

**INSTITUTIONAL GOVERNANCE AND FINANCIAL SUSTAINABILITY OF WATER
RESOURCES AUTHORITY BASIN AREAS IN KENYA**

BY

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MASTER OF SCIENCE IN COMMERCE (FINANCE AND ACCOUNTING)

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(FINANCE AND ACCOUNTING) DEGREE IN THE SCHOOL OF BUSINESS AT KCA
UNIVERSITY**

OCTOBER 2025

DECLARATION

I declare that this dissertation is my original work and has not been previously submitted or published elsewhere for ward of degree. I also declare that this contains no material by other people except where due reference is made author duly acknowledged.

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I do hereby confirm that I have examined the master’s dissertation of

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ABSTRACT

Public sector's financial sustainability is crucial for ensuring that government institutions can meet current and future obligations without jeopardizing their ability to provide essential public services. Notwithstanding the fundamental significance of financial sustainability, the Water Resources Authority basin areas highlight an ongoing deficiency in this regard. A primary challenge for WRA basin areas in Kenya financial sustainability is not limited to inconsistent funding. Although empirical literature consistently underscored institutional governance as one of the most critical strategies for driving financial sustainability, positioning it at the core of organizational success and long-term viability, most of these studies had contextual gaps, conceptual gaps and methodological gaps. This study sought to assess institutional governance as it related to financial sustainability in the institution. The specific objectives were to find out the effect of accountability, transparency, stakeholder participation, and decentralization on the financial sustainability of WRA basin areas in Kenya. The theories that anchored the study were the Institutional Theory, Stakeholder Theory, and the Priority Theory of Sustainable Finance. In the research, a descriptive research design was adopted, targeting the six Water Resources Authority basin areas in Kenya. The study used a census approach with a sample size of 160 respondents, from whom primary data was gathered through a carefully crafted questionnaire, administered using a drop-and-pick approach. Secondary data was collected using a research-designed data collection tool. The questionnaire was tested for validity through content validity testing, and for reliability using Cronbach's alpha. Quantitative data was analyzed to yield descriptive statistics. Partial Least Squares Structural Equation Modelling was used to construct and validate a conceptual model focused on assessing the financial sustainability of WRA basin areas in Kenya. The study concluded that each of; accountability ($\beta=0.2377$; $p<0.01$), transparency ($\beta=0.2677$; $p=0.004$), stakeholder participation ($\beta=0.1567$; $p=0.002$) and decentralization ($\beta=0.5114$, $p<0.01$), has significant and positive effect on financial sustainability of WRA basin areas in Kenya. The study recommends that WRA basin areas in Kenya should strengthen accountability and improve transparency mechanisms and communication so as to build greater stakeholder trust and clarity. They should improve stakeholder participation by fostering inclusiveness, trust, and better-informed decision-making. They should review internal governance and empower lower-level sub basins to make them more meaningfully so as to enhance operational flexibility.

Keywords: Accountability, Decentralization, Financial Sustainability, Stakeholder Participation, Transparency, Water Resources Authority Basin Areas

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DEDICATION

This Thesis is dedicated to my loving and hardworking Mother Mrs. Linet Nyaoro, Late Father CPA George Nyaoro, Wife Juliana Ndavi, my dear lovely sons Adrian and Miracle and Lastly my beautiful daughter Angel Merkel Nyaoro for their moral support and encouragement throughout my research study

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ACRONYMS AND ABBREVIATIONS

ANOVA	Analysis of Variance
AVE	Average Variance Extracted
CEO	Chief Executive Officer
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CFO	Chief Finance Officer
CR	Composite Reliability
DAO	Decentralized Autonomous Organizations
DV	Dependent Variable
EBIT	Earnings Before Interest and Taxes
ERC	Ethical Review Committee
FY	Fiscal Year
NACOSTI	National Commission for Science, Technology, and Innovation
OECD	Organisation for Economic Co-operation and Development
PLS- SEM	Partial Least Squares-Structural Equation Modelling
RMSEA	Root Mean Square Error of Approximation
ROA	Return on Assets
ROCE	Return On Capital Employed
ROI	Return on Investment
SEM	Structural Equation Modelling
SEM-PLS	Structural Equation Modelling-Partial Least Squares
SPSS	Statistical Package for Social Sciences
SR	Sustainability Reporting
TLI	Tucker-Lewis Index
UK	United Kingdom
UNDP	United Nations Development Programme
USA	United States of America
WHO	World Health Organization
WRA	Water Resources Authority basin areas

OPERATIONAL DEFINITION OF TERMS

Accountability refers to the responsibility of an institution's leadership to ensure that decisions are made in accordance with the best interests of stakeholders, while also being answerable for the outcomes and consequences of those decisions (Khrees, 2020).

Decentralization refers to the systematic process of transferring decision-making authority and responsibilities from a central governing body or management to lower levels within an organizational or governmental framework (Altamimi et al., 2023).

Financial sustainability refers to an institution's ability to maintain stable financial health over the long term, ensuring it can generate sufficient resources to meet its operational needs and achieve its objectives without compromising its future viability (Bakken, 2021).

Institutional governance implies a system of rules, practices, processes, and structures used to direct and manage an institution through accountability, transparency, stakeholder participation, and decentralization, which collectively foster an environment of trust, efficiency, and long-term organizational resilience. (Al-Alagmeh & Megdadi, 2024).

Stakeholder participation refers to comprehensive involvement of all pertinent stakeholders in the decision-making processes within an institution (Brown & Chen, 2023).

Transparency involves the openness of an organization in disclosing information about its operations, financial status, decision-making processes, and other key aspects of governance (Hosseini, Finn, & Momeni, 2023).

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Recompences of investment in water and sanitation services are both profound and far-reaching (Water Resources Authority [WRA], 2023). Access to a reliable and justifiable water source is indispensable for preserving human life, fostering economic development, and maintaining the ecological balance of ecosystems (World Health Organization [WHO], 2021). Such investments in drinking water and sanitation infrastructure are consistently associated with significant returns, with benefit-cost ratios that consistently surpass unity. In Kenya, the Water Resources Authority (WRA), a state corporation, has been entrusted with the critical responsibility of safeguarding the right to clean water on behalf of the national government. This responsibility entails the regulation of water resource management and usage to ensure an adequate supply of water for both current and future generations (WRA, 2023). Achieving this ambitious goal requires that the WRA secure sufficient revenue to support its operations; failure to do so would result in the financial unsustainability of its initiatives (Lekaldero, 2022). This underscores the pressing need for the WRA to ensure its financial sustainability. In this context, financial sustainability encapsulates the organization's ability to cultivate a diversified resource base, thereby fortifying the continuity of its institutional framework and ensuring the enduring provision of benefits to its intended beneficiaries (Msomi & Olarewaju, 2021)

Financial sustainability is a crucial aspect of an organization's survival, growth, and expansion (Lekaldero, 2022). It involves adopting strategic financial management practices

that optimize resource allocation and utilization. This includes mobilizing various resources, generating income through self-financing, revenue strategies, and comprehensive financial planning (Dadu et al., 2024). In an ever-changing environment, financial sustainability ensures that institutions remain adaptable and responsive to emerging demands and opportunities, enabling them to navigate uncertainties (Minyoso, 2020; World Bank, 2023). Financially resilient organizations are better equipped to continue fulfilling their core functions even amid fluctuating external conditions (Smith & Johnson, 2022).

Securing reliable revenues and managing financial resources effectively is vital for an institution's long-term success (Gleibnar et al., 2022). Without financial sustainability, organizations may struggle to maintain operations, implement projects, or plan for future growth (Liwa, 2020). Therefore, the ability to mobilize financial resources through government funding, donor support, or internally generated funds is essential for ensuring the ongoing viability and effectiveness of an institution in achieving its objectives (Alshareef, 2024).

However, over the past decade, WRA has faced significant challenges in meeting its revenue targets, which has posed a considerable threat to its financial sustainability (WRA, 2019). Its financial health directly impacts its ability to regulate and manage resources efficiently (Gleibnar et al., 2022). In this context, institutional governance has increasingly emerged as a crucial resource for bolstering financial stability (Wabwire, 2022). Institutional governance is focused on rectifying nonconformities, lapses, challenges, and impediments encountered by organizations, thereby ensuring the systematic control and oversight of work processes and procedures (Halim et al., 2023). Institutional governance seeks to achieve organizational objectives by regulating the ways employees behave,

enhancing work efficiency, and preventing both functional and financial misconduct, all while safeguarding the interests of all stakeholders (Al-Alagmeh & Megdadi, 2024). It aims to establish a framework of rules and principles that guide organizational management, ensuring the monitoring of financial sustainability while promoting transparency and accountability in operations.

1.1.1 Institutional Governance

Institutional governance is increasingly recognized as essential for driving organizational growth and ensuring long-term financial sustainability (Dharwadkar et al., 2020). It operates through a sophisticated framework of principles, namely; accountability, transparency, participation, and decentralization, that collectively cultivate trust, operational efficiency, and organizational resilience (Al-Alagmeh & Megdadi, 2024). By clarifying internal power structures and promoting ethical responsibility, institutional governance ensures that firms operate effectively while safeguarding the long-term interests of shareholders (Johnson & Davis, 2022). Moreover, it plays a pivotal role in reinforcing national economic competitiveness by enhancing the health of the corporate sector (Kaplan & Minton, 2023).

Well-established governance structures align organizational members with corporate objectives and promote performance through effective managerial oversight (Harrison, 2021). These frameworks implement checks and balances to mitigate agency costs and improve overall efficiency and effectiveness (Roberts, 2020). By ensuring strategic oversight and accountability, robust governance practices help harmonize the interests of shareholders and management, reduce operational strain, and facilitate sustained revenue growth.

Ultimately, institutional governance serves as a critical mechanism for fostering investor confidence and achieving enduring financial success.

Institutional governance is a comprehensive framework of controls and foundational principles designed to regulate organizational practices, ensuring the achievement of exceptional success. This framework is grounded on core foundations of transparency, decentralization, active participation, and organizational accountability, which cumulatively provide a culture of trust, effectiveness, and long-term organizational sustainability (Al-Alagmeh & Megdadi, 2024). This increased profile is due to its capacity to enhance sustainability by encouraging openness, ensuring accountability, and articulating clear power relationships in firms. Meanwhile, it ensures that corporations are managed with efficiency, as well as safeguarding the interests of shareholders in the long term. Financial success therefore demands that corporations place great importance on ethical responsibility and develop robust institutional systems of governance (Johnson & Davis, 2022). In addition, institutional regulation forms the basis for economic development through the building up of the health of the corporate environment, subsequently leading to national competitiveness (Kaplan & Minton, 2023).

Institutional governance metrics are key indicators employed to evaluate the efficacy of an organization's governance framework, assessing its capacity to attain its objectives while upholding transparency, accountability, and long-term sustainability (Al-Alagmeh & Megdadi, 2024). These metrics focus on evaluating how well governance structure's function, how decisions are made, and how those decisions align with ethical standards, regulations, and best practices. The institutional governance metrics used in the public sector

include; include: accountability, transparency, stakeholder participation, and decentralization (Hosseini et al., 2023; Wabwire, 2022; Khrees, 2020).

Accountability, as defined by Khrees (2020), entails the obligation of institutional leaders to act in stakeholders' best interests while being answerable for the consequences of their decisions. In the realm of financial sustainability, accountability ensures efficient use of resources through transparent fund reporting, regulatory compliance, and alignment of managerial actions with strategic goals. It builds stakeholder trust, attracts investment, and mitigates risks like financial mismanagement and corruption, thereby supporting long-term stability.

Transparency refers to openly sharing information about operations and financial matters (Hosseini et al., 2023). Accurate and timely disclosure of financial data enhances stakeholder confidence, reduces the risk of fraud, and helps attract external funding (Aguilera & Cuervo-Cazurra, 2021; Dadu et al., 2024). Transparency lay the foundation for ethical governance and financial resilience. Transparency involves candor on the part of an organization in disclosing information on operations, financial situation, decision-making, and other governance fundamentals (Hosseini et al., 2023). Financial management in this regard means providing accurate, timely, and accessible information on revenues, costs, and financial outcomes. Such transparency builds stakeholder trust and allows fiscal choices to be based on credible and factual information (Aguilera & Cuervo-Cazurra, 2021). Transparency goes hand in hand with financial sustainability since financial transparency allows investors, donors, and other stakeholders to ascertain the risk exposure of an organization as well as its overall financial situation. Transparent reporting reduces the risk of fraud, wastage, or financial wrongdoing, eventually leading to extensive financial loss.

Additionally, ethical financial practices make financial resources more accessible to organizations from external sources since creditors and investors have a preference for institutions that come across as having transparent, honest, and trustworthy financial information (Dadu et al., 2024).

Stakeholder participation, as emphasized by Brown and Chen (2023), involves engaging all relevant stakeholders in decision-making processes, which strengthens ownership, trust, and strategic alignment. This inclusive approach leads to more informed financial decisions, better resource allocation, and improved risk management, all of which contribute to financial sustainability (Wabwire, 2022). Decentralization complements these efforts by delegating decision-making authority to lower organizational levels, thereby enhancing responsiveness and local adaptability (Altamimi et al., 2023). When local units are empowered to manage finances and respond to context-specific challenges, organizations benefit from more efficient budgeting, greater innovation, and improved operational effectiveness (Dadu et al., 2024). Furthermore, decentralization fosters local ownership and reduces corruption, making it a vital component of sustainable institutional governance. Regular evaluation of these governance metrics ensures continued accountability, transparency, and ethical resilience, all critical to long-term sustainability.

Despite this recognition, the precise connection between institutional governance and the enhancement of WRA's financial sustainability remains unresolved. These necessities the current study to assess the manner in which institutional governance related to financial sustainability of WRA in Kenya.

1.1.2 Financial Sustainability

Financial sustainability is broadly recognized as a vital factor influencing shareholder value and guiding investment decisions (Gleibnar et al., 2022). It is also viewed as a strategic investment approach that ensures the long-term viability of economic activities (Bakken, 2021). The World Bank (2023) defines financial sustainability as an organization's capacity to sustain operations while meeting its social and economic responsibilities, thereby securing long-term success. In this context, it involves maintaining stable financial health, effectively managing resources, diversifying income streams, and engaging in strategic planning to mitigate financial risks (Smith & Johnson, 2022). This enables institutions to remain resilient and continue service delivery despite economic fluctuations.

Financial sustainability is essential for long-term organizational resilience, providing the financial stability needed to meet goals and adapt to change (OECD, 2023). It equips organizations to handle economic shocks, invest strategically, and maintain operations in uncertain conditions. Effective financial sustainability builds stakeholder confidence by showcasing sound resource management and reliable revenue generation (Smith & Lee, 2022). It also supports innovation, service expansion, and enhanced impact, allowing institutions to thrive in dynamic and competitive environments.

Measures of financial sustainability are essential for assessing an organization's ability to maintain operations and achieve long-term success (Wabwire, 2022). These measures combine both quantitative and qualitative indicators to provide a comprehensive

view of financial health and resilience. Quantitative metrics such as revenue diversity, profitability, operating efficiency (Bakken, 2021) and liquidity ratios (Aydin & Kutan, 2021) offer insight into financial sustainability while qualitative factors, like stakeholder impact and adaptability help assess long-term sustainability (Dadu et al., 2024; Hutton & Peterson, 2021). In this study, financial sustainability will be measured using, revenue diversity, operational efficiency, liquidity ratios, and stakeholder impact (Dadu et al., 2024; Bakken, 2021). Revenue diversity, in particular, reduces reliance on a single income stream, enhancing financial sustainability by supporting predictable and stable funding (OECD, 2023; World Bank, 2023). Operational efficiency, evaluated through cost ratios and economies of scale, identifies how well an organization manages expenses relative to performance (Smith & Lee, 2022). Liquidity ratios further indicate the organization's ability to meet short-term obligations, with strong liquidity supporting operational continuity in times of financial stress (Aydin & Kutan, 2021; Daryaei & Movahedi, 2022; OECD, 2023; Brown & Chen, 2023; Bakken, 2021). In the context of stakeholder impact, an organization's ability to fulfill its social, environmental, and governance objectives, coupled with its effectiveness in communicating these initiatives to stakeholders, serves as a key indicator of its overall sustainability (Brown & Chen, 2023).

Globally, financial sustainability now goes beyond maintaining financial health to integrating responsible practices with broader societal and environmental goals, particularly in response to global crises, economic volatility, and social inequality (World Bank, 2023; Smith & Johnson, 2023). Key global drivers include climate change, which necessitates incorporating environmental risks into financial planning (OECD, 2023), and the COVID-19 pandemic, which highlighted the importance of resilient financial models during periods of

disruption (United Nations, 2022). Governments and global institutions are increasingly embedding sustainability into financial regulations and policy frameworks (European Commission, 2023).

In Africa, financial sustainability has taken on critical importance due to region-specific challenges such as volatile commodity prices, political instability, infrastructure deficits, and climate change (World Bank, 2023). Many African economies remain dependent on natural resources, making them vulnerable to global market fluctuations (Dadu et al., 2024). To navigate these challenges, institutions must focus on long-term strategies like economic diversification, investment in human capital, and sustainable resource management (United Nations, 2022; Smith & Johnson, 2023; Dadu et al., 2024). Strengthening institutions, ensuring transparency, and enhancing regulatory frameworks are also essential for attracting investment and building financial resilience (Aydin & Kutan, 2021). In Kenya, financial sustainability is tied to urbanization, infrastructure development, and economic vulnerability. It depends on effective resource mobilization, financial inclusion, and diversification strategies (Kenya National Bureau of Statistics, 2022; Mutua, 2021; Muthoka, 2023). Fiscal discipline and addressing social challenges such as poverty and inequality are key to sustaining growth (Republic of Kenya, 2022; UNDP, 2023), while the adoption of ESG practices further aligns Kenyan enterprises with global sustainability goals (Mutua, 2021).

1.1.3 Water Resources Authority in Kenya

The global water crisis is intensifying due to rising demand and increasing scarcity, driven by factors such as climate change, pollution, population growth, rapid urbanization, and poor

water management (Bates et al., 2021). These pressures are expected to severely impact socio-economic activities, food security, public health, and education, while also amplifying the effects of climate change (Alvord et al., 2020). In response, global awareness has grown, prompting significant attention from both the public and policymakers. As part of a coordinated global effort, the United Nations established Sustainable Development Goal (SDG) 6, which sets out ambitious targets to ensure the sustainable use and management of water resources by 2030 (United Nations, 2023).

At the global level, internationally integrated sustainable water resource management (WRM) is required to counteract the effects of climate change, population growth, and deterioration of the environment. Sustainable WRM involves the availability and sustainably supplied quality of the water resources at global, regional, and local levels through an integrated adaptive approach. Sustainable WRM worldwide is influenced by climate variability, international waters governance, and technological advancement. The 2024 State of Global Water Resources report also identifies the impacts of record-high heat and climate extremes on water supply, necessitating the need for integrated management practices to deal with these demands (World Meteorological Organization, 2024). Transboundary water cooperation is equally crucial because nearly half of the world's rivers and aquifers cross international boundaries. Collaborative institutions are necessary in order to reduce conflict and enhance resilience in shared water resources (World Bank, 2024).

Regionally, Sustainable water resource management in Africa is determined by the continent's diverse climatic, ecological, and socio-economic characteristics. Africa is highly vulnerable to climate variability and change that exacerbates water scarcity, droughts, and flooding in arid and semi-arid regions (UNESCO, 2023; FAO, 2022). Africa's limited

freshwater resources are barely 9% being currently exploited, but the irregular spatial pattern of water, combined with population growth, urbanization, and industrial pressures, impose serious sustainability challenges (UN-Water, 2023).

In Kenya, water resource management is confronted by climatic uncertainty, agricultural growing demand, urban expansion, and ecosystem deterioration. Kenya has a very uneven pattern of rainfall, with arid and semi-arid areas (ASALs) occupying more than 80% of the country, thus making water scarcity a chronic issue (Kenya Ministry of Water & Sanitation, 2023). Kenya has established several policies that have aided in sustainable WRM, e.g., the Water Act (2016), which invented Water Resource Authorities and Water User Associations for regulating, monitoring, and managing water utilization in a sustainable way (Republic of Kenya, 2021). Catchment management, planning integration, and stakeholder participation are given due importance to achieve equitable allocation and prevent over-extraction. Community involvement at the local level has played an important role in Kenya, with Water Resource Users Associations (WRUAs) providing cooperative management, conservation, and regulation of river basins. For instance, Mau Forest and Tana River basin programs show that combining regulation with community water stewardship is more sustainable, supports livelihoods, and safeguards the environment (FAO, 2022; Republic of Kenya, 2021).

In Kenya, water resources are vital for economic development, agriculture, and public health, with both surface and groundwater sources playing key roles (Mulwa et al. 2021). However, the country's water supply is unevenly distributed, with arid and semi-arid regions in the central and northern areas facing chronic shortages, while the highlands and western regions enjoy relatively abundant resources. Major rivers like the Tana and Ewaso

Ng'iro, along with lakes such as Lake Victoria and Lake Naivasha, are critical for irrigation, hydropower, and domestic use. Nevertheless, Kenya faces persistent challenges, including population growth, climate change, and pollution, which strain these limited resources (Mutschinski & Coles, 2021). Although water management efforts through the Water Resources Authority (WRA) promote conservation and equitable access, the country continues to struggle with sustainably managing its water to meet the needs of its growing rural and urban populations.

1.2 Problem Statement

Financial sustainability in the public sector is essential for ensuring that government institutions can meet current and future obligations while maintaining service delivery (Wabwire, 2022; Smith & Johnson, 2023). In Kenya, the Water Resources Authority (WRA) relies on revenue from water usage fees, licensing, and fines to fund 90–100% of its administrative expenses (WRA, 2020). However, actual revenue covers only about 25% of the budget (WRA, 2020; WRA, 2024). For example, in FY 2016/2017, WRA proposed a budget of Kshs. 2.1 billion but realized only Kshs. 1.05 billion, resulting in a shortfall of Kshs. 1.1 billion (WRA, 2019). Persistent deficits and outstanding liabilities of approximately Kshs. 3 billion hinder WRA's ability to meet increasing demands for water management, infrastructure development, and provision of reliable water (Muthoka, 2023).

