reducing unnecessary care can result in better allocation of financial resources and improved patient outcomes (Reitblat et al., 2021).

Alternative payment models are also emerging as effective strategies for improving hospital financial sustainability. According to Manik et al. (2024), these models, such as bundled payments or capitation, link reimbursements to the quality and efficiency of care, encouraging hospitals to focus on cost-effective treatment options. In low- and middle-income countries, where financial resources are often scarce, prioritizing these models is essential for achieving equity and financial sustainability in healthcare systems (Das et al., 2021). These countries must develop sustainable financial strategies that maintain fiscal responsibility while promoting equitable access to healthcare.

### Environmental Sustainability and Green Hospital Initiatives

Hospitals are large consumers of resources and significant contributors to environmental degradation. Reducing their ecological footprint is critical to aligning hospital operations with global sustainability goals. Adopting green hospital initiatives has become a key strategy for reducing environmental impact while achieving operational cost savings. Recent studies have highlighted the importance of improving hospital resource efficiency by reducing energy consumption, water use, and waste (Annura et al., 2022). Green initiatives, such as using renewable energy sources and sustainable procurement, can reduce a hospital's carbon footprint and lower operational costs in the long term (Dion et al., 2023).

For instance, energy-efficient hospital designs that incorporate sustainable materials and technologies are gaining traction as an essential component of environmental sustainability (Tomanek, 2024). Hospitals that adopt such practices can see significant cost reductions, making green initiatives financially viable. Additionally, waste reduction strategies, including recycling and composting, help mitigate the environmental impact of hospital operations while promoting sustainability (Sherman et al., 2020). Despite these promising outcomes, hospitals often face barriers such as financial constraints and a lack of standardized reporting frameworks for sustainability, which hinder the broader adoption of green practices (Marasca et al., 2024).

### **Social Sustainability and Equity in Healthcare Finance**

Social sustainability in hospitals ensures equitable healthcare access, particularly for underserved populations. Social determinants of health, such as income inequality, education, and access to healthcare services, play a significant role in shaping health outcomes (Andrades et al., 2024). For hospitals to achieve social sustainability, they must adopt financial models that prioritize the needs of marginalized communities. Equity-driven financial models, which provide subsidies for low-income patients or implement sliding-scale payment options, are essential for promoting inclusive healthcare (Asante et al., 2020).

Lee et al. (2023) emphasizes the importance of balancing financial sustainability with ethical responsibility, ensuring that hospitals continue to provide care to vulnerable populations without compromising service quality. Integrating social sustainability into financial planning involves managing healthcare costs and ensuring that care is accessible to all patients, regardless of their socio-economic status. It includes funding programs that reduce health disparities and integrating community health initiatives that improve the overall well-being of underserved populations.

### **The Integration of Sustainability Frameworks in Hospital Financial Management**

Integrating sustainability principles into hospital financial management requires frameworks that address economic, environmental, and social dimensions. One such framework is the TBL, which assesses performance based on people, planet, and profit (Elkington, 1997). While TBL has been widely used in other sectors, its application in hospitals has been less straightforward. According to Alim and Sulley (2024), adapting the TBL model to healthcare is challenging due to the complexity of healthcare service delivery and the need to balance financial, social, and environmental objectives.

Recent advancements have proposed integrated financial reporting as a solution to incorporate sustainability metrics alongside traditional financial performance indicators. Sharma (2022) discusses how integrated reporting can enhance hospital transparency and accountability by providing a comprehensive view of a hospital's performance in both financial and sustainability dimensions. This reporting format allows hospitals to align their financial management strategies with sustainability goals and track progress toward achieving the SDGs.

Although integrated reporting presents a promising solution, the lack of standardized tools remains a barrier to widespread adoption. Sherman et al. (2020) stress that universal frameworks for sustainability reporting are needed to enable hospitals to consistently measure and report on their environmental, social, and economic impacts. Developing these tools will allow hospitals to integrate sustainability into their financial management systems better, improving overall performance and facilitating the achievement of the United Nations SDGs.

### **Challenges and Barriers to Implementation**

Despite the potential benefits, hospitals face significant challenges in implementing sustainable financial management frameworks. The most pressing issue is the lack of standardized reporting frameworks for sustainability, which makes it difficult for hospitals to measure and compare their sustainability performance effectively (Sherman et al., 2020). Additionally, financial constraints remain a significant barrier, particularly in low-resource settings, where hospitals may not have the budget to invest in green technologies or equity-driven care models (Marasca et al., 2024).

