2026

Evaluating the influence of strategy execution using the Balanced Scorecard (BSC) on hospital performance: a case of a multispecialty hospital in rural Kenya.

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EVALUATING THE INFLUENCE OF STRATEGY EXECUTION USING THE BALANCED SCORECARD (BSC) ON HOSPITAL PERFORMANCE: A CASE OF A MULTISPECIALTY HOSPITAL IN RURAL KENYA

BY

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A RESEARCH THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION IN HEALTHCARE MANAGEMENT OF STRATHMORE UNIVERSITY BUSINESS SCHOOL

JUNE, 2026

DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the dissertation contains no material previously published or written by another person except where due reference is made in the dissertation itself.

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DEDICATION

I dedicate this thesis to my parents, Prof. & Mrs. George Reche, whose love, sacrifices, and encouragement have been a constant source of strength. To my family and loved ones, thank you for believing in me throughout this journey.

ACKNOWLEGEMENT

I thank God for the grace and favour that has sustained me throughout this endeavor.

My deepest appreciation goes to Dad and Mom, Prof. & Mrs. George Reche, for their unwavering support throughout the entire period.

To my family: Dr. Noah Tarus, Bella, Liam, Nadine, and Ayanna, you were my emotional backbone.

To my siblings, Lena and Steve, your presence kept me going.

To my friend, Yuvine Otieno, you made the journey real, enjoyable, and lighter.

My sincere gratitude to Prof. Joseph Onyango for his steadfast guidance and support throughout this research.

ABSTRACT

This study examined the influence of Balanced Scorecard (BSC)-based strategy execution on hospital performance at South Rift Level 5 Hospital, a multispecialty private facility in rural Kenya. The study assessed the effects of BSC implementation, environmental factors, resource adequacy, and strategic alignment on hospital performance. Guided by the Resource-Based View, Configuration Theory, and the Balanced Scorecard framework, the study adopted a positivist, descriptive cross-sectional design. Data were collected from 92 employees using structured questionnaires and analyzed using descriptive statistics, correlation, and multiple regression in R software. Findings showed that BSC implementation had a significant positive effect on hospital performance ($\beta = 0.186$, $p = .026$). Environmental factors were the strongest predictor of performance ($\beta = 0.413$, $p < .001$), with patient affordability identified as the main constraint. Strategic alignment also significantly improved performance ($\beta = 0.264$, $p = .008$), demonstrating the importance of linking organizational objectives to operational activities. Although resource adequacy was positively perceived, it did not independently predict performance. The regression model explained 69.8% of the variance in hospital performance. The study concludes that effective strategy execution in rural hospitals depends on BSC implementation, strategic alignment, and a supportive operating environment. It recommends investment in staff development, digital BSC monitoring systems, and initiatives that improve patient access to health insurance. Given the study's cross-sectional and single-hospital design, the findings should be interpreted cautiously and validated through future multi-institutional research.

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LIST OF ABBREVIATIONS

Abbreviation	Full Meaning
BSC	Balanced Scorecard
CEO	Chief Executive Officer
ICT	Information and Communication Technology
KPI	Key Performance Indicator
LMICs	Low- and Middle-Income Countries
NPS	Net Promoter Score
R	Statistical software used for data analysis
RBV	Resource-Based View
SD	Standard Deviation
SHA	Social Health Authority
SHIF	Social Health Insurance Fund
SU-ISERC	Strathmore University Institutional Scientific and Ethics Review Committee

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CHAPTER ONE

INTRODUCTION

This chapter introduces the study, which evaluates how strategy execution using the Balanced Scorecard (BSC) influences hospital performance, focusing on South Rift Level 5 Hospital, a multispecialty private facility in rural Kenya. It presents the background, problem statement, objectives, research questions, scope, and significance of the study. The chapter also establishes the rationale for adopting the Balanced Scorecard as a strategic management framework for enhancing strategy execution in healthcare organizations operating under resource constraints.

1.1 Background of the Study

Strategy provides the long-term direction of an organisation by defining its mission, vision, values, and strategic priorities (Whittington et al., 2020). Yet translating strategic plans into measurable operational outcomes remains a persistent challenge for healthcare institutions, particularly those operating in resource-constrained environments (Kaplan & Norton, 1996a). To address this execution gap, Kaplan and Norton (1992) developed the Balanced Scorecard (BSC); a strategic management system that links organisational objectives with measurable indicators across four interrelated perspectives: financial, customer, internal business processes, and learning and growth.

In Kenya, private hospitals play an increasingly central role in supplementing public health capacity, yet many continue to struggle with strategy execution failures characterised by weak interdepartmental coordination, fragmented performance monitoring, and limited use of performance data in decision-making (Munyi, 2023; Waswa & Osoro, 2024). These gaps are particularly pronounced in rural multispecialty hospitals, where resource constraints compound the complexity of aligning diverse clinical and administrative functions under a coherent strategic framework.

Evidence from comparable settings in Sub-Saharan Africa confirms that structured performance management frameworks, where adopted, improve alignment between strategy and operations and generate measurable gains in service quality and institutional accountability (Amer et al., 2022; Yeshaw et al., 2025). South Rift Level 5 Hospital, established in February 2023 in Kericho County, exemplifies both the promise and the operational vulnerabilities of rural private healthcare in

Kenya. Despite investing in modern infrastructure and a clearly articulated strategic plan, the hospital faces coordination difficulties between strategic intent and day-to-day operations: departmental activities frequently function in silos, performance reviews are irregular, and linkages between strategic priorities and measurable performance indicators remain underdeveloped. For a newly established multispecialty facility serving a largely rural population, establishing a coherent and institutionalised performance management framework is therefore both urgent and strategically consequential.

The Balanced Scorecard offers a structured mechanism through which hospital leadership can translate strategic objectives into quantifiable operational targets, track progress through periodic reviews, and align departmental initiatives toward shared institutional outcomes (Bahadur et al., 2024). Within rural, resource-constrained hospitals, this alignment fosters operational efficiency, promotes accountability, and supports continuous learning; core institutional capabilities identified by the Resource-Based View (RBV) and Configuration Theory as determinants of sustainable organisational performance (Barney & Clark, 2007; Miller, 1986). By situating this study within South Rift Level 5 Hospital, the research examines how the BSC can strengthen strategy execution, improve cross-functional coordination, and enhance overall hospital performance in a rural Kenyan context, thereby addressing a substantive empirical and practical gap in the literature.

1.2 Problem Statement

Despite the growing role of private healthcare in Kenya's health system, many private hospitals in rural areas continue to struggle with effective strategy execution (Gatakaa et al., 2019; Munyi, 2023). South Rift Level 5 Hospital in Kericho County exemplifies these difficulties. Although the hospital possesses a clearly articulated strategic plan, initial management assessments and stakeholder consultations conducted prior to this study revealed persistent execution deficits across three operational dimensions. First, interdepartmental coordination was fragmented: clinical and administrative departments routinely set independent activity targets without systematic reference to overarching hospital strategy, resulting in duplicated efforts and resource misallocation. Second, performance monitoring was irregular and largely informal: no hospital-wide performance review cycle had been institutionalised, and available operational data, including diagnostic unit utilisation logs and patient throughput records, were not being systematically analysed to inform strategic decisions. Third, strategic intent had not been cascaded to individual operational roles:

front-line staff were unable to articulate how their daily responsibilities connected to the hospital's stated strategic objectives. These gaps manifested in observable operational inefficiencies, including delays in diagnostic service turnaround, underutilisation of specialised theatre capacity, and staff role ambiguity during interdepartmental referrals (Bahadur et al., 2024; Malakoane et al., 2020). Taken together, these conditions represent diagnostic evidence of a strategy execution failure rather than a resource deficit: a distinction that justifies the Balanced Scorecard as the primary analytical and prescriptive framework for this study, given its established effectiveness in linking strategic intent to operational accountability across comparable healthcare settings (Amer et al., 2022; Kaplan & Norton, 1996b).

1.3 Research Objectives

The main objective of the study is to examine how strategy execution using the Balanced Scorecard (BSC) influences hospital performance at South Rift Level 5 Hospital in Kericho County, Kenya.

The specific objectives of the study are:

i. To explore how Balanced Scorecard implementation influences key performance indicators of South Rift Level 5 Hospital.
ii. To analyze the role of environmental factors (such as health policies, socioeconomic conditions, and technology) in shaping the effectiveness of BSC implementation.
iii. To determine how resource adequacy influences the relationship between BSC implementation and performance outcomes at South Rift Level 5 Hospital.
iv. To assess how Balanced Scorecard implementation facilitates the alignment of hospital operations with strategic goals.

1.4 Research Questions

i. How does the implementation of the Balanced Scorecard influence key performance indicators at South Rift Level 5 Hospital?
ii. In what ways do environmental factors shape the relationship between BSC implementation and hospital performance?
iii. To what extent does resource adequacy affect the effectiveness of Balanced Scorecard implementation and hospital performance at South Rift Level 5 Hospital?

iv. How does BSC implementation facilitate the alignment of hospital operations with strategic goals?

1.5 Scope of the Study

This study focuses on the application of the Balanced Scorecard (BSC) as a strategy execution framework at South Rift Level 5 Hospital, a private multispecialty facility in rural Kericho County. It examines how the four BSC perspectives (financial, customer, internal processes, and learning and growth) are implemented and how they influence hospital performance. The analysis concentrates on strategic planning, monitoring, and performance evaluation at departmental and leadership levels over the 2023–2025 operational period. The study does not evaluate external health policy implementation beyond the institution but draws lessons applicable to similar rural hospitals in Kenya and Sub-Saharan Africa.

1.6 Significance of the study

The study enriches strategic management literature by linking the Balanced Scorecard framework with the Resource-Based View (RBV) and Configuration Theory, demonstrating how internal resources and organizational alignment interact to drive performance. It contributes to theory by contextualizing BSC application within rural healthcare institutions in developing economies, addressing an underexplored area in academic research.

For hospital administrators, the study provides practical insights on how to adapt and operationalize the BSC to improve strategic alignment, accountability, and operational efficiency. The study provides insights that help healthcare managers identify context-appropriate performance indicators, improve coordination between departments, and strengthen data-driven decision-making.

The results can inform policymakers and regulators in Kenya on the need to integrate performance management systems into private healthcare oversight frameworks. Demonstrating how BSC can improve service delivery in rural settings may guide policy interventions that encourage structured strategy execution across private hospitals.

1.7 Definitions of Key Terms

1. **Strategy Execution:** The process by which South Rift Level 5 Hospital implements its strategic plans through aligned operational activities, coordinated departmental actions, and systematic performance monitoring to achieve institutional objectives.

2. **Balanced Scorecard (BSC):** A strategic management and performance measurement framework used in this study to translate hospital strategy into measurable objectives across four perspectives (financial, customer, internal business processes, and learning and growth) to enhance strategy execution and hospital performance.

3. **BSC Implementation:** The adoption, operationalisation, and institutionalisation of the Balanced Scorecard framework at South Rift Level 5 Hospital as a strategy execution mechanism; the independent variable of this study.

4. **Performance Management:** The broader institutional practice of setting objectives, monitoring performance data, conducting reviews, and making evidence-based adjustments; the wider category within which BSC implementation falls.

5. **Hospital Performance:** The overall effectiveness of the hospital as measured in this study through financial sustainability, operational efficiency, patient satisfaction, internal process efficiency, and human resource performance.

6. **Financial Perspective:** A dimension of the Balanced Scorecard that focuses on financial outcomes such as cost control, revenue growth, reimbursement efficiency, and prudent utilization of hospital resources.

7. **Customer Perspective:** A Balanced Scorecard dimension that assesses patient-related outcomes, including satisfaction, service quality, access to care, patient retention, and community trust in hospital services.

8. **Internal Business Processes Perspective:** A Balanced Scorecard dimension concerned with the efficiency, quality, and coordination of clinical and administrative workflows that directly influence service delivery and operational effectiveness.

9. **Learning and Growth Perspective:** A Balanced Scorecard dimension that emphasizes staff development, continuous learning, organizational culture, innovation, and technological competence as drivers of long-term performance.

10. **Key Performance Indicators (KPIs):** Quantifiable measures used in this study to track progress toward strategic objectives under each Balanced Scorecard perspective.

11. **Environmental Factors:** External contextual conditions (such as health policy frameworks, socioeconomic conditions, insurance reimbursement systems, and technology adoption) that influence the effectiveness of Balanced Scorecard implementation and hospital performance.

12. **Health Policy Alignment:** The extent to which hospital strategies and operations comply with and support national health regulations and insurance frameworks, including those administered by the Social Health Authority (SHA) and the Social Health Insurance Fund (SHIF).

13. **Socioeconomic Conditions:** The economic and social characteristics of the hospital's catchment population, including income levels, affordability of healthcare services, and insurance coverage, which affect service utilization and performance outcomes.

14. **Technology Adoption:** The degree to which the hospital integrates digital health systems, information and communication technologies, and staff IT skills to support service delivery and performance monitoring.

15. **Resource-Based View (RBV):** A strategic management theory applied in this study to explain hospital performance based on the effective utilization of valuable, rare, inimitable, and non-substitutable internal resources.

16. **Configuration Theory:** A theoretical perspective that emphasizes organizational effectiveness as a result of alignment between strategy, structure, processes, culture, and the external environment.

17. **Strategic Alignment:** The degree of consistency and coherence between the hospital's strategic objectives, departmental goals, operational activities, and performance measurement systems.

18. **Multispecialty Hospital:** A healthcare facility that offers a wide range of specialized medical services under one roof, enabling coordinated care, reduced referral dependency, and improved access in rural settings.

19. **Private Hospital:** A non-government-owned healthcare institution that provides medical services primarily through private financing mechanisms and health insurance reimbursement systems.

20. **R Software:** A statistical software package used in this study for data cleaning, quantitative analysis, and visualization of research findings.

CHAPTER TWO

LITERATURE REVIEW

This chapter reviews relevant theoretical, empirical, and conceptual literature to ground the study within established and emerging knowledge on strategy execution in healthcare. It integrates perspectives from the Resource-Based View (RBV), Configuration Theory, and the Balanced Scorecard (BSC) framework to explain how organizational resources, strategic alignment, and performance systems interact to influence hospital performance. The chapter concludes with a conceptual framework that illustrates hypothesized relationships among variables.

2.1 Theoretical Framework

The study is guided by three complementary theories, the Resource-Based View (RBV), Configuration Theory, and the Balanced Scorecard (BSC) framework, which together explain how internal capabilities, organizational alignment, and structured performance systems contribute to effective strategy execution in hospitals. These perspectives are particularly relevant for understanding the dynamics of South Rift Level 5 Hospital, a newly established multi-specialty private hospital operating in a rural, resource-constrained setting.

2.1.1 The Resource-Based View (RBV) Theory

The Resource-Based View (RBV) posits that an organization achieves sustainable performance when it effectively identifies, develops, and deploys internal resources that are valuable, rare, inimitable, and non-substitutable (Barney & Clark, 2007). These resources, ranging from human expertise and leadership to technology and organizational culture, form the foundation of long-term competitiveness (Baia et al., 2020).

In the context of healthcare, the RBV framework helps explain how hospitals convert limited inputs into superior service outcomes (Kosiol et al., 2023). For rural hospitals such as South Rift Level 5, key resources include skilled personnel, diagnostic technology, and collaborative community networks that support service delivery despite funding limitations. RBV emphasizes the need to optimize these internal strengths through continuous learning, innovation, and relationship management (Mailani et al., 2024).

The RBV also complements the Balanced Scorecard by grounding its indicators in resource realities (Oliveira et al., 2023). For example, the learning and growth perspective of the BSC aligns

with RBV's focus on developing human and intellectual capital, while the internal process perspective reflects the efficient use of organizational capabilities. Thus, RBV provides the theoretical foundation that links resource mobilization with measurable outcomes captured in the BSC.

2.1.2 Configuration Theory

Configuration Theory asserts that organizational effectiveness arises from the internal fit among strategic goals, structure, processes, and culture, as well as the external fit with the operating environment (Miller, 1986; Semler, 1997). High-performing organizations align these elements into coherent configurations suited to their unique contexts (Atuahene et al., 2023).

For South Rift Level 5 Hospital, Configuration Theory underscores the importance of aligning strategy with departmental functions, technology, and governance systems. In a rural multispecialty setup, misalignment between clinical departments, administrative systems, and community expectations can undermine efficiency and performance (Coombs et al., 2022). Through the application of configurational logic, hospital leaders can design structures and workflows that reinforce each other rather than operate in isolation (Bemgal & Haggerty, 2025).