Inadequate funding limits monitoring, enforcement, and maintenance of water infrastructure, increasing risks of illegal abstraction and pollution (World Bank, 2023). Effective financial sustainability also relies on strong institutional governance. Studies indicate that accountability mechanisms enhance financial performance (Dharwadkar et al.,

2020; Martinez & Singh, 2022; Williams & Roberts, 2022), though prior research often exhibits contextual, conceptual, or methodological gaps, such as small sample sizes or sector-specific focus (Adeyemi & Olorunsola, 2023; Nguyen & Zhang, 2021). Despite institutional governance being pivotal to financial outcomes, comprehensive studies on its role in sustaining public institutions remain limited. This study addressed this gap by examining the influence of governance measures, accountability, transparency, stakeholder participation, and decentralization, on the financial sustainability of WRA basin areas, providing actionable insights to strengthen institutional financial viability.

1.3 Objectives the study

1.3.1 General objective

To assess the effect of institutional governance on financial sustainability of Water Resources Authority basin areas in Kenya.

1.3.2 Specific Objectives

The specific objectives were;

1. To determine the effect of accountability on financial sustainability of Water Resources Authority basin areas in Kenya
2. To establish the effect of transparency on financial sustainability of Water Resources Authority basin areas in Kenya
3. To assess the effect of stakeholder participation on financial sustainability of Water Resources Authority basin areas in Kenya

4. To establish the effect of decentralization on financial sustainability of Water Resources Authority basin areas in Kenya

1.4 Research questions

The study research questions were:

1. What is the effect of accountability on financial sustainability of Water Resources Authority basin areas in Kenya?
2. What is the effect of transparency on financial sustainability of Water Resources Authority basin areas in Kenya?
3. What is the effect of stakeholder participation on financial sustainability of Water Resources Authority basin areas in Kenya?
4. What is the effect of decentralization on financial sustainability of Water Resources Authority basin areas in Kenya?

1.5 Justification of the Study

The need for this research is underscored by the critical role that the WRA played in the governance, management, and sustainable utilization of water resources in Kenya. As the country grapples with an increasing range of complex challenges, such as the worsening crisis of water scarcity, the far-reaching impacts of climate change, and rapid population growth, the importance of establishing and maintaining robust institutional frameworks has never been more urgent. These frameworks were essential for ensuring the equitable distribution and sustainable management of water resources, which are vital to Kenya's

socio-economic development, public health, and environmental preservation. The escalating water scarcity crisis in Kenya, driven by both natural and anthropogenic factors, has placed immense pressure on the country's water supply systems.

Climate change further exacerbates this issue, with more frequent and intense droughts, changing precipitation patterns, and shifting water availability across regions. At the same time, rapid population growth, particularly in urban areas, has led to increased demand for water resources, putting further strain on the infrastructure required to meet these needs. This combination of factors calls for immediate and effective management to ensure that the nation's water resources can meet both current and future demands. As the WRA confronts these challenges, the effectiveness of its governance structures will be a crucial determinant of its ability to meet the evolving demands for water services. Despite the acknowledgment that institutional governance significantly influences organizational performance, there remains a substantial gap in empirical research regarding its specific impact on the financial sustainability of public bodies like the WRA.

Financial sustainability in public organizations is not solely about managing resources efficiently; it also encompasses the capacity to ensure continuous service delivery without compromising future obligations. Robust governance mechanisms, such as accountability, transparency, stakeholder participation, and decentralization, are fundamental to optimizing resource allocation, minimizing waste, and enhancing long-term cost-effectiveness. Despite the indispensable role these institutional governance practices play in fostering financial sustainability, the intricate relationship between these practices and financial viability, particularly within Kenya's water sector, remains insufficiently explored. This study bridged this gap by investigating how governance frameworks within the WRA

basin areas either facilitate or impede its financial sustainability. Given the strategic importance of water resources for Kenya's economic development, environmental resilience, and public health, this research was both timely and of significant relevance.

1.6 Significance of the Study

Given the critical role that WRA plays in managing the country's water resources, understanding how governance practices influence its financial sustainability can offer actionable insights that benefit both institutional actors and the wider public. This research would not only inform internal improvements within the WRA but also support policy development, academic inquiry, and more effective water resource management. It would be useful to;

1.6.1 Policy Makers: This study would guide policy decisions in Kenya by highlighting how governance practices impact the financial sustainability of WRA and other state corporations. Its findings would help policymakers at WRA and relevant ministries develop stronger governance frameworks to enhance financial performance across public sector institutions.

1.6.2 Water Resource Authority for Designing Programs. The WRA would directly benefit by gaining insights into how its governance structures affect financial sustainability, helping to guide reforms that improve financial management, accountability, and resource efficiency.

1.6.3 Water Regulatory Bodies. Regulatory bodies would benefit from the study by gaining insights into how institutional governance at the WRA affects financial sustainability

and compliance. This would aid in designing better regulatory frameworks and governance models for other water-related institutions

1.6.4 Water Management Initiatives. Kenya's water resources are critical to achieving the United Nations' Sustainable Development Goals (SDGs), particularly SDG 6 (Clean Water and Sanitation). The study's findings could offer practical insights that align with the global agenda for sustainability in addition to fostering sustainable practices in water distribution and consumption in Kenya.

1.6.5 Empirical evidence. This study enriched the existing body of literature on institutional governance and financial sustainability, with a particular focus on Kenyan public institutions. Research on WRA basin areas is limited, and this study filled that gap by providing empirical evidence on how governance structures impact financial sustainability in Kenya's water sector.

1.6.6 Future Researcher. This work laid the groundwork for scholars seeking to explore the broader implications of institutional governance on financial sustainability in the public sector, both within Kenya and in other developing countries, ultimately contributing to the advancement of global knowledge in this critical area.

1.6.7 Scholars and Academicians. Scholars and professionals in fields such as public administration, water governance, and financial sustainability stand to gain significantly from the study's valuable contribution to advancing academic discourse and deepening their understanding of these critical domains. The research added to the body of literature on how institutional governance affects financial outcomes in public sector organizations, particularly in resource management agencies.

1.7 Scope of the Study

Significantly, the research concentrated solely on the Water Resources Authority (WRA) and its internal governance mechanisms, aiming to analyze their influence on the organization's financial sustainability. Specifically, the study examined the WRA's governance framework, with a focus on key elements such as accountability, transparency, stakeholder participation, and decentralization, and how these factors contributed to or hindered the authority's ability to maintain financial stability.

To explore these dynamics, the research utilized a quantitative approach combined with a descriptive research design. The study gathered and analyzed secondary data pertaining to both financial sustainability and the internal governance practices within the WRA. The sources of secondary data included internal reports produced by the WRA, detailed financial records, and governance documentation, all of which provided insight into the authority's financial health and governance strategies. The research covered the period from 2016 to 2025. This time frame was specifically chosen because the WRA had faced persistent challenges since 2016, making it a critical period for understanding how institutional governance mechanisms had impacted its financial sustainability.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Primary intention will be providing a thorough and distinct literature review concerning institutional governance, financial sustainability and related factors. It delves into an analysis of seminal works by leading scholars, which are central to the present study. This chapter offers an in-depth analysis of key theories and empirical research on financial sustainability, synthesizing these insights to build a strong conceptual framework for the study. This chapter anchors the research in established theoretical frameworks to provide a comprehensive understanding of how governance, financial practices, and other key factors impact organizational sustainability. It critically examines pertinent empirical studies, emphasizing their relevance to the research and identifying gaps in the existing literature. This analysis establishes a strong foundation for the study's contribution, offering a clear context for exploring the topic.

2.2 Theoretical Review

This study identifies theoretical frameworks crucial in elucidating both institutional governance and financial sustainability, as well as the intricate relationship between the two. These theories are invaluable in helping to pinpoint the key factors that inform the implementation of effective institutional governance and the achievement of financial sustainability. In particular, the study examines theories that are especially relevant to understanding the financial sustainability of the WRA basin areas in Kenya, focusing on key

dimensions such as accountability, transparency, stakeholder participation, and decentralization. The theories explored include Institutional Theory as well as the Stakeholder Theory in addition to the Priority Theory of Sustainable Finance.

2.2.1 Institutional Theory

Institutional theory offers a framework for understanding how organizations are shaped by their environment, including social, cultural, political, and economic factors. It emphasizes that organizational actions are influenced not just by market forces but by institutional norms, regulations, and expectations that guide behavior and performance. This theory highlights how organizations adopt structures and practices to conform to societal expectations, which can impact their sustainability and performance. Research has shown that institutional pressures, particularly in sectors like water governance, play a critical role in financial stability and operational effectiveness.

Meyer and Rowan (2020) argue that organizations may adopt formal structures to gain legitimacy rather than for efficiency. Institutional theory also explores how organizations align with formal and informal rules, shaping behavior and creating incentives that influence decisions. DiMaggio and Powell (2021) expand on this by showing how organizations within similar sectors often adopt similar practices to gain legitimacy. Scott (2021) highlights the importance of cultural and cognitive factors in shaping institutional behavior, with evolving ideas and values influencing decision-making and financial sustainability. Overall, institutional theory provides valuable insight into how organizations adapt to and operate within their institutional environments.

In the case of the WRA in Kenya, institutional theory can be applied to analyze the influence of institutional governance on its financial sustainability. The WRA, as a government agency responsible for regulating and managing water resources, operates within a complex institutional environment that includes governmental policies, legal frameworks, international norms, and societal expectations. Institutional theory clearly demonstrates that the financial sustainability of the WRA in Kenya is shaped by various institutional pressures, including legal requirements, regulatory expectations, international norms, and societal expectations. The WRA's ability to maintain legitimacy, comply with institutional norms, and innovate within these frameworks is essential for its long-term financial sustainability. As institutional theory asserts, organizations like the WRA are not solely driven by market forces but are profoundly influenced by the institutional context in which they operate, impacting their resource management and funding strategies.

2.2.2 The Stakeholder theory

Stakeholder Theory, introduced by Edward Freeman in 1984, challenges the traditional focus on maximizing shareholder value by asserting that organizations must consider the interests of all parties affected by their actions. This theory broadens corporate responsibility beyond shareholders to include employees, customers, suppliers, communities, and regulatory bodies. Freeman argues that an organization's long-term success is linked to its ability to balance the needs of these diverse stakeholder groups, emphasizing that organizations depend on these groups for resources and legitimacy, while also influencing their well-being.

Unlike traditional management approaches that prioritize shareholder wealth, Stakeholder Theory advocates for creating value across all stakeholders. By addressing

stakeholders' concerns, organizations can ensure sustainable success, which ultimately benefits shareholders as well. This inclusive approach not only promotes corporate sustainability but also advances societal well-being.

Stakeholder Theory also emphasizes ethical considerations in business decisions, such as fairness and awareness of social and environmental impacts, challenging the shareholder primacy model. It highlights that stakeholders have the power to influence business outcomes, which in turn shapes corporate strategies, governance, and performance. By adopting a long-term perspective, organizations can pursue sustainable strategies that minimize the risk of adverse financial outcomes.

In the context of institutional governance, Stakeholder Theory posits that effective governance structures, which prioritize stakeholder interests, often lead to enhanced transparency and accountability. Such governance practices foster trust among stakeholders, thereby improving the organization's reputation and financial sustainability. Research by Yavuz et al. (2024) underscores the critical role of strong corporate governance in enhancing sustainability disclosures, which, in turn, significantly influence financial performance. Effective governance frameworks facilitate transparency and comprehensiveness in sustainability reporting, thereby bolstering organizational credibility, attracting investor confidence, and ultimately driving improved financial outcomes. Additionally, integrating stakeholder interests into governance practices allows organizations to better align their strategies with stakeholder expectations, fostering increased customer loyalty, enhanced employee satisfaction, and stronger supplier collaboration. These factors collectively contribute to sustained financial sustainability. Studies indicate that stakeholder orientation,

particularly when aligned with material sustainability, drives financial success (Bertsch, 2023).

Moreover, incorporating diverse stakeholder perspectives into decision-making processes fosters more comprehensive and informed strategies. Such inclusivity promotes organizational resilience and adaptability, which are crucial for supporting sustained financial performance (Wang, 2023). Thus, applying Stakeholder Theory within institutional governance frameworks not only enhances transparency but also aligns organizational strategies with stakeholder expectations, mitigates risks, and improves decision-making processes. Collectively, these elements serve as foundational pillars in promoting the financial sustainability of organizations. By ensuring effective governance and integrating stakeholder interests into decision-making, organizations are better positioned to navigate challenges, optimize resource utilization, and create long-term value.

2.2.3 The Priority Theory of Sustainable Finance

As a framework, the Priority Theory of Sustainable Finance offers a framework for incorporating sustainability into the financial sector, emphasizing the prioritization of the most critical governance issues (Ozili, 2022). This theory advocates the creation of long-term value over short-term profits, emphasizing the importance of proactive risk management and transparency. By prioritizing these elements, the theory ensures that financial decisions contribute to a more sustainable and equitable global economy.

It specifically encourages investors and financial institutions to align their decisions with long-term sustainability goals, considering future risks, including social inequalities. In this regard, the theory aims to mitigate potential financial risks associated with

environmental degradation and social instability (Pinchot & Christianson, 2020). For sustainability to be effectively integrated into financial decision-making, it is imperative that transparency and accountability are prioritized. The Priority Theory underscores the necessity for financial institutions to implement transparent and accountable reporting practices regarding the incorporation of ESG factors into their operations. Such transparency facilitates the ability of stakeholders, ranging from investors to regulators, to assess the sustainability impact of financial decisions, ensuring that institutions are held accountable for their role in advancing sustainable development (Pinchot & Christianson, 2020). Furthermore, the theory emphasizes the strategic allocation of capital toward initiatives that promote long-term sustainable expansion (Kuhn, 2020). Such investments could include renewable energy, sustainable agriculture, environmentally conscious infrastructure, or initiatives that promote social equity. By prioritizing these types of investments, financial institutions can drive systemic change, effectively redirecting capital away from industries or practices that contribute to environmental harm or social injustice (Cunha et al., 2021).

The Theory underscores the integration of sustainable finance principles at the very heart of financial institutions' core business models. In doing so, these principles can become a fundamental aspect guiding business activities, thereby ensuring that sustainability is woven into the fabric of institutional practices (Setyowati, 2020). In the context of the WRA, the theory suggests the exploration of diverse financing sources, such as government allocations, donor funding, and private investments, in order to reduce reliance on a single funding stream. Moreover, directing funds toward projects that promote sustainable water management and conservation will attract investors committed to ESG-compliant initiatives. By applying the Priority Theory, the WRA can strengthen its governance structures and

financial strategies, thereby achieving more sustainable and effective water resource management.

2.3 Empirical Review

Empirical studies examining institutional governance as well as financial sustainability have become increasingly relevant, as researchers explore the intersection between corporate governance structures and long-term financial sustainability. Several studies have focused on how governance mechanisms impact the financial stability and sustainability of organizations. This study conducted a comprehensive review of relevant past research, which was deemed instrumental in advancing the current investigation, categorized under the key themes of accountability, transparency, stakeholder participation, and decentralization.

2.3.1 Accountability and Financial Sustainability

Empirical studies above highlight the critical role of accountability in enhancing financial sustainability across various sectors. The consistent finding across these studies is that strong accountability mechanisms, whether in public or private organizations, lead to more effective financial management, improved resource allocation, and enhanced organizational performance. Williams and Roberts (2022) investigated the role of accountability in enhancing financial sustainability within the UK healthcare sector, specifically focusing on NHS Trusts and healthcare institutions tasked with financial planning and resource allocation. The study revealed that higher levels of accountability directly contributed to improved financial planning and sustainable resource allocation. Employing a quantitative, correlational design, the research utilized a stratified random sampling approach to select a diverse range of respondents. Data was collected through structured surveys from senior managers and financial officers, alongside the analysis of publicly available financial reports. Descriptive statistics were employed to summarize the

key variables and provide an overview of the data, while regression analysis was used to examine the strength and nature of the relationship between accountability practices and financial performance. The findings revealed a positive correlation, indicating that organizations with stronger accountability mechanisms tended to experience better financial outcomes, suggesting that improved transparency and responsibility contribute to enhanced financial sustainability. However, the study identified a key conceptual gap: while it linked accountability to financial performance, it did not examine the long-term effects of sustained accountability measure

Nguyen and Zhang (2021) investigated the impact of accountability on financial sustainability within non-profit organizations in the United States. Their study confirmed that enhanced accountability significantly improved financial controls and funding efficiency, thereby contributing to better financial sustainability in these organizations. The research employed a quantitative, cross-sectional design, targeting 50 non-profits primarily dependent on donations, grants, and public funding. Data were collected through surveys distributed to financial managers and accountability officers, supplemented by in-depth interviews with key stakeholders to gain deeper insights into the influence of accountability on financial outcomes. The mixed-methods approach provided a comprehensive analysis of the relationship between accountability practices and financial performance in non-profit organizations. The findings consistently showed a positive correlation between accountability practices, such as internal audits and reporting, and improved financial sustainability. However, the study did not address the role of financial accountability in smaller non-profits or account for external factors impacting financial outcomes, thus highlighting areas for further research.

Martinez and Singh (2022) conducted a longitudinal study on the impact of corporate governance and accountability mechanisms on the financial sustainability of the banking sector in Latin America. Using purposive sampling, the study focused on large and medium-sized banks with established governance frameworks. Data collection involved financial report analysis and semi-structured interviews with senior executives. Panel data regression analysis demonstrated that strong governance and accountability mechanisms positively impacted the financial stability and sustainability of banks. However, the study's focus on the Latin American banking sector revealed a contextual gap, indicating the need for further research across other sectors and regions to examine the broader applicability of these findings.

Patel and Kumar (2023) examined the dynamic relationship between accountability, governance, and financial sustainability within Small and Medium Enterprises (SMEs) in India. Employing a quantitative survey design and utilizing stratified random sampling, they surveyed 150 SMEs. The study applied advanced statistical techniques, including regression analysis and Structural Equation Modeling (SEM), to analyze the data. The results showed that robust accountability mechanisms, such as internal financial controls and transparent decision-making, were significantly linked to enhanced financial sustainability in SMEs. However, the study was limited by its exclusion of external factors such as government policies and market conditions, which could influence financial sustainability, thus presenting opportunities for future research.

Regionally, Adeyemi and Olorunsola (2023) explored the relationship between accountability practices and financial sustainability in Nigerian local governments. Their study utilized a quantitative survey-based design with stratified sampling, collecting data

from finance officers, auditors, and senior managers. Descriptive and correlation statistics were employed to analyze the data, revealing a positive correlation between accountability measures, such as transparency and internal audits, and improved financial sustainability. However, the study did not specify which accountability practices were most effective across different sectors, suggesting the need for additional research to investigate the variations and broader implications for financial sustainability in local governments.

Locally, the study conducted by Ndibaru and Ongwae (2023) sought to examine the relationship between financial accountability practices and the financial sustainability of donor-funded projects in Kiambu County, Kenya. Employing a descriptive research design, the study targeted a population of 360 managerial staff, encompassing both head office and sub-county project managers within the county. A stratified random sampling technique was utilized to categorize the population, followed by simple random sampling to select a representative sample of 189 respondents. The findings revealed that three core financial accountability practices—financial monitoring, financial planning, and financial control, exerted a statistically significant influence on the financial sustainability of donor-funded projects in the region. Although fund utilization was positively associated with sustainability outcomes, the relationship was not statistically significant. Notably, the scope of this study was confined exclusively to donor-funded projects in Kiambu County, which limited generalisation of the results.

Collectively, these studies emphasize the critical role of accountability in promoting financial sustainability across various sectors, including public organizations, non-profits, and SMEs. A common finding across these studies is that effective accountability mechanisms significantly improve financial management, resource allocation, and overall

organizational performance. However, substantial gaps remain in the literature, particularly regarding the long-term effects of accountability, the efficacy of specific accountability measures in different contexts, and the influence of external factors such as economic downturns, policy shifts, and technological advancements. To offer a more comprehensive understanding of the relationship between accountability and financial sustainability, future research should focus on addressing these gaps.

2.3.2 Transparency and Financial Sustainability

Cuadrado-Ballesteros and Bisogno (2022) examined the relationship between budget transparency and financial sustainability in the public sector. Using econometric models, the researchers analyzed data from 110 countries, utilizing the Open Budget Index (OBI) as a measure of budget transparency. The study found a positive correlation between the degree of transparency in budget reporting and long-term fiscal health. Specifically, the findings highlighted the dual role of transparency: not only does it foster greater citizen trust, but it also enhances the stability and sustainability of public finances by encouraging more effective fiscal management and accountability. These results underscore the importance of transparency in ensuring both the financial resilience of governments and the public's confidence in their financial stewardship. However, the study had conceptual gaps being limited to budget transparency.

In a similar vein, Doe and Smith (2024) explored the significant role of accountability and transparency in enhancing organizational financial performance within the U.S. manufacturing and service sectors. Utilizing a quantitative, cross-sectional survey approach, the researchers surveyed 300 companies using stratified random sampling based

on firm size to ensure diversity in the sample. Data were collected from senior financial officers, with additional secondary financial data drawn from company reports. By employing descriptive statistics, multiple regression analysis, and SEM, the study demonstrated that financial transparency, particularly in the context of disclosure practices, positively influenced profitability. Furthermore, the research highlighted the synergistic effect of both accountability and transparency, finding that their combined impact on financial performance was greater than the sum of their individual contributions. This suggests that these elements are mutually reinforcing and collectively enhance organizational performance. However, the study's focus on the manufacturing and service sectors calls for further research to determine whether these findings hold true across other industries and economic contexts, particularly in sectors with differing regulatory environments.