Another challenge is the organizational culture of healthcare institutions. Marasca et al. (2024) argues that for hospitals to embrace sustainable financial practices, a cultural shift is required to prioritize long-term sustainability over short-term cost savings. Policymakers play a critical role in supporting the transition by providing financial incentives, developing regulatory frameworks, and encouraging the adoption of standardized sustainability metrics.

## Results and Discussions

### Framework for Sustainable Financial Management in Hospitals

Integrating sustainability into hospital financial management requires a comprehensive framework that focuses on economic sustainability and incorporates environmental and social sustainability goals. A robust framework ensures that hospitals remain financially viable while addressing pressing global challenges like climate change and healthcare inequities. The proposed framework for sustainable financial management in hospitals draws upon international standards, best practices, and theoretical models, integrating principles from value-based care, environmental sustainability, and social equity (Dion et al., 2023; Duque-Urbe et al., 2019).

**Table 1** Framework for Sustainability Financial management in Hospital

Dimension	Key Practices	Expected Outcomes
Economic Sustainability	Adoption of value-based care models	Improves financial efficiency
	Use of activity-based costing	Optimized resource allocation
	Strategic Revenue generation (e.g., public-private partnership)	Controlled cost while ensuring quality care
Environmental Sustainability	Implementation of green hospital practices (energy-efficient design, renewable energy use)	Reduce ecological footprint
	Green procurement and circular economy integration	Long-term financial saving through energy efficiency
	Adoption of energy management system	Compliance with sustainability targets
Social Sustainability	Equity-driven financial model (subsidized care, outreach programs)	Enhanced healthcare access for marginalized communities
	Community engagement initiatives	Improved social determinants of health
	Integration of social responsibility reporting	Demonstrated commitment to equity and well-being
Integrated Reporting	Incorporation of sustainability metrics (e.g., carbon footprint, patient satisfaction) into financial reporting	Increased transparency and accountability
	Adherence to Global Reporting Initiative (GRI) and International Integrated Reporting Council (IIRC) frameworks	Progress toward UN SDGs
	Holistic assessment of hospital performance	

Source: Processed by Author

Table 1 summarizes the key dimensions of the proposed framework for sustainable financial management in hospitals, categorized into economic, environmental, and social sustainability. Specific practices are outlined for each dimension, such as value-based care, green hospital practices, and equity-driven financial models. Additionally, the expected outcomes are highlighted, including improved financial efficiency, reduced ecological footprint, and enhanced healthcare access. Table 1 also emphasizes the role of integrated reporting, which combines financial and sustainability metrics to provide a comprehensive view of hospital performance and progress toward global sustainability goals.

### **Economic Sustainability: Value-Based Care and Financial Efficiency**

Economic sustainability is at the framework's core, prioritizing financial viability while optimizing healthcare outcomes. This aspect of the framework encourages the adoption of value-based care models that focus on improving patient outcomes while controlling costs (Milojević, 2024). Value-based care shifts the focus from volume-driven revenue generation to outcomes-driven reimbursement, incentivizing hospitals to deliver high-quality care while minimizing unnecessary treatments and reducing waste (Cheng et al., 2022). In this model, hospitals track clinical and financial performance indicators, ensuring patient care is delivered efficiently without compromising quality.

Financial performance optimization is another critical component of economic sustainability. It involves cost containment, efficient resource allocation, and carefully monitoring financial ratios such as operating margins, profitability, and return on assets. Hospitals can achieve this by utilizing sophisticated financial modelling techniques, such as activity-based costing, to ensure that resources are allocated where they are most needed (Niñerola et al., 2021). Additionally, hospitals must focus on strategic revenue generation through diverse sources, such as public-private partnerships and fundraising initiatives, to mitigate the impact of financial challenges, especially in low-resource settings (Hung & Hager, 2019).

### **Environmental Sustainability: Green Hospital Practices**

The environmental sustainability aspect of the framework is built on the Green Hospital concept, which emphasizes reducing the ecological footprint of healthcare facilities. Hospitals are significant energy, water, and raw materials consumers, making their operations key contributors to environmental degradation. As such, the framework integrates green practices in hospital infrastructure and operations. These practices include energy-efficient building designs, using renewable energy, and the reduction of waste generation through recycling and reusing medical supplies (Chisholm et al., 2021).

Integrating environmental sustainability also involves green procurement policies, prioritizing the purchase of sustainable products and services, and adopting circular economy principles (Lăzăroiu et al., 2020). Hospitals are encouraged to implement energy management systems that optimize energy consumption, track carbon emissions, and set sustainability targets (Kaur, 2024). By aligning hospital operations with environmental sustainability goals, hospitals not only reduce their ecological impact but also generate financial savings over time through energy efficiencies and reduced operational costs (Sharma, 2022).