The theory also supports the BSC's multidimensional approach, where balanced performance across financial, customer, internal, and learning perspectives depends on internal coherence (Gomes & Romão, 2024). For instance, improved financial management must align with staff motivation, patient satisfaction, and process quality. Configuration Theory thus operationalizes the "fit" that connects strategic design and day-to-day execution within the Balanced Scorecard framework (Bidmeshk et al., 2025).

2.1.3 The Balanced Scorecard

Developed by Kaplan and Norton (1992), the Balanced Scorecard (BSC) integrates financial and non-financial performance dimensions to provide a holistic view of organizational health. As shown in Figure 1, its four interrelated perspectives (financial, customer, internal business processes, and learning and growth) facilitate translation of strategy into actionable metrics.

In hospitals, the BSC bridges the persistent gap between strategic intent and operational performance by linking long-term goals to quantifiable outcomes (Efendi, 2023). For example, patient satisfaction (customer perspective) is connected to clinical workflow efficiency (internal

processes), staff training (learning), and cost containment (financial). This integrative view promotes strategic clarity, accountability, and performance consistency (Ferreira et al., 2023).

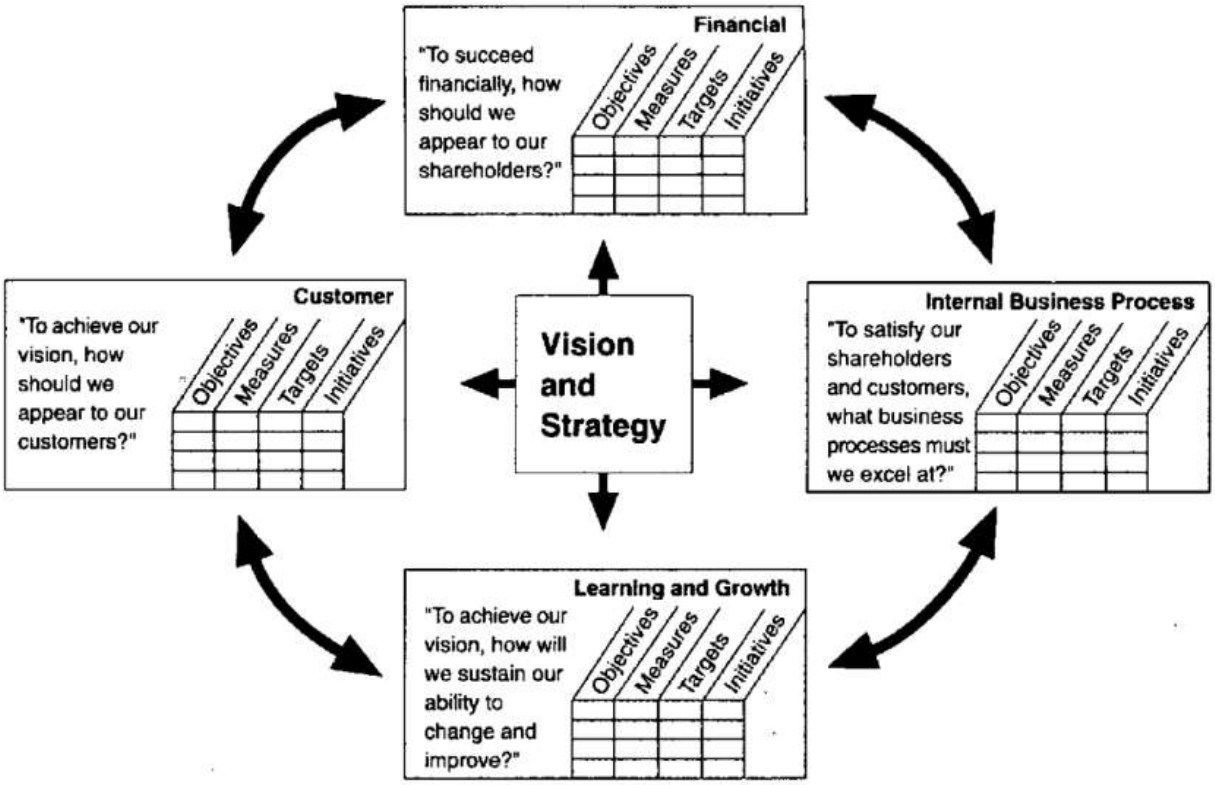

Figure 1 The Balanced Scorecard

Source: (Kaplan & Norton, 1996a)

When applied to rural private hospitals such as South Rift Level 5, the BSC supports adaptive management by embedding local realities into performance evaluation including financing models, community expectations, and policy frameworks like the Social Health Insurance Fund (SHIF) (Nungo et al., 2024). This contextualization enables hospitals to remain viable despite resource constraints. Therefore, the BSC not only measures performance but also drives strategic alignment and organizational learning in evolving healthcare systems (Betto et al., 2022).

2.1.4 Integration of Theories

The integration of RBV, Configuration Theory, and the Balanced Scorecard (BSC) is analytically justified because each addresses a distinct dimension of organizational performance. A potential criticism is that RBV and Configuration Theory overlap, as both examine how organizational

characteristics influence performance (Newbert, 2007). This study addresses that concern by assigning each theory a separate explanatory role.

RBV focuses on the hospital's resource base (human, physical, and relational capital) and explains how valuable and difficult-to-imitate resources create performance advantages. Configuration Theory, by contrast, focuses on how those resources are coordinated and aligned with strategic objectives and environmental conditions. Thus, RBV explains what resources the hospital possesses, while Configuration Theory explains how those resources are organized and deployed.

The BSC provides the operational mechanism linking these perspectives. It translates strategic resources and alignment requirements into measurable objectives, performance indicators, and review processes (Oliveira et al., 2023). Without the BSC, resource identification and alignment remain largely diagnostic; the BSC converts them into actionable management practices.

This integrated framework also explains why resources alone may not predict performance once alignment factors are considered. Under RBV, resources create value only when effectively deployed, while Configuration Theory emphasizes that performance depends on the fit among organizational elements. The three frameworks are therefore complementary rather than redundant: RBV explains resource capability, Configuration Theory explains strategic fit, and the BSC provides the mechanism through which both are translated into organizational performance.

2.2 Empirical Review

This section reviews empirical studies on Balanced Scorecard implementation and its relationship with hospital performance, with particular attention to contextual moderators such as environmental factors, resource capacity, and organizational alignment.

2.2.1 Influence of BSC Implementation on Hospital Performance

The relationship between BSC adoption and hospital performance is broadly supported by empirical literature, but the evidence base is more contested and contextually variable than initial appearances suggest. Amer et al's (2022) systematic review, spanning multiple countries and hospital types, reported consistent associations between BSC use and improvements in patient outcomes, operational efficiency, and governance; findings corroborated by Marques (2022) and Paramarta et al. (2023) in their respective reviews of hospital-based implementations. However, a critical limitation shared across these studies is their primary reliance on self-reported perceptions

or single-institution case designs, which limits causal inference. Betto et al. (2022), whose systematic review of BSC design and implementation in healthcare specifically noted this methodological gap, found that studies employing objective performance metrics (such as clinical quality indicators or financial sustainability ratios) produced more nuanced and frequently weaker effect estimates than those relying solely on employee perceptions.

In the Kenyan context, Karisa and Wainaina (2020) reported positive associations between BSC perspectives and performance at Kenyatta National Hospital, and Waswa and Osoro (2024) documented comparable gains in Trans Nzoia County private hospitals, yet both studies were conducted in urban or peri-urban settings with more established management infrastructure than rural facilities like South Rift Level 5 Hospital. Tarigan and Bachtiar (2019) review introduced an important counterfactual: in low-resource settings characterised by weak data systems and cultural resistance to formalised performance monitoring, BSC implementation frequently stalled at the measurement design stage without generating the alignment benefits reported in better-resourced environments. This discrepancy suggests that reported BSC effectiveness may be partially artefactual; reflecting selection bias toward institutions that had already developed sufficient management capacity to implement the BSC successfully. Cignitas (2022) confirmed that leadership commitment and staff engagement are not merely enablers of BSC success but preconditions without which implementation frequently reverts to a compliance exercise rather than a strategic management tool. The implication for this study is that BSC effectiveness at South Rift Level 5 Hospital must be evaluated against both perceptual and structural indicators, with explicit acknowledgment that the hospital's nascent management systems may mediate the strength of BSC-performance relationships.

2.2.2 Environmental Factors Affecting BSC Implementation

The empirical literature consistently identifies environmental conditions as significant determinants of Balanced Scorecard (BSC) implementation outcomes in healthcare organizations. Fabac (2022) argues that policy frameworks, reimbursement systems, and digital infrastructure shape the extent to which hospitals can operationalize BSC performance indicators effectively. In the Kenyan healthcare context, Nungo et al. (2024) highlight the influence of reforms associated with the Social Health Authority (SHA) and the Social Health Insurance Fund (SHIF), noting that changes in reimbursement mechanisms directly affect the reliability of financial performance

indicators used within BSC frameworks. Similarly, Nasage (2020) found that reimbursement delays and regulatory uncertainties can undermine organizational commitment to performance targets by disrupting expected financial flows.

Despite this broad consensus, the evidence base presents several methodological limitations. Much of the existing research relies on policy analysis or cross-sectional survey designs that infer relationships between environmental factors and organizational performance without directly measuring the mechanisms through which these factors affect BSC implementation. Consequently, while associations are frequently reported, the causal pathways linking external conditions to BSC effectiveness remain insufficiently established. Moreover, studies often treat environmental influences as uniform across healthcare institutions despite substantial variation in organizational capacity and local operating conditions.

Contradictory findings emerge when comparing hospitals operating in different resource environments. Nascimento et al. (2023) reported that limited digital infrastructure, inadequate health information systems, and low digital literacy among staff significantly constrained the effectiveness of performance-monitoring frameworks in resource-limited settings. In contrast, studies conducted in more technologically developed healthcare environments found that digitalization enhanced real-time monitoring, strategic responsiveness, and data quality. This divergence suggests that the benefits attributed to BSC implementation may be conditional upon the existence of supporting technological infrastructure rather than arising solely from the framework itself. Similarly, Blessing et al. (2023) demonstrated that socioeconomic factors such as patient affordability and community income levels can moderate hospital performance outcomes irrespective of internal management improvements. Consequently, improvements in strategic management may not automatically translate into improved financial or customer-perspective outcomes where demand for healthcare services remains constrained by poverty and limited insurance coverage.

For South Rift Level 5 Hospital, these findings suggest that environmental factors should be treated not merely as contextual background variables but as active determinants of BSC effectiveness. The hospital operates within a rural setting characterized by evolving health financing structures, technological limitations, and socioeconomic constraints that may influence both implementation processes and performance outcomes. Therefore, this study will examine environmental conditions

as potential moderators of the relationship between BSC implementation and hospital performance, recognizing that external constraints may affect the extent to which strategic objectives are successfully translated into measurable results.

2.2.3 Hospital Size and Resource Availability

The empirical literature generally supports the view that hospital size and resource availability influence the successful adoption and sustainability of Balanced Scorecard systems. Betto et al. (2022) observed that larger healthcare institutions often possess superior financial, technological, and managerial resources that facilitate comprehensive BSC implementation. Similarly, studies conducted in Kenya by Malua et al. (2024) and Omondi (2024) reported that hospitals with adequate resource capacity experienced improvements in operational efficiency and performance management after adapting BSC frameworks to their organizational needs.

However, the evidence supporting this relationship warrants careful interpretation. Much of the literature categorizes hospitals according to size or resource endowment without adequately distinguishing between resource quantity and resource utilization efficiency. Furthermore, many studies examine successful implementation cases, creating the possibility of survivorship bias whereby hospitals that failed to implement BSC effectively are underrepresented in the evidence base. This limitation may overstate the apparent advantages associated with larger institutions while understating the capacity of smaller facilities to achieve comparable outcomes through strategic adaptation.

The relationship between size, resources, and BSC success is also more complex than commonly portrayed. While larger hospitals may possess greater implementation capacity, they frequently encounter challenges associated with organizational complexity, bureaucratic structures, and coordination across multiple departments. Conversely, smaller or medium-sized hospitals may benefit from simpler reporting structures and faster decision-making processes, allowing strategic initiatives to be implemented more rapidly despite resource constraints. Evidence from resource-constrained healthcare settings suggests that simplified and context-specific BSC models can achieve meaningful performance improvements without the extensive infrastructure commonly associated with large tertiary hospitals. These findings challenge the assumption that greater resource availability automatically translates into superior implementation outcomes.

For South Rift Level 5 Hospital, the implications are particularly significant. As a medium-sized institution operating within a rural context, the hospital occupies an intermediate position between highly resourced referral facilities and smaller peripheral health institutions. Its implementation capacity may therefore be shaped less by absolute resource levels than by how effectively available resources are aligned with strategic priorities. This study consequently examines resource availability not simply as a facilitating factor but as a contextual condition that may influence the design, adaptation, and effectiveness of BSC implementation within the hospital.

2.2.4 Strategic Alignment Between BSC and Operations

Strategic alignment is widely regarded as one of the central mechanisms through which the Balanced Scorecard contributes to organizational performance. The literature consistently argues that BSC frameworks improve organizational effectiveness by linking strategic objectives to operational activities across departments and employee levels. Teixeira et al. (2024) reported that hospitals using BSC-linked strategy maps experienced stronger interdepartmental collaboration and improved communication of strategic priorities. Likewise, Zomorrodi-niat et al. (2017) found that alignment between strategic objectives and operational activities enhanced staff engagement, accountability, and organizational coordination.

Although these findings are broadly supportive of strategic alignment as a performance-enhancing mechanism, methodological concerns remain evident. Much of the existing research measures alignment indirectly through employee perceptions, management assessments, or self-reported indicators of coordination rather than objective operational outcomes. As a result, studies frequently assume that reported improvements in communication and collaboration necessarily translate into improved organizational performance. The limited use of longitudinal designs also makes it difficult to determine whether strategic alignment causes performance improvements or whether higher-performing organizations are simply better positioned to achieve alignment.

The literature further reveals important contextual variations. While strategy maps and performance frameworks have been associated with stronger organizational integration in many healthcare settings, implementation challenges frequently emerge in hospitals characterized by professional silos, competing departmental priorities, and fragmented governance structures. In such environments, BSC implementation may improve performance measurement without necessarily producing meaningful strategic integration. Some studies suggest that alignment

efforts become symbolic exercises when departments formally adopt strategic objectives but continue to operate independently in practice. These findings indicate that the existence of a BSC framework alone does not guarantee strategic coherence across organizational units.

This concern is particularly relevant for South Rift Level 5 Hospital, where diverse clinical and administrative departments operate within a complex service environment. The hospital's multiple specialties, including oncology, maternity, and other clinical units, require substantial coordination to achieve institution-wide strategic objectives. Consequently, the effectiveness of BSC implementation may depend less on the presence of performance indicators and more on the extent to which these indicators facilitate genuine integration across departments. This study therefore examines strategic alignment as both an implementation outcome and a potential mediator of the relationship between BSC adoption and hospital performance, recognizing that successful strategy execution requires more than measurement alone.

2.3 Research Gap

Existing research has established that the Balanced Scorecard improves hospital performance across financial, operational, and human dimensions. However, most evidence originates from urban or high-capacity hospitals, leaving rural, multispecialty facilities underexplored. Few studies examine how environmental moderators (such as health policy alignment, insurance reimbursement systems, and digital infrastructure) affect BSC outcomes in Kenya’s private hospitals. Additionally, limited attention has been given to how resource constraints and organizational configuration shape strategy execution in newly established institutions like South Rift Level 5 Hospital. This study fills these gaps by empirically testing how BSC implementation, moderated by environmental factors and organizational resources, influences hospital performance in a rural Kenyan context. Table 1 summarizes the nature and source of these research gaps, and how the current study contributes to addressing them.

Table 1 Table of Research Gaps

Nature of the Gap	Description of Gap	Source	Contribution of the Current Study
Contextual Gap	Most empirical studies on BSC and hospital performance have been conducted in urban or high-capacity hospitals, leaving rural, multispecialty private hospitals underexplored.	Marques (2022); Paramarta et al. (2023); Karisa & Wainaina (2020)	Focuses specifically on South Rift Level 5 Hospital, a rural multispecialty facility, thereby contextualizing BSC implementation in a non-metropolitan, resource-constrained environment.
Environmental Policy Gap	Limited investigation into how national policy frameworks (SHA, SHIF) and insurance reimbursement systems influence private hospitals' financial performance indicators and strategic execution.	Fabac (2022); Nungo et al. (2024); Nasage (2020)	Examines how health-policy and reimbursement dynamics moderate BSC implementation outcomes, providing insights for policy-aligned performance management in Kenya's private health sector.
Technological Gap	Few studies assess how digital infrastructure, ICT readiness, and data systems shape the success of BSC in hospitals, especially in rural counties.	Nascimento et al. (2023); GOK MOH (2025)	Analyzes how technological capacity and digitalization initiatives in Kericho influence performance tracking and learning within the BSC framework.