Similarly, Johnson and Lee (2023) investigated the critical role of transparency in financial reporting and its impact on the financial performance of publicly listed companies in the United States. Focusing on the clarity and timeliness of financial disclosures, their study found a direct positive correlation between transparency and enhanced profitability, as measured by Return on Assets (ROA) and Return on Equity (ROE). Through a quantitative, cross-sectional design, the study analyzed secondary data from 500 publicly traded firms. The results indicated that greater transparency significantly boosted financial performance, particularly for companies with robust corporate governance structures. Nevertheless, the study's exclusive focus on U.S.-listed companies limits the generalizability of the findings to other regions or private-sector organizations, suggesting the need for future research that extends the scope of the study to include global and private-sector contexts.

Patel and Zhang (2022) explored the influence of corporate transparency on financial performance in emerging economies. Transparency was assessed using a disclosure index and board oversight, while financial performance was measured through metrics such as net profit margin and Earnings Before Interest and Taxes (EBIT). Using SEM for data analysis, the study found a positive relationship between corporate transparency and financial performance. The effects of transparency were particularly pronounced in countries with stronger regulatory frameworks, suggesting that regulatory environments play a significant role in enhancing the effectiveness of transparency practices. However, the regional focus of the study on four specific emerging economies limits the broader applicability of its findings to other emerging markets, pointing to the need for further research to assess the impact of transparency in a wider range of developing economies.

Similarly, Brown and Harris (2021) examined the role of financial transparency in corporate profitability within the UK retail sector. Their study analyzed voluntary financial disclosures in annual and sustainability reports and their impact on profitability, measured by gross profit margin and operating income. Through a longitudinal design spanning five years, the research found that retail companies with more extensive voluntary disclosures experienced enhanced profitability, particularly during economic downturns. However, the study's focus on the retail sector confined its findings to this particular industry, restricting broader generalization.

Williams and Thompson (2020) explored the relationship between transparency and financial stability within European banks. Using a time-series analysis, the study assessed financial stability through the Z-score and the non-performing loans ratio, while transparency was measured through financial disclosures, regulatory compliance, and

internal audit practices. Their findings revealed that increased transparency was associated with improved financial stability, particularly in banks that adhered to higher standards of transparency. However, the study called for further investigation into different forms of transparency and the regulatory environment's influence on the effects of transparency on financial stability.

Regionally, Krah and Mertens (2023) conducted to explore the extent to which financial transparency influences citizens' trust in local government, and how this trust, in turn, affects their willingness to pay taxes and levies. The research focused specifically on local governments in Ghana, representing a broader sub-Saharan African context. A descriptive research design was adopted, utilizing a survey methodology to collect data. The target population consisted of citizens who possessed a working knowledge of local government operations and were capable of interpreting financial information. This ensured the respondents could meaningfully assess levels of financial transparency. Stratified random sampling was employed to select 404 respondents. Data were collected using an online questionnaire. For data analysis, the study employed PLS-SEM, a technique suitable for analyzing complex models and accommodating both formative and reflective constructs. The results revealed a statistically significant and positive relationship between perceived financial transparency and trust in local government ($\beta = 0.56$, $p < 0.000$). Furthermore, financial transparency was found to have a positive influence on citizens' willingness to pay taxes and levies ($\beta = 0.43$, $p < 0.000$), underscoring the critical role of transparency in enhancing revenue mobilization efforts through trust-building. There conceptual gaps in the study by Krah and Mertens (2023) in that just focused on effects of financial transparency.

Locally, Karanja (2024) conducted an in-depth investigation into the impact of corporate transparency on the operational and financial performance of Kenyan publicly listed commercial banks, specifically emphasizing financial and governance transparency. Adopting a positivist research approach, the study utilized a correlational research design, targeting employees from all 11 banks listed on the Nairobi Securities Exchange between 2008 and 2023. Data were gathered from secondary sources, primarily financial reports and regulatory filings, ensuring a comprehensive analysis based on historical performance data. The findings revealed a strong positive correlation between corporate transparency and bank performance, with transparency accounting for 64.2% of the variance in performance outcomes. This robust relationship underscores the critical role of transparency in improving both operational and financial performance in the banking sector. However, a limitation of the study is its narrow focus on transparency as the sole determinant of performance, excluding other potential influencing factors, such as market competition, economic conditions, and management practices, which could provide a more holistic view of the drivers of financial performance.

These studies offer valuable insights into the ways transparency influences financial performance and stability across diverse sectors and geographical contexts. They emphasize the critical importance of transparency in enhancing profitability, stability, and long-term performance. However, the studies also reveal substantial limitations, such as narrow sectoral focus, sample size constraints, and regional applicability.

2.3.3 Stakeholder participation and Financial Sustainability

Fusco et al. (2024) undertook an ambitious exploration aimed at elucidating the extent to which stakeholder engagement exerts influence over the Sustainability Reporting (SR) process, particularly in aligning the dynamic interplay between the demand and supply of accountability. The research further delves into the central challenges inherent in this practice, with particular focus on a pivotal yet under-explored sector: the judicial system. Employing a rigorous action research methodology, the study intricately dissects the stakeholder engagement phase within the broader framework of a multi-year project conducted at an Italian Public Prosecutor's Office between 2019 and 2024. Data were meticulously gathered from a diverse array of sources, including written notes and reports from meetings, stakeholder surveys, and publicly available sustainability reports. The findings underscore that stakeholder engagement can significantly enhance the degree of accountability by substantially improving the responsiveness of SR to the informational needs of stakeholders. However, the study also identifies critical limitations, notably within the accounting system, which, it argues, must transcend its current economic focus to more effectively address the comprehensive demands of accountability. Despite the study's noteworthy contributions, it remains circumscribed by its exclusive focus on the Italian Public Prosecutor's Office, which inherently limits its generalizability to broader contexts.

Judijanto et al. (2024) undertook an exceptionally rigorous empirical investigation into the profound influence of stakeholder engagement, social business models, and financial sustainability on the growth trajectories of social enterprises. Utilizing a robust and sophisticated quantitative methodology, they gathered data from 230 social entrepreneurs and employed Structural Equation Modeling-Partial Least Squares (SEM-PLS) to analyze

the data. Their study unequivocally demonstrated a significant positive correlation between stakeholder engagement and financial sustainability, with these factors serving as pivotal drivers for the growth, scalability, and expansion of social enterprises. These findings underscore the indispensable role of nurturing robust stakeholder relationships and ensuring financial stability as foundational enablers of long-term success and scalability for social ventures.

Regionally, in response to the growing challenge of declining donor support, Ogbuabor et al. (2023) undertook a qualitative, exploratory study aimed at uncovering the key challenges and emerging opportunities associated with transitioning Nigeria's HIV response toward greater financial sustainability through domestic resource mobilization. The chosen methodology was particularly apt for unpacking the intricate social, political, and institutional dynamics that influence financial decision-making within the health sector. The study engaged a purposively selected cohort of stakeholders involved in HIV/AIDS financing at both national and subnational levels, ensuring a diverse and representative array of perspectives. Data were gathered through semi-structured, in-depth interviews designed to elicit rich, contextually grounded insights. Employing a thematic framework approach, the researchers systematically analyzed the data to identify recurring patterns and critical themes. The findings revealed a consistent concern among stakeholders regarding the inadequacy of government funding, largely attributed to limited engagement by the Ministry of Finance and systemic delays in the disbursement of budgeted resources. The study highlights methodological gap on only using qualitative approach, which could explain cause and effect.

Locally, Machuma, et al. (2024) conducted a meticulously detailed analysis to assess the impact of stakeholder participation on the sustainability of water borehole projects in Mavoko Constituency, a region where numerous initiatives encountered setbacks following the cessation of international donor funding. The study placed particular emphasis on the contributions of social inclusion, stakeholder engagement, and strategic planning in enhancing the sustainability of community-based water projects in Machakos County. Grounded in resource dependence theory, the researchers utilized a descriptive survey design and systematic random sampling to capture data from 302 respondents involved in 20 distinct water projects. Their analysis revealed that social inclusion, stakeholder engagement, and strategic planning were decisive factors in boosting the likelihood of project sustainability, with social inclusion enhancing sustainability prospects by a factor of 5.6, stakeholder engagement by 4.8, and planning by 3.6. These compelling findings firmly establish the critical role of strategic stakeholder participation in ensuring the enduring success and sustainability of community-driven water projects. The study focus was on sustainability of water borehole projects; highlighting conceptual gaps.

Mulwa (2023) explored the influence of stakeholder engagement on the sustainability of donor-funded initiatives in Kenya, with a particular focus on the Kenya Innovation Engine. The study investigated the effects of donor engagement, implementer engagement, and beneficiary engagement on project sustainability. Employing both primary and secondary data sources, the research utilized a descriptive design and stratified sampling to analyze responses from 67 participants. The findings affirmed that both donor engagement (with a positive coefficient of 0.129) and implementer engagement (with a positive coefficient of 0.503) exhibited a statistically significant and favorable impact on project

sustainability. However, beneficiary engagement revealed a negative coefficient of -0.397, reflecting the complexity of the relationship between beneficiary involvement and sustainability. The study concluded that donor and implementer engagement are paramount in ensuring sustainability. However, further exploration into the role of stakeholder as beneficiaries is warranted.

Micheni et al. (2023) investigated the effect of stakeholder engagement on the sustainability of donor-funded health projects in Kenya. Employing a mixed-methods approach, they gathered both quantitative and qualitative data from 230 respondents within the health sector. Their analysis confirmed a significant relationship between stakeholder engagement and project sustainability, with the legal and regulatory framework emerging as a critical moderating factor. The study concluded that enhancing stakeholder engagement practices could profoundly improve the sustainability of donor-funded health projects in Kenya. On aggregate, these studies underscore the indisputable importance of stakeholder engagement in fostering the sustainability of projects across various sectors, including public administration, social entrepreneurship, water infrastructure, and healthcare. A recurring theme throughout the studies is the essential need for a strategic, well-considered approach to stakeholder participation, ensuring the long-term success and effectiveness of these initiatives. Furthermore, these studies highlight the urgent need for continued scholarly exploration to address contextual variations and refine engagement strategies, thereby amplifying their overall impact across diverse organizational and sectoral landscapes.

2.3.4 Decentralization and financial sustainability

Recent empirical studies have critically examined the influence of decentralization on financial sustainability, exploring both its benefits and limitations across various sectors. In their pivotal study, Zafarullah et al. (2020) conducted an extensive investigation into the critical relationship between fiscal decentralization and macroeconomic stability. Their research rigorously examined how fiscal decentralization impacts key macroeconomic indicators, particularly inflation rates and fiscal deficits. Through a robust quantitative methodology and regression analysis, the study revealed a notable reduction in inflation rates linked to fiscal decentralization, although no significant correlation was found between decentralization and fiscal deficits. The study also emphasized the crucial role of political institutions and corruption perceptions in shaping the decentralization-inflation relationship, highlighting that institutional quality plays a decisive role in influencing macroeconomic outcomes. However, there is need further research to explore additional macroeconomic indicators to provide a more comprehensive understanding of the broader effects of fiscal decentralization.

In a groundbreaking and insightful study, Kolmykov (2023) explored the complex relationship between governance decentralization and financial efficiency within Decentralized Autonomous Organizations (DAOs) in the Decentralized Finance (DeFi) sector. Kolmykov (2023) utilized advanced econometric models to assess the impact of governance decentralization on critical financial metrics, such as Return on Investment (ROI) and the Gini coefficient, a measure of income inequality. The results demonstrated that decentralization of governance positively influenced financial efficiency in DAOs, although this improvement came with notable trade-offs regarding operational efficiency.

The findings underscored the significant gap in understanding the balance between decentralization and financial performance within DeFi protocols, emphasizing the need for more in-depth studies to explore these trade-offs. However, the study was highly specific to DAOs within the DeFi sector, limiting generalizability to other financial institutions or public sector entities.

Regionally, Sima et al. (2023) undertook a rigorous empirical investigation into the effects of fiscal decentralization on economic growth, as measured by per capita GDP, across 23 African nations and 23 OECD member states. Employing a quantitative, cross-sectional research design, the study was grounded in secondary data drawn from reputable international databases. The sample included a balanced representation of 46 countries, with African nations selected based on data availability and regional representativeness, and OECD countries serving as a benchmark for developed economies. The findings compellingly demonstrated that both dimensions of fiscal decentralization, expenditure and revenue, exerted a statistically significant and positive influence on economic growth, thereby underscoring the relevance of decentralized fiscal frameworks in fostering development across diverse economic contexts. While the study established a link between fiscal decentralization and GDP growth, it did not examine intermediary mechanisms, such as public service efficiency, institutional accountability, or local revenue mobilization

Locally, the study by Wagana et al. (2017) sought to produce robust empirical insights to guide policy formulation and improve public service delivery within the framework of Kenya's devolution strategy. In pursuit of this objective, the researchers employed a descriptive survey design, well-suited to capturing complex relationships between decentralization mechanisms and service outcomes without experimental

manipulation. Targeting a broad base of 2,794 county government officials from all 47 counties across the country, the study utilized a multiphase sampling approach. Initially, eight counties were selected from five distinct regions using stratified random sampling to ensure regional representation. Data collection was conducted using structured questionnaires. To analyze the data, the researchers applied regression analysis, enabling them to assess the magnitude and direction of the influence of financial and political decentralization on service delivery. The results revealed a statistically significant and positive correlation between both forms of decentralization and improvements in public service delivery. While demonstrating a positive relationship between decentralization and service delivery, the study did not fully explore underlying mechanisms, such as political participation, capacity building, or local institutional governance

On aggregate, these studies provide a comprehensive and nuanced examination of the intricate relationship between decentralization and financial sustainability. While decentralization offers significant potential for enhanced financial outcomes, including improved operational efficiency and financial metrics, it also presents considerable challenges, particularly in governance and the effective management of decentralized systems. These studies underscore the pressing need for continued research to uncover the dynamics of decentralization and its broader implications for financial sustainability, both within blockchain-based systems and across various sectors and governance structures. The findings make it clear that while decentralization can drive financial performance, its success is intricately tied to the specific mechanisms of governance and the balance between decentralization and operational efficiency.

2.3.5 Summary and Knowledge Gaps

The reviewed studies consistently highlighted that financial sustainability was primarily driven by accountability, transparency, stakeholder participation, and decentralization. These findings established a clear connection between financial sustainability and the aforementioned factors. Several studies exhibited notable gaps that warranted further attention. While these studies offered valuable insights, they each presented important gaps, methodological, contextual, or scope-related—that hindered their ability to provide comprehensive and universally applicable findings. Addressing these gaps in future research would have significantly enhanced understanding of the complex relationships between transparency, accountability, and financial sustainability.

For instance, the study by Williams and Roberts (2022) highlighted a key conceptual gap by failing to explore the long-term effects of accountability measures on financial sustainability and the potential impact of external economic shocks. Similarly, the study by Adeyemi and Olorunsola (2023) failed to identify which specific accountability measures were most effective in enhancing financial sustainability across diverse sectors. Patel and Kumar (2023) overlooked pivotal external factors, such as government policies and market dynamics, which undeniably exerted influence on the shaping of financial sustainability. The study by Karanja (2024) exhibited notable contextual limitations, as it confined its analysis exclusively to corporate transparency and performance, thereby neglecting other crucial dimensions. Similarly, the research by Cuadrado-Ballesteros and Bisogno (2022) narrowly focused on budget transparency, thus failing to encompass broader aspects of fiscal accountability. In contrast, Fusco, Pavone, and Ricci's (2024) study was constrained by its

narrow focus on the Italian Public Prosecutor's Office, limiting the broader applicability of its findings.

Nguyen and Zhang's (2021) research were hindered by significant methodological gaps, including a small sample size that severely restricted the generalizability of their conclusions. Moreover, their failure to explore the influence of financial accountability on the financial outcomes of smaller non-profits further curtailed the study's potential to offer comprehensive insights into the broader implications of accountability practices across diverse organizational scales. Similarly, Williams and Thompson (2020) grappled with biases in their approach, as their analysis was based on a limited sample of just 50 commercial banks across Europe, thereby compromising the study's external validity.

Martinez and Singh (2022) encountered contextual gaps, as their research was limited to the banking sector in Latin America, restricting the relevance of their findings to other regions. Similarly, Doe and Smith (2024) faced limitations due to their focus on manufacturing and service sectors, which may have restricted the broader applicability of their conclusions to other industries. Cuadrado-Ballesteros and Bisogno (2022) also focused solely on budget transparency, while Johnson and Lee (2023) limited their study to publicly traded U.S. companies, raising concerns about the generalizability of their findings to non-U.S. markets or private firms. Patel and Zhang (2022) restricted their research to just four emerging markets, limiting the applicability of their findings to other developing economies, while also omitting industry-specific factors that could have significantly impacted the effects of transparency. Finally, Brown and Harris (2021) centered their investigation on retail companies, a narrow focus that significantly limited the broader applicability of their findings to other sectors.

To enhance the depth and scope of understanding, future research should have broadened its purview to explore the influence of diverse forms of transparency on profitability, thereby offering a more nuanced and comprehensive analysis of these complex dynamics across different industries.

2.4 Conceptual Framework

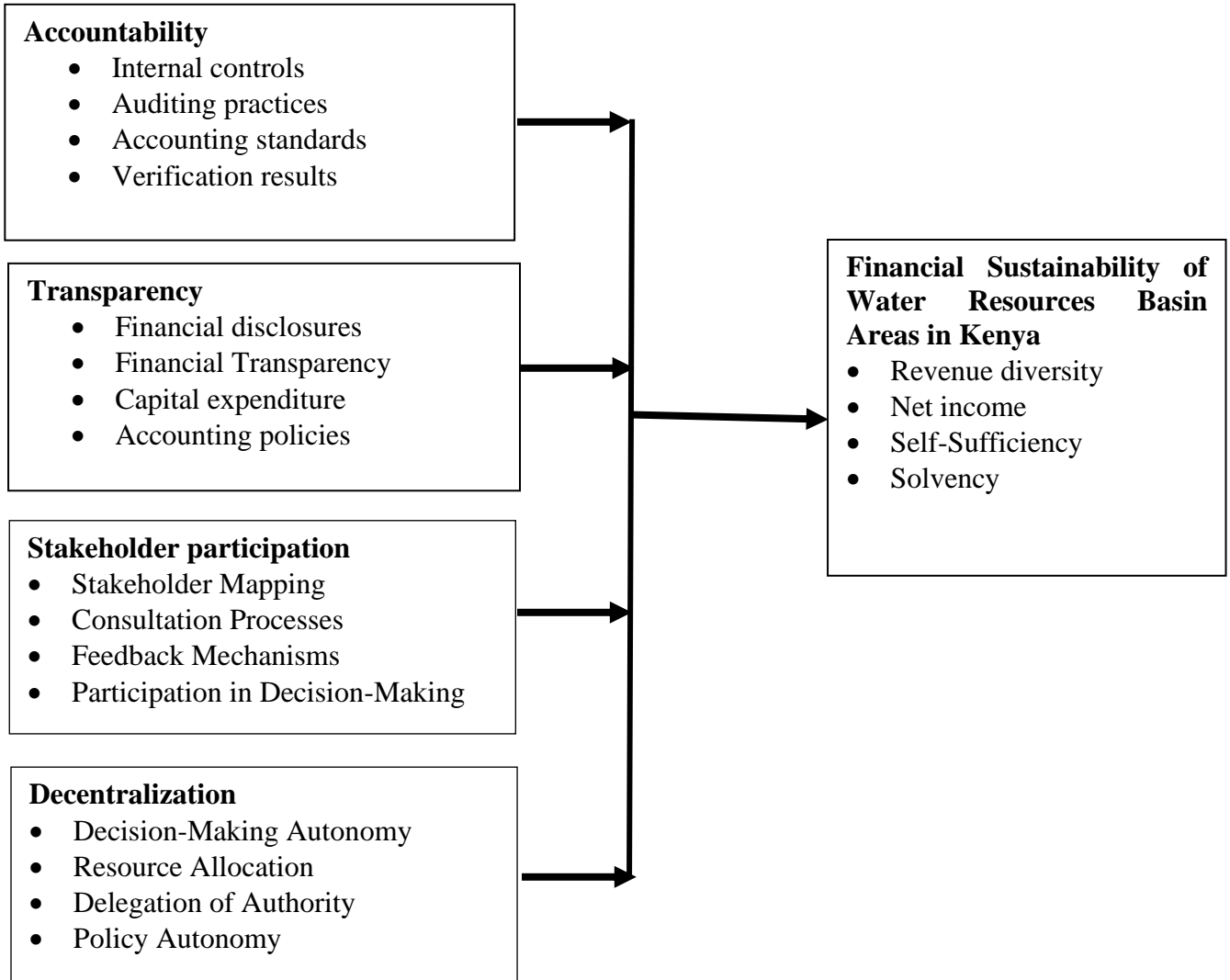
In this study, a conceptual framework was developed while informed by the theoretical perspectives examined, proposing that the financial sustainability of the WRA in Kenya affected by accountability, transparency, stakeholder participation, and decentralization. As a result, accountability, transparency, stakeholder participation, and decentralization are conceptualized as the independent variables (IVs), which were expected to influence or drive changes in the dependent variable (DV). In this context, the financial sustainability of the Water Resources Authority basin areas in Kenya was designated as the DV, representing the outcome or effect that is potentially influenced by variations in the IVs. The study posited that these key factors; accountability, transparency, stakeholder participation, and decentralization were fundamental drivers in determining the financial sustainability of the institution, and their influence was systematically examined throughout the research.