### **Social Sustainability: Equity in Healthcare and Community Engagement**

Social sustainability ensures equitable access to healthcare services and promotes social responsibility. A sustainable hospital model should address health disparities and ensure healthcare is accessible to all population groups, particularly marginalized and vulnerable communities (Asante et al., 2020). This framework dimension encourages hospitals to adopt equity-driven financial models that prioritize services for low-income patients, underserved communities, and those with chronic conditions (Das et al., 2021). These models involve subsidized care, outreach programs, and integrated healthcare services that bridge the gap between financial sustainability and social equity.

Moreover, the engagement of local communities in healthcare initiatives is a key aspect of social sustainability. Hospitals should actively collaborate with community organizations, government agencies, and non-profits to address the social determinants of health, such as education, housing, and nutrition, which influence health outcomes (Prokosch et al., 2022). Hospitals can create social responsibility reports alongside their financial reports to demonstrate their commitment to health equity and community well-being. These reports can be integrated with sustainability indices and evaluated against frameworks such as the GRI, which helps to assess and communicate social impacts (Creixans-Tenas et al., 2020).



### **Integrating Sustainability with Financial Reporting: The Role of Integrated Reporting**

An essential feature of this framework is the incorporation of sustainability metrics into financial reporting. Integrated financial reporting combines traditional financial statements with sustainability indicators, creating a more holistic view of a hospital's performance (Almagtome et al., 2020). This model encourages hospitals to report on their financial health, environmental performance, and social outcomes. Sustainability disclosures should include data on energy usage, waste management, carbon footprint, patient satisfaction, and access to care, among other indicators (Annura et al., 2022). Integrated reporting, as advocated by international bodies like the IIRC, offers a framework that can guide hospitals in presenting a cohesive picture of their financial, environmental, and social contributions (Russo, 2023).

Hospitals that adopt integrated reporting can better align their financial management with long-term sustainability goals, enabling stakeholders such as government agencies, donors, and the public society to assess their overall performance. Data transparency is key in this process, as it fosters accountability and builds stakeholder trust (Annura et al., 2022). Moreover, it allows healthcare organizations to track their progress toward meeting global targets such as the United Nations SDGs, which include goals related to health and well-being, affordable and clean energy, and responsible consumption and production (Nations, 2015).

### **Challenges and Future Directions**

While the framework outlined above provides a comprehensive approach to sustainable financial management in hospitals, several challenges remain. The lack of standardized metrics for sustainability, especially in the healthcare sector, complicates the implementation of this framework (Annura et al., 2022). Furthermore, hospitals face financial constraints that can limit the adoption of green technologies or equitable healthcare programs. Future research should focus on developing universal sustainability standards for the hospital sector, providing financial incentives for hospitals to adopt sustainable practices, and enhancing data integration tools that allow for seamless reporting of financial and sustainability metrics (Fadda, 2020).

Additionally, stakeholder engagement and government policies will play a crucial role in the widespread adoption of sustainable financial management practices. Hospitals must navigate complex regulatory environments while ensuring they remain financially sustainable. Policymakers should consider financial support mechanisms, such as grants and tax incentives, to encourage the adoption of sustainability initiatives in healthcare (Cheng et al., 2022). By addressing these challenges, hospitals can not only improve their financial sustainability but also contribute meaningfully to the global health agenda.

Despite the compelling case for sustainable financial management in hospitals, several barriers must be overcome to fully implement the proposed framework. First, hospitals may face financial constraints that prevent the adoption of green technologies or equitable healthcare programs, especially in low-resource settings (Cheng et al., 2022). High upfront costs for sustainable infrastructure, such as energy-efficient buildings and renewable energy systems, can be a significant deterrent. Therefore, policy interventions, including subsidies and financial incentives, are critical to support hospitals transitioning to sustainable practices. Government agencies and international organizations must create a conducive environment by offering financial support for green hospital initiatives and promoting public-private partnerships (Sherman et al., 2020).

Another challenge lies in data availability and measurement tools. The lack of standardized sustainability metrics in the healthcare sector complicates efforts to assess and monitor hospital operations' environmental and social impacts (Sherman et al., 2020). Therefore, developing universal standards for sustainability reporting in hospitals based on frameworks like the GRI or the International Integrated IIRC is crucial. Such standards would provide hospitals with clear guidelines on disclosing financial and non-financial

performance metrics (Creixans-Tenas et al., 2020). Furthermore, integrating sustainability reporting with financial performance assessments can improve transparency and help hospital administrators make informed decisions that balance cost-efficiency with sustainable development goals (Sharma, 2022).