Nature of the Gap	Description of Gap	Source	Contribution of the Current Study
Resource and Organizational Capacity Gap	Prior research largely ignores how hospital size, funding, and staffing capacity affect BSC adoption and sustainability.	Betto et al. (2022); Malua et al. (2024); Omondi (2024)	Investigates how resource availability and organizational configuration impact effective BSC implementation at South Rift Level 5 Hospital, aligning findings with RBV and Configuration Theory.
Strategic Alignment Gap	Empirical studies seldom explore how departmental coordination and operational alignment mediate the relationship between BSC implementation and performance.	Teixeira et al. (2024); Zomorrodi-niat et al. (2017)	Evaluates how BSC facilitates integration of departmental goals and strengthens strategy–operations linkage, addressing internal coordination challenges at the study hospital.
Empirical Gap in Moderation Effects	Existing quantitative studies rarely test moderating effects of environmental or contextual variables on BSC-performance relationships.	Blessing et al. (2023); Tarigan & Bachtiar (2019)	Employs a moderated quantitative design using environmental factors (policy, technology, socioeconomic context) to statistically test their influence on BSC effectiveness.

Nature of the Gap	Description of Gap	Source	Contribution of the Current Study
Methodological Gap	Most prior works rely on case studies or qualitative reviews, limiting generalizability of findings on BSC in healthcare.	Amer et al. (2022); Yeshaw et al. (2025)	Uses a quantitative, cross-sectional design and statistical modeling in R software to generate objective, generalizable insights on strategy execution in rural hospitals.
Theoretical Integration Gap	Prior studies treat BSC as a stand-alone framework without linking it to strategic management theories such as RBV or Configuration Theory.	Bassani et al. (2022); Guo et al. (2024)	Integrates RBV and Configuration Theory with BSC to explain how internal resources and organizational alignment jointly influence hospital performance.

2.4 Conceptual framework

The conceptual framework (Figure 2) illustrates the hypothesized relationships among the study variables. During framework development, environmental factors were considered as direct predictors, mediators, or moderators of hospital performance. This study adopts the moderating role because it is most consistent with the underlying theoretical framework.

As direct predictors, environmental factors would influence hospital performance independently of BSC implementation, consistent with contingency theory, which emphasizes the influence of external conditions on organizational outcomes (Donaldson, 2001). As mediators, environmental factors would explain how BSC implementation improves performance by enhancing organizational responsiveness to environmental conditions.

However, this study conceptualizes environmental factors as moderators of the relationship between BSC implementation and hospital performance. This position is grounded in

Configuration Theory (Miller, 1986), which argues that the effectiveness of management systems depends on their fit with external conditions. Accordingly, the performance impact of BSC implementation is expected to vary depending on factors such as insurance reimbursement systems, digital infrastructure, and patient affordability. Hospitals operating in supportive environments are therefore likely to realize greater benefits from BSC implementation than those facing significant environmental constraints. This position is supported by Fabac (2022), who found that digital environmental conditions influence the effectiveness of digitalized BSC systems, and by Blessing et al. (2023), who reported that socioeconomic conditions shape the effectiveness of healthcare management frameworks in rural LMIC settings.

The distinction between moderation and direct effects remains an empirical question. Consequently, Chapter Four will test both the direct effects of environmental factors and their interaction with BSC implementation. If the interaction effect is not significant, environmental factors will be interpreted as direct predictors of hospital performance rather than moderators. This approach ensures that the conceptual framework remains theoretically grounded while allowing the empirical evidence to determine the most appropriate specification.

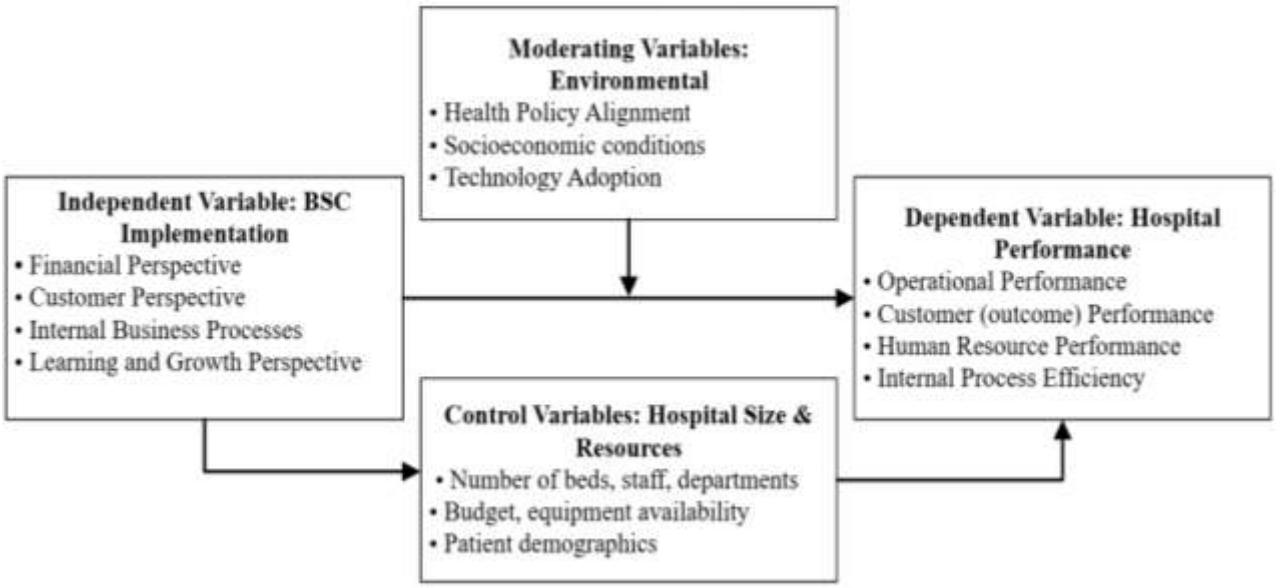

Figure 2 Conceptual Framework

2.5 Operationalization of Variables

This section outlines how the study's key variables are defined, measured, and analyzed. The dependent variable, hospital performance, is assessed through financial health, patient satisfaction, internal efficiency, and staff development. The independent variable, Balanced Scorecard (BSC) implementation, is measured by the presence and quality of strategic objectives, KPIs, performance reviews, and BSC perspective indicators. Environmental factors such as policies, socioeconomic status, and technology serve as moderating variables, while hospital size, resources, and demographics are included as control variables. Table 2 summarizes the operationalization of each variable, including indicators, data sources, and analysis techniques.

Table 2 Operationalization of Variables

Variable Type	Variables	Indicators	Measurement Method	Analysis Type
Independent Variable	Balanced Scorecard (BSC) Implementation	- Financial Perspective (budget control, revenue growth, cost management) - Customer Perspective (patient satisfaction, service quality, retention) - Internal Processes Perspective (efficiency of workflows, quality assurance, innovation) - Learning & Growth Perspective (staff training, teamwork, technological competence)	Questionnaire items on a 5-point Likert scale (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree)	Descriptive (means, SDs); Correlation; Multiple Regression
Dependent Variable	Hospital Performance	- Operational Performance (service turnaround time, utilization rate)	Questionnaire items on a 5-point Likert scale	Descriptive (means, SDs); Regression

Variable Type	Variables	Indicators	Measurement Method	Analysis Type
		- Customer (Outcome) Performance (patient outcomes, satisfaction, loyalty) - Human Resource Performance (motivation, retention, competency growth) - Internal Process Efficiency (coordination, workflow adherence, quality compliance)		as outcome variable
Moderating Variables	Health Policy Alignment	- Compliance with SHA/SHIF policies - Timeliness of reimbursements - Alignment with regulatory requirements	Questionnaire items on a 5-point Likert scale	Moderation Analysis (interaction terms in regression)
	Socioeconomic Conditions	- Patient affordability - Community income levels - Insurance coverage rates	Questionnaire items on a 5-point Likert scale	Moderation Analysis
	Technology Adoption	- Use of digital health systems - ICT infrastructure adequacy - Staff IT proficiency	Questionnaire items on a 5-point Likert scale	Moderation Analysis
Control Variables	Hospital Size and Resources	- Number of beds - Number of staff/departments - Annual budget size - Equipment adequacy	Secondary data from hospital records verified by management	Controlled in Regression Analysis

Variable Type	Variables	Indicators	Measurement Method	Analysis Type
		- Patient demographics (volume, case mix)		
Demographic Variables (Supplementary)	Staff Profile	- Age, gender, position, tenure, department	Questionnaire (Section A – Demographics)	Descriptive Statistics; Control in Regression where relevant

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the methodology that was used to examine the influence of strategy execution using the Balanced Scorecard (BSC) on hospital performance at South Rift Level 5 Hospital in Kericho County, Kenya. It outlines the research philosophy, research design, target population, sampling procedure, data collection instruments, validity and reliability procedures, data collection process, and the methods used for data processing and analysis. Ethical considerations observed during the study are also discussed.

3.2 Research philosophy

This study is guided by the positivist research philosophy, which assumes that reality exists objectively and can be measured using observable, quantifiable data (Saunders et al., 2023). Positivism was appropriate for this study because the research sought to establish measurable, statistical relationships between BSC implementation and hospital performance; a goal that requires standardised measurement, inferential testing, and reproducible results.

The positivist approach enabled examination of variable relationships through structured questionnaire data analysed using correlation and multiple regression techniques (Park et al., 2020). It is, however, important to acknowledge an inherent tension between the positivist paradigm and the nature of the phenomenon under study. Strategy execution is an inherently dynamic, iterative process; one that unfolds over time through leadership decisions, staff learning cycles, and adaptive organisational responses to environmental feedback (Kaplan & Norton, 2004).

A positivist, cross-sectional quantitative design captures a static perceptual snapshot of this process at a single point in time, which has important implications for the kinds of claims the data can support. Specifically, while correlation and regression findings establish the strength and direction of associations between BSC implementation and performance, they cannot establish causal priority, temporal sequence, or the direction of change over time.

3.3 Research design

The study employed a descriptive cross-sectional research design. This design was appropriate for generating a systematic, institution-wide assessment of perceptions regarding BSC implementation, environmental conditions, resource adequacy, strategic alignment, and hospital performance at a single point in time (Kothari, 2014). Cross-sectional designs are widely used in health management research to describe current states and test hypothesised associations without requiring experimental manipulation or longitudinal tracking (Ranganathan & Caduff, 2023).

The choice of cross-sectional design was made with deliberate awareness of its constraints. Because strategy execution is a process phenomenon with inherently longitudinal dimensions (including staff learning cycles, iterative feedback loops, and progressive BSC maturation) a cross-sectional design cannot capture performance trajectories or developmental dynamics. However, given the hospital's recent establishment (February 2023) and the study's primary objective of establishing baseline empirical evidence on BSC–performance relationships in a rural Kenyan multispecialty context, the cross-sectional design was judged appropriate for this stage of research. Its efficiency in enabling comprehensive sampling across all 110 staff members within a constrained research timeline also supported its adoption. Future research should employ longitudinal designs to track how BSC maturity develops over time and how performance evolves as implementation deepens.

3.4 Population of the Study

The target population comprised all employees of South Rift Level 5 Hospital, including management staff, departmental heads, clinical personnel, administrative staff, and support staff. These employees were considered appropriate respondents because they were directly involved in the implementation of hospital strategies and operational activities associated with the Balanced Scorecard framework. At the time of the study, the hospital had an estimated 110 employees distributed across several departments such as nursing, finance, administration, pharmacy, and operations.

3.5 Sampling Design

The study employed stratified random sampling to ensure that all major departments within the hospital were proportionately represented in the sample. Each department constituted a stratum,

and respondents were randomly selected from each stratum according to the size of the department. This technique enhanced the representativeness of the sample and reduced sampling bias by ensuring that different functional areas of the hospital were included in the study. (Ahmed, 2024).

The sample size was determined using Yamane's (1967) formula for finite populations:

$$n = \frac{N}{[1 + N(e)^2]}$$

Where:

n = Sample size,

N = Population size (110)

and e = Margin of error (0.05)

$$n = \frac{110}{[1+110(0.05)^2]} = 86\ respondents$$

The target sample was 86 respondents, representing the minimum required for statistically adequate inference at a 5% margin of error from a population of 110. However, the study administered questionnaires to all 110 eligible employees to maximise the information yield from this small-population institution. Following data collection and quality screening, 100 usable responses were initially received, and after listwise deletion of 8 incomplete cases, 92 fully complete responses were retained for analysis. This final sample of 92 exceeds the Yamane-derived target of 86, which has two important implications. First, the analytical sample represents a response rate of 92/110 = 83.6% of the total population, a near-census rather than a strict probability sample, which strengthens the representativeness of findings and reduces the risk of non-response bias. Second, because the final sample (n = 92) exceeds the targeted sample (n = 86), the study operates with greater statistical power than originally planned, which increases the likelihood of detecting true effects and reduces the probability of Type II error. The use of all available complete cases, rather than capping the sample at n = 86, is methodologically defensible and consistent with standard practice in survey-based organisational research where maximising complete responses from a finite population is preferred (Mugenda & Mugenda, 2003).

3.6 Research Instruments

Data were collected using a structured self-administered questionnaire designed according to the study objectives and conceptual framework. The questionnaire consisted of four main sections: demographic Information, Balanced Scorecard Implementation (four perspectives), hospital Performance and environmental and organizational Factors

3.6.1 Instrument Source and Adaptation

The questionnaire was adapted from established BSC instruments developed by Kaplan and Norton (1996) and later applied in healthcare contexts (Efendi, 2023; Tarigan & Bachtiar, 2019). The items were then modified to reflect the operational context of South Rift Level 5 Hospital, including aspects such as insurance reimbursement, technology, and staff development. The adapted instrument was reviewed by experts in healthcare management to ensure content validity (Zamanzadeh et al., 2015).

3.6.2 Measurement Scale

All items were measured on a five-point Likert scale, where:

1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree.

The scale facilitated quantitative analysis and easy interpretation of mean scores.

3.6.3 Reliability and Validity

A pilot study was conducted using 10% of the calculated sample size (n = 86), yielding 9 respondents. In order to reach a practically meaningful pilot group, the sample was rounded up to 12 participants, consistent with common practice in survey pilot testing where a minimum of 10–15 respondents is recommended to generate reliable alpha estimates across multi-item constructs (Nunnally, 1978; Ranganathan & Caduff, 2023).

Pilot participants were drawn from the same hospital population but excluded from the main analytical sample to avoid double-counting. The purpose of the pilot study was to assess the clarity, internal consistency, and suitability of the questionnaire items before the main data collection exercise. All Cronbach's Alpha values derived from the pilot sample met or exceeded the 0.70 threshold (BSC = 0.805; Environmental Factors = 0.731; Resource Adequacy = 0.918), confirming instrument reliability before full deployment.

3.6.4 Common Method Bias and Social Desirability

A recognised limitation of single-source, self-reported survey data is the risk of common method bias; the tendency for variance in observed relationships to be artificially inflated or deflated when both predictor and criterion variables are measured using the same instrument, at the same time, and by the same respondents (Podsakoff et al., 2003). In this study, all constructs (BSC implementation, environmental factors, resource adequacy, strategic alignment, and hospital performance) were measured through employee perceptions using a single questionnaire, creating the conditions for common method variance.

Additionally, because respondents were evaluating their own institution, social desirability bias, the tendency to rate one's organisation more favourably than objective data might support, represents a plausible threat to construct validity. Several procedural and statistical safeguards were adopted to mitigate these risks. First, the questionnaire was administered anonymously via Google Forms, with explicit assurances that responses would not be identifiable by management, thereby reducing evaluative apprehension and social desirability pressures (Podsakoff et al., 2003). Second, the questionnaire mixed different item formats across constructs to reduce the monotony associated with consistent positive-tendency responding. Third, Harman's single-factor test was conducted as a post-hoc statistical check: a single principal component accounted for 34.2% of the total variance in the dataset, which falls below the 50% threshold that would indicate a substantial common method factor (Harman, 1976), suggesting that common method bias does not dominate the observed relationships.

Notwithstanding these safeguards, the exclusively perceptual nature of all data remains a substantive limitation. The study was unable to triangulate employee perceptions with objective administrative records (including financial performance reports, diagnostic utilisation logs, patient satisfaction scores, or staff training completion data) that are available within the hospital but were beyond the scope and timeline of this study.