FIGURE 1

Conceptual Framework

Independent variables

Dependent variable



2.5 Operationalization of study variables

TABLE 1

Framework

Variable	Orientation	Indicators	Scale of Measurement
Financial sustainability of Water Resources Authority basin areas in Kenya	Dependent Variable	- Revenue diversity - Net income - Self-Sufficiency - Solvency.	Ordinal scale measured using 5-point Likert Scale
Accountability	Independent Variable	- Internal controls - Auditing practices - Accounting standards - Verification results	Ordinal scale measured using 5-point Likert Scale
Transparency	Independent Variable	- Financial disclosures - Financial Transparency - Capital expenditure - Accounting policies	Ordinal scale measured using 5-point Likert Scale
Stakeholder participation	Independent Variable	- Stakeholder Mapping - Consultation Processes - Feedback Mechanisms - Participation in Decision-Making	Ordinal scale measured using 5-point Likert Scale
Decentralization	Independent Variable	- Decision-Making Autonomy - Resource Allocation - Delegation of Authority - Policy Autonomy	Ordinal scale measured using 5-point Likert Scale

Source: Researcher (2025)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlined the essential elements that ensured the study's academic rigor and robustness. It defined the research design, target population, and sampling techniques in detail, ensuring a representative sample. The chapter also explained the construction and application of research instruments for data collection, highlighting the measures that were taken to ensure their validity and reliability. It further described the systematic procedures for data collection and analysis, ensuring transparency and replicability. Ethical considerations were also addressed, emphasizing the integrity and ethics that were maintained throughout the research process.

3.2 Research Design

When searching empirical evidence, research design emerges as the foundational strategic framework meticulously crafted to steer the entire research endeavor (Carter & Little, 2021). It is a critical component during the planning phase. This study employed a descriptive research design to explore and provide a detailed analysis of the impact of institutional governance on the financial sustainability of the WRA basin areas in Kenya. Descriptive research design was particularly valuable as it facilitates the detailed examination of the relationships among key variables of interest (Dube & Tustin, 2022; Sutton & Austin, 2015).

3.3 Target Population

In scholarly research, the target population refers to the entire group of individuals or entities a researcher aims to study and generalize findings to, sharing specific characteristics relevant to the research (Bryman, 2021; Tavakol & Dennick, 2022). For this study, the target population consisted of 6 WRA basin areas in Kenya; Athi Basin Area, Ewaso Ng'iro North Basin Area, Lake Victoria North Basin Area, Lake Victoria South Basin Area, Rift Valley Basin Area, Tana Basin Area (WRA, 2025). The unit of observation was the 160 managers of WRA basin areas in Kenya as shown in Table 2.

TABLE 2

Target Population Distribution

Basin Area	Managers
/Athi Basin Area	40
Ewaso Ng'iro North Basin Area	28
Rift Valley Basin Area	28
Lake Victoria North Basin Area	20
Lake Victoria South Basin Area	20
Tana Basin Area	24
Total	160

Source: WRA (2025)

3.4 Sample Size and Sampling Procedure

Based on research works, sample encompasses carefully selected subset of respondents, chosen to serve as representative of the broader population, thereby enabling the researcher to draw generalized conclusions based on this smaller, yet indicative, group (Sekaran &

Bougie, 2019; Etikan & Bala, 2017). Since the target population was manageable and readily accessible, the study used census, where the entire population will participate as the sample size.

3.5 Research Instruments

Data collection for this study drew on both secondary and primary sources to facilitate a comprehensive investigation of the research problems, considering the range of methodologies based on cost, time, and resource needs (Creswell, 2020). Primary data were collected using a closed-ended, structured questionnaire, with the objective of ensuring that it was understandable and relevant, and a 5-point Likert scale to convert qualitative perceptions into measurable conclusions (Sekaran & Bougie, 2019; Kumar, 2021). Secondary financial sustainability data were obtained from WRA operational records through the use of a researcher-constructed tool. The research covered a period of ten years (2016–2025) to identify significant trends and advancements, thus allowing for an in-depth conceptualization of the topic's progression over the years.

3.6 Reliability and Validity of the Instrument

In this study, data collection began with pilot testing of the research instrument to determine its validity and reliability in a manner that was precise and reliable for gathering the required data (Sekaran & Bougie, 2019). Pilot testing engaged 16 respondents employed by the Nairobi City Water and Sewerage Company Ltd. and needed them to complete the questionnaire within one week. The pilot test was used as a rehearsal or practice for the final study, which approximated actual research circumstances and revealed the effectiveness of the instrument (Creswell, 2020).

The pilot trial was aimed at identifying any flaws or vagueness in the research tool, allowing for necessary revisions (Sekaran & Bougie, 2019). It measured the clarity, wording, and understandability of questionnaire items, and provided feedback on the time required to fill out the instrument. Pre-testing was essential for refining the research instruments, ensuring they were linguistically appropriate, conceptually clear, and aligned with the study objectives (Robson, 2021; Bryman, 2021).

3.6.1 Reliability of Research Instrument

Assessing the reliability of a research instrument is important for ensuring stable and reproducible results over time (Kothari, 2019). Reliability provides the credibility of data collected and is required for establishing research validity (Tavakol & Dennick, 2011; Cooper & Schindler, 2014). To verify the reliability of the instrument, a pilot study involving 16 respondents from Nairobi City Water and Sewerage Company Ltd. was conducted, which helped identify and correct any issues related to timing, bias, or clarity before the actual study (Bolarinwa, 2015). Two main forms of reliability were considered: internal reliability, which examines response consistency within a scale, and external reliability, which considers the stability of the instrument across different settings (Cooper & Schindler, 2014).

Internal reliability was ascertained by using Cronbach's alpha, where 0.7 and higher demonstrated satisfactory internal consistency (George & Mallery, 2016). Low alpha items were either examined or revised for improved coherence (Kothari, 2019). Besides, the study employed Composite Reliability (CR), which is specifically suitable for PLS-SEM, with thresholds of over 0.6 being acceptable. For further confirmation of reliability and

convergent validity, Average Variance Extracted (AVE) was calculated with an acceptable level of 0.5, meaning that the constructs adequately represented the variance in their indicators (Ahmad, Farrukh, & Nazir, 2016). These measures of reliability altogether ensured the instrument was not just reliable but also fit for the main study.

3.62 Validity of Research Instrument

Kothari (2019) asserts that validity directly measures the extent to which an instrument accurately assesses the construct it is designed to evaluate, making it a fundamental factor in determining the instrument's utility and effectiveness within the broader research framework. Validity, therefore, stands as a cornerstone criterion in ensuring that the research instrument truly captures the essence of the variable it seeks to measure, thereby enhancing the credibility and accuracy of the study's findings. To ascertain the validity of the instrument, a series of rigorous tests, using content validity and construct validity, were conducted to evaluate its accuracy, relevance, and meaningfulness.

Validity tests were conducted continuously throughout the study and data collection phases. Content validity was assessed by two experts, a financial specialist and the research supervisor, who evaluated whether the instrument accurately represented the intended concepts and domain. Their feedback on the suitability and representativeness of the questions helped improve the validity of the data collection tool.

In construct validity, the Kaiser-Meyer-Olkin (KMO) measure assessed sampling adequacy, indicating whether the data are suitable for factor analysis. A KMO value of 0.5 is the minimum threshold for acceptability, with values between 0.7 and 0.8 considered good, and above 0.9 deemed excellent. In addition, Bartlett's Test of Sphericity evaluated whether

correlations among variables are significantly different from zero, testing the null hypothesis that the correlation matrix is an identity matrix. A $p\text{-value} \leq 0.05$ suggests a strong interrelationship among variables, validating the suitability of the data for factor analysis.

3.7 Data Collection Procedure

The study first undertook a pre-test of the research instrument to ensure its functionality and effectiveness (Kothari, 2019). This preliminary testing phase served to refine the instrument, identify any potential issues, and enhance its overall precision and reliability before full-scale data collection ensued. This initial step ensured that the instrument was accurate and effective, and any necessary revisions were made based on feedback before proceeding with the full-scale data collection process (Creswell, 2018).

To begin the research, the study first sought appointments with the relevant firms listed under the WRA basin areas to establish the logistics and timing for data collection (Babbie, 2021). Primary data were gathered using the "drop and pick" method. This approach involved distributing the questionnaires at a designated time and location, followed by their subsequent retrieval after a set period. This method ensured a systematic and convenient process for gathering responses, facilitating the collection of high-quality, reliable data from the participants. The researcher personally distributed the questionnaires to the participants at designated locations or through agreed-upon means, ensuring that each respondent received a clear explanation of the purpose and content of the survey.

During the distribution phase, the researcher was available to address any immediate questions or concerns the respondents had, providing clarification on any ambiguous or unclear items within the questionnaire. Once the questionnaires were delivered, respondents

were granted a sufficient period of time to complete their responses. The allotted time ensured that participants could engage with the questions thoughtfully and provide considered and meaningful answers. The researcher established a specific deadline for the return of the completed questionnaires to maintain the flow of the data collection process and to avoid undue delays. At the agreed-upon time, the researcher retrieved the completed questionnaires from the respondents, ensuring that all forms were collected in an organized manner.

The drop and pick method proved particularly beneficial as it struck a balance between providing respondents with adequate time for reflection while maintaining control over the timeliness of data collection. This method enhanced the efficiency of the process, reduced the likelihood of incomplete or rushed responses, and ensured that the data gathered were comprehensive and reliable. Furthermore, by offering real-time support and clarification, the researcher was able to mitigate potential misunderstandings, leading to more accurate and valid responses. This method, therefore, facilitated a systematic, organized, and reliable means of data collection, reinforcing the integrity of the research (Flick, 2018).

3.8 Data Processing and Analysis

The collected data underwent a meticulous review to identify and rectify any errors of omission or commission. Once discrepancies were addressed, the data were systematically categorized and coded to ensure consistency and accuracy. Following this initial process, the study utilized quantitative analysis methods to generate descriptive statistics (Field, 2013). In this study, descriptive statistics, were used to identify patterns,

trends, and associations within the data. The results of the descriptive analysis were presented through a combination of visual aids; tables and charts, alongside narrative interpretations that emphasized the key outcomes.

In addition to descriptive statistics, the study employed Structural Equation Modelling (SEM). SEM is a comprehensive statistical technique used to analyze complex relationships among observed and latent (unobserved) variables. It combines elements of factor analysis and multiple regression (Pallant, 2016). Specifically, the study adopted the Partial Least Square (PLS-SEM) method to estimate the structural equation models using ADNCO software and STATA Version 12. PLS-SEM was particularly well-suited for this analysis as it allowed for the simultaneous assessment of multiple relationships among observed and latent variables, providing a robust framework for testing both the measurement and structural components of the proposed model (Hair et al., 2017).

The study utilized Partial Least Squares Structural Equation Modeling (PLS-SEM) to construct and validate a conceptual model focused on assessing the financial sustainability of WRA basin areas in Kenya (Krah & Mertens, 2023). This method was chosen due to its suitability for analyzing complex, real-world public sector data and for examining the effects of institutional governance variables; accountability, transparency, stakeholder participation, and decentralization; on financial sustainability (Hair et al., 2017; Wong, 2013). A key advantage of PLS-SEM lies in its composite-based modelling approach, which incorporates common, specific, and error variance to enhance predictive accuracy (Sarstedt et al., 2017). In applying this methodology, the study effectively captured the predictive influence of governance factors on financial sustainability. The modelling process adhered to established guidelines by Hair et al. (2014), ensuring

methodological rigor and reliability in analyzing the relationships among the study variables.

Confirmatory Factor Analysis (CFA) was used to assess the construct validity of the measurement model in this study (Hair et al., 2017). The process of performing CFA involved-;

Model Specification that involved specifying the measurement model through theoretical models and past studies. This described how each observed variable (item) would load on a specific latent construct (factor) (Rattanachaitada et al., 2025). Next, the model was checked for identification to ensure that there were enough data points available to estimate all parameters like factor loadings, variances, and covariances. This. It confirmed that the model. Yes. It possessed a unique and solvable structure (Rattanachaitada et al., 2025).

The PLS-SEM model in this study was specified as:

$$Y=f(IG)$$

Where Y is the financial sustainability of Water Resources Authority basin areas in Kenya;

IG is the Institutional Governance which include accountability, transparency, stakeholder participation, and decentralization.

Data analysis was carried out using the Statistical Package for the Social Sciences (SPSS) version 27.0 and STATA 12, which enabled precise and efficient processing of the

data. This software facilitated comprehensive statistical analyses, allowing the researcher to draw meaningful insights from the data, providing a solid foundation for informed conclusions and recommendations.

3.9 Diagnostic Tests

The parameters were estimated using sample data. In this case, the factor loadings were calculated to determine the extent to which each observed item related with its corresponding relative latent construct, with the expected outcomes being higher than 0.5, preferably over 0.7 (Alnahdi & Hui, 2019). The model fit was evaluated using various indices: Chi-Square (χ^2), Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), and Tucker-Lewis Index (TLI). It was established through an acceptable model fit with some thresholds for all indices (Rogers, 2024; Alavi et al., 2020). Subsequently, convergent validity was evaluated through testing factor loadings, Cronbach's alpha, Composite Reliability (CR), and AVE. CR values ≥ 0.7 and AVE values ≥ 0.5 were acceptable and guaranteed that the items were measuring their respective constructs reliably (Rattanachaitada et al., 2025).

To confirm if constructs differed from one another, cross-loading tests and the Fornell-Larcker criterion were utilized. Square root of AVE was needed to be higher than inter-construct correlations, and no item should load significantly on more than one factor (Alnahdi & Hui, 2019). When the model failed fit or was issue with loadings or validity, theory-grounded modifications were made. This involved removing poor-performing items or error term adjusting (Rattanachaitada et al., 2025). After any necessary changes, the model was re-tested for improved fit and construct validity. A good-fitting terminal model

ensured that the items accurately represented the intended latent variables (Rattanachaithada et al., 2025).

3.9 Ethical Issues

The study strongly adhered to ethical research practices and moreover was, guided by the National Commission for Science, Technology, and Innovation (NACOSTI) guidelines and the KCA University Ethical Review Committee (ERC) policy. The research proposal was perused to ensure that participants' dignity, rights, and privacy were protected and ensured that the research complied with ethical and transparent research practices. Prior to the collection of data, 1 ethical clearance had been obtained, confirming that the research was in keeping with national and institutional standards of scientific conduct and participants' protection.

Informed consent was an elementary ethical necessity. Participants received a clear, comprehensible exposition of aims, procedures, potential risks, and benefits of the study. Consent was given voluntarily and in writing, with assurance that participants could withdraw at any point without penalty. This ensured that the principles of autonomy, voluntary action, and respect for persons were fully preserved. Special attention was given to using participant-appropriate terms and providing additional clarification when needed.

Confidentiality and data protection were also prioritized in the research. All personal data were anonymized or pseudonymized and stored securely, with access limited to authorized persons. No information was disclosed without consent, and data protection protocols were followed strictly. Furthermore, NACOSTI and ERC required reporting

results in an honest way, with a prohibition against falsification and plagiarism. Honesty, integrity, and participant protection were the foundation of all stages of the research process.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter delineates the comprehensive data analysis and presents the key findings derived from the study. The results obtained from the data analysis are systematically showcased through the use of illustrative tables, enhancing clarity and facilitating intuitive understanding. These visual representations are accompanied by detailed narrative interpretations, aligned meticulously with the research objectives. The chapter's core components encompass the study's response rate, background information analysis, descriptive statistics of the study variables, diagnostic testing, and model fitting procedures. Additionally, rigorous tests, including, common method variance, confirmatory factor analysis, fitness indices, convergent validity and discriminant validity, were conducted to ascertain the suitability and robustness of the dataset. Following the completion of diagnostic evaluations, the chapter proceeds to implement PL-SEM on the validated data to explore the relationships among the variables under study.

4.2 Pilot Results

Prior to commencing full-scale data collection, the study undertook a pilot test to assess the validity and reliability of the research instrument, ensuring its appropriateness and effectiveness for capturing accurate and consistent data.

4.2.1. Results on Reliability of Research Instrument

So as to assess the reliability of the questionnaire, the study employed the Cronbach's alpha internal consistency method. This technique evaluates the degree to which items within the research instrument consistently measure the same underlying construct. The reliability of the data collected was determined by calculating Cronbach's alpha (α), which ranges in value from 0 to 1. An alpha value below 0.7 was interpreted as indicating insufficient internal consistency, prompting a review of the relevant items, either through deletion or revision. Conversely, an alpha value equal to or exceeding 0.7 was considered acceptable, signifying that the items demonstrated satisfactory reliability and were retained in the instrument without further modification. The Cronbach's Alpha, which is the reliability coefficient, was 0.834. A value $\alpha = 0.834$, was above the threshold of above 0.7 as indicated by Kothari (2012). Based on Kothari's (2012) position, a reliability coefficient of 0.834 is high, implying a high consistency of the items in the tool. Accordingly, all the items in tool were retained owing to the high consistency. The results of this reliability analysis are presented in Table 3.

TABLE 3
Reliability Statistics

Cronbach's Alpha	N of Items
0.834	5

Source: Research Data (2025)

The results indicated that the Cronbach's Alpha coefficients for the constructs were as follows: financial sustainability of WRA ($\alpha = 0.719$), accountability ($\alpha = 0.838$), transparency ($\alpha = 0.703$), stakeholder participation ($\alpha = 0.825$), and decentralization ($\alpha =$

0.740), all demonstrating strong internal consistency. The overall reliability of the entire instrument was notably high, with a Cronbach's Alpha of 0.804, surpassing the commonly accepted threshold of 0.7 as recommended by Kothari (2012). Given this robust internal consistency, all items within the research instrument were retained. Consequently, the instrument was deemed highly reliable and appropriate for accurately measuring the study variables, ensuring the generation of consistent and dependable results throughout the analysis. The tool item-total statistics results are captured in the Table 4.

TABLE 4
Results on Item-Total Statistics

Construct	Cronbach's alpha(α)
Financial sustainability	0.7119
Accountability	0.8381
Transparency	0.7029
Stakeholder participation	0.8249
Decentralization	0.7391

Source: Research Data (2025)

4.2.2 Results on Validity of Research Instrument

The results of the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity confirmed the validity of the instrument across all constructs. Specifically, the KMO values for Financial Sustainability (KMO = 0.566), Accountability (KMO = 0.828), Transparency (KMO = 0.661), Stakeholder Participation (KMO = 0.891), and Decentralization (KMO = 0.684) all exceeded the minimum acceptable threshold of 0.5, indicating that the sampling was adequate for factor analysis (Field, 2017).

Furthermore, Bartlett's Test of Sphericity for all constructs yielded p-values less than 0.05, confirming that the correlation matrices were not identity matrices and that sufficient

intercorrelations existed among variables to justify the application of factor analysis. These findings affirm that the instrument demonstrated strong construct validity and was appropriate for further inferential analysis. Given that all five constructs met the required criteria, they were retained for final model construction. The results are in Table 5

TABLE 5
Kaiser-Meyer-Olkin and Bartlett’s Test of Sphericity

Factor	KMO	Bartlett’s Test	Comment
Financial sustainability	0.566	0.000	Valid
Accountability	0.828	0.000	Valid
Transparency	0.661	0.000	Valid
Stakeholder participation	0.891	0.000	Valid
Decentralization	0.684	0.000	Valid

Source: Research Data (2025)

4.3 Response Rate

The study collected data for the research analysis by administering questionnaire to 160 managers of the WRA water basin areas in Kenya. Out of the targeted population (sample size) 160 respondents, 128 responded by submitting the filled data to the researcher. The results show that that response rate was 80.003% which based on research by Kamel and Harris (2016) is good to produce accurate results. Kamel and Harris (2016) indicate in social sciences response rate above 50% should be considered ‘good. Accordingly, a response rate of 80.00% which was well above 50% would evidently produce credible results since it was very high. Although the response rate was very good at 80.00%, the failure of 20% to respond was not explained. The results were captured in Table 6.

TABLE 6
Analysis by Response Rate

Indicator	Frequency	Percent
Sample Size	160	100.00%
Responded	128	80.00%
Not Responded	32	20%

Source: Research Data (2025)

All those who responded in the data collection, adequately filled the questionnaire which provided sufficient information for analysis. After receiving the completed questionnaire, the researcher confirmed and clarified issues arising during data collection. The answers were given by the right source and were adequate for producing credible results. The researcher highly appreciated this response and was very thankful to the subjects. In addition, the subjects responded positively during verification the data provided.

4.4 Background Information

The study required the respondents to provide their backgrounds information based on their sex, educational qualification and position in the banks. The gender and qualification of the staff at the Water Resource Authority provide important data regarding the make-up and expertise of the institution. Among the 128 staff, the males dominate the workforce by being 89 (69.53%) of the total employees, as opposed to the females who are 39 (30.47%). This is gender disparity in the institution, with more than two-thirds of the workforce being male.

Academically, the largest group of employees are those who hold undergraduate degrees, totaling 61 (47.66%). They are closely followed by Master's degree holders, who constitute 58 (45.31%) of the employees. A small number, 8(6.25%), are educated at the

college level, and 1(0.78%) holds a PhD. This shows that the majority of the employees are well educated, with over 93% holding at least an undergraduate degree and an extremely high percentage holding postgraduate degrees.

The professional qualification levels show that a vast 110(85.94%) are in the professionally qualified category, reflecting a highly specialized and technical workforce. This is followed by 14(10.94%) with diploma-level qualifications, and a small minority of 4(3.13%) who are categorized under technicians. The numbers show that the organization heavily relies on professionally qualified personnel to carry out its operations.

In the case of tenure in the Water Resource Authority, the highest number of employees, 38 (29.69%), have remained for 15 to 20 years, followed closely by 37 (28.91%) who have served for 11 to 15 years. A further 29(22.66%) have remained for 21 to 25 years, which shows that an overwhelming majority of the personnel have long-term experience with the organization. 17 (13.28%) have worked 5 to 10 years, and 7 (5.47%) have worked more than 25 years. This distribution reflects a mature and experienced workforce, as the majority have been employed for over ten years. The results are in Table 7.