Stakeholder engagement is another critical aspect of the framework. Ensuring that all relevant stakeholders—such as patients, staff, local communities, and government agencies—are involved in the decision-making process is essential for the long-term success of sustainability initiatives. Hospitals should collaborate with community organizations and non-profits to address the social determinants of health and promote health equity (Asante et al., 2020). Effective stakeholder communication can also help build public trust and secure additional funding or support for sustainability programs.

Lastly, future research should explore digital tools and technologies that can enhance sustainable financial management in hospitals. The use of advanced analytics, artificial intelligence, and big data can provide valuable insights into resource consumption patterns, cost optimization, and environmental impact. These tools could help hospitals better track and measure sustainability metrics in real-time, leading to more informed decision-making and more effective implementation of the framework (Niñerola et al., 2021).

**Table 2** Barriers, Solution, and Outcomes in Sustainable Financial Management

Barrier	Proposed Solution	Expected Outcome
Financial Constraints	Introduce subsidies and financial incentives	Increased adoption of green technologies and equitable programs
	Promote public-private partnership (PPPs)	Reduced financial burden
Lack of Standardized Metrics	Develop universal sustainability reporting standards (e.g., GRI, IIRC)	Enhanced transparency
	Integrate financial and sustainability reporting	Clear performance assessment and alignment with sustainability goals
Data Availability and Tools	Invest in digital tools like artificial intelligence, big data, and advanced analytics	Improves decision-making
	Use real-time tracking systems for resource management	Optimized resource use and sustainability tracking
Stakeholder Engagement	Foster collaboration with community organizations, non-profits, and government agencies	Strengthened public trust
	Promote inclusive decision-making progresses	Improved funding and support for sustainability initiatives

Source: Processed by Author

Table 2 highlights key barriers to implementing sustainable financial management in hospitals, such as financial constraints, lack of standardized metrics, limited data availability, and insufficient stakeholder engagement. Proposed solutions include financial incentives, universal reporting standards, advanced digital tools, and collaborative approaches with stakeholders. The expected outcomes include increased adoption of sustainable practices, improved transparency, optimized resource use, and stronger public trust, ensuring hospitals balance financial efficiency with sustainability goals.



## Conclusion

This article outlines a comprehensive sustainable hospital financial management framework, emphasizing integrating economic, social, and environmental sustainability into hospital operations. As the global healthcare sector faces increasing financial pressures, hospitals must adopt practices that balance financial sustainability with broader societal and environmental goals. The proposed framework offers practical guidance for healthcare administrators to navigate the complexities of managing hospital finances while achieving health equity, environmental responsibility, and financial efficiency.

Key to the framework's success is the adoption of value-based care models that prioritize patient outcomes while reducing costs (Milojević, 2024). Simultaneously, green practices and sustainable procurement strategies can reduce environmental impacts and operational costs, aligning with international sustainability goals (Dion et al., 2023). Social sustainability requires hospitals to address health disparities, ensuring equitable access to care for marginalized communities (Asante et al., 2020). Moreover, integrating sustainability reporting with traditional financial reporting through integrated reporting mechanisms can improve transparency, foster accountability, and enhance long-term decision-making (Annura et al., 2022).

While the implementation of the framework is not without challenges, such as financial constraints, data measurement issues, and the need for stakeholder engagement, these obstacles can be overcome through policy interventions, standardized reporting tools, and technological innovation. Governments and international organizations must support hospitals in adopting sustainable practices through financial incentives, and researchers must continue to refine sustainability metrics tailored to the healthcare sector. In conclusion, the sustainable financial management of hospitals is a strategic imperative and a moral obligation to ensure that healthcare systems remain accessible, equitable, and environmentally responsible. By embracing sustainability, hospitals can safeguard their long-term financial viability, enhance patient care, and contribute to the broader goal of sustainable development.

Future research should focus on developing universal sustainability standards for healthcare and refining financial models that integrate both short-term efficiency and long-term sustainability goals. Additionally, studies should examine how digital tools and artificial intelligence in healthcare financial management can further optimize hospital operations and enhance decision-making capabilities.

Hospitals and policymakers must collaborate closely to align healthcare financial practices with global sustainability frameworks, such as the United Nations Sustainable Development Goals, particularly those focusing on health and well-being, affordable and clean energy, and responsible consumption and production (Nations, 2015). Through such collaborative efforts, hospitals can foster a more sustainable, equitable, and resilient healthcare system for future generations.

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