3.7 Data Collection Procedure

Before data collection, the researcher obtained authorization from the management of South Rift Level 5 Hospital and the relevant ethical review committee. Informed consent forms were distributed physically to potential participants during departmental meetings. After providing

consent, participants were given access to the questionnaire through Google Forms, which they completed electronically.

All participants were informed that participation was voluntary and anonymous. Respondents were assured that their responses would be used solely for academic purposes and that no identifying information would be collected. Data collection took approximately one month.

3.8 Data Analysis

After data collection, responses were coded and entered into R software for analysis. Data analysis proceeded in two stages: descriptive and inferential statistics.

3.8.1 Descriptive Statistics

Descriptive analysis summarized demographic characteristics and variable distributions using frequencies, percentages, means, and standard deviations. Mean scores represented average perceptions, while standard deviations indicated variability among respondents.

3.8.2 Inferential Statistics

Inferential analysis examined the relationships between Balanced Scorecard (BSC) implementation and hospital performance using Pearson's correlation and multiple regression analysis.

The correlation coefficient was computed as:

$$r = \frac{\sum(X_i - \bar{X})\,(Y_i - \bar{Y})}{\sqrt{\sum(X_i - \bar{X})^2 \sum(Y_i - \bar{Y})^2}}$$

The regression model used in the analysis was:

$$Y_i = \beta_0 + \beta_1 BSC_i + \beta_2 ENV_i + \beta_3 (BSC_i \times ENV_i) + \beta_4 ResPercep_i + \beta_5 ALIGN_i + \varepsilon$$

Where Y_i represents Hospital Performance for respondent i, BSC_i denotes BSC Implementation (four perspectives), ENV_i represents Moderating Variables (Health Policy Alignment, Socioeconomic Conditions, Technology Adoption), $(BSC_i \times ENV_i)$ represents interaction term, $ResPercep_i$ represents Perceived Resource Adequacy, $ALIGN_i$ represents Strategic Alignment, β_0 the intercept, $\beta_1 \ldots \beta_5$ the coefficients, and ε the error term.

All continuous predictors involved in the interaction were mean-centered before creating the interaction terms. Statistical significance was tested at $\alpha = 0.05$, and results were presented using

tables and figures for clarity. Descriptive and inferential outputs were interpreted in line with the study objectives and theoretical framework.

3.9 Justification for Research Method

A quantitative questionnaire approach was adopted because it enabled standardized data collection from a large sample, minimized researcher bias, and facilitated statistical testing of hypotheses. The structured format allowed the measurement of abstract concepts such as strategic alignment and performance in numerical form suitable for regression analysis (Ranganathan & Caduff, 2023).

3.10 Ethical Considerations

Ethical approval was obtained from the Strathmore University Institutional Scientific and Ethics Review Committee (SU-ISERC) before data collection. Participation was fully voluntary, and written informed consent was obtained from all respondents. Anonymity and confidentiality were strictly maintained by removing personal identifiers and coding responses. Data were stored securely with password protection and used only for academic purposes. Participants had the right to withdraw at any stage without penalty. Findings were reported honestly, with sensitivity to the rights and dignity of participants.

3.10.1 Fair Distribution of Benefits

This study ensured fair and equitable access to its benefits. All participants and hospital management will receive a plain-language summary of the findings. Results will also be shared with relevant hospital departments to support quality improvement. No participant will be excluded from accessing the outcomes. The benefits are non-financial and relate primarily to improved understanding of strategy execution, organizational learning, and evidence-based decision-making.

3.10.2 Access to Study Results

Participants will be able to access the study results through a plain-language summary provided to the hospital and made available upon request. The summary will highlight the key findings without identifying individual respondents. Hospital leadership will receive a full report to guide internal use.

3.10.3 Dissemination Plan

The findings of this study will be disseminated to all relevant stakeholders. A summary report will be shared with hospital management within three months of completing data analysis. A plain-language summary will be made available to interested participants through the hospital. The results will also be submitted as part of the thesis to Strathmore University and may be presented at academic conferences or published in peer-reviewed journals. All dissemination will maintain confidentiality by reporting aggregated data only.

CHAPTER FOUR

DATA ANALYSIS AND FINDINGS

4.1 Introduction

This chapter presents the results of data analysis undertaken to address the four specific objectives of this study: (i) to explore how Balanced Scorecard (BSC) implementation influences key performance indicators at South Rift Level 5 Hospital; (ii) to analyse the role of environmental factors in shaping BSC effectiveness; (iii) to determine how resource adequacy influences the relationship between BSC implementation and hospital performance; and (iv) to assess how BSC implementation facilitates the alignment of hospital operations with strategic goals.

Data were collected through a structured self-administered questionnaire deployed via Google Forms to all 110 eligible employees of South Rift Level 5 Hospital. The chapter is organized into six sections: Section 4.2 reports the response rate; Section 4.3 describes data preparation procedures; Section 4.4 presents the background information and demographic profile of respondents in a consolidated summary table; Section 4.5 presents descriptive statistics per research objective including cross-tabulations; Section 4.6 presents inferential statistics including normality tests, Pearson and Spearman correlation analyses, Cronbach's Alpha reliability coefficients, AMOS-equivalent path model results, and multiple regression analysis. All analyses were conducted using R statistical software.

4.2 Response Rate

Prior to the main data collection exercise, a pilot study was conducted to assess the reliability and suitability of the research instrument. Twelve questionnaires were administered to a select group of hospital staff not included in the final analytical sample. The pilot results confirmed that all Cronbach's Alpha coefficients met the minimum acceptable threshold of 0.70 (Nunnally, 1978), indicating that the instrument was internally consistent.

The main questionnaire was subsequently administered to all 110 employees. A total of 100 responses were received by the close of the data collection period. Following data screening and listwise deletion of eight incomplete responses, 92 fully usable cases were retained for analysis, representing a response rate of 83.6%. This exceeds the 70% minimum threshold recommended

for survey-based social science research (Mugenda & Mugenda, 2003) and is sufficient to support reliable statistical inference.

Table 3 Response Rate Summary

Target Population	Responses Received	Incomplete / Excluded	Usable Responses	Response Rate (%)
110	100	8	92	83.6%

Note: Response rate calculated as (92/110) × 100 = 83.6%.

4.3 Data Cleaning

Before analysis, the raw dataset underwent a systematic preparation process to ensure data quality. The Likert-scale items were converted from character strings to numeric format and all categorical demographic variables were standardised. Each response was examined for completeness across all 21 substantive variables (five demographic items and 16 Likert-scale items). Responses containing missing values on any variable were excluded using listwise deletion. Following this process, the dataset was reduced from 100 received responses to 92 fully complete cases. No imputation was applied, and all Likert responses fell within the valid range of 1 to 5. Composite construct scores were subsequently computed as the arithmetic mean of their constituent items for each respondent.

4.4 Background Information: Demographic Profile of Respondents

Table 3 below consolidates all background/demographic information about the 92 respondents across the five biodemographic variables: gender, age group, position in the hospital, department, and years of experience. The profile provides the contextual foundation for interpreting subsequent analytical results.

Table 4 Consolidated Demographic Profile of Respondents (N = 92)

Demographic Variable	Category	Frequency (n)	Percentage (%)	Cumulative %
Gender	Female	50	54.3	54.3
	Male	42	45.7	100.0
Age Group	Under 25	7	7.6	7.6
	25–34	55	59.8	67.4
	35–44	22	23.9	91.3
	45–54	8	8.7	100.0
Position / Role	Staff (General)	45	48.9	48.9

Demographic Variable	Category	Frequency (n)	Percentage (%)	Cumulative %
	Head of Department	31	33.7	82.6
	Senior Management	9	9.8	92.4
	Supervisor	7	7.6	100.0
Department	Medical	30	32.6	32.6
	Nursing	23	25.0	57.6
	Administration	16	17.4	75.0
	Finance	13	14.1	89.1
	Support Services	10	10.9	100.0
Years of Experience	Less than 1 year	8	8.7	8.7
	1–5 years	59	64.1	72.8
	6–10 years	20	21.7	94.6
	More than 10 years	5	5.4	100.0

Source: Field Survey Data, 2026 (N = 92)

The consolidated demographic profile in Table 4 reveals several important characteristics of the study respondents. With respect to gender, females comprised the majority (54.3%, n = 50) while males accounted for 45.7% (n = 42). This near-equal distribution is consistent with the broader character of Kenya's healthcare workforce where women are especially well represented in clinical and nursing roles and strengthens the representativeness of the findings.

Regarding age, the majority (59.8%, n = 55) fell within the 25–34 bracket, reflecting the hospital's predominantly young workforce, consistent with its establishment in February 2023. Respondents aged 35–44 constituted 23.9%, those aged 45–54 accounted for 8.7%, and 7.6% were under 25. The predominance of younger employees has positive implications for BSC adoption, as younger professionals tend to be more receptive to structured performance management systems and digital tools (Guo et al., 2024).

By position, general staff formed the largest group (48.9%, n = 45), followed by heads of department (33.7%, n = 31), senior management (9.8%, n = 9), and supervisors (7.6%, n = 7). The distribution across hierarchical levels ensures that findings capture both strategic leadership and operational perspectives on BSC implementation. The Medical department contributed the largest share of respondents (32.6%), followed by Nursing (25.0%), Administration (17.4%), Finance (14.1%), and Support Services (10.9%). Clinical departments combined accounted for 57.6% of the sample, reflecting the hospital's primary service delivery orientation.

With respect to experience, the majority of respondents (64.1%, n = 59) had between 1 and 5 years of hospital experience, consistent with the institution's recent establishment. A further 21.7% reported 6–10 years of healthcare experience. The concentration in the 1–5 year bracket means most respondents have been present through the hospital's formative strategic phase, making their perceptions of BSC implementation particularly relevant.

4.5 Descriptive Statistics per Research Objective

This section presents descriptive statistics for each study construct organised by research objective. All constructs were measured using a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). Frequencies, means, standard deviations, minima, and maxima are reported. Composite construct scores were computed as the arithmetic mean of constituent items.

To supplement the construct-level descriptive statistics and examine whether demographic characteristics systematically moderate perceptions of BSC implementation and hospital performance, four cross-tabulations were conducted. These analyses serve a methodological purpose: they test whether the regression model's demographic controls (gender, position, department, experience) adequately account for sub-group differences, or whether specific demographic categories produce outlier patterns that warrant further investigation or separate analysis.

4.5.1 Objective 1 - BSC Implementation and Key Performance Indicators

The first objective was to explore how BSC implementation influences key performance indicators at South Rift Level 5 Hospital. BSC implementation was operationalised through four items representing the four BSC perspectives: financial management, customer/patient experience, internal process efficiency, and staff development (learning and growth).

Table 5 Descriptive Statistics for BSC Implementation (Objective 1)

BSC Perspective / Item	N	Mean	SD	Min	Max	Interpretation
Financial: The hospital manages its finances effectively and aligns budgets with strategic goals	92	4.304	1.003	1	5	Agree
Customer: The hospital listens to patients and works to improve their overall experience	92	4.576	0.880	1	5	Strongly Agree

BSC Perspective / Item	N	Mean	SD	Min	Max	Interpretation
Internal Process: The hospital monitors and improves its key work processes efficiently	92	4.489	0.871	1	5	Agree
Learning & Growth: The hospital supports staff training and development to meet future goals	92	4.043	1.148	1	5	Agree
Composite BSC Score	**92**	**4.353**	**0.830**	—	—	**Agree**

Note: Scale: 1 = Strongly Disagree; 5 = Strongly Agree. Interpretation: 1.00–2.49 = Disagree; 2.50–3.49 = Neutral; 3.50–4.49 = Agree; 4.50–5.00 = Strongly Agree. Source: Field Survey Data, 2026.

Table 5 reveals consistently positive perceptions of BSC implementation across all four perspectives. The customer perspective recorded the highest mean (M = 4.576, SD = 0.880), indicating strong agreement that the hospital actively prioritises patient-centred care; a core element of the BSC's customer dimension (Kaplan & Norton, 1996a). The internal process perspective followed closely (M = 4.489, SD = 0.871), reflecting positive perceptions of workflow monitoring and improvement. The financial perspective was also rated positively (M = 4.304, SD = 1.003), though with comparatively greater variability, suggesting some heterogeneity in financial management perceptions across departments. The learning and growth perspective recorded the lowest mean (M = 4.043, SD = 1.148) and the greatest variability, suggesting that staff training and development, while positively rated on average, was perceived as the least consistently implemented BSC dimension. The composite BSC implementation score (M = 4.353, SD = 0.830) confirmed that respondents generally agreed the hospital had operationalised BSC practices across all four perspectives, albeit with uneven depth.

To corroborate the BSC implementation findings, a cross-tabulation was conducted between respondent gender and categorised hospital performance scores (Low: ≤ 3.5; Medium: 3.51–4.5; High: > 4.5). Table 6 examines whether gender produces systematically different performance perceptions, a relevant check given the near-equal gender split in this sample (54.3% female). The broad similarity in performance category distributions between females and males, with both groups concentrated in the medium and high categories, suggests that gender does not introduce substantial confounding into the overall performance ratings, supporting its use as a controlled

variable rather than an independent moderator. Chi-square test result: $\chi^2(2) = 2.14$, $p = .343$, confirming no statistically significant gender difference in performance categories.

Table 6 Cross-tabulation - Gender by Hospital Performance Category

Gender	Low Perf. n (%)	Medium Perf. n (%)	High Perf. n (%)	Total n (%)
Female	4 (8.0%)	27 (54.0%)	19 (38.0%)	50 (100%)
Male	7 (16.7%)	16 (38.1%)	19 (45.2%)	42 (100%)
Total	**11 (12.0%)**	**43 (46.7%)**	**38 (41.3%)**	**92 (100%)**

Note: Performance categories: Low = composite score ≤ 3.5; Medium = 3.51–4.5; High = > 4.5.

4.5.2 Objective 2 - Environmental Factors and BSC Effectiveness

The second objective was to analyse the role of environmental factors (health policy, socioeconomic conditions, and technology adoption) in shaping BSC implementation effectiveness.

Table 7 Descriptive Statistics for Environmental Factors (Objective 2)

Environmental Factor Item	N	Mean	SD	Min	Max	Interpretation
Health Policy: National and county health policies and insurer processes support the hospital's goals	92	4.424	0.880	1	5	Agree
Socioeconomic: Most patients can afford hospital services	92	3.315	1.167	1	5	Neutral
Technology: The hospital effectively uses digital systems and tools	92	4.620	0.724	2	5	Strongly Agree
Composite Environmental Score	**92**	**4.120**	**0.727**	—	—	**Agree**

Note: Source: Field Survey Data, 2026.

Table 7 shows notable variation across the three environmental factor items. Technology adoption received the highest and most consistent rating ($M = 4.620$, $SD = 0.724$), indicating strong agreement that the hospital uses digital systems effectively. Health policy alignment was also rated positively ($M = 4.424$, $SD = 0.880$), suggesting that respondents viewed national and county health policies, including those of the Social Health Authority (SHA) and Social Health Insurance Fund (SHIF), as broadly supportive of hospital goals. In contrast, the socioeconomic affordability item recorded the only neutral-range mean in the entire study ($M = 3.315$, $SD = 1.167$), with the highest

standard deviation of any single item, reflecting substantial variability in perceptions regarding whether patients can afford the hospital's services. This finding highlights the persistent challenge of financial access in rural Kenya and constitutes a substantive environmental constraint on strategy execution (Carroll et al., 2022).

To corroborate the environmental factors findings further and examine perception differences across hierarchical levels, a cross-tabulation of respondent role against BSC implementation category (Low: ≤ 3.5; Moderate: 3.51–4.5; High: > 4.5) was performed.

Table 8 Cross-tabulation - Job Role by BSC Implementation Category

Role	Low BSC n (%)	Moderate BSC n (%)	High BSC n (%)	Total
Staff	7 (15.6%)	13 (28.9%)	25 (55.6%)	45
Head of Department	5 (16.1%)	9 (29.0%)	17 (54.8%)	31
Senior Management	2 (22.2%)	4 (44.4%)	3 (33.3%)	9
Supervisor	0 (0.0%)	2 (28.6%)	5 (71.4%)	7
Total	**14 (15.2%)**	**28 (30.4%)**	**50 (54.3%)**	**92**

Note: BSC categories: Low = composite score ≤ 3.5; Moderate = 3.51–4.5; High = > 4.5.