TABLE 7**Analysis by Respondents Demographics**

Demographics	Parameter	Frequency	Percent
Sex	Male	89	69.53%
	Female	39	30.47%
	Total	128	100.00%
Highest academic qualifications Attained	College	8	6.25%
	Undergraduate degree	61	47.66%
	Masters Degree	58	45.31%
	PhD Degree	1	0.78%
	Total	128	100.00%
Highest professional qualifications	Technician	3	2.36%
	Diploma	14	11.02%
	Professional	110	86.61%
	Total	127	100.00%
Period worked at Water Resource Authority	5 to 10 years	17	13.28%
	11 to 15 Years	37	28.91%
	15 to 20 Years	38	29.69%
	21 to 25 Years	29	22.66%
	over 25 years	7	5.47%
	Total	128	100.00%

Source: Research Data (2025)

Thus, the Water Resource Authority has a workforce that is predominantly male, highly educated, and professionally qualified, with most personnel having long tenure. This is indicative of a stable, well-qualified organization that is likely to benefit from institutional knowledge and professional expertise acquired through many years of service..

4.5 Descriptive Analysis

The study made various representation of information in frequency tables and the associated narratives from data analysis of data related major study concepts. The data was analyzed based on the objectives, where descriptive statics was obtained and used to describe the,

independent variables (IVs) and the dependent variable (DV). The various descriptive statistics of these results are captured in this section. The study relied on result produce from analysis of data collected using questions ranked on 5-point Likert scale.

4.5.1 Descriptives for Financial sustainability of WRA.

The study first evaluated the status financial sustainability of WRA The results obtained for financial sustainability of WRA. The results conducted to assess the financial sustainability of the Water Resources Authority basin areas in Kenya reveal a consistent and critical view from respondents across various financial indicators. The analysis focused on four key statements; each rated on a five-point Likert scale ranging from Strongly Disagree to Strongly Agree. The findings demonstrate a pattern of strong scepticisms about the Authority's financial strength.

Among all the items, the statement that received the most favourable perception, though still low, was that the basin areas have a diverse range of revenue sources to ensure long-term financial stability. However, a majority of respondents disagreed. Specifically, 28(21.88%), strongly disagreed, while another 71(55.47%), disagreed. The results show that 5(3.91%) agreed with the statement and a 1(0.78%) strongly agreed. A moderate portion of the sample, 23(17.97%), remained neutral.

The perception that the basin areas consistently generate sufficient net income to support their operations and long-term goals received an even lower score. In this case, 33(25.78%) strongly disagreed and 71 (55.47%) disagreed. Neutral responses came from 19(14.84%), while 5(3.91%) agreed. No respondent strongly agreed with this statement.

The lowest-rated statement concerned whether the basin areas are financially self-sufficient and capable of operating without relying on external support. This statement received the most critical judgment from respondents. A total of 25(19.53%) strongly disagreed and 83 (64.84%) disagreed, representing over 84% combined in outright disagreement. The results show that 5(3.91%) agreed, and none strongly agreed with this statement. Neutral responses came from 15(11.72%).

The second highest-rated statement in terms of mean score was related to the basin areas' capacity to meet long-term financial obligations and maintain a stable financial position. Based on the results, 3(2.34%) strongly disagreed, and 80(62.50%) disagreed, showing that nearly two-thirds of the respondents held a negative view. In contrast, 16(12.50%) agreed and 3 (2.34%) strongly agreed that the basin areas are financially stable. Notably, 26(20.31%) were neutral on the matter, indicating some uncertainty or lack of sufficient knowledge among a portion of the respondents.

When the responses to all the financial sustainability items are averaged, the overall view remains consistent with the individual indicators. On average, 22(17.38%) strongly disagreed across items, while approximately 76.25 (59.57%) disagreed. The results show that 7.75(6.06%) agreed and just 1(0.78%) strongly agreed overall. A total of 20.75(16.21%) were neutral across the statements, showing that a small but present portion of the population neither agreed nor disagreed. The results were recorded in Table 8.

TABLE 8

Financial sustainability of WRA

Parameter	Strongly Disagree		Disagree		Neither		Agree		Strongly Agree	
	n	%	n	%	N	%	N	%	n	%
The Water Resources Authority basin area has a diverse range of revenue sources to ensure long-term financial stability.	28	21.88%	71	55.47%	23	17.969%	5	3.906%	1	0.78%
The basin area consistently generates sufficient net income to support its operations and long-term objectives.	33	25.78%	71	55.47%	19	14.844%	5	3.906%	0	0.00%
The basin area is financially self-sufficient and can operate effectively without relying on external financial support.	25	19.53%	83	64.84%	15	11.719%	5	3.906%	0	0.00%
The basin area has the capacity to meet its long-term financial obligations and maintain a stable financial position	3	2.34%	80	62.50%	26	20.313%	16	12.500%	3	2.34%
Aggregate financial sustainability	22	17.38%	76.3	59.57%	20.75	16.211%	7.75	6.055%	1	0.78%

Source: Research Data (2025)

4.5.2 Descriptive for Accountabilities and Financial Sustainability

The study assessed the first objective to find out the effect of accountability on financial sustainability of Water Resources Authority basin areas in Kenya. Based on the objective “*To find out the effect of accountability on financial sustainability of Water Resources Authority basin areas in Kenya,*” the findings in the Table 8 provide insight into how various elements of accountability were perceived by respondents in relation to their role in promoting financial sustainability. As regards the statement that “*The internal controls in place effectively help in managing financial risks, ensuring the long-term financial sustainability of the organization,*” 71 (55.47%), neither agreed nor disagreed with the

statement. This was followed by 39 (30.47%) who disagreed, indicating that nearly one-third of the respondents questioned the effectiveness of current internal controls. A minority of the participants agreed, 11 (8.59%) agreed and 6 (4.69%) strongly agreed, while the results show that 1(0.78%) strongly disagreed. This distribution reveals a cautious view of internal controls, where most respondents either remain neutral or sceptical, although a small portion sees them as supportive of financial sustainability.

When asked whether the results of financial verifications consistently support the accuracy of financial data, 76(59.38%) neither agreed nor disagreed (were neutral). 36 (28.13%) disagreed and 4 (3.13%) strongly disagreed. Agreement came from 11(8.59%), while just 1(0.78%) strongly agreed. This shows relatively low confidence in the reliability of verification results, with neutral responses dominating the pattern.

The item that received the most favorable perception among respondents was “Auditing practices are effective in identifying financial inefficiencies and supporting strategies,” where 77 (60.16%) respondents selected Neither Agree nor Disagree, while 35 (27.34%) disagreed with the statement. A smaller number expressed agreement, with 12 (9.38%) agreeing and 4 (3.13%) strongly agreeing. Interestingly, no respondent strongly disagreed, suggesting that while a significant portion of the participants were uncertain or non-committal, there was little outright rejection of the effectiveness of auditing practices. This may imply that auditing processes are viewed somewhat positively, although many participants may lack direct involvement or clarity regarding their outcomes.

On the item, “*The organization’s auditing practices ensure that financial activities are monitored accurately.*” A majority of respondents, 81 (63.28%), were neutral, showing

hesitation or perhaps unfamiliarity with the detailed operations of financial auditing. It was shown that 29 (22.66%) disagreed with the statement, and 4 (3.13%) strongly disagreed. On the other hand, 10 (7.81%) agreed and another 4 (3.13%) strongly agreed. Although the mean suggests a slightly positive tilt, the data shows that for many participants, confidence in the accuracy of financial monitoring is still limited.

Perceptions around the consistent application of accounting standards was well perceived where 77 (60.16%) were neutral, indicating a majority of uncertainty. This was followed by 30 (23.44%) who disagreed and 6 (4.69%) who strongly disagreed, which combined reflect a noticeable level of doubt. However, 11 (8.59%) agreed and 4 (3.13%) strongly agreed that consistent accounting standards contribute to accurate financial reporting. The dominance of neutral responses and modest agreement levels suggest that, while the application of standards is not strongly contested, it is not widely endorsed either.

On the statement that accounting standards in place promote transparency was where 73 (57.03%) remained neutral as 34 (26.56%) disagreed, and 8 (6.25%) strongly disagreed. The results show that 10 (7.81%) agreed, and 3 (2.34%) strongly agreed. This result reflects limited endorsement of accounting standards as tools for promoting transparency, despite their technical significance in financial governance.

As regards the statement about the adequacy of internal control systems in supporting financial sustainability over time, 76 (59.38%) were neutral, 38 (29.69%) disagreed, and 3 (2.34%) strongly disagreed. Agreement was limited to 10 (7.81%), with 1 (0.78%) strongly agreeing. While disagreement levels were moderate, the very high proportion of neutral

responses suggests widespread ambiguity regarding the long-term effectiveness of internal control systems.

In the item regarding “*financial verification results helping the organization identify areas for improvement produced*”: while 64(50.00%) remained neutral, 34 (26.56%) disagreed and 8 (6.25%) strongly disagreed. On the positive side, 18 (14.06%) agreed, and 4 (3.13%) strongly agreed. The increased level of agreement compared to other statements shows some belief in the usefulness of financial verifications, though the neutrality and disagreement rates still indicate general caution.

TABLE 9
Analysis by Accountability

Parameter	Strongly Disagree		Disagree		Neither		Agree		Strongly Agree		M	STDEV
	n	%	n	%	n	%	n	%	n	%		
The internal controls in place effectively help in managing financial risks, ensuring the long-term financial sustainability of the organization.	1	0.78%	39	30.47%	71	55.469%	11	8.594%	6	4.69%	2.86	0.771
The internal control systems are adequate to support consistent financial sustainability over time	3	2.34%	38	29.69%	76	59.375%	10	7.813%	1	0.78%	2.75	0.664
Auditing practices are effective in identifying financial inefficiencies and supporting strategies	0	0.00%	35	27.34%	77	60.156%	12	9.375%	4	3.13%	2.88	0.694
The organization's auditing practices ensure that financial activities are monitored accurately.	4	3.13%	29	22.66%	81	63.281%	10	7.813%	4	3.13%	2.85	0.733
The consistent application of accounting standards provides accurate financial reportin	6	4.69%	30	23.44%	77	60.156%	11	8.594%	4	3.13%	2.82	0.778
The accounting standards in place promote transparency.	8	6.25%	34	26.56%	73	57.031%	10	7.813%	3	2.34%	2.73	0.789
The verification	4	3.13%	36	28.13%	76	59.375%	11	8.594%	1	0.78%	2.76	0.684

Parameter	Strongly Disagree		Disagree		Neither		Agree		Strongly Agree		M	STDEV
	n	%	n	%	n	%	n	%	n	%		
results consistently support the accuracy of financial data	8	6.25%	34	26.56%	64	50.000%	18	14.063%	4	3.13%	2.81	0.867
The results from financial verifications help the organization identify areas for improvement	4	3.32%	34	26.86%	74	58.11%	12	9.08%	3	2.64%	3.00	0.748
Aggregate Accountability												

Source: Research Data (2025)

4.5.3 Descriptive for Transparency and Financial Sustainability of WRA

The study assessed the second objective; effect of transparency on financial sustainability of Water Resources Authority basin areas in Kenya. In relation to the objective “*To establish the effect of transparency on financial sustainability of Water Resources Authority basin areas in Kenya,*” the table 9 presents respondents’ perceptions on various transparency-related parameters. The findings indicate the level of agreement or disagreement with each statement, providing insights into how transparency is viewed in terms of supporting financial sustainability. For the statement “The organization provides clear and comprehensive financial disclosures that enhance transparency,” the majority of respondents were neutral, with 62 (48.44%) selecting “Neither agree nor disagree.” A notable proportion, 51 (39.84%), disagreed, while only 8 (6.25%) agreed, 7 (5.47%) strongly disagreed. This indicates that while outright dissatisfaction was low, many respondents were either unsure or found the financial disclosures lacking in clarity or comprehensiveness.

Similarly, when asked if “The financial disclosures provided are sufficient for stakeholders to make informed decisions,” 64 (50.00%), remained neutral, 50 (39.06%) disagreed, and 12 (9.38%) strongly disagreed, showing that a significant portion did not find the disclosures sufficient. Meanwhile 2 (1.56%) agreed, and none strongly agreed. These results suggest that most stakeholders were either unconvinced or uncertain about the adequacy of financial disclosures for informed decision-making.

On the matter of whether “The organization consistently maintains a high level of financial transparency in all its financial reporting,” 75 (58.59%) chose a neutral stance, while 39 (30.47%) disagreed and 8 (6.25%) strongly disagreed. Just 6 (4.69%) agreed. This again points to a large portion of respondents being either uncertain or sceptical about the organization's consistency in transparent reporting. For the item “The financial information shared by the organization accurately reflects its financial position,” 71 respondents (55.47%) were neutral, while 41 (32.03%) disagreed and 10 (7.81%) strongly disagreed as 6 (4.69%) agreed. The trend shows continued uncertainty or lack of confidence in the accuracy of financial reporting.

Respondents were similarly doubtful about the transparency of capital expenditure decisions. Regarding whether “The organization's capital expenditure decisions are made in a transparent manner, with clear justification for each investment,” 60 (46.88%) neither agreed nor disagreed, while a combined 63 respondents (49.22%) either disagreed or strongly disagreed. Only 5 respondents (3.90%) agreed or strongly agreed. This pattern persisted with the statement “The allocation of capital expenditures is openly communicated and available for review by stakeholders,” where 58 (45.31%) were neutral, 51 (39.84%) disagreed, and 14 (10.94%) strongly disagreed while 5 (3.91%) agreed.

When evaluating transparency in accounting policies, 55 (42.97%) respondents remained neutral on whether “The organization’s accounting policies are clearly documented and accessible,” while 51 (39.84%) disagreed and 13 (10.16%) strongly disagreed as 8 (6.25%) agreed, and 1 (0.78%) strongly agreed.

For the item, “The accounting policies followed by the organization are consistent and transparent,” 58 (45.31%) were neutral, 47 (36.72%) disagreed, and 10 (7.81%) strongly disagreed as 9(7.03%) agreed and 4(3.13%) strongly agreed. These figures reflect limited confidence in the organization’s financial policy transparency and consistency. Aggregately, perceptions of transparency and financial transparency, 63 (49.12%) remained neutral, while 48 (37.11%) disagreed and 11 (8.50%) strongly disagreed as 6 (4.59%) agreed and 1 (0.68%) strongly agreed. Overall, the responses suggest that while strong dissatisfaction was relatively low, most stakeholders either felt uncertain or did not perceive the organization’s financial practices to be sufficiently transparent. These results are captured in Table 10.

TABLE 10

Transparency and Financial Sustainability

Parameter	Strongly Disagree		Disagree		Neither		Agree		Strongly Agree	
	n	%	n	%	n	%	n	%	n	%
The organization provides clear and comprehensive financial disclosures that enhance transparency	7	5.47%	51	39.84%	62	48.438%	8	6.250%	0	0.00%
The financial disclosures provided are sufficient for stakeholders to make informed decisions	1 2	9.38%	50	39.06%	64	50.000%	2	1.563%	0	0.00%
The organization consistently maintains a high level of financial transparency in all its financial reporting	8	6.25%	39	30.47%	75	58.594%	6	4.688%	0	0.00%
The financial information shared by the organization accurately reflects its financial	1 0	7.81%	41	32.03%	71	55.469%	6	4.688%	0	0.00%
The organization's capital expenditure decisions are made in a transparent manner, with clear justification for each investment	1 3	10.16%	50	39.06%	60	46.875%	3	2.344%	2	1.56%
The allocation of capital expenditures is openly communicated and available for review by stakeholders.	1 4	10.94%	51	39.84%	58	45.313%	5	3.906%	0	0.00%
The organization's accounting policies are clearly documented and accessible, ensuring transparency in financial reporting	1 3	10.16%	51	39.84%	55	42.969%	8	6.250%	1	0.78%
The accounting policies followed by the organization are consistent and transparent, supporting trust in financial statements	1 0	7.81%	47	36.72%	58	45.313%	9	7.031%	4	3.13%
Aggregate Transparency	1 1	8.50%	48	37.11%	63	49.12%	6	4.59%	1	0.68%

Source: Research Data (2025)

4.5.4 Descriptive for Stakeholder participation and Financial Sustainability

The study assessed the third objective; to assess the effect of stakeholder participation on financial sustainability of Water Resources Authority basin areas in Kenya. Regarding whether the organization clearly identifies and maps relevant stakeholders, a majority expressed dissatisfaction: 56 participants (43.75%) disagreed and 19 (14.84%) strongly disagreed, while 8 (6.25%) agreed and 3 (2.34%) strongly agreed. Similarly, when asked whether stakeholder mapping is regularly updated to include all key players, 62 respondents (48.44%) disagreed and 18 (14.06%) strongly disagreed. As 4 (3.13%) agreed, 2 (1.56%) strongly agreed, indicating minimal confidence in the organization's stakeholder update processes. Most of them, 69 (53.91%) disagreed with the statement that the organization actively consults stakeholders before making major decisions, and 18 (14.06%) strongly disagreed. Only a small minority 4 (3.13%) agreed and 2 (1.56%) strongly agreed. Transparency in the consultation process was also rated poorly, with 52 (40.63%) disagreeing and 17 (13.28%) strongly disagreeing. More than 40% (53 respondents) remained neutral, and fewer than 5% agreed or strongly agreed. Regarding feedback mechanisms, while 62 respondents (48.44%) were neutral, 53 (41.41%) disagreed and 5 (3.91%) agreed, indicating that many either do not see feedback systems as effective or are unaware of their existence.

When asked whether stakeholder feedback is actively considered in decision-making, 67 (52.34%) disagreed and 10 (7.81%) strongly disagreed, while 6 (4.69%) agreed and 1 (0.78%) strongly agreed. Furthermore, 59 respondents (46.09%) disagreed with the statement that stakeholders are provided with meaningful opportunities to participate in decision-making, and 15 (11.72%) strongly disagreed, reinforcing the perception of

exclusion. The sense of being personally valued in decision-making was also low, with 58 (45.31%) disagreeing, 15 (11.72%) strongly disagreeing, and 11 (8.59%) agreeing and 2 (1.56%) strongly agreeing. At the aggregate level, stakeholder participation was viewed as weak: 60 respondents (46.48%) disagreed overall, 15 (11.72%) strongly disagreed, while 6 (4.69%) agreed and 2 (1.37%) strongly agreed. This suggests a general dissatisfaction with how stakeholders are identified, engaged, and included in the organization's decision-making processes. The interpretation of stakeholder participation responses reveals a generally critical perception among respondents. These results are captured in Table 11.

TABLE 11

Stakeholder Participation and Financial Sustainability

Parameter	Strongly Disagree		Disagree		Neither		Agree		Strongly Agree	
	n	%	n	%	n	%	n	%	n	%
The organization clearly identifies and maps all relevant stakeholders for effective engagement in its activities.	19	14.84%	56	43.75%	42	32.813%	8	6.250%	3	2.34%
Stakeholder mapping is regularly updated to ensure that all key stakeholders are involved in important decisions.	18	14.06%	62	48.44%	42	32.813%	4	3.125%	2	1.56%
The organization actively consults stakeholders before making major decisions that may affect them.	18	14.06%	69	53.91%	35	27.344%	4	3.125%	2	1.56%
The consultation processes used by the organization are transparent and provide opportunities for meaningful input.	17	13.28%	52	40.63%	53	41.406%	5	3.906%	1	0.78%
The organization has effective feedback mechanisms in place to gather input from stakeholders on key issues.	8	6.25%	53	41.41%	62	48.438%	5	3.906%	0	0.00%
Feedback provided by stakeholders is actively considered and used to inform decision-making within the organization.	10	7.81%	67	52.34%	44	34.375%	6	4.688%	1	0.78%
Stakeholders are provided with meaningful opportunities to participate in key	15	11.72%	59	46.09%	46	35.938%	5	3.906%	3	2.34%

decision-making processes.										
My participation in decision-making processes is valued and has an impact on the final outcomes	15	11.72%	58	45.31%	42	32.813%	11	8.594%	2	1.56%
Aggregate Stakeholder Participation	15	11.72%	60	46.48%	46	35.74%	6	4.69%	2	1.37%

Source: Research Data (2025)

4.5.5 Descriptive for Decentralization and Financial Sustainability

The study assessed the fourth objective; to establish the effect of decentralization on financial sustainability of Water Resources Authority basin areas in Kenya. When asked whether sections within the organization have the autonomy to make decisions without requiring approval from higher management, 68 (53.13%) disagreed, while only 6 (4.69%) strongly disagreed. A significant portion 44 (34.38%) selected neither agree nor disagree, only 7 (5.47%) agreed, with a further 3 (2.34%) strongly agreeing. This suggests that while some pockets may perceive autonomy, the majority do not see their units as independently empowered. A similar pattern emerged in response to the statement that the decision-making process is decentralized, allowing for quicker and more efficient decisions at all levels. As 83 (64.84%) disagreed, 6 (4.69%) strongly disagreed, while 35 (27.34%) were neutral. Very few respondents, 4 (3.13%), agreed, none 0 (0.00%) strongly agreed, highlighting a perception that decision-making is overwhelmingly centralized and possibly slow due to hierarchical approval processes.

Control over resources is also seen as lacking at the section level. When asked whether each section is given enough control over its own resources to make decisions that support its specific goals, 88 (68.75%) disagreed and 8 (6.25%) strongly disagreed, while 30

(23.44%) were neutral. It was shown that 2 (1.56%) agreed, no respondents 0 (0.00%) strongly agreed, indicating near-unanimous views on the absence of meaningful resource autonomy.

The statement about decentralized resource allocation, which would allow units to manage their budgets effectively, received 85 (66.41%) disagreement and 7 (5.47%) strong disagreement. As 32 (25.00%) were neutral, 3 (2.34%) agreed, 1 (0.78%) strongly agreed. These figures further confirm that staff perceive resource management as firmly controlled at the top.