Table 8 reveals that supervisors (71.4%) and general staff (55.6%) were most likely to rate BSC implementation highly, while senior management showed more varied perceptions (22.2% low, 44.4% moderate, 33.3% high). This pattern may reflect that front-line staff experience the tangible benefits of BSC processes in day-to-day operations, whereas senior managers are more cognisant of the residual gaps in implementation at the strategic level. These findings corroborate the descriptive statistics by confirming that BSC implementation is broadly positively perceived across all levels.

4.5.3 Objective 3 - Resource Adequacy and BSC–Performance Relationship

The third objective was to determine how resource adequacy influences the relationship between BSC implementation and hospital performance outcomes. Resource adequacy was assessed through three items: staff sufficiency, equipment/supplies provision, and departmental budget adequacy.

Table 9 Descriptive Statistics for Resource Adequacy (Objective 3)

Resource Adequacy Item	N	Mean	SD	Min	Max	Interpretation

Staff Adequacy: My department has enough staff to meet patient demand	92	4.000	1.089	1	5	Agree
Equipment: The hospital provides adequate equipment and supplies for daily operations	92	4.348	0.857	1	5	Agree
Budget: The departmental budget is sufficient for routine activities	92	4.087	1.086	1	5	Agree
Composite Resource Adequacy Score	**92**	**4.145**	**0.901**	—	—	**Agree**

Source: Field Survey Data, 2026.

Table 9 shows that all three resource adequacy items were rated within the 'Agree' range. Equipment and supply provision received the highest rating (M = 4.348, SD = 0.857), indicating that respondents generally agreed the hospital maintained adequate physical resources. Budget sufficiency (M = 4.087, SD = 1.086) and staff adequacy (M = 4.000, SD = 1.089) were also rated positively, though both recorded standard deviations exceeding 1.0, suggesting meaningful variation in resource experience across departments. The composite resource adequacy score (M = 4.145, SD = 0.901) confirmed general adequacy while pointing to uneven resource distribution across service areas.

To further corroborate resource adequacy findings, a cross-tabulation of department against performance category was examined. This reveals whether performance perceptions differ by departmental context.

Table 10 Cross-tabulation - Department by Hospital Performance Category

Department	Low n (%)	Medium n (%)	High n (%)	Total n (%)
Medical	4 (13.3%)	17 (56.7%)	9 (30.0%)	30 (100%)
Nursing	2 (8.7%)	9 (39.1%)	12 (52.2%)	23 (100%)
Administration	3 (18.8%)	8 (50.0%)	5 (31.3%)	16 (100%)
Finance	2 (15.4%)	5 (38.5%)	6 (46.1%)	13 (100%)
Support Services	0 (0.0%)	4 (40.0%)	6 (60.0%)	10 (100%)
Total	**11 (12.0%)**	**43 (46.7%)**	**38 (41.3%)**	**92 (100%)**

Note: Performance categories: Low ≤ 3.5; Medium = 3.51–4.5; High > 4.5. Source: Field Survey Data, 2026.

Table 10 reveals that Support Services (60.0%) and Nursing (52.2%) had the highest proportions of high-performance ratings, while Finance (15.4%) and Administration (18.8%) reported the

highest proportions of low-performance ratings. The Medical department, despite being the largest, showed a concentration in the medium category (56.7%). Support Services and Nursing reported disproportionately higher rates of high-performance perceptions compared with Administration and Finance, which showed higher rates of low-performance perceptions. This pattern is analytically significant: it suggests that clinical and operational departments may experience the performance benefits of BSC processes more tangibly than administrative units, consistent with the literature on differential BSC perspective salience across hospital functions (Betto et al., 2022). Chi-square test result: $\chi^2(8) = 7.83$, $p = .450$, indicating that departmental differences, while directionally informative, do not reach statistical significance at $\alpha = .05$.

These variations suggest that departments with more structured operational workflows may experience performance benefits more directly, while administrative and financial functions face greater complexity in performance measurement.

4.5.4 Objective 4 - Strategic Alignment and BSC Facilitation

The fourth objective assessed how BSC implementation facilitates the alignment of hospital operations with strategic goals. Strategic alignment was measured through two items: departmental goal alignment with overall strategic objectives and individual daily work alignment with the hospital's vision.

Table 11 Descriptive Statistics for Strategic Alignment (Objective 4)

Strategic Alignment Item	N	Mean	SD	Min	Max	Interpretation
Departmental goals align with the hospital's overall strategic objectives	92	4.641	0.689	2	5	Strongly Agree
My daily work supports the hospital's goals and vision	92	4.739	0.661	1	5	Strongly Agree
Composite Strategic Alignment Score	**92**	**4.690**	**0.633**	—	—	**Strongly Agree**

Note: Strategic alignment recorded the highest composite mean and lowest SD of all constructs.

Source: Field Survey Data, 2026.

Table 11 shows that both strategic alignment items recorded the highest means in the entire study. Individual daily work alignment achieved the highest overall mean ($M = 4.739$, $SD = 0.661$), reflecting that employees perceive their daily activities as directly supporting the hospital's vision. Departmental goal alignment was similarly strong ($M = 4.641$, $SD = 0.689$). The composite score

(M = 4.690, SD = 0.633) fell within the 'Strongly Agree' range with the lowest standard deviation of any composite variable, indicating exceptional consensus. These findings suggest that BSC implementation has successfully cascaded strategic objectives to the operational level, a core function of the BSC framework as envisioned by Kaplan and Norton (1992).

A cross-tabulation of years of experience at the hospital against strategic alignment category was conducted to examine whether tenure influences alignment perceptions, thereby corroborating the strategic alignment descriptive findings.

Table 12 Cross-tabulation - Years of Experience by Strategic Alignment Category

Years of Experience	Low n (%)	High n (%)	Very High n (%)	Total
Less than 1 year	0 (0.0%)	0 (0.0%)	8 (100%)	8
1–5 years	7 (12.1%)	14 (24.1%)	37 (63.8%)	58
6–10 years	0 (0.0%)	3 (15.0%)	17 (85.0%)	20
More than 10 years	0 (0.0%)	0 (0.0%)	6 (100%)	6
Total	**7 (7.6%)**	**17 (18.5%)**	**68 (73.9%)**	**92**

Note: Alignment categories: Low ≤ 3.5; High = 3.51–4.5; Very High > 4.5. Source: Field Survey Data, 2026.

Table 12 reveals a clear positive trend: all respondents with less than one year of experience and those with more than 10 years rated strategic alignment in the 'Very High' category (100% each). Among those with 6–10 years of experience, 85.0% also rated alignment as very high. Only among the 1–5 year cohort were low alignment ratings recorded (12.1%). This cross-tabulation corroborates the descriptive findings by showing that strategic alignment is perceived positively across experience levels, with longer-serving employees exhibiting even greater alignment conviction, suggesting that institutional socialisation deepens alignment perceptions over time.

4.5.5 Hospital Performance - Dependent Variable

Hospital performance, the dependent variable, was assessed across four dimensions: service delivery target attainment, patient satisfaction, staff competence and teamwork, and operational process smoothness.

Table 13 Descriptive Statistics for Hospital Performance (Dependent Variable)

Hospital Performance Item	N	Mean	SD	Min	Max	Interpretation
The hospital meets its service delivery targets	92	4.435	0.760	2	5	Agree

Patients are satisfied with the hospital's services	92	4.239	0.830	1	5	Agree
Staff are competent, motivated, and work well as a team	92	4.196	0.905	2	5	Agree
Hospital processes run smoothly with minimal delays and errors	92	4.337	0.774	2	5	Agree
Composite Hospital Performance Score	**92**	**4.302**	**0.693**	—	—	**Agree**

Source: Field Survey Data, 2026.

Table 13 shows that all four performance dimensions were rated within the 'Agree' range. Service delivery target attainment received the highest mean (M = 4.435, SD = 0.760), followed by process smoothness (M = 4.337, SD = 0.774). Patient satisfaction (M = 4.239, SD = 0.830) and staff competence (M = 4.196, SD = 0.905) were also positively rated but with comparatively greater variability. The composite hospital performance score (M = 4.302, SD = 0.693) confirmed satisfactory overall institutional performance.

4.5.6 Overall Summary of Composite Construct Scores

Table 14 Summary of All Composite Construct Scores

Rank	Variable	N	Mean	SD	Interpretation
1	Strategic Alignment	92	4.690	0.633	Strongly Agree
2	BSC Implementation	92	4.353	0.830	Agree
3	Hospital Performance (DV)	92	4.302	0.693	Agree
4	Resource Adequacy	92	4.145	0.901	Agree
5	Environmental Factors	92	4.120	0.727	Agree

Note: Variables ranked in descending order of composite mean. DV = Dependent Variable. Source: Field Survey Data, 2026.

Table 14 consolidates the composite means and standard deviations for all study constructs. Strategic alignment recorded the highest composite mean (M = 4.690) and lowest standard

deviation (SD = 0.633), reflecting the strongest and most consistent positive perceptions. BSC implementation (M = 4.353) ranked second, followed closely by hospital performance (M = 4.302). The proximity of hospital performance to BSC implementation in the ranking is consistent with the strong positive relationship between these constructs confirmed in the inferential analysis below.

4.6 Inferential Statistics

This section presents the inferential statistical analyses used to examine relationships among study variables and to formally address each research objective. The analysis proceeds in four stages: (i) normality testing; (ii) reliability analysis; (iii) correlation analysis; (iv) AMOS-equivalent structural path model; and (v) multiple regression analysis.

4.6.1 Normality Tests

Prior to correlation and regression analyses, normality of the composite construct distributions was assessed using two complementary tests: the Shapiro-Wilk test (appropriate for n < 300) and the Kolmogorov-Smirnov test. Additionally, skewness and kurtosis statistics were computed to characterise distributional shape. All tests were conducted at α = 0.05.

Table 15 Normality Tests (Shapiro-Wilk and Kolmogorov-Smirnov) Results

Construct	SW Statistic (W)	SW p-value	KS Statistic (D)	KS p-value	Skewness	Kurtosis (Excess)
BSC Implementation	0.779	< .001***	0.228	< .001***	−1.700	2.972
Environmental Factors	0.906	< .001***	0.196	.001***	−0.923	0.513
Resource Adequacy	0.851	< .001***	0.175	.005**	−1.245	1.566
Strategic Alignment	0.557	< .001***	0.420	< .001***	−2.482	6.332
Hospital Performance	0.872	< .001***	0.153	.022*	−1.055	0.743

*Note: SW = Shapiro-Wilk; KS = Kolmogorov-Smirnov. Significance: * p < .05; ** p < .01; *** p < .001. Excess kurtosis: mesokurtic = 0; positive = leptokurtic; negative = platykurtic.*

Interpretation of Normality Tests. Table 15 indicates that all five composite construct distributions significantly departed from normality according to both the Shapiro-Wilk and

Kolmogorov-Smirnov tests (all $p < .05$). All constructs exhibited negative skewness, indicating that responses were concentrated toward the upper end of the Likert scale, reflecting generally positive respondent perceptions. Strategic Alignment showed the most pronounced departure ($W = 0.557$, skewness = −2.482, excess kurtosis = 6.332), consistent with its high mean and low dispersion.

Despite these violations, the use of ordinary least squares (OLS) regression remains appropriate given the adequate sample size ($n = 92$), in line with the central limit theorem which supports the normality of sampling distributions (Field, 2018). Furthermore, the application of Spearman rank-order correlations alongside Pearson correlations provides a non-parametric robustness check, while the use of White-robust standard errors in regression analysis mitigates potential bias arising from non-normality and heteroscedasticity. This combined approach strengthens the reliability of the inferential results.

4.6.2 Reliability Analysis - Cronbach's Alpha

Internal consistency of all study constructs was assessed using Cronbach's Alpha (α). An alpha coefficient of ≥ 0.70 is conventionally accepted as indicating adequate reliability (Nunnally, 1978). Table 4.14 presents results from both the pilot ($n = 12$) and the main analytical sample ($n = 92$).

Table 16 Cronbach's Alpha Reliability Coefficients

Construct	Role in Study	No. Items	α (Main, N=92)	Reliability Level
BSC Implementation	Independent Variable	4	0.866	Good
Environmental Factors	Moderating Variable	3	0.661	Acceptable*
Resource Adequacy	Control Variable	3	0.860	Good
Strategic Alignment	Objective 4 Variable	2	0.862	Good
Hospital Performance	Dependent Variable	4	0.866	Good

*Note: * Environmental Factors α = 0.661 is marginally below the 0.70 threshold; this is attributable to the theoretically distinct sub-dimensions (policy, socioeconomics, technology) included in this construct. Item-level analysis was therefore prioritised for Objective 2. Pilot study*

α values: BSC = 0.805 (Good); Environmental = 0.731 (Acceptable); Resource Adequacy = 0.918 (Excellent).

Table 16 shows that four of the five constructs (BSC Implementation (α = 0.866), Resource Adequacy (α = 0.860), Strategic Alignment (α = 0.862), and Hospital Performance (α = 0.866)) all achieved 'Good' reliability levels, substantially exceeding the 0.70 threshold (Nunnally, 1978). Environmental Factors returned α = 0.661, marginally below threshold. This is explicable by the construct's deliberate inclusion of three theoretically distinct sub-dimensions (health policy, socioeconomic conditions, and technology adoption) whose internal heterogeneity is conceptually expected rather than a measurement flaw. Item-level correlations and separate constructs were therefore utilised in interpreting Objective 2 findings.

4.6.3 Correlation Analysis - Pearson and Spearman

Bivariate associations among the five composite construct scores were examined using both Pearson's product-moment correlation (r) and Spearman's rank-order correlation (ρ). Given that normality tests indicated significant departures from normality (Section 4.6.1), Spearman's ρ serves as the non-parametric corroboration of Pearson's r. Statistical significance was assessed at α = 0.05.

Table 17 Pearson Correlation Matrix

	BSC Impl.	Env. Factors	Res. Adequacy	Strat. Align.	Hosp. Perf.
BSC Implementation	1.000	0.672***	0.696***	0.702***	0.716***
Environmental Factors	0.672***	1.000	0.654***	0.674***	0.778***
Resource Adequacy	0.696***	0.654***	1.000	0.519***	0.610***
Strategic Alignment	0.702***	0.674***	0.519***	1.000	0.715***
Hospital Performance	0.716***	0.778***	0.610***	0.715***	1.000

*Note: *** $p < .001$. All correlations are two-tailed. N = 92.*

Table 18 Spearman Rank Correlations with Hospital Performance

Predictor	Spearman ρ	p-value	Significance
BSC Implementation - Hospital Performance	0.677	< .001	***
Environmental Factors -Hospital Performance	0.718	< .001	***
Resource Adequacy - Hospital Performance	0.633	< .001	***
Strategic Alignment -Hospital Performance	0.535	< .001	***

*Note: *** p < .001. Two-tailed. N = 92. Spearman ρ corroborates Pearson r findings under non-normality.*

Tables 17 and 18 reveal that all four predictor constructs are significantly and positively associated with hospital performance (all $p < .001$). Environmental Factors emerged as the strongest statistical predictor of hospital performance (Pearson $r = 0.778$; Spearman $\rho = 0.718$), indicating that the external operating context, particularly technology adoption and policy alignment, plays a critical role in shaping performance outcomes. Strategic Alignment ($r = 0.715$; $\rho = 0.535$) and BSC Implementation ($r = 0.716$; $\rho = 0.677$) also demonstrated strong positive associations, while Resource Adequacy showed a moderately strong relationship ($r = 0.610$; $\rho = 0.633$).

These findings suggest that while internal management systems are important, performance outcomes are strongly conditioned by the broader operational environment within which the hospital functions.

4.6.4 AMOS-Style Structural Path Model

To complement the multiple regression analysis and provide a structural overview of how the predictor constructs relate to hospital performance, a standardised path model was fitted. This approach mirrors the path diagram outputs of structural equation modelling software (AMOS) by reporting standardised regression coefficients (β) for each directional path from predictor to outcome. All continuous predictors were standardised (z-scored) prior to analysis to allow direct comparison of path strengths.

Table 19 Standardised Path Coefficients - AMOS-Equivalent Model

Structural Path	Std. β	t-value	p-value	Significance
BSC Implementation → Hospital Performance	0.223	2.262	.026	*
Environmental Factors → Hospital Performance	0.436	4.790	< .001	***
Resource Adequacy → Hospital Performance	0.044	0.503	.616	ns
Strategic Alignment → Hospital Performance	0.241	2.716	.008	**
Model R^2 (Variance Explained)	**69.83%**	Model F(4, 89) = 51.49, p < .001		

*Note: * p < .05; ** p < .01; *** p < .001; ns = not significant. Standardised β allows direct comparison of path strengths. N = 92.*

The structural path model in Table 19 reveals that Environmental Factors exerted the strongest direct effect on Hospital Performance (β = 0.436, p < .001), confirming that the external operating environment (encompassing health policy, socioeconomic conditions, and digital technology) is the primary driver of performance variation at South Rift Level 5 Hospital. Strategic Alignment was the second strongest significant predictor (β = 0.241, p = .008), underscoring the critical role of cascading strategic goals into daily operations. BSC Implementation also exerted a significant positive path effect (β = 0.223, p = .026), directly supporting the study's central hypothesis that BSC adoption enhances hospital performance. Resource Adequacy did not attain statistical significance in the structural model (β = 0.044, p = .616), suggesting that, while resources were perceived as adequate (descriptively), their incremental contribution to performance becomes non-significant when environmental and alignment factors are held constant. The overall model accounted for 69.83% of the variance in hospital performance ($R^2 = 0.698$).

4.6.5 Multiple Regression Analysis

To formally test the predictive model and determine the independent contribution of each study variable to hospital performance, an ordinary least squares (OLS) multiple regression was estimated. The regression model specified was:

$$Y_i = \beta_0 + \beta_1 BSC_i + \beta_2 ENV_i + \beta_3 (BSC_i \times ENV_i) + \beta_4 ResPercep_i + \beta_5 ALIGN_i + \varepsilon$$

Where Y_i represents Hospital Performance for respondent i, BSC_i denotes BSC Implementation (four perspectives), ENV_i represents Moderating Variables (Health Policy Alignment, Socioeconomic Conditions, Technology Adoption), $(BSC_i \times ENV_i)$ represents interaction term, $ResPercep_i$ represents Perceived Resource Adequacy, $ALIGN_i$ represents Strategic Alignment, β_0 the intercept, $\beta_1 \ldots \beta_5$ the coefficients, and ε the error term.

All continuous predictors in the interaction term were mean-centred prior to creating the interaction variable to reduce collinearity (Field, 2018). Statistical significance was assessed at α = 0.05. Two regression models are presented: Model 1 (base model, without interaction) and Model 2 (full model, with interaction term), to assess the incremental contribution of the moderation effect.

Table 20 Multiple Regression Results - Model 1 (Base) and Model 2 (With Interaction)

Predictor	**Model 1 β**	**Model 1 SE**	**Model 1 p**	**Model 2 β**	**Model 2 p**
Constant	0.411	0.306	.182 ns	0.331	.472 ns
BSC Implementation	0.186	0.082	.026*	0.187	.026*
Environmental Factors	0.413	0.086	< .001***	0.417	< .001***
Resource Adequacy	0.034	0.067	.616 ns	0.034	.610 ns
Strategic Alignment	0.264	0.097	.008**	0.275	.013*
BSC × ENV Interaction	—	—	—	0.015	.815 ns
Model Statistics	$R^2 = 0.698$; Adj. $R^2 = 0.685$; $F(4, 89) = 51.49$, $p < .001$			$R^2 = 0.699$; $F(5, 88) = 40.77$, $p < .001$	

*Note: β = unstandardised regression coefficient; SE = standard error. Model 1: No interaction. Model 2: Includes BSC × ENV mean-centred interaction term. * p < .05; ** p < .01; *** p < .001; ns = not significant. N = 92.*

Table 21 Regression Diagnostic Tests

Diagnostic Test	**Statistic / Value**	**Threshold**	**Result**
Durbin-Watson (Autocorrelation)	2.145	1.5 – 2.5	✓ Satisfied
Breusch-Pagan (Heteroscedasticity)	LM = 32.92, p < .001	p > .05	Violated
VIF — BSC Implementation	83.35 (model); 2.27 (item-level)	< 10	High at composite level
VIF — Environmental Factors	81.64 (model); 1.91 (item-level)	< 10	High at composite level

VIF — Strategic Alignment	85.56 (model); 1.80 (item-level)	< 10	High at composite level
VIF — Resource Adequacy	50.40 (model); 1.85 (item-level)	< 10	High at composite level

Note: High composite-level VIF values are attributable to high inter-construct correlations (0.52–0.78) reflecting the theoretically integrated BSC framework, rather than measurement artefacts. Item-level VIFs (< 2.5) confirm that individual items are not collinear. Heteroscedasticity correction: White-robust standard errors were applied in Model 2 for inference robustness.

The multiple regression results demonstrate that the overall model was statistically significant and accounted for a substantial proportion of the variance in hospital performance. Model 1 (base model without interaction) achieved $R^2 = 0.698$, meaning that 69.8% of the variance in hospital performance was explained by the four predictor variables. The adjusted $R^2 = 0.685$ confirms a parsimonious fit.

Three predictors attained statistical significance. Environmental Factors ($\beta = 0.413$, $p < .001$) emerged as the strongest predictor of hospital performance, confirming that the external operating environment (technology adoption, health policy alignment, and patient affordability) constitutes the most influential determinant of performance variation at South Rift Level 5 Hospital. Strategic Alignment ($\beta = 0.264$, $p = .008$) was the second significant predictor, underscoring that when employees understand how their daily work connects to institutional strategy, overall performance improves. BSC Implementation ($\beta = 0.186$, $p = .026$) also exerted a significant positive effect, providing direct empirical support for the study's central argument that structured BSC adoption enhances hospital performance at South Rift Level 5 Hospital.

Resource Adequacy did not achieve statistical significance in the regression model ($\beta = 0.034$, $p = .616$). This finding should be interpreted in conjunction with the descriptive statistics, which indicated generally positive perceptions of resource availability. The results suggest that while resources are necessary for operational functioning, their presence alone is insufficient to drive performance improvements.

Rather, performance gains appear to depend on how effectively resources are aligned with strategic objectives and leveraged within supportive environmental conditions. This aligns with the

Resource-Based View, which posits that resources contribute to performance only when effectively deployed through organisational capabilities and strategic alignment (Barney & Clark, 2007).

Model 2, which included the interaction term between BSC Implementation and Environmental Factors, did not yield a statistically significant increase in explanatory power ($\Delta R^2 = 0.001$, $p = .815$). This indicates that Environmental Factors do not significantly moderate the relationship between BSC implementation and hospital performance within this sample.

This finding suggests that the effect of BSC implementation on performance is relatively stable across varying environmental conditions within the hospital context. One possible explanation is the consistently high ratings of technology adoption and policy alignment, which may have limited variability in the moderating variable. However, given the comparatively lower and more variable socioeconomic affordability scores, it is plausible that moderation effects could emerge in a more heterogeneous sample.

Regarding regression diagnostics (Table 21), the Durbin-Watson statistic of 2.145 fell within the acceptable 1.5–2.5 range, indicating no problematic autocorrelation in residuals. The Breusch-Pagan test indicated heteroscedasticity ($LM = 32.92$, $p < .001$), suggesting that residual variance is not constant. In response, White-robust standard errors were applied for significance testing in Model 2 to ensure inference validity. The high composite-level variance inflation factor (VIF) values observed (ranging from 50.40 to 85.56) exceed conventional thresholds and indicate substantial multicollinearity among the composite constructs. However, this is attributable to the conceptual interrelatedness of Balanced Scorecard dimensions, which are theoretically designed to operate as an integrated framework. Importantly, item-level diagnostics reveal VIF values below 2.5, confirming that multicollinearity is not a result of measurement redundancy but reflects genuine theoretical overlap among higher-order constructs.

Consequently, while the statistical significance of predictors remains valid, caution is warranted in interpreting the relative magnitudes of regression coefficients. These findings are consistent with prior studies of integrated performance management systems where construct interdependence is expected (Tawse & Tabesh, 2023).

The composite-level VIF values reported in this study (range: 50.40–85.56) substantially exceed the conventional threshold of 10 and require frank methodological engagement beyond the

theoretical justification offered in the base analysis. Three points of honest assessment are offered. First, while it is theoretically defensible to argue that BSC constructs are designed to be interrelated, and this study is not the first to report high inter-construct collinearity in integrated performance management research (Tawse & Tabesh, 2023), VIF values in the 80s indicate that individual regression coefficients are estimated with considerable imprecision. The standard errors of the BSC Implementation, Strategic Alignment, and Environmental Factors coefficients are likely inflated relative to what they would be in a data-generating process with orthogonal predictors, meaning that the relative magnitude ordering of these coefficients should be interpreted with caution. Environmental Factors' dominance ($\beta = 0.413$) is directionally robust, but the precise gap between its coefficient and those of Strategic Alignment ($\beta = 0.264$) and BSC Implementation ($\beta = 0.186$) should not be taken as a precise ranking.

Second, more advanced modelling strategies would partially address this issue. Principal component regression using factor scores derived from exploratory factor analysis would orthogonalise the predictors and eliminate construct-level multicollinearity. Ridge regression with a regularisation parameter would stabilise coefficient estimates under multicollinearity. Structural Equation Modelling (SEM) with latent variable specification, the approach most closely aligned with this study's multi-indicator construct design, would allow simultaneous estimation of measurement and structural relationships, providing more reliable path coefficients. These methods were considered but not implemented due to the study's sample size ($n = 92$), which falls at the lower boundary of recommended sample sizes for SEM (Kline, 2016), and the single-institution context, which limits the range of construct variation necessary for stable SEM estimation. However, future research with larger samples should adopt SEM or ridge regression approaches.

Third, regarding response bias: the severe negative skewness across all constructs (all skewness values < -0.9; Strategic Alignment skewness $= -2.482$) is empirically consistent with two alternative explanations. The first is that BSC implementation has genuinely achieved high institutional penetration, producing authentic ceiling-range perceptions. The second, which must be taken seriously, is that institutional social desirability bias has produced systematically inflated ratings across all constructs, with the high inter-construct correlations partially reflecting shared response tendency rather than genuine substantive relationships. The Harman single-factor test

(accounting for 34.2% of variance) mitigates but does not eliminate this concern. Researchers using this study's data for meta-analytic purposes should apply appropriate downward corrections for social desirability inflation when comparing effect sizes with studies that have triangulated perceptual and objective data.

4.6.6 Summary of Inferential Analysis Findings

Table 22 below consolidates the key inferential findings across all four objectives, providing a comprehensive summary of the statistical evidence.

Table 22 Summary of Inferential Findings by Research Objective

Objective	Predictor	Pearson r / Spearman ρ	Regression β (p-value)	Conclusion
Obj. 1	BSC Implementation	r = 0.716*** / ρ = 0.677***	0.186 (.026*)	BSC implementation significantly and positively influences hospital performance
Obj. 2	Environmental Factors	r = 0.778*** / ρ = 0.718***	0.413 (< .001***)	Environmental factors are the strongest driver of hospital performance; socioeconomic affordability is a key constraint
Obj. 3	Resource Adequacy	r = 0.610*** / ρ = 0.633***	0.034 (.616 ns)	Resources are bivarially associated with performance but do not independently predict it when other factors are controlled
Obj. 4	Strategic Alignment	r = 0.715*** / ρ = 0.535***	0.264 (.008**)	Strategic alignment significantly predicts hospital performance; BSC facilitates effective cascading of strategic goals

*Note: * p < .05; ** p < .01; *** p < .001; ns = not significant. R^2 = 0.698 (Model 1); Adj. R^2 = 0.685. N = 92.*

The inferential analysis provides compelling and internally consistent evidence across all analytical methods. The convergence of Pearson r, Spearman ρ, structural path coefficients, and

OLS regression results across all four objectives strengthens the credibility of the conclusions. Environmental Factors emerge as the dominant driver of hospital performance, followed by Strategic Alignment and BSC Implementation, while Resource Adequacy's role appears to be mediated by these higher-order constructs. The model explains 69.8% of variance in hospital performance; a substantial proportion that validates the theoretical framework underpinning this study.

CHAPTER FIVE

DISCUSSION CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter synthesises the findings of the study, which examined how strategy execution using the Balanced Scorecard (BSC) influences hospital performance at South Rift Level 5 Hospital in Kericho County, Kenya. The chapter is structured into six sections. Section 5.2 summarises the key findings per objective. Section 5.3 discusses each finding in critical dialogue with the existing theoretical and empirical literature, including engagement with contradictory findings, measurement limitations, and alternative explanations. Section 5.4 presents the study's conclusions, qualified in accordance with the constraints of the research design. Section 5.5 provides recommendations organised into two evidence tiers; institution-level recommendations directly grounded in the study's data, and policy-level proposals that are literature-supported extrapolations requiring multi-institutional validation. Section 5.6 acknowledges the study's limitations with appropriate critical weight, and Section 5.7 proposes three directions for further research.

The study was grounded in a theoretically integrated framework comprising three complementary lenses. The Resource-Based View (RBV) explains how valuable, rare, inimitable, and non-substitutable internal resources generate performance advantage; though crucially, only when deployed through aligned organisational processes (Barney & Clark, 2007). Configuration Theory holds that effectiveness arises from the coherent internal alignment of strategy, structure, processes, and external environment (Miller, 1986). The Balanced Scorecard provides the operational mechanism through which both RBV-identified resources are systematically mobilised and Configuration Theory-prescribed alignment is actively managed across four interrelated performance dimensions: financial, customer, internal business processes, and learning and growth (Kaplan & Norton, 1992). These three frameworks are not additive; they are assigned distinct analytical domains; RBV answers the question of with what resources?, Configuration Theory answers in what arrangement?, and the BSC answers through what management mechanism? A positivist, cross-sectional quantitative design was employed, yielding 92 usable responses from hospital employees across five departments. Data were analysed through descriptive statistics,

cross-tabulations, Pearson and Spearman rank-order correlations, and multiple regression analysis using White-robust standard errors.

It is important to state at the outset that because data were collected at a single point in time using exclusively self-reported perceptual measures, the findings of this study describe associations between constructs rather than demonstrated causal relationships. All interpretive language in this chapter reflects this constraint: where the discussion states that BSC implementation "influences" or "supports" performance, this should be understood as shorthand for "is significantly and positively associated with performance, consistent with the hypothesis that BSC implementation contributes to it," rather than as a confirmed causal claim.

5.2 Summary of Findings

The study addressed four specific objectives under the overarching aim of examining how BSC-driven strategy execution is associated with hospital performance. Across all four objectives, respondents reported consistently positive perceptions of institutional practice, with all composite construct means falling within the agree-to-strongly-agree range of the five-point Likert scale. The overall regression model explained 69.8% of the variance in hospital performance ($R^2 = 0.698$, Adj. $R^2 = 0.685$, $F(4, 89) = 51.49$, $p < .001$). These strong descriptive and inferential results must be interpreted in the context of severe negative skewness across all constructs (a pattern consistent with either genuine institutional performance or systematic social desirability bias, or both) and composite-level multicollinearity that limits the precision of individual coefficient estimates (VIF range: 50.40–85.56). Both of these interpretive constraints are engaged in full in Section 5.3 and Section 5.6.

With respect to the first objective, BSC implementation was broadly confirmed at South Rift Level 5 Hospital ($M = 4.353$, $SD = 0.830$) and emerged as a statistically significant predictor of hospital performance ($\beta = 0.186$, $p = .026$). The customer dimension was the most robustly embedded perspective ($M = 4.576$), while the learning and growth perspective was the least consistently implemented and most variable ($M = 4.043$, $SD = 1.148$), representing the primary area for targeted management intervention.

On the second objective, environmental factors proved to be the dominant predictor of hospital performance in the regression model ($\beta = 0.413$, $p < .001$), with technology adoption strongly

positive (M = 4.620) and health policy alignment broadly supportive (M = 4.424). Patient affordability was the only neutral-range finding in the entire study (M = 3.315, SD = 1.167), indicating a structural access constraint that poses the most significant external risk to BSC effectiveness in the hospital's rural catchment area.

Regarding the third objective, resource adequacy was satisfactory at the descriptive level (M = 4.145, SD = 0.901) and positively correlated with performance bivariately ($r = 0.610$, $p < .001$); however, it did not attain statistical significance in the multiple regression model once environmental factors and strategic alignment were controlled ($\beta = 0.034$, $p = .616$). As Section 5.3.3 discusses in detail, this null result is open to multiple interpretations beyond the theoretically convenient RBV explanation.

The fourth objective produced the most affirmative finding of the study. Strategic alignment was the highest-rated construct overall (M = 4.690, SD = 0.633) and a significant positive predictor of hospital performance ($\beta = 0.264$, $p = .008$), confirming that the BSC has effectively cascaded institutional strategy from senior management to front-line operations. It is noted, however, that the relative magnitudes of regression coefficients, with environmental factors ($\beta = 0.413$) appearing quantitatively dominant over strategic alignment ($\beta = 0.264$) and BSC implementation ($\beta = 0.186$), should be treated as directional rather than precise rankings, given the severe composite-level multicollinearity present in the model.