When assessing perceptions of delegated authority, 74 (57.81%) disagreed that the organization effectively delegates authority to lower levels, 9 (7.03%) strongly disagreed. As 31 (24.22%) expressed neutrality, 13 (10.16%) agreed and 1 (0.78%) strongly agreed. Compared to earlier statements, this item saw slightly more agreement, indicating some recognition of delegation, though still limited. A related item on whether staff are empowered to make decisions within their area of responsibility showed similar results, 72 (56.25%) disagreed, 7 (5.47%) strongly disagreed, 37 (28.91%) selected neutral. It was shown that 11 (8.59%) agreed, 1 (0.78%) strongly agreed, reflecting a moderate level of perceived empowerment, though again, not widespread. The flexibility of sections to adapt and implement policies based on their specific needs was also rated poorly. As 74 (57.81%) disagreed, 10 (7.81%) strongly disagreed, 32 (25.00%) chose neither, 10 (7.81%) agreed and 2 (1.56%) strongly agreed. Although slightly higher than in other areas, this still represents a predominantly centralized policy environment. When asked whether the organization allows sufficient policy autonomy at lower levels to address challenges without excessive oversight, responses were more mixed but still leaned negative. 61 (47.66%) disagreed, 15 (11.72%)

strongly disagreed, totaling nearly 60%. However, 39 (30.47%) were neutral, 7 (5.47%) agreed and 6 (4.69%) strongly agreed. This item had the highest positive response rate, though it remains relatively low overall.

The aggregate analysis across all items reveals that, on average, 76 (59.08%) of responses were disagree, 9 (6.64%) were strongly disagree, 35 (27.34%) chose neither agree nor disagree, while only 7 (5.57%) agreed and 2 (1.37%) strongly agreed. These aggregated figures underscore a strong organizational pattern of limited decentralization. The results reflect a workforce that largely perceives centralized control over decision-making, resource allocation, policy implementation. There are only small pockets of perceived empowerment or autonomy, in many cases, high neutral responses suggest uncertainty, inconsistency, or a lack of communication about authority structures. If the WRA basin areas aim to become more agile and responsive, these findings suggest an opportunity to clarify, strengthen, actively promote decentralization strategies, including delegating decision rights, enabling budget control at lower levels, fostering staff empowerment across departments. These results are captured in Table 12.

TABLE 12

Decentralization and Financial Sustainability

Parameter	Strongly Disagree		Disagree		Neither		Agree		Strongly Agree	
	n	%	n	%	n	%	n	%	n	%
Sections within the organization have the autonomy to make decisions without requiring approval from higher management.	6	4.69%	68	53.13%	44	34.375%	7	5.469%	3	2.34%
The decision-making process is decentralized, allowing for quicker and more efficient decisions at all levels.	6	4.69%	83	64.84%	35	27.344%	4	3.125%	0	0.00%
Each section is given enough control over its own resources to make decisions that support its specific goals.	8	6.25%	88	68.75%	30	23.438%	2	1.563%	0	0.00%
Resource allocation within the organization is decentralized, allowing individual units to manage their budgets effectively.	7	5.47%	85	66.41%	32	25.000%	3	2.344%	1	0.78%
The organization effectively delegates authority to lower levels, allowing employees to take ownership of their tasks.	9	7.03%	74	57.81%	31	24.219%	13	10.156%	1	0.78%
Staff are empowered to make decisions within my area of responsibility, reflecting a decentralized structure	7	5.47%	72	56.25%	37	28.906%	11	8.594%	1	0.78%
Sections have the flexibility to adapt and implement policies according to their specific needs and goals.	10	7.81%	74	57.81%	32	25.000%	10	7.813%	2	1.56%
The organization allows sufficient policy autonomy	15	11.72%	61	47.66%	39	30.469%	7	5.469%	6	4.69%

Parameter	Strongly Disagree		Disagree		Neither		Agree		Strongly Agree	
	n	%	n	%	n	%	n	%	n	%
at lower levels to address challenges effectively without excessive oversight										
Aggregate decentralization	9	6.64%	76	59.08%	35	27.34%	7	5.57%	2	1.37%

Source: Research Data (2025)

4.6 Structural Equation Modelling (SEM) Results

The study conducted PL-SEM analysis using STATA, ADNCO software and SPSS. The study estimated a standardized path model where the dependent variable was financial sustainability of Water Resources Authority basin areas in Kenya (FS) and the independent (exogenous) variables were; Accountability (AC), Transparency (TP), Stakeholder participation (SP), and Decentralization (DC).

4.6.1 Common Method Variance

There was a need to assess Common Method Variance (CMV) in this study because data for all variables were collected from the same respondents using a single self-reported survey instrument. When the same measurement method is used to collect data on both independent and dependent variables, particularly from a single source, it can introduce systematic bias that artificially inflates or deflates the observed relationships among constructs (Podsakoff et al., 2003). This bias, referred to as Common Method Variance, occurs not due to the actual constructs being measured but rather due to the measurement technique itself, such as similar item wording, response styles, or social desirability effects (MacKenzie & Podsakoff, 2012).

To ensure the validity of the findings, it was essential to evaluate and control for CMV, as it poses a threat to internal validity and may result in spurious correlations among variables (Chang, Witteloostuijn, & Eden, 2010). Detecting CMV allows researchers to determine whether the relationships identified are true reflections of the constructs or artifacts of the measurement method used. One approach to addressing CMV involves the use of a measured latent method factor or an assumed source of method bias as a covariate in the statistical analysis. This technique, often referred to as the latent method factor technique, introduces a common factor into the model that loads on all items, allowing researchers to partition the variance attributable to the constructs of interest from the variance due to the method used (Podsakoff et al., 2003). Specifically, the common method variance is quantified as the square of the factor loadings associated with the method factor prior to standardization. This enables estimation of how much variance in the data is shared across items due to the measurement method itself rather than the theoretical constructs.

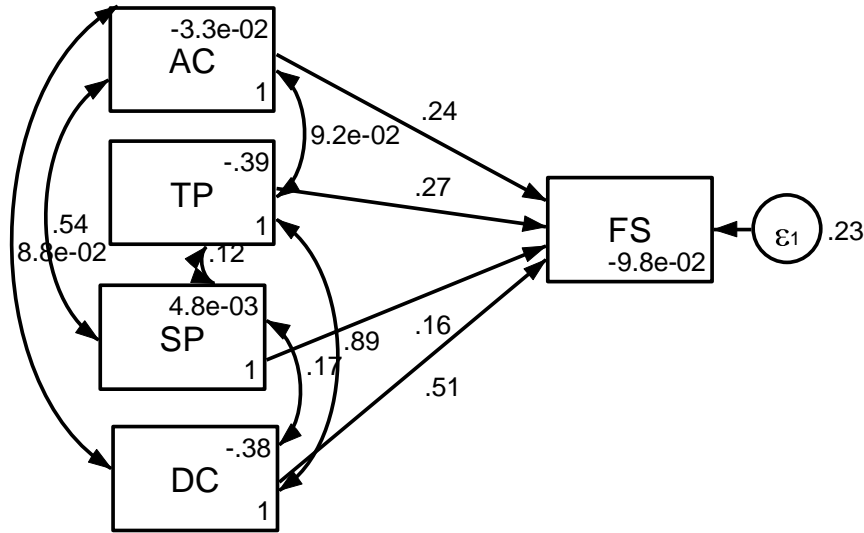
A commonly used heuristic for interpreting CMV in this context is the 50% threshold, where a shared variance of more than 50% is often taken as evidence of substantial common method bias (Williams, Cote, & Buckley, 1989). If the amount of common method variance is below this threshold, it is generally considered not to threaten the validity of the results. However, some scholars argue that the threshold should be used with caution and in conjunction with other diagnostic tools, such as Harman's single-factor test or marker variable techniques, to ensure a robust assessment (Podsakoff et al., 2012). The results presented in Figure 2 indicate that the common factor loadings for the majority of the paths ranged between 0.15 and 0.27 except for CV and AC which was 0.51. This suggests that the proportion of variance attributable to the common method factor is

relatively low. Since the square of these loadings (representing the shared variance) falls well below the commonly accepted threshold of 0.50, it can be inferred that CMV is not a significant threat to the validity of the findings in this study. According to Podsakoff et al. (2003), when the variance attributed to the method factor remains below 50%, the risk of inflated or spurious relationships among variables due to measurement bias is minimal. Therefore, it is reasonable to conclude that CMV is unlikely to have significantly influenced the observed relationships among the study constructs.

Accountability. The results from a standard SEM estimation are in Figure 2.

FIGURE 2

Common Method Variance



Source: Research Data (2025)

4.6.2 Confirmatory Measurement Model (CFA)

This study utilized Confirmatory Factor Analysis (CFA) and SEM, with a focus on path analysis, to investigate the relationship between the various dimensions of institutional governance and the financial sustainability of the WRA water basins in Kenya. In doing so, the study adopted the two-step SEM approach as outlined by Anderson and Gerbing (1988). This approach begins with the validation of the measurement model, ensuring that the constructs are accurately and reliably measured. Once this was confirmed, the structural model is tested to evaluate the hypothesized relationships between the constructs. This methodological framework has also been applied in prior studies examining institutional

governance and financial sustainability (Lindahl & Silver, 2014; Thampradit & Fongsuwan, 2014), demonstrating its robustness and relevance in similar research contexts.

The structural model, which represents the assumed linear and causal relationships among the key constructs, was tested using data collected through validated measurement instruments. Prior to conducting Confirmatory Factor Analysis (CFA), the study employed Exploratory Factor Analysis (EFA) as a preliminary step to identify the underlying structure of the observed variables. EFA involved the examination of the pattern matrix, communalities, and the extraction of factors using Principal Components Analysis (PCA). This approach is commonly used in early stages of scale development to reduce data complexity and detect latent constructs that may not be directly observable (Fabrigar et al., 1999; Williams, Onsmann, & Brown, 2010; Hair et al., 2019). EFA provides insight into the dimensionality of the data and ensures that well-defined factors proceed to the confirmatory stage, thereby enhancing the reliability and validity of the final measurement model.

The KMO value of 0.704 exceeded the recommended threshold of 0.50, indicating sampling adequacy for factor analysis. Additionally, Bartlett's Test of Sphericity was significant ($p = 0.000$), confirming that the variables were sufficiently correlated. These results demonstrate that the data was suitable for factor analysis (Hair et al., 1998). The results of the KMO and Bartlett's tests are summarized in Table 13.

TABLE 13
KMO and Bartlett's Tests

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.704
Bartlett's Test of Sphericity	Approx. Chi-Square	420.812
	Df	10.0
	Sig.	.000

Source: Research Data (2025)

EFA was conducted using PCA to reduce the number of items used to measure the variables. When properly executed, PCA groups together highly correlated variables, allowing them to be represented as distinct underlying factors or components. The analysis produced the pattern matrix presented in Table 14. The results derived from the provide detailed insights into how well each indicator reflects its corresponding latent construct within the study, which sought to assess the effects of institutional governance on the financial sustainability of WRA basin areas in Kenya. The institutional governance dimensions explored were accountability, transparency, stakeholder participation, and decentralization, with financial sustainability.

As with the construct of financial sustainability, the indicator FSA (Revenue diversity) demonstrated a very strong factor loading of 0.9388, signifying that it is a highly reliable measure of this construct. In contrast, indicators FSB (Net income) and FSC (Self-Sufficiency) registered moderate loadings of 0.4365 and 0.4464, respectively, indicating a moderate relationship with financial sustainability. However, FSD(Solvency) had an extremely low loading of 0.0520, suggesting it lacks a meaningful contribution and may not effectively represent the construct. This implies that while FSA robustly captures the

concept, the inclusion of FSD undermines the overall reliability of the construct and warrants reconsideration.

For the construct accountability, several indicators showed strong validity. Specifically, AC3, AC4, and AC8 (verification results) stood out with high loadings of 0.7373, 0.7344, and 0.8772, respectively, indicating that they are strong and reliable items measuring accountability. Additionally, AC7 loaded at 0.6277 and AC6 at 0.5243, both contributing moderately well to the construct. AC2 presented a loading of 0.5034, which is acceptable but relatively weaker. Notably, AC1 and AC5 had low loadings of 0.3803 and 0.1426, respectively, with AC5 being particularly problematic. These findings suggest that the accountability construct is generally well supported by its indicators, but certain items, such as AC5 and potentially AC1, may need to be removed or revised to improve measurement precision.

In the case of transparency, the factor loadings varied considerably. TR4 showed a strong loading of 0.7991, indicating it is a reliable indicator of the construct, while TR8 also performed fairly well with a loading of 0.6699. Other indicators, such as TR6, TR3, and TR7, had moderate loadings ranging from 0.3709 to 0.4336. However, TR1, TR2, and TR5 exhibited weak loadings below 0.35, with TR2 and TR5 at particularly low levels of 0.2481 and 0.2460. These results point to an inconsistency in the measurement of transparency. While certain indicators such as TR4 are clearly effective, a number of others appear to be weak and may need to be omitted or re-evaluated to strengthen the construct's reliability.

Turning to stakeholder participation, the indicators demonstrated overall strong performance. SP3 emerged as the most robust indicator with a factor loading of 0.8208,

followed by SP1 at 0.7336. Other indicators, including SP2 (0.6462), SP4 (0.5419), SP5 (0.6048), SP6 (0.4307), SP7 (0.5029), and SP8 (0.4568), showed moderate to strong loadings. This pattern indicates that the construct is consistently measured across a range of items, providing solid empirical support for its inclusion in the model without significant concern for item-level weaknesses.

In contrast, the construct of decentralization revealed significant measurement challenges. Although DC2 and DC3 demonstrated moderate loadings of 0.5700 and 0.4371, and DC6 followed closely at 0.4369, several other indicators underperformed. DC7 (0.3552) was below the acceptable threshold, and indicators such as DC1 (-0.0396), DC4 (0.0420), DC5 (0.0887), and DC8 (-0.0909) showed extremely weak or even negative loadings. These values indicate that these items either do not align well with the decentralization construct or may be conceptually misaligned. Consequently, the construct of decentralization, as currently operationalized, lacks sufficient measurement validity and would benefit from the revision or replacement of weak indicators. The dependent construct as shown in Table 14.

TABLE 14**Factor Loading Results**

Indicator	Financial sustainability	Accountability	Transparency	Stakeholder participation	Decentralization
FSA	0.9388				
FSB	0.4365				
FSC	0.4464				
FSD	0.0520				
AC1		0.3803			
AC2		0.5034			
AC3		0.7373			
AC4		0.7344			
AC5		0.1426			
AC6		0.5243			
AC7		0.6277			
AC8		0.8772			
TR1			0.3221		
TR2			0.2481		
TR3			0.3534		
TR4			0.7991		
TR5			0.2460		
TR6			0.4336		
TR7			0.3709		
TR8			0.6699		
SP1				0.7336	
SP2				0.6462	
SP3				0.8208	
SP4				0.5419	
SP5				0.6048	
SP6				0.4307	
SP7				0.5029	
SP8				0.4568	
DC1					-0.0396
DC2					0.5700
DC3					0.4371
DC4					0.0420
DC5					0.0887
DC6					0.4369
DC7					0.3552
DC8					-0.0909

Source: Research Data (2025)

The PL-SEM factor loading results highlight a mixed picture regarding the reliability and validity of the indicators used to assess institutional governance in relation to financial sustainability. Constructs such as stakeholder participation and accountability are well measured by most of their respective items. Financial sustainability also appears to be measured effectively, though the presence of a single poorly performing item detracts from its overall strength. Transparency, while partially supported, includes several weak items that compromise its measurement reliability. Most concerning is the construct of decentralization, which demonstrated widespread issues.

The study revised the indicators by removing; The internal control systems are adequate to support consistent financial sustainability over time, The organization's accounting policies are clearly documented and accessible, ensuring transparency in financial reporting, The organization clearly identifies and maps all relevant stakeholders for effective engagement in its activities, Stakeholder mapping is regularly updated to ensure that all key stakeholders are involved in important decisions, The consultation processes used by the organization are transparent and provide opportunities for meaningful input, The organization has effective feedback mechanisms in place to gather input from stakeholders on key issues, Feedback provided by stakeholders is actively considered and used to inform decision-making within the organization, Stakeholders are provided with meaningful opportunities to participate in key decision-making processes, Each section is given enough control over its own resources to make decisions that support its specific goals, Sections have the flexibility to adapt and implement policies according to their specific needs and goals, The organization allows sufficient policy autonomy at lower levels to address challenges effectively without excessive oversight.

This resulted in the pattern matrix presented in Table 4.15, which demonstrates that the variables loaded onto four distinct factors of institutional governance: accountability, transparency, stakeholder participation, and decentralization This resulted to Table 15.

4.6.3 Communalities

Communalities were then assessed to determine the extent to which the variance in each original variable was explained by the extracted factors. According to Hair et al. (2019), variables with communality values less than 0.5 are considered to have low explanatory power and may be excluded from further analysis.

The communalities presented ranged from 0.503 to 0.696, indicating that all values exceeded the 0.5 cutoff point. This suggests that the variables were well represented by the extracted factors and fit appropriately with other variables within their respective factors (Hair et al., 2019). The results were captured in Table 15.

TABLE 15
Communalities

s	Initial	Extraction
The Water Resources Authority basin area has a diverse range of revenue sources to ensure long-term financial stability.	1.000	.503
The basin area consistently generates sufficient net income to support its operations and long-term objectives.	1.000	.500
The basin area is financially self-sufficient and can operate effectively without relying on external financial support.	1.000	.524
The basin area has the capacity to meet its long-term financial obligations and maintain a stable financial position	1.000	.642
Auditing practices are effective in identifying financial inefficiencies and supporting strategies	1.000	.696
The organization’s auditing practices ensure that financial activities are monitored accurately.	1.000	.624
The consistent application of accounting standards provides accurate financial reportingg	1.000	.618
The verification results consistently support the accuracy of financial data	1.000	.390
The results from financial verifications help the organization identify areas for improvement	1.000	.510
Sections within the organization have the autonomy to make decisions without requiring approval from higher management.	1.000	.508
The decision-making process is decentralized, allowing for quicker and more efficient decisions at all levels.	1.000	.522

Extraction Method: Principal Component Analysis.

Source: Research Data (2025)

4.6.4 Fitness indices

Based on the PLS-SEM model output, the analysis sought to assess the effect of institutional governance, measured through the dimensions of accountability, transparency, stakeholder participation, and decentralization, on the financial sustainability of the WRA basin areas in Kenya. A key element of the model evaluation involved determining how well the hypothesized relationships and construct measurements fit the observed data. This assessment was primarily reflected in the Standardized Root Mean Square Residual (SRMR) value and, when available, by discrepancy measures as showed in Table 16.

TABLE 16
Analysis by Standardized Root Mean Square Residual

	Value	HI95	HI99
SRMR	0.1116		
d _{ULS}			
d _G			

Source: Research Data (2025)

In this particular analysis, the SRMR value was 0.1116. The SRMR statistic represents the average difference between the observed correlation matrix and the model-implied correlation matrix. In other words, it measures how closely the proposed model reproduces the observed relationships among the indicators in the dataset. A lower SRMR indicates a better fit. Conventionally, an SRMR value below 0.08 is regarded as a strong indicator of good model fit, while values below 0.10 may be accepted in less stringent modelling contexts, particularly in exploratory research or PLS-SEM frameworks. However, an SRMR value that exceeds 0.10, as is the case here with 0.1116, suggests a poor model fit. This relatively high SRMR value implies that the hypothesized model does not adequately capture the empirical structure present in the data. The discrepancy between the model's predictions and the actual observed relationships is larger than what is typically acceptable. As a result, the fit of the model should be reconsidered. The data may suggest issues such as weak or mis specified structural relationships among the constructs, poor indicator reliability, or the inclusion of irrelevant or misaligned items under each construct.

The table presented shows the PLS-SEM model fit indices for moderated data using ADANCO software, in the context of a study assessing the effects of institutional

governance on the financial sustainability of WRA basin areas in Kenya, incorporating a moderating variable.

In this model output, the Standardized Root Mean Square Residual (SRMR) is reported as 0.0000, which is the ideal possible value for this metric. SRMR measures the difference between the observed correlation matrix and the model-implied correlation matrix. A value of 0 indicates perfect fit, meaning the model’s predicted correlations match the actual observed correlations exactly. This perfect SRMR value suggests that the model with the moderating variable included fits the data exceptionally better than conventional thresholds for acceptable fit (typically SRMR < 0.08 for good fit and < 0.10 for acceptable fit). In this case, the absence of any residual discrepancy between the model’s predictions and the observed data indicates a fully specified and properly estimated model. Thus, the study then moderated the data to have Table 17.

TABLE 17
Standardized Root Mean Square Residual for Moderated Data

	Value	HI95	HI99
SRMR	0.0000		
d _{ULS}			
d _G			

Source: Research Data (2025)

4.6.5 Convergent Validity

The results provided insight into the reliability and internal consistency of the constructs used to assess the effects of institutional governance, comprised of accountability, transparency, stakeholder participation, and decentralization, on financial sustainability within the WRA basin areas in Kenya. To evaluate the quality of the measurement model, Cronbach's alpha(α), traditional measure of internal consistency reliability. As concerns

accountability, the results indicate strong internal consistency and measurement reliability. Dijkstra-Henseler's rho was 0.8568, composite reliability was 0.8020, and Cronbach's alpha was 0.8381. All three values surpass the commonly accepted threshold of 0.70, suggesting that the indicators used to measure accountability reliably capture the underlying construct. Similarly, stakeholder participation showed high reliability, with Dijkstra-Henseler's rho recorded at 0.8388, composite reliability at 0.8159, and Cronbach's alpha at 0.8249. These results indicate that the items measuring stakeholder participation are not only consistent but also accurately represent the concept being measured. Transparency showed acceptable reliability.

While Dijkstra-Henseler's rho (0.7447) and Cronbach's alpha (0.7029) were both above the acceptable threshold. This suggests that a fairly consistent. Financial sustainability, the key outcome variable, demonstrated a similar pattern. The values for Dijkstra-Henseler's rho (0.7940) and Cronbach's alpha (0.7119) indicate acceptable reliability. The weakest construct in terms of reliability was decentralization where Cronbach's alpha was acceptable at 0.7391. The measurement model demonstrates strong reliability for accountability and stakeholder participation, moderate reliability for transparency and financial sustainability, and weak reliability for decentralization.