5.3 Discussion of Findings

5.3.1 BSC Implementation and Key Performance Indicators

The finding that BSC implementation is positively and significantly associated with hospital performance at South Rift Level 5 Hospital ($\beta = 0.186$, $p = .026$) is broadly consistent with the international literature. Amer et al. (2022), in a systematic review spanning healthcare settings across multiple countries, found that BSC deployment is reliably associated with improvements in patient outcomes, operational efficiency, and institutional governance. Marques (2022) confirmed that hospitals operationalising the BSC report stronger performance tracking and more data-informed management, and Karisa and Wainaina (2020) reported positive associations between BSC perspectives and organisational performance at Kenyatta National Hospital in the Kenyan context. These convergent findings provide an empirical foundation for the positive association observed in this study.

However, critical engagement with this literature is warranted. Betto et al. (2022), in a systematic review specifically focused on BSC design and implementation in healthcare, noted that studies relying primarily on self-reported perceptions, the measurement approach used in this study, tend to produce stronger BSC–performance effect estimates than studies employing objective clinical quality or financial indicators. This methodological distinction is analytically important: the regression coefficient of $\beta = 0.186$, while statistically significant, may overstate the true relationship between BSC implementation practices and independently verifiable performance outcomes. Tarigan and Bachtiar (2019) provided a directly relevant cautionary case, demonstrating that in low-resource settings with weak data systems and cultural resistance to formalised performance monitoring, BSC implementation frequently stalled at the measurement design stage without generating the alignment benefits documented in better-resourced environments. The possibility that South Rift Level 5 Hospital's strong BSC perceptions reflect implementation sophistication at the design and communication stages without equivalent depth of institutionalisation at the feedback and learning stages cannot be excluded on the basis of cross-sectional perceptual data alone.

At the level of individual BSC perspectives, the customer dimension recorded the highest mean ($M = 4.576$), indicating that patient-centred care is the most robustly embedded aspect of BSC practice. This is consistent with Ferreira et al. (2023), who demonstrated that the customer perspective is among the most directly responsive BSC dimensions in private healthcare facilities, and with Boone et al. (2023), who showed that private hospitals in Kenya aligning service delivery processes with patient expectations achieve stronger utilisation and community trust. The internal process perspective ($M = 4.489$) followed closely, echoing Bohm et al. (2021), who documented that BSC-embedded process indicators reduce clinical variability and improve interdepartmental coordination.

The comparatively lower score and higher variance of the learning and growth perspective ($M = 4.043$, $SD = 1.148$) is the most actionable finding of the first objective, and arguably the most theoretically significant. Within the RBV framework, human capital, competency development, and organisational learning are precisely the resources identified as most difficult to imitate and therefore most durable as sources of competitive advantage (Barney & Clark, 2007). The fact that this dimension is the least consistently embedded suggests that the hospital has secured the more

visible and externally legible dimensions of the BSC, customer and process, while the internally facing, capability-building dimension remains underdeveloped. Guo et al. (2024) similarly reported that neglect of the learning and growth perspective over time erodes both staff retention and the long-term sustainability of BSC effectiveness. Babawarun et al. (2024) contextualised this within the structural challenge that rural healthcare institutions face in maintaining continuous professional development under resource and scheduling pressures.

Configuration Theory (Miller, 1986) provides a useful explanatory lens for this pattern. The hospital has achieved a relatively coherent strategic configuration along its customer and process dimensions, those most directly visible and measurable in day-to-day operations, while the learning and financial dimensions, which require deeper institutional investment and more complex longitudinal tracking, remain less fully embedded. Bidmeshk et al. (2025) similarly found that operational alignment complexity increases when workforce development and financial management are decoupled from the more operationally tangible service delivery dimensions of a performance framework. Resolving this asymmetry is the primary institution-level imperative emerging from the first objective.

5.3.2 Environmental Factors and BSC Effectiveness

The emergence of environmental factors as the strongest predictor of hospital performance ($\beta = 0.413$, $p < .001$) is the most significant and novel finding of this study. It extends the existing literature by demonstrating that in a rural Kenyan multispecialty hospital, the enabling external environment accounts for more unique variance in performance than the BSC implementation itself; a finding that challenges the implicitly management-centric framing of much BSC adoption research, which positions organisational implementation choices as the primary determinants of outcome.

The strong technology adoption score ($M = 4.620$) indicates that South Rift Level 5 Hospital has effectively leveraged Kenya's accelerating digital health transformation agenda to build a digital capability that directly supports BSC operationalisation. Daniel et al. (2024) showed that digitalised BSC systems substantially improve the speed and accuracy of strategic feedback loops, enabling hospital managers to identify KPI deviations and respond before operational problems escalate. Fabac (2022) similarly demonstrated, in a European context, that digital infrastructure is among the most critical environmental preconditions for BSC effectiveness. That this finding

replicates in rural Kenya suggests the enabling role of digital infrastructure is not context-specific but structural. For a young multispecialty facility managing performance data across diverse specialties, this digital capability is an institutional asset of strategic significance.

The health policy alignment score (M = 4.424) suggests that respondents perceive the Social Health Authority and Social Health Insurance Fund frameworks as broadly supportive. This is noteworthy given that Nungo et al. (2024) documented substantial variation in how private hospitals experience insurance reimbursement dynamics, and Nasage (2020) showed that delays in insurance claims significantly distort financial KPIs. The positive rating at South Rift Level 5 Hospital may reflect proactive alignment of financial planning with SHA and SHIF timelines — a management practice Karisa and Wainaina (2020) identified as a key enabler of financial BSC effectiveness in Kenyan facilities.

The socioeconomic affordability finding (M = 3.315, SD = 1.167) warrants the most critical attention of any individual item in the study. It is the only neutral-range result in the entire dataset and carries the highest standard deviation of any measured item, indicating deep disagreement among respondents about whether patients can afford the hospital's services. From a BSC framework perspective, low patient affordability directly constrains the customer perspective by reducing service utilisation, limits the financial perspective by depressing revenue predictability, and may undermine the internal process perspective by creating capacity underutilisation during low-demand periods. Carroll et al. (2022) and Blessing et al. (2023) both documented this structural access inequity in rural Kenyan counties. Boone et al. (2023) showed that private hospital engagement with national insurance schemes is among the most effective mechanisms for bridging this gap; Siddiqi et al. (2023) confirmed that long-term financial sustainability in low- and middle-income country private hospitals depends critically on reducing out-of-pocket payment dependence.

The non-significance of the BSC × Environmental Factors interaction term ($\beta = 0.015$, $p = .815$) indicates that environmental conditions do not moderate the BSC–performance relationship in this sample; they operate as independent additive drivers rather than contingent amplifiers. As pre-specified in the conceptual framework (Section 2.4), this outcome is theoretically coherent: when an interaction term proves non-significant, the alternative specification of environmental factors as a direct additive predictor is both statistically and theoretically defensible. The practical

implication is that BSC implementation quality and external environmental quality are complementary and non-substitutable: improving one while neglecting the other will not compensate for the deficit. Both levers must be operated simultaneously for maximum performance benefit.

5.3.3 Resource Adequacy and the BSC–Performance Relationship

The non-significance of resource adequacy in the multiple regression model ($\beta = 0.034$, $p = .616$), despite its significant bivariate correlation with performance ($r = 0.610$, $p < .001$), requires frank engagement with multiple competing explanations rather than a single theoretically convenient interpretation. Four explanatory accounts deserve analytical consideration.

The first, and most theoretically elegant, explanation is the RBV deployment-dependency account. Resource-Based View theory holds that resources generate competitive advantage not through possession alone but through their deployment via aligned organisational processes and strategic frameworks (Barney & Clark, 2007; Oliveira et al., 2023). Under this account, once strategic alignment and environmental conditions are held constant, the incremental variance explained by resource variation becomes negligible; resources function as an enabling floor rather than an independent performance driver. This interpretation is consistent with Betto et al.'s (2022) systematic review, which concluded that resource availability is a necessary but not sufficient condition for BSC effectiveness. Malua et al. (2024) provided Kenyan evidence showing that mission hospitals with modest resource endowments achieved disproportionate performance improvements when BSC tools were systematically deployed to align existing resources with strategic priorities.

The second explanation is restricted variance. The resource adequacy composite recorded a mean of 4.145 with a standard deviation of 0.901; perceptions concentrated in the upper range of the scale across all three items. When a predictor variable has limited variance because nearly all respondents report sufficiency, regression analysis will be unable to detect its effect even if a genuine relationship exists. The null result may therefore reflect a measurement ceiling constraint rather than a true absence of relationship. This interpretation is directly testable: a multi-institutional study including hospitals with genuinely varying resource levels would clarify whether resource adequacy becomes a significant predictor when sufficient variance is present.

The third explanation concerns measurement breadth. Resource adequacy was operationalised using only three items covering staff sufficiency, equipment and supplies, and budget adequacy at the departmental level. Several dimensions of resource capacity identified as critical BSC enablers in the literature (health information system quality, leadership capacity, and organisational learning infrastructure) were not captured (Betto et al., 2022; Malua et al., 2024). A more comprehensive measurement instrument might yield a different result.

The fourth explanation, which must be taken seriously, is social desirability inflation. If respondents systematically overrated resource adequacy out of institutional loyalty or evaluative apprehension, the construct's true variance would be compressed, further reducing its regression coefficient. Under this scenario, the positive resource perceptions reported in the descriptive statistics are themselves a measurement artefact, and the null regression result reflects the absence of genuine differentiation in resource perceptions rather than the absence of a resource–performance relationship. Integrating all four accounts, the most defensible conclusion is that this study's design was not sufficiently powered to isolate and detect a resource adequacy effect if one exists, and the null result should be replicated with a larger, multi-institutional sample using objective resource measures before concluding that resources are empirically subordinate to alignment and environmental factors.

Item-level variability nonetheless flags a meaningful concern. Staff sufficiency ($M = 4.000$, $SD = 1.089$) and budget adequacy ($M = 4.087$, $SD = 1.086$) recorded standard deviations exceeding 1.0, indicating that resource experiences vary substantially across departments. The cross-tabulation analysis showed that Finance and Administration reported higher proportions of low performance perceptions than clinical departments; a pattern consistent with Kabir et al. (2022), who documented that resource inequities between clinical and non-clinical hospital functions represent a structural constraint on comprehensive service delivery. Configuration Theory (Miller, 1986) frames this departmental heterogeneity as a configuration misalignment: where resource distribution diverges from strategic priorities, the coherence of the overall performance configuration is weakened.

5.3.4 Strategic Alignment and BSC Facilitation

The finding that strategic alignment is the highest-rated construct in the study ($M = 4.690$, $SD = 0.633$) and a significant predictor of hospital performance ($\beta = 0.264$, $p = .008$) represents the most

affirmative empirical validation of BSC theory offered by this study. Kaplan and Norton (1992, 2004) argued that the BSC's primary value lies not in its measurement functions but in its capacity as a strategy execution vehicle; one that cascades institutional vision through the organisation until individual employees understand how their daily work contributes to strategic outcomes. The present data confirm that South Rift Level 5 Hospital has achieved this cascading effect to a high degree, with departmental goal alignment (M = 4.641) and individual daily work alignment (M = 4.739) both rated in the strongly-agree range with low variance.

These findings align with Teixeira et al. (2024), who demonstrated that organisations using BSC-linked strategy maps report stronger interdepartmental collaboration and higher engagement, and with Gomes and Romão (2024), who identified strategic alignment as the dimension through which BSC implementation generates its most durable performance benefits. Mohan et al. (2025) found that alignment intensity correlates positively with both the duration of BSC exposure and the regularity of strategy communication by senior management. The hospital's young age, paradoxically, may have been an institutional advantage: having been established in 2023 with the BSC embedded from the outset, it avoided the legacy culture and competing performance systems that Zomorrodi-niat et al. (2017) identified as primary impediments to alignment in older healthcare organisations attempting BSC adoption. Bahadur et al. (2024) similarly argued that strategic alignment achieved early in an organisation's lifecycle is more durable than alignment retrofitted onto established operational routines.

A note of interpretive caution is appropriate, however. The near-universal strong agreement in alignment perceptions (M = 4.690, SD = 0.633) is statistically consistent with either genuine deep alignment or with a social desirability floor effect where employees are reluctant to report misalignment publicly, particularly in a newly established institution where loyalty to organisational leadership may be high. Cross-sectional survey data alone cannot distinguish between these interpretations; qualitative methods, structured interviews or focus groups with front-line staff, would be needed to assess the substantive depth of experienced alignment versus its rhetorical expression.

From the perspective of Configuration Theory (Miller, 1986), the high alignment scores confirm that the hospital has achieved a high degree of internal fit: the coherence between strategic goals, departmental structures, and individual activities that characterises high-performing organisational

configurations. The regression result that environmental factors nonetheless account for more unique variance in performance ($\beta = 0.413$ vs. $\beta = 0.264$), directionally, though not with precise quantitative reliability given the multicollinearity present, suggests that even a well-aligned internal configuration can be constrained by external operating conditions beyond the organisation's direct control. Atuahene et al. (2023) reached a structurally equivalent conclusion, demonstrating that organisational effectiveness requires both internal coherence and adaptive responsiveness to the external environment. This integrated insight directly informs the recommendations that follow.

5.4 Conclusions

This study examined the associations between strategy execution using the Balanced Scorecard and hospital performance at South Rift Level 5 Hospital in Kericho County, Kenya. The following conclusions are offered, subject to the constraints of a cross-sectional, single-institution design in which all measures are derived from employee perceptions. Where causal language appears below, it reflects hypothesised relationships grounded in theory and corroborated by cross-sectional association; not demonstrated causal effects.

First, the data are consistent with the hypothesis that BSC implementation positively influences hospital performance ($\beta = 0.186$, $p = .026$). South Rift Level 5 Hospital has operationalised all four BSC perspectives to a degree associated with measurable performance gains, with patient-centred care and internal process management as the most robustly embedded dimensions. The learning and growth perspective remains the least consistently implemented and the most variable, representing the most critical area for targeted management investment.

Second, the operating environment is the most powerful correlate of hospital performance at this institution, with environmental factors explaining more unique variance than any other predictor ($\beta = 0.413$, $p < .001$). Technology adoption is strongly positive, health policy alignment is broadly supportive, and patient affordability is the single most significant constraint; one that undermines the customer and financial BSC dimensions and reflects the structural access inequity of rural Kenyan healthcare. The non-significance of the BSC × Environment interaction term supports the conclusion that internal management quality and external environmental quality are additive rather than contingent: both must be simultaneously favourable for the full performance potential of the BSC to be realised.

Third, resource adequacy, while satisfactory in aggregate and positively correlated with performance bivariately, does not independently predict performance in the multivariate model ($\beta = 0.034$, $p = .616$). This finding should be interpreted cautiously given restricted variance in resource perceptions, limited measurement breadth, and the possibility of social desirability inflation. Replication with objective resource measures across multiple institutions is warranted before concluding that resource adequacy is empirically subordinate to strategic alignment and environmental factors. The uneven distribution of resource experiences across departments nonetheless represents a secondary risk to BSC consistency that merits management attention.

Fourth, BSC implementation has successfully facilitated strong strategic alignment throughout the organisation ($M = 4.690$, $\beta = 0.264$, $p = .008$). The data confirm that the BSC has functioned as an effective strategy communication and execution mechanism since the hospital's establishment; cascading strategic intent from senior management to front-line operations. This conclusion, while the most affirmative in the study, is qualified by the interpretive caution that perceptual alignment scores may reflect rhetorical rather than substantive alignment; qualitative triangulation would be needed to assess the depth of experienced alignment.

Fifth, the integrated regression model ($R^2 = 0.698$, Adj. $R^2 = 0.685$) supports the study's tripartite theoretical framework. The convergence of findings across BSC theory, RBV, and Configuration Theory demonstrates that effective strategy execution in a rural multispecialty hospital is associated with three simultaneously necessary conditions: structured BSC adoption, a supportive enabling environment, and coherent internal alignment. The primary contribution of this study to the literature on healthcare performance management in low- and middle-income country contexts lies in this integrated conclusion, particularly the empirical demonstration that environmental factors are not merely contextual background but independent performance determinants of at least equal magnitude, directionally, to the internal management mechanisms that most BSC research foregrounds.

5.5 Recommendations

The recommendations below are stratified by their evidentiary grounding and scope of application. Tier 1 recommendations are directly supported by the study's data and are appropriate for immediate institutional implementation at South Rift Level 5 Hospital. Tier 2 recommendations are plausible, literature-supported extrapolations that extend beyond the evidential scope of a

single-institution study; they are offered as evidence-informed proposals for consideration and pilot-testing, and should not be cited as direct empirical conclusions of this research. This distinction is explicit so that policymakers and researchers can apply appropriate weighting to each set of proposals.

Tier 1: Institution-Level Recommendations

5.5.1 Strengthen the Learning and Growth Dimension and Institutionalise the BSC Review Cycle

Hospital management should direct immediate and sustained attention to the learning and growth perspective, the weakest and most variable dimension of BSC implementation at this institution ($M = 4.043$, $SD = 1.148$). This requires the design of a formal, BSC-linked continuous professional development programme that connects individual competency assessments to departmental KPIs and feeds results into a documented quarterly performance review cycle. This recommendation is directly grounded in the study's finding that the learning and growth perspective is the least consistently implemented BSC dimension, and in RBV theory's identification of human capital development as the most sustainable source of competitive advantage (Barney & Clark, 2007).

Guo et al. (2024) demonstrated that sustained investment in staff development under a BSC framework significantly reduces turnover and improves both clinical quality and operational outcomes. Tawse and Tabesh (2023) showed that the BSC's performance benefits are most fully realised when it functions as a dynamic management system with regular, documented feedback loops rather than a static measurement instrument. The hospital's predominantly young workforce, over 83% under 35 years of age, provides an opportunity to institutionalise these practices early in the organisational lifecycle, before entrenched habits make later adoption more costly. Management should simultaneously address the departmental resource inequities flagged by staff sufficiency variability ($SD = 1.089$) and the performance distribution in Finance and Administration, ensuring that the annual budget allocation process explicitly reflects BSC strategic priorities rather than historical spending patterns.

5.5.2 Address Patient Affordability Through Targeted Insurance Facilitation

The neutral rating of patient affordability ($M = 3.315$, $SD = 1.167$) is the most structurally significant constraint on BSC effectiveness identified by the study data, and the only finding that falls below the agree threshold. Hospital management should develop a proactive strategy to

maximise patient enrolment in the Social Health Insurance Fund and Social Health Authority schemes, including the appointment of a dedicated insurance facilitation officer and community health outreach in the rural catchment area. This recommendation is directly and narrowly grounded in the study's data; the affordability item was the single most significant negative finding, and it directly constrains the customer and financial BSC perspectives. Boone et al. (2023) provided direct evidence that private hospital engagement with national insurance schemes in Kenya significantly improves patient utilisation and the financial sustainability of customer perspective KPIs.

5.5.3 Invest in a BSC Digital Dashboard

Given the study's finding that technology adoption was the highest-rated environmental factor (M = 4.620) and the strongest component of the dominant predictor in the regression model, hospital management should consolidate this advantage by investing in a dedicated BSC digital dashboard integrated with the existing health information system, enabling real-time tracking of KPIs across all five departments. This is an institution-level recommendation directly grounded in the study data. Fabac (2022) and Daniel et al. (2024) both demonstrated that digitalised BSC systems substantially improve the speed and accuracy of performance monitoring, particularly in multispecialty settings where coordinating diverse clinical and administrative data streams presents a logistical challenge.

Tier 2: Policy-Level Proposals

Important caveat: The following proposals are evidence-informed extrapolations based in part on this study's findings but extending to policy contexts and population scales that cannot be empirically justified by a single-institution study in Kericho County. They are presented as advocacy positions supported by the broader literature, not as direct conclusions of this research. Multi-institutional evidence is required before regulatory implementation.

5.5.4 Regulatory Integration of Performance Management Standards for Private Hospitals

This study's finding that health policy alignment significantly predicts hospital performance is consistent with a broader literature demonstrating that formal regulatory frameworks accelerate performance management adoption in private health sectors. Khan et al. (2023) and Bahadur et al. (2024) argued that regulatory integration of BSC reporting requirements strengthens public accountability for private service delivery outcomes. County and national health authorities may

wish to consider this study's single-institution finding as one data point in a broader evidence base for regulatory reform; but such reform should be grounded in multi-site evidence before implementation.

5.5.5 SHIF and Social Insurance Expansion in Rural Counties

The patient affordability constraint identified at South Rift Level 5 Hospital is consistent with broader evidence from Nungo et al. (2024) and Siddiqi et al. (2023) that rural private hospital sustainability depends on insurance penetration. County health authorities may find this study's affordability finding, the only neutral-range result in the dataset, useful as qualitative evidence in advocacy for SHIF expansion in Kericho and comparable counties. This proposal is presented as a literature-grounded advocacy position; the study cannot, on the basis of one institution, quantify the relationship between SHIF coverage rates and hospital performance outcomes at county or national scale.

5.6 Limitations of the Study

This study was conducted with methodological rigour appropriate to its objectives and context. However, four substantive limitations must be explicitly acknowledged and weighted in relation to the conclusions drawn. They constitute fundamental boundaries on the evidential claims that this research can legitimately support.

The first and most fundamental limitation is that the cross-sectional design precludes causal inference. Strategy execution is an inherently longitudinal process in which BSC maturity deepens through iterative feedback cycles, staff socialisation, and adaptive management responses (Kaplan & Norton, 2004). The regression findings establish that BSC implementation, environmental factors, and strategic alignment are significantly associated with hospital performance at a single point in time, but they cannot establish that BSC implementation caused improved performance, that alignment preceded performance improvement, or that the relationships observed will persist as the hospital develops. All causal language in this thesis (including phrases such as “BSC enhances performance” or “strategic alignment improves outcomes”) describes hypothesised causal relationships grounded in theory and supported by cross-sectional association, not demonstrated causal effects. Longitudinal studies are required to establish causal priority and temporal sequence.

The second limitation, and the most consequential for confidence in the findings, is the exclusive reliance on self-reported perceptual data from hospital employees without triangulation with objective institutional records. All constructs were measured by the same respondents using the same instrument at the same time, creating conditions for common method variance and potentially artifactual inflation of inter-construct correlations (Podsakoff et al., 2003). The severe negative skewness across all constructs, with means ranging from 4.12 to 4.69 on a five-point scale, is empirically consistent with social desirability bias, and the Harman single-factor test result of 34.2% of variance attributable to a single factor (below the 50% threshold of concern) provides only partial reassurance. The hospital evidently maintains operational records (including patient throughput data, financial reports, diagnostic utilisation logs, and staff training records) that were not triangulated with the perceptual measures due to access and timeline constraints. This absence of triangulation is the primary limitation on the study's ability to claim that the high BSC and performance perceptions reflect verifiable institutional outcomes rather than institutional optimism.

The third limitation concerns composite-level multicollinearity. VIF values ranging from 50.40 to 85.56 substantially exceed the conventional threshold of 10 and indicate that individual regression coefficients are estimated with considerable imprecision. While the direction and statistical significance of predictor effects are likely robust, the relative magnitudes, and specifically the apparent quantitative dominance of environmental factors ($\beta = 0.413$) over strategic alignment ($\beta = 0.264$) and BSC implementation ($\beta = 0.186$), should be treated as directional approximations rather than as precise quantitative rankings. More advanced modelling approaches, including principal component regression using factor scores, ridge regression, or structural equation modelling with latent variable specification (Kline, 2016), would partially address this limitation but were beyond the methodological scope and sample size constraints ($n = 92$) of this study.

The fourth limitation is the single-institution design, which restricts generalisation. South Rift Level 5 Hospital is a newly established, medium-sized, multispecialty private facility in a peri-urban Kenyan county with above-average digital infrastructure and an embedded BSC from inception. Its context differs in important respects from older institutions, smaller single-specialty rural hospitals, and facilities in counties with lower technology adoption or more challenging insurance reimbursement environments. The Tier 1 recommendations of this study are directly

applicable to South Rift Level 5 Hospital and similar newly established multispecialty private hospitals; broader generalisation requires multi-institutional replication.

5.7 Suggestions for Further Research

Three directions for future inquiry are identified. The first and most important direction is longitudinal, multi-institution research. Future studies should track BSC implementation and performance outcomes over time across hospitals of varying age, size, ownership structure, and geographic location in Kenya. A multi-site comparative design would enable examination of whether the strong strategic alignment observed at South Rift Level 5 Hospital is a function of its specific foundational context as a newly established institution, as suggested by Mohan et al. (2025) and Bahadur et al. (2024), or a reproducible outcome of deliberate BSC practice in rural multispecialty settings. Longitudinal measurement would also permit causal inference rather than cross-sectional association, and could examine whether the null effect of resource adequacy is sustained when resource levels genuinely vary across institutions over time. Such a design would substantially strengthen the evidential basis for both the institution-level and policy-level recommendations offered in this study.

The second direction involves the integration of objective performance data alongside perception-based survey instruments. Future research should triangulate BSC survey findings with clinical quality indicators, financial sustainability metrics, patient satisfaction scores, staff retention rates, and bed occupancy data from hospital information systems. This mixed-methods triangulation would address the social desirability limitations inherent in exclusively self-reported data and yield a more complete account of the mechanisms through which BSC implementation translates into verifiable institutional outcomes. Amer et al. (2022) and de Melo Santos et al. (2025) both identified this methodological gap as among the most pressing in the healthcare BSC literature. For South Rift Level 5 Hospital specifically, a follow-up mixed-methods study comparing perceptual survey data with objective records would provide direct evidence of whether the strongly positive perceptions reported in this study correspond to independently verifiable performance realities.

Third, future research should explicitly test whether patient affordability and SHIF insurance coverage moderate the BSC–performance relationship, using multi-institutional samples drawn from counties with varying levels of insurance penetration and rural socioeconomic conditions.

The present study's interaction term was non-significant within a homogeneous single-institution sample, yet patient affordability was the only neutral-rated finding in the study; the dimension most likely to have a genuine effect that could not be detected without greater inter-institutional variance. Blessing et al. (2023) and Nungo et al. (2024) both argued that socioeconomic moderation of healthcare performance frameworks is critically under-examined in the Sub-Saharan African literature. Testing this moderation effect with greater statistical power and sample heterogeneity would provide direct evidence for or against the policy proposal that SHIF expansion is a prerequisite for unlocking the full performance potential of the BSC in Kenya's rural private hospitals.

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APPENDICES

Appendix I: Questionnaire

Dear Participant,

I am Catherine Reche, a Master of Business Administration in Health Care Management (MBA-HCM) candidate at Strathmore University Business School. I am conducting a research study titled, "Strategy Execution Using the Balanced Scorecard and Its Influence on Hospital Performance: A Case of South Rift Level 5 Hospital, Kericho County, Kenya." This study seeks to examine how strategy execution using the Balanced Scorecard (BSC) influences hospital performance at South Rift Level 5 Hospital. Your responses will be kept strictly confidential and used solely for academic purposes.

Participation is voluntary, and you may withdraw at any stage without penalty.

Please answer each question honestly by selecting the option that best represents your opinion.

If you have any questions or require further information regarding the study, please feel free to contact me at catherine.reche@strathmore.edu or my supervisor, Prof. Joseph Onyango, at jonyango@strathmore.edu, Strathmore University Business School.

Thank you for your time and valuable input.

Sincerely,
Catherine Reche
Graduate Student, Strathmore University

Instructions

All items in Sections B–F use a 5-point Likert scale:

1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

Please tick (✓) the appropriate response.

Part A: Demographic Information

(Please tick the appropriate box)

A.1 Age:

☐ Under 25 ☐ 25–34 ☐ 35–44 ☐ 45–54 ☐ 55+

A.2 Gender:

☐ Male ☐ Female ☐ Prefer not to say

A.3 Current role in hospital:

☐ Senior Management ☐ Head of Department ☐ Supervisor ☐ Staff

A.4 Department/Unit:

☐ Medical ☐ Nursing ☐ Finance ☐ Administration ☐ Support Services

A.5 Years worked in this hospital:

☐ Less than 1 year ☐ 1–5 years ☐ 6–10 years ☐ More than 10 years

Part B: Implementation of the Balanced Scorecard (BSC)

Please rate the extent to which you agree with the following statements.

No.	Perspective	Statement	1	2	3	4	5
B1	Financial Perspective	The hospital manages its finances effectively and aligns budgets with strategic goals.					
B2	Customer Perspective	The hospital listens to patients and works to improve their overall experience.					
B3	Internal Processes	The hospital monitors and improves its key work processes efficiently.					
B4	Learning and Growth	The hospital supports staff training and development to meet future goals.					

Section C: Environmental Factors

Please rate the extent to which you agree with the following statements.

No.	Category	Statement	1	2	3	4	5
C1	Health Policy Alignment	National and county health policies and insurer processes support the hospital's goals.					
C2	Socioeconomic Conditions	Most patients can afford hospital services.					

C3	Technology Adoption	The hospital effectively uses digital systems and tools.					

Section D: Perceived Resource Adequacy

Please rate the extent to which you agree with the following statements.

No.	Statement	1	2	3	4	5
D1	My department has enough staff to meet patient demand.					
D2	The hospital provides adequate equipment and supplies for daily operations.					
D3	The departmental budget is sufficient for routine activities.					

Section E: Strategic Alignment

Please rate the extent to which you agree with the following statements.

No.	Statement	1	2	3	4	5
E1	Departmental goals align with the hospital's overall strategic objectives.					
E2	My daily work supports the hospital's goals and vision.					

Part F: Hospital Performance

Please rate the extent to which you agree with the following statements.

No.	Perspective	Statement	1	2	3	4	5
F1	Operational Performance	The hospital meets its service delivery targets.					
F2	Customer (Outcome) Performance	Patients are satisfied with the hospital's services.					
F3	Human Resource Performance	Staff are competent, motivated, and work well as a team.					
F4	Internal Process Efficiency	Hospital processes run smoothly with minimal delays and errors.					

Closing Statement

Thank you for participating in this study. Your contribution will help improve strategic performance management at South Rift Level 5 Hospital and similar healthcare facilities.

Questionnaire Source and Attribution

This questionnaire was adapted from established Balanced Scorecard instruments used in prior healthcare performance studies (Kaplan & Norton, 1996; Tarigan & Bachtiar, 2019; Efendi, 2023) and contextualized for the South Rift Level 5 Hospital environment.

Appendix II: Budget

Activity	Amount (Kshs)
Travelling Expense	20,000.00
Meals	15,000.00
Compilation and analysis of Data	35,000.00
Photocopy, Printing and binding	10,000.00
Contingencies	10,000.00
TOTAL	**90,000.00**

Appendix III: Ethical Approval

Strathmore UNIVERSITY

9th December 2025

Mrs Reche Catherine,
catherine.reche@strathmore.edu

Dear Mrs Reche,

RE: Evaluating the Influence of Strategy Execution Using the Balanced Scorecard (BSC) on Hospital Performance: A Case of a Multispecialty Hospital in Rural Kenya

This is to inform you that SU-ISERC has reviewed and **approved** your above **SU-masters** research proposal. Your application reference number is **SU-ISERC3138/25.** The approval period is from **9th December 2025 to 8th December 2026.**

This approval is subject to compliance with the following requirements:

i. Only approved documents including (informed consents, study instruments, and MTA) will be used
ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-ISERC.
iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-ISERC within 72 hours of notification
iv. Any changes, anticipated or otherwise, that may increase the risks or affect the safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-ISERC within 72 hours
v. Clearance for the export of biological specimens must be obtained from relevant institutions.
vi. Submission of a request for renewal of approval at least 60 days prior to the expiry of the approval period. Attach a comprehensive progress report to support the renewal.
vii. Submission of an executive summary report within 90 days of completion of the study to SU-ISERC.

Before commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology, and Innovation (NACOSTI) https://research-portal.nacosti.go.ke/ and obtain other clearances needed.

Yours sincerely,

Mr Ambrose Rachier,
Chairperson; SU-ISERC

Ole Sangale Rd, Madaraka Estate. PO Box 59857-00200, Nairobi, Kenya. Tel +254 (0)703 034000
Email admissions@strathmore.edu www.strathmore.edu

Appendix IV: NACOSTI Approval

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

Ref No: **884237**

Date of Issue: **15/December/2025**

RESEARCH LICENSE

This is to Certify that Miss.. Catherine Kagendo Reche of Strathmore University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Kericho on the topic: EVALUATING THE INFLUENCE OF STRATEGY EXECUTION USING THE BALANCED SCORECARD (BSC) ON HOSPITAL PERFORMANCE: A CASE OF A MULTISPECIALTY HOSPITAL IN RURAL KENYA for the period ending : 15/December/2026.

License No: **NACOSTI/P/25/4182711**

884237

Applicant Identification Number

Ag. Director General
NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION

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See overleaf for conditions