The PL-SEM factor loading results highlight a mixed picture regarding the reliability and validity of the indicators used to assess institutional governance in relation to financial sustainability. Constructs such as stakeholder participation and accountability are well measured by most of their respective items. Financial sustainability also appears to be measured effectively, though the presence of a single poorly performing item detracts from its overall strength. Transparency, while partially supported, includes several weak items

that compromise its measurement reliability. Most concerning is the construct of decentralization, which demonstrated widespread issues. The results are Table 18.

TABLE 18
Analysis by Convergent Validity Check

Construct	Dijkstra-Henseler's rho (ρ_A)	Jöreskog's rho (ρ_c)	Cronbach's alpha(α)
Financial sustainability	0.7940	0.5629	0.7119
Accountability	0.8568	0.8020	0.8381
Transparency	0.7447	0.6553	0.7029
Stakeholder participation	0.8388	0.8159	0.8249
Decentralization	0.5249	0.3118	0.7391

Source: Research Data (2025)

The Table 18 presents the Average Variance Extracted (AVE) values for the key constructs in the study examining the effects of institutional governance on financial sustainability of Water Resources Authority basin areas in Kenya. Financial sustainability has an AVE of 0.3185, indicating the proportion of variance in its indicators explained by the construct. Accountability shows a slightly higher AVE of 0.3675, followed closely by stakeholder participation at 0.3670. Transparency has a lower AVE value of 0.2204, while decentralization records the lowest AVE at 0.1066. These AVE values suggest varying degrees of convergent validity among the constructs, with accountability and stakeholder participation demonstrating moderate explanatory power, whereas decentralization exhibits very weak variance explanation.

TABLE 19
Analysis by Average Variance Extracted

Construct	Average variance extracted (AVE)
Financial	
sustainability	0.3185
Accountability	0.3675
Transparency	0.2204
Stakeholder	
participation	0.3670
Decentralization	0.1066

Source: Research Data (2025)

4.7.6 Discriminant Validity

Discriminant validity was assessed by comparing the AVE values with the squared correlations between constructs. According to Fornell and Larcker (1981), discriminant validity is established when the AVE for each construct is greater than the squared correlation between that construct and any other.

The AVE values for each construct indicate the amount of variance in the observed variables explained by the latent construct: financial sustainability (0.3185), accountability (0.3675), transparency (0.2204), stakeholder participation (0.3670), and decentralization (0.1066). Based on squared correlations, which measure the shared variance between constructs, financial sustainability has low squared correlations with accountability (0.0799), transparency (0.0982), stakeholder participation (0.2600), and decentralization (0.0408). This suggests relatively weak associations between financial sustainability and the governance constructs.

Accountability and transparency share a squared correlation of 0.1616, indicating some overlap but still moderate distinctiveness. Transparency and stakeholder participation

have a higher squared correlation of 0.2947, reflecting a stronger relationship between these two constructs. Decentralization shows very low squared correlations with all other constructs, ranging from 0.0130 to 0.1323, suggesting it is relatively independent from the other governance factors. Table 20 presents the estimated correlations between constructs, along with their corresponding squared correlations and AVE values, thereby providing evidence for discriminant validity. The table presents the AVE values on the diagonal and the squared correlations between the constructs below the diagonal.

TABLE 20

Diagonal and The Squared Correlations Between the Constructs

Construct	Financial sustainability	Accountability	Transparency	Stakeholder participation	Decentralization
Financial sustainability	0.3185				
Accountability	0.0799	0.3675			
Transparency	0.0982	0.1616	0.2204		
Stakeholder participation	0.2600	0.0859	0.2947	0.3670	
Decentralization	0.0408	0.0142	0.0130	0.1323	0.1066

Squared correlations; AVE in the diagonal.

Source: Research Data (2025)

Overall, the AVE values mostly exceed the squared correlations between constructs, which supports discriminant validity, indicating that the constructs measure distinct concepts. However, some correlations, particularly between transparency and stakeholder participation, approach the AVE value, which may warrant further examination to confirm construct distinctiveness.

**TABLE 21:
Squared Correlations**

Correlations		Estimate
Financial sustainability	<-->	Financial sustainability 0.3845
Financial sustainability	<-->	Accountability 0.0799
Financial sustainability	<-->	Transparency 0.0962
Financial sustainability	<-->	Stakeholder participation 0.2600
Financial sustainability	<-->	Decentralization 0.0408
Accountability	<-->	Accountability 0.3675
Accountability	<-->	Transparency 0.1616
Accountability	<-->	Stakeholder participation 0.0859
Accountability	<-->	Decentralization 0.0142
Transparency	<-->	Transparency 0.2204
Transparency	<-->	Stakeholder participation 0.2947
Transparency	<-->	Decentralization 0.0130
Stakeholder participation	<-->	Stakeholder participation 0.3670
Stakeholder participation	<-->	Decentralization 0.1323
Decentralization	<-->	Decentralization 0.1066

Source: Research Data (2025)

With regards to intercorrelations among predictors, several significant relationships emerged. Transparency (TP) and Decentralization (DC) were very highly correlated ($r = 0.886$, $p < 0.001$), which suggest redundancy such as overlapping constructs. Accountability (AC) and Stakeholder participation (SP) also show a strong positive correlation ($r = 0.541$, $p < 0.001$), indicating these constructs may be conceptually related. Meanwhile, other covariances, such as Accountability (AC) with Transparency (TP) or Decentralization (DC), and Transparency (TP) with Stakeholder participation (SP), are not statistically significant.

The correlation between Stakeholder participation (SP) and Decentralization (DC) is modest but statistically significant ($r = 0.166$, $p = 0.049$).

The model intercept is also statistically significant (-0.098 , $p = 0.038$), suggesting that financial sustainability of Water Resources Authority basin areas in Kenya would be slightly below average when all predictors are held at zero in standardized terms. The beta coefficient for Accountability was significant ($\beta=0.2377$; $p<0.01$) while that for Transparency was also significant ($\beta=0.2677$; $p= 0.004$). Moreover, the beta coefficient for Stakeholder participation was significant ($\beta=0.1567$; $p=0.002$) while that of Decentralization was also significant ($\beta=0.5114$, $p<0.01$).

So, the general model is

$$FS = (-0.098) + 0.2377AC + 0.2677TP + 0.1567SP + 0.5114DC.$$

Thus,

$$\begin{aligned} \text{Financial sustainability of Water Resources Authority basin areas in Kenya} &= -0.098 \\ &+ 0.2377\text{Accountability} + 0.2677\text{Transparency} + 0.1567\text{Stakeholder participation} + \\ &0.5114\text{Decentralization} \end{aligned}$$

The findings of the SEM model reveal several important insights about the financial sustainability of WRA basin areas in Kenya. The model constant is statistically significant, with a coefficient of -0.098 and a p-value of 0.038 . This negative value indicates that, when all the predictor variables, accountability, transparency, stakeholder participation, and decentralization, are held at their average level, the expected level of financial sustainability is slightly below the average. Accountability shows a statistically significant positive effect

on financial sustainability, with a standardized coefficient (β) of 0.2377. This means that for every one change in accountability, financial sustainability is expected to change by approximately 0.2377 units in the same direction. Transparency also has a significant positive relationship, with a coefficient of 0.2677 and a p-value of 0.004. This implies that changing transparency by one unit leads to a 0.2677 change in financial sustainability in the same direction. This shows that open governance helps build trust and improves financial performance. Stakeholder Participation contributes positively as well, with a coefficient of 0.1567. Although this effect is slightly smaller than those of accountability and transparency, it remains statistically significant. It means changing stakeholders by unit is associated with a 0.1567 change in financial sustainability in the same direction. Decentralization emerges as the most influential predictor in the model, with a coefficient of 0.5114. This strong positive relationship suggests that shifting decentralization leads to a 0.5114 change in financial sustainability in the same direction. Thus, all four governance factors, accountability, transparency, stakeholder participation, and especially decentralization, play a significant role in improving the financial sustainability of WRA basin areas in Kenya. The size of the coefficients indicates the relative strength of each factor's influence, with decentralization having the greatest impact, followed by transparency, accountability, and stakeholder participation. These results suggest that improving institutional governance practices is a key pathway toward enhancing the financial health and long-term viability of WRA basin areas. The structured equation model is captured in Table 22.

These variables explain approximately 76.7% of the variance in financial sustainability of Water Resources Authority basin areas in Kenya, as indicated by the residual variance of 0.00096.

The SEM results indicate a well-specified model predicting the endogenous variable, financial sustainability of Water Resources Authority basin areas in Kenya, from four observed exogenous variables: accountability, transparency, stakeholder participation, and decentralization. Based on 128 observations, the model is just-identified, meaning all parameters are exactly specified. The model provides strong evidence that accountability, transparency, stakeholder participation, and decentralization are important and statistically significant predictors of financial sustainability of Water Resources Authority basin areas in Kenya. The model appears has high explanatory power. The model summary is captured in Table 23.

TABLE 23

Model Goodness of Fit

Equation-level goodness of fit

depvars	Variance			R-squared	mc	mc2
	fitted	predicted	residual			
observed FS	.0041462	.0031815	.0009647	.7673255	.8759712	.7673255
overall				.7673255		

mc = correlation between depvar and its prediction
 mc2 = mc^2 is the Bentler-Raykov squared multiple correlation coefficient

Source: Research Data (2025)

4.7 Hypothesis Testing

4.7.1 Accountability and Financial Sustainability of Water Resources Authority basin areas in Kenya

Guided by the first objective to find out the effect of accountability on financial sustainability of Water Resources Authority basin areas in Kenya, the study tested the hypothesis

H₀₁: There is no significant effect of accountability on financial sustainability of Water Resources Authority basin areas in Kenya

The SEM demonstrates a mathematically perfect fit across all commonly reported fit indices. The Root Mean Square Error of Approximation (RMSEA) is reported as 0.000, with a 90% confidence interval of [0.000, 0.000], and a p-close value of 1.000, indicating perfect approximation to the population model. Similarly, the Comparative Fit Index (CFI) is 1.000, suggesting excellent model fit. The Standardized Root Mean Square Residual (SRMR) is also 0.000, indicating no residual discrepancy between the model-implied and observed correlations. However, it is important to note that these fit statistics are not meaningful in this case because the model is just-identified, that is, the number of estimated parameters equals the number of unique data points (variances and covariances), resulting in zero degrees of freedom. In such models, the fit is always perfect by construction, regardless of the model's substantive validity. Therefore, while the statistical indices suggest an ideal fit, they do not provide evidence of actual model quality or parsimony.

In contrast, the coefficient of determination (CD) is reported at 0.101, indicating that the model explains 10.1% of the variance in the dependent variable. This suggests that, although the model formally fits the data perfectly, its explanatory power is relatively low.

In aggregate, while the fit indices all suggest a perfect model, this is an artifact of the model's just-identified nature. To obtain meaningful insights into model fit, the model would need to be modified to be overidentified, allowing for degrees of freedom and residual variance to assess model performance more robustly.

TABLE 24
Fitness Indices

Criteria	Cutoff Value	Model Result
Chi-Square (χ^2)	> 0.05 indicates good fit	13.56
p-value	$p > 0.05$	0.000
CFI	≥ 0.95 (excellent), ≥ 0.90 (acceptable)	1.000 (perfect, but due to just-identified model)
RMSEA	≤ 0.05 (close fit), 0.05–0.08 (reasonable fit)	0.000 (perfect)

Source: Research Data (2025)

The structural equation model examined the effects of eight observed exogenous variables (ac1 through ac8) on the endogenous variable fs. Among these predictors, ac3 had a statistically significant positive effect on fs (coefficient = 0.0396, $p = 0.001$). This suggests that for each one-unit increase in ac3, the latent factor fs is expected to increase by approximately 0.04 units, holding all other variables constant. All other variables (ac1, ac2, ac4, ac5, ac6, ac7, and ac8) showed non-significant effects on fs, as their p-values exceeded the conventional threshold of 0.05. This indicates that there is no strong evidence to suggest these variables meaningfully predict the latent factor within this model. The intercept term (_cons) was marginally significant ($p = 0.087$), which indicates a possible, though not definitive, deviation from zero when all predictors are at their reference levels. Overall, the model identifies ac3 as the only significant predictor of the latent construct fs in this dataset,

suggesting that attention should be focused on understanding the role of ac3 in relation to the underlying construct measured by FS (financial sustainability).

TABLE 25

Regression Weights for Accountability and Financial Sustainability

Predictor	Estimate	S.E.	C.R.	P-value
fs ← ac1	-0.00399	0.00941	-0.420	0.672
fs ← ac2	-0.00084	0.00964	-0.090	0.930
fs ← ac3	0.03963	0.01167	3.400	0.001
fs ← ac4	-0.01509	0.01039	-1.450	0.146
fs ← ac5	-0.00718	0.01015	-0.710	0.479
fs ← ac6	-0.00081	0.00906	-0.090	0.929
fs ← ac7	0.00226	0.00938	0.240	0.810
fs ← ac8	-0.00436	0.00809	-0.540	0.590

Source: Research Data (2025)

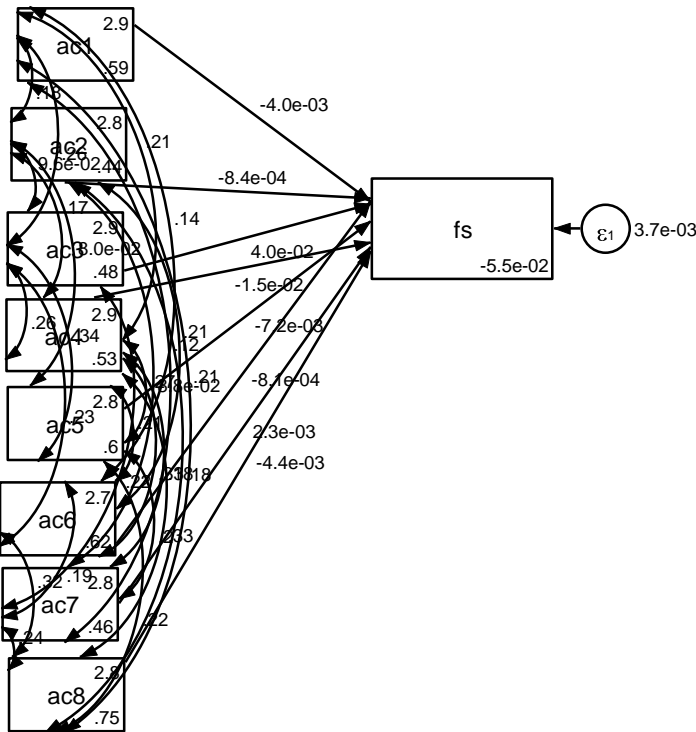
The SEM was estimated with 128 observations using maximum likelihood. The model examined how eight variables (ac1 through ac8) predict the latent factor `fs`. Among these predictors, only ac3 had a statistically significant effect on `fs`, with a positive coefficient of about 0.04. This means that for every one-unit increase in ac3, the latent factor `fs` increases by approximately 0.04 units, holding other variables constant. All other variables (ac1, ac2, ac4, ac5, ac6, ac7, and ac8) showed no significant impact on `fs`, as their effects were close to zero and statistically non-significant. The residual variance of the latent factor `fs` was small, indicating that the predictors explain a reasonable portion of the variance, but some unexplained variance remains.

Additionally, the predictors themselves are positively correlated with each other, meaning they tend to move together. For example, ac1 and ac3 showed a moderate positive correlation, as did several other pairs like ac4 and ac6. These correlations among predictors

suggest that while many variables are related to each other, only ac3 directly predicts the latent factor `fs` in this model. Thus, the model suggests that `fs` is primarily influenced by ac3, while the other predictors do not have significant direct effects once their interrelations are accounted for

FIGURE 3 SEM

Hypothesized on Accountability on Financial Sustainability



Source: Research Data (2025)

Based on results in Table 22, the study concludes that there is a significant effect of accountability on financial sustainability of Water Resources Authority basin areas in Kenya ($p < 0.01$)

4.7.2 Transparency and Financial Sustainability of Water Resources Authority basin areas in Kenya

With help of objective 2 to establish the effect of transparency on financial sustainability of Water Resources Authority basin areas in Kenya the study tested the hypothesis

H₀₂: There is no significant effect of transparency on financial sustainability of Water Resources Authority basin areas in Kenya

The model shows an excellent overall fit to the data. The Chi-Square statistic for the model versus the saturated model is 0.000, which indicates a perfect fit; The CF) and the Tucker-Lewis Index (TLI) are both 1.000, reflecting an ideal fit and suggesting that the model fits the data substantially better than the baseline model. These values exceed the commonly accepted cutoff of 0.95 for good model fit.

Similarly, the RMSEA is 0.000, with both the lower and upper bounds of the 90% confidence interval also at 0.000. This indicates no approximation error in the model. Furthermore, the p-close value is 1.000, confirming that the RMSEA is significantly below the threshold of 0.05, which supports a conclusion of excellent fit to the population data. The Standardized SRMR is also 0.000, suggesting that the difference between the observed and predicted correlations is negligible. Despite these ideal fit indices, the model's CD is relatively low at 0.149. This means that 14.9% of the variance in the dependent variable is explained by the model, indicating limited explanatory power. In sum, although the model fits the data structure very well from a statistical standpoint, it explains a small portion of the variance in the outcome, and could benefit from additional or more predictive variables. These results re captured in Table 26.

TABLE 26

Model Fit Indices for Transparency and Financial Sustainability

Criteria	Cutoff Value	Model Result
Chi-Square (χ^2)	> 0.05 indicates good fit	19.872
p-value	p > 0.05	0.000
CFI	≥ 0.95 (excellent), ≥ 0.90 (acceptable)	1.000 (perfect, but due to just-identified model)
CD (R^2)	Higer the Better	0.149
SRMR	≤ 0.08 (good), ≤ 0.05 (excellent)	0.000
RMSEA	≤ 0.05 (close fit), 0.05–0.08 (reasonable fit)	0.000 (perfect)
RMSEA 90% CI	Lower bound: ~0, Upper bound: ≤ 0.08	0.000 – 0.000
p-close (RMSEA)	> 0.05	1.0

Source: Research Data (2025)

The regression results from the structural equation model indicate how the eight observed exogenous variables (tr1 through tr8) contribute to the prediction of the outcome variable, fs. Among these, two variables showed statistically significant relationships. In these results, tr8 demonstrated a strong and statistically significant positive effect on fs, with a regression estimate of 0.027 and a p-value less than 0.001. This suggests that increases in tr8 are associated with corresponding increases in fs, making tr8 the most influential predictor in the model. Further, tr2 exhibited a negative and statistically significant relationship with fs. Its regression estimate was -0.016, and the p-value was 0.026, indicating that higher values of tr2 are associated with lower values of the outcome variable fs. The remaining variables, tr1, tr3, tr4, tr5, tr6, and tr7, did not show statistically significant effects on fs, as their p-values were all greater than 0.05. This means that, within this model and dataset, these predictors do not meaningfully influence the outcome. The intercept of the model was estimated at -0.045, with a p-value of 0.068, which is marginally non-significant

at the conventional 0.05 level. The model reveals that tr8 positively contributes to the outcome, tr2 has a small but significant negative impact, and the other variables do not have a notable influence. The overall model fit is strong, indicating that while not all predictors are significant, the model structure itself aligns well with the observed data as indicated in Table 27.

TABLE 27
Regression Weights for Transparency and Financial Sustainability

Path	Estimate	S.E.	C.R.	P
fs ← tr1	-0.00054	0.00665	-0.08	0.935
fs ← tr2	-0.01643	0.0074	-2.22	0.026
fs ← tr4	0.00008	0.00732	0.01	0.992
fs ← tr3	-0.00029	0.00791	-0.04	0.971
fs ← tr5	0.00317	0.00598	0.53	0.596
fs ← tr6	-0.01019	0.00761	-1.34	0.180
fs ← tr7	0.00376	0.00767	0.49	0.624
fs ← tr8	0.02702	0.00608	4.44	0.000
Intercept	-0.04511	0.02469	-1.83	0.068

Source: Research Data (2025)

This structural equation model explores how a set of eight observed predictors relates to a single observed outcome variable, based on 128 observations and estimated using an asymptotically distribution-free method. The model fit is exceptionally good, as indicated by an almost zero discrepancy value, showing that the specified relationships align very well with the observed data.

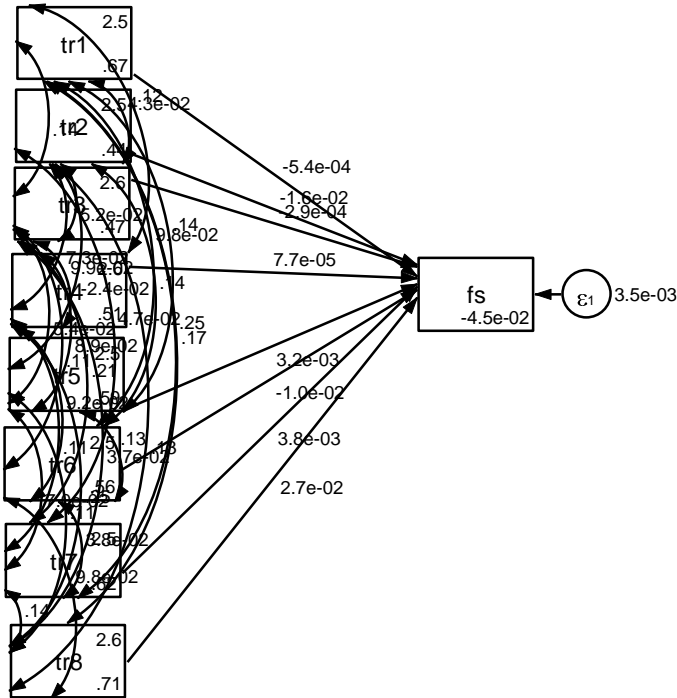
Looking at the direct effects on the outcome variable, most predictors have coefficients close to zero and are statistically non-significant, meaning they do not show reliable influence. However, two predictors stand out: One predictor has a small but statistically significant negative effect on the outcome. Its coefficient is about -0.016 with a

standard error of 0.0074, a z-value of -2.22, and a p-value of 0.026, indicating that as this predictor increases, the outcome tends to decrease slightly but significantly. Another predictor shows a positive and statistically significant effect on the outcome. Its coefficient is approximately 0.027 with a standard error of 0.0061, a z-value of 4.44, and a p-value less than 0.001, indicating a strong positive association.

The constant term is negative and marginally non-significant, suggesting a slight downward shift in the outcome when all predictors are zero, but this effect is not definitive. The residual variance of the outcome variable is estimated at 0.00353, indicating that the unexplained variability after accounting for these predictors is relatively small. Regarding the predictors themselves, the model reveals multiple significant positive covariances among them, suggesting that many of these predictors tend to vary together. For example, some pairs exhibit moderate to strong positive covariances with z-values well above 2 and p-values below 0.05, indicating statistically reliable associations within the predictor set. While most predictors do not directly influence the outcome, two have significant effects in opposite directions, and the predictors are interrelated. The model's excellent fit underscores the robustness of these findings.

FIGURE 4

SEM Hypothesized on Transparency and Financial Sustainability



Source: Research Data (2025)

The results in Table 22 show that there is a significant effect of transparency on financial sustainability of Water Resources Authority basin areas in Kenya (p=0.004)

4.7.3 Stakeholder Participation and Financial Sustainability of Water Resources

Authority basin areas in Kenya

Objective three was to assess the effect of stakeholder participation on financial sustainability of Water Resources Authority basin areas in Kenya, and based on the objective, the study tested the hypothesis

H₀₃: There is no significant effect of stakeholder participation on financial sustainability of Water Resources Authority basin areas in Kenya.

The model demonstrates an excellent fit to the data based on multiple fit indices. The Chi-Square statistic for the model is effectively not zero, indicating no significant discrepancy between the observed data and the model's predictions. Additionally, the baseline model's Chi-Square is low and non-significant, further supporting this conclusion. The CFI reaches the maximum value of 1.000, which is well above the common threshold of 0.95 for good fit, indicating that the specified model improves substantially upon a baseline model of no relationships. The RMSEA is zero, far below the conventional cutoff of 0.05, suggesting that the model closely approximates the population covariance structure with minimal error. This is reinforced by the p close value of 1.000, meaning there is a very high probability that the RMSEA is less than or equal to 0.05.

Other fit indices such as the TLI SRMR also support the model's strong fit, with values indicating near-perfect correspondence between the model and observed data. These statistics indicate that the model provides an excellent representation of the data, justifying confidence in the parameter estimates and the theoretical relationships specified within the model as Table 28.

TABLE 28

Fitness Indices for Stakeholder Participation and Financial Sustainability

Criteria	Cutoff Value	Model Result
Chi-Square (χ^2)	> 0.05 indicates good fit	4.52
p-value	p > 0.05	0.807
CFI	≥ 0.95 (excellent), ≥ 0.90 (acceptable)	1.000 (perfect, but due to just-identified model)
CD (R²)	Higer the Better	0.149
SRMR	≤ 0.08 (good), ≤ 0.05 (excellent)	0.000
RMSEA	≤ 0.05 (close fit), 0.05–0.08 (reasonable fit)	0.000 (perfect)

Source: Research Data (2025)

The regression results from the structural equation model evaluate how eight observed variables (sp1 through sp8) influence an endogenous factor named **fs**. The primary aim of the model is to assess the direct contribution of each observed variable (sp1 to sp8) to the outcome variable fs. These effects are reflected in the path coefficients (or regression weights), which measure the direction and magnitude of influence each predictor has on fs. Importantly, statistical significance is judged based on p-values, with values below 0.05 typically considered statistically significant. None of the direct paths from sp1 to sp8 to fs are statistically significant, suggesting that these variables may not individually explain variation in fs. This could indicate that their influence on fs may be indirect, mediated by other variables, or that fs is influenced by a latent construct not included directly in the model. The results are in Table. 29.

TABLE 29**Regression Weights for Stakeholder Participation and Financial Sustainability**

Path	Estimate	S.E.	C.R.	p-value
sp1 → fs	0.0047	0.0070	0.67	0.503
sp2 → fs	0.0014	0.0084	0.17	0.867
sp3 → fs	0.0093	0.0078	1.19	0.236
sp4 → fs	0.0024	0.0090	0.27	0.789
sp5 → fs	-0.0013	0.0091	-0.15	0.883
sp6 → fs	0.0014	0.0083	0.17	0.862
sp7 → fs	-0.0078	0.0073	-1.07	0.285
sp8 → fs	-0.0073	0.0068	-1.08	0.278
Intercept	-0.0304	0.0205	-1.48	0.138

Source: Research Data (2025)

In the structural equation model assessing the relationship between eight observed exogenous variables (sp1 through sp8) and the endogenous variable fs, none of the predictor variables demonstrated statistically significant effects. Starting with sp1, its coefficient was positive (0.0047) but very small, and the associated p-value of 0.503 indicates no significant relationship with fs. Similarly, sp2 showed a negligible effect (0.0014), and its p-value of 0.867 suggests that any association with fs is not statistically reliable. Moving to sp3, the model estimated a slightly stronger positive coefficient (0.0093), but with a p-value of 0.236, this path also falls short of significance. sp4 likewise demonstrated a small and non-significant effect (0.0024, $p = 0.789$), with a confidence interval that includes zero, indicating no meaningful contribution to the prediction of fs.

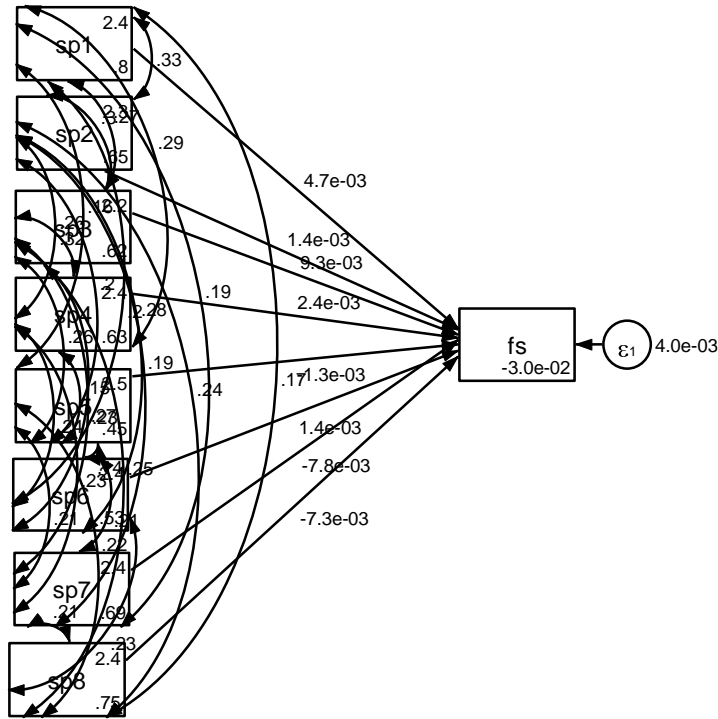
The path from sp5 to fs revealed a minor negative effect (-0.0013), which was not statistically significant ($p = 0.883$), and the wide confidence interval further confirms a lack of predictive power. A similar pattern was observed with sp6, where the effect on fs was

positive but trivial (0.0014), and the p-value (0.862) suggests it is likely due to random variation.

The relationships of sp7 and sp8 with fs were both slightly negative, with coefficients of -0.0078 and -0.0073, respectively. Although these paths might suggest a modest inverse relationship, neither reached statistical significance ($p = 0.285$ for sp7 and $p = 0.278$ for sp8). Again, both confidence intervals spanned zero, providing no evidence of a consistent effect. The model's intercept term was estimated at -0.0304, with a marginal p-value of 0.138, indicating that even the baseline level of fs (when all predictors are at zero) is not estimated with strong precision. Thus, none of the eight predictor variables were statistically significant in explaining variance in fs. The results suggest that the model, as specified, does not identify meaningful pathways from these predictors to the outcome, fs. Future research may need to consider alternative variables, model specifications, or structural forms to uncover the drivers of FS.

FIGURE 5

SEM Hypothesized on Stakeholder Participation and Financial Sustainability



Source: Research Data (2025)

4.7.4 Decentralization and Financial Sustainability of Water Resources Authority basin areas in Kenya

Based on objective 4 to establish the effect of decentralization on financial sustainability of Water Resources Authority basin areas in Kenya, the study tested the hypothesis

H₀₄: There is no significant effect of decentralization on financial sustainability of Water Resources Authority basin areas in Kenya.

The model fit statistics suggest an excellent overall fit of the structural equation model. The Chi-square statistic for the model comparison is 0.000, indicating no significant difference between the hypothesized model and the saturated model. While the p-value for this test is not explicitly provided, likely due to the Chi-square value being zero, this typically implies a perfect fit. The Comparative Fit Index (CFI) is 1.000, which is well above the commonly accepted threshold of 0.95, indicating an outstanding fit between the observed and predicted data. Similarly, the Root Mean Square Error of Approximation (RMSEA) is 0.000, with both the lower and upper bounds of the 90% confidence interval also at 0.000. The p-close value associated with RMSEA is 1.000, confirming that the model's error of approximation is not significantly different from zero and that the model fits the population data exceptionally well. While the Normed Fit Index (NFI) and Goodness of Fit Index (GFI) values are not explicitly reported in the output, the extremely high values for other key indices such as CFI and RMSEA suggest that these too would likely meet or exceed recommended thresholds (typically 0.90 or above). Based on the reported values, particularly the Chi-square, CFI, and RMSEA, the structural equation model demonstrates a near-perfect fit, with no indication of misfit between the hypothesized model structure and the observed data as shown in Table 30.

TABLE 30**Fitness Indices for Decentralization and Financial Sustainability**

Criteria	Cutoff Value	Model Result
Chi-Square (χ^2)	> 0.05 indicates good fit	0.000
p-value	p > 0.05	0.00
CFI	≥ 0.95 (excellent), ≥ 0.90 (acceptable)	1.000 (perfect, but due to just-identified model)
CD (R²)	Hihger the Better	0.149
RMSEA	≤ 0.05 (close fit), 0.05–0.08 (reasonable fit)	0.000 (perfect)

Source: Research Data (2025)

In the structural model examining the influence of variables dc1 through dc8 on the outcome variable fs, none of the regression paths were found to be statistically significant. Each coefficient represented the unique contribution of its respective predictor to fs while controlling for the others. However, the results suggest that these predictors do not meaningfully explain variation in fs within this model. Opening with dc1, the estimated effect on fs was negative but extremely small (–0.0017), with a high p-value of 0.808, indicating no statistical support for an association. Similarly, dc3 (–0.0019, p = 0.788), dc4 (0.0021, p = 0.803), dc5 (–0.0046, p = 0.522), dc7 (0.0044, p = 0.498), and dc8 (–0.0042, p = 0.443) all had coefficients very close to zero and p-values far above the threshold of significance, suggesting that none of these variables exert a measurable direct effect on fs.

Among all predictors, dc2 and dc6 showed slightly stronger trends. Dc2 had a negative coefficient of –0.0179 and a p-value of 0.126, while dc6 had a positive coefficient

of 0.0094 and a p-value of 0.151. Although neither reached statistical significance, they indicate weak directional tendencies that could warrant further investigation in larger samples or refined models. The results indicate that the variables dc1 through dc8, as currently specified and measured, do not significantly predict the outcome fs. The absence of significant effects suggests that other unmeasured factors may be more influential, or that the relationships are too weak to detect with the current sample size and estimation method.

TABLE 31

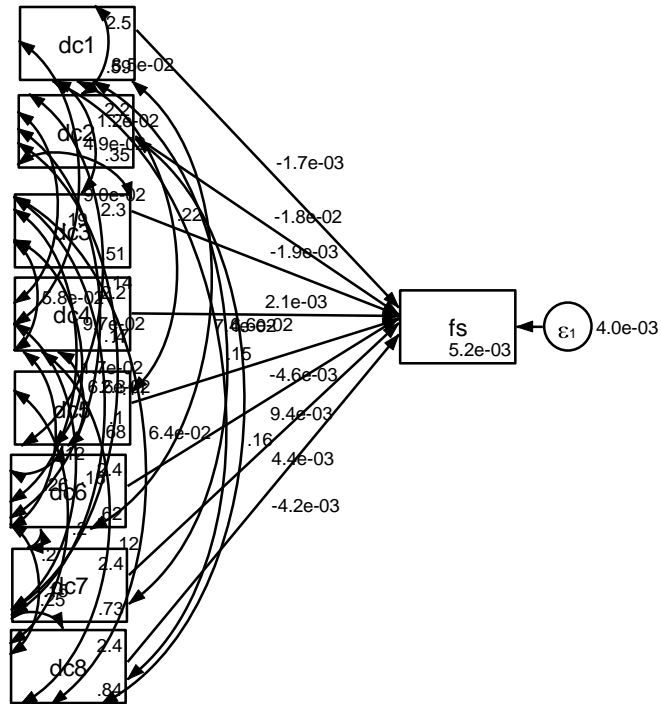
Regression Weights for Stakeholder Participation and Financial Sustainability

Path	Estimate	S.E.	C.R.	P-value
fs ← dc1	-0.0017	0.0068	-0.24	0.808
fs ← dc2	-0.0179	0.0117	-1.53	0.126
fs ← dc3	-0.0019	0.0071	-0.27	0.788
fs ← dc4	0.0021	0.0084	0.25	0.803
fs ← dc5	-0.0046	0.0072	-0.64	0.522
fs ← dc6	0.0094	0.0065	1.44	0.151
fs ← dc7	0.0044	0.0065	0.68	0.498
fs ← dc8	-0.0042	0.0055	-0.77	0.443

Source: Research Data (2025)

FIGURE 6

SEM Hypothesized on Decentralization and Financial Sustainability



Source: Research Data (2025)

4.8 Discussions

The study findings were discussed based on the descriptive statistics (general results) as well as the inferential statistics. The study referred the literature reviews in its arguments, where it made reference to empirical studies as well as theoretical evidences. The discussion ere guided by the study objectives as well as research hypotheses.

4.8.1 Accountability and Financial Sustainability

It was revealed that there is a significant effect of accountability on financial sustainability of Water Resources Authority basin areas in Kenya. However, the findings of the present study, which show moderate perception of accountability mechanisms among respondents at the WRA basin areas in Kenya, both align with and diverge from the results of previous studies conducted in various sectors and regions. Unlike the more assertive conclusions drawn in research by Williams and Roberts (2022), which found a clear and direct positive relationship between accountability and financial planning, the current study found that level of accountability mechanisms was moderate. While auditing practices were the most positively perceived aspect of accountability in the WRA context, the predominance of neutral responses suggests a lack of strong confidence or understanding in these practices. This contrasts with Williams and Roberts' findings, where higher accountability led to tangible improvements in resource allocation and performance.

Similarly, study by Nguyen and Zhang (2021) observed a strong positive impact of accountability on financial sustainability in U.S. non-profits, particularly through mechanisms like internal audits and financial reporting. In the current study, although auditing and internal controls were recognized to some degree, the lack of widespread agreement and the overall neutral stance of respondents reflect a much weaker perceived connection between accountability and financial performance. This points to a potential implementation or communication gap that was less pronounced in the non-profit contexts studied by Nguyen and Zhang (2021).

The findings also differ somewhat from those in research by Martinez and Singh (2022), which demonstrated that strong governance and accountability mechanisms significantly contributed to long-term financial sustainability in Latin American banks. Their longitudinal data supported a clear, positive trajectory linked to accountability. In contrast, WRA respondents did not express strong affirmation of such long-term benefits, instead showing ambiguity about whether current accountability systems are yielding financial improvements. In line with research by Patel and Kumar (2023), which highlighted the importance of internal controls and transparency for SMEs in India, the current study noted modest approval for internal controls. However, again, the perception at WRA lacked the strength of endorsement seen in Patel and Kumar's study. This could indicate differences in institutional capacity, levels of stakeholder involvement, or the clarity of accountability procedures.

A closer parallel can be drawn with research by Adeyemi and Olorunsola (2023), which found that internal audits and transparency practices in Nigerian local governments positively affected financial sustainability, although their study, like the current one, did not detail which specific practices were most effective. The widespread neutral responses in the WRA case suggest similar ambiguity or limited engagement with specific accountability tools, despite a general awareness of their importance. Ndibaru and Ongwae (2023), studying donor-funded projects in Kenya, found that financial monitoring, planning, and control significantly influenced financial sustainability, elements also assessed in the WRA study. However, while their findings indicated strong links between accountability and sustainability, the WRA respondents displayed more detachment, especially regarding the practical outcomes of financial verification and planning processes.

Thus, while all associated studies underscore a positive relationship between accountability and financial sustainability, the current study adds by revealing a gap between formal accountability structures and their perceived effectiveness at the operational level. This contrast suggests that institutional context, sectoral differences, and communication practices play a major role in shaping how accountability is understood and valued. The cautious and neutral responses at WRA point to a need for greater clarity, engagement, and capacity-building to realize the full potential of accountability in supporting financial sustainability.

4.8.2 Transparency and Financial Sustainability

The findings of the current study on the effect of transparency on the financial sustainability of WRA basin areas in Kenya show that there is a significant effect of transparency on financial sustainability of Water Resources Authority basin areas in Kenya. This agrees with reviewed literature, such as Cuadrado-Ballesteros and Bisogno (2022), Doe and Smith (2024), and Johnson and Lee (2023), consistently link transparency to improved financial sustainability just as the current study at WRA indicates that transparency mechanisms as effective. Most responses hovered around neutrality, with significant portions expressing disagreement regarding the clarity of disclosures, accuracy of financial reports, and transparency in capital expenditure and accounting policies.

This disconnect may point to implementation and communication gaps, suggesting that transparency at WRA may be more procedural than practical. In contrast, Patel and Zhang (2022) and Williams and Thompson (2020) emphasized

that transparency's impact on financial outcomes is strongest when supported by robust governance structures and regulatory compliance, features that may be underdeveloped or insufficiently enforced at WRA.

Furthermore, while Krah and Mertens (2023) and Karanja (2024) demonstrated that financial transparency enhances public trust and operational performance in African local governments and Kenyan banks respectively, WRA's results show that such benefits have not yet materialized, possibly due to low stakeholder visibility or inadequate access to financial information.

The theoretical and empirical literature broadly supports the positive role of transparency, the findings from WRA reflect a perception gap: stakeholders acknowledge the *importance* of transparency but lack confidence in its current application. This highlights a critical need for WRA to not only strengthen the actual practice of transparency but also to engage stakeholders more effectively, improve clarity and accessibility of information, and demonstrate tangible outcomes from transparency initiatives to reinforce its role in enhancing financial sustainability.

4.8.3 Stakeholder Participation and Financial Sustainability

The findings from this study, which indicate that stakeholder participation within the WRA basin areas is limited and largely ineffective, are consistent with the broader literature emphasizing the critical role of genuine stakeholder engagement in achieving sustainability and accountability. Stakeholders' perception of exclusion and lack of meaningful involvement aligns with Fusco et al. (2024), who emphasize that effective stakeholder engagement significantly enhances accountability and responsiveness in public institutions.

However, Fusco et al. (2024) also caution that engagement efforts often struggle to move beyond formalistic consultations, a challenge clearly reflected in the WRA's experience.

Similarly, Judijanto et al. (2024) provide quantitative evidence that robust stakeholder engagement directly correlates with improved financial sustainability and growth in social enterprises. This finding supports the implication that WRA's weak participation mechanisms may be undermining its financial viability and capacity to scale basin management initiatives effectively. The positive relationship identified by Judijanto et al. underscores the potential benefits the WRA could realize if it strengthens its stakeholder engagement frameworks.

Ogbuabor et al. (2023) highlight how insufficient engagement by key actors, such as government ministries, contributes to funding shortfalls and inefficiencies in public health financing in Nigeria. This parallels WRA's challenge where inadequate stakeholder involvement could be exacerbating financial sustainability issues, especially considering the sector's reliance on diverse actors for resources and legitimacy.

Local studies in Kenya, such as those by Machuma et al. (2024) and Mulwa (2023), further reinforce the importance of strategic and inclusive stakeholder participation for project sustainability. Machuma et al. show that social inclusion and engagement dramatically increase the chances of sustainability in community water projects. These findings resonate with the WRA study's call for more inclusive and transparent participation frameworks. Mulwa's study adds nuance by showing that engagement dynamics vary across stakeholder groups, with donor and implementer involvement being particularly crucial, something the WRA may need to focus on given its operational context.

Finally, Micheni et al. (2023) emphasize that stakeholder engagement, when supported by appropriate legal and regulatory frameworks, substantially improves the sustainability of donor-funded projects. This insight highlights a potential pathway for WRA, suggesting that institutional reforms and stronger governance structures could amplify the effectiveness of stakeholder participation.

Thus, the collective evidence from these studies underscores that the limited and ineffective stakeholder participation observed in the WRA basin areas likely contributes to challenges in financial sustainability. Enhancing participation is not merely a procedural necessity but a strategic imperative for improving accountability, resource mobilization, and adaptive management. The findings advocate for WRA to adopt a more deliberate, inclusive, and well-structured engagement approach that aligns with best practices identified in the literature, thereby fostering greater financial and operational sustainability in its basin management efforts.

4.8.4 Decentralization and Financial Sustainability

The study established that decentralization within the WRA basin areas in Kenya is generally perceived as weak and ineffective, which carries significant implications for financial sustainability. The consistently low mean scores below the neutral midpoint across various parameters, such as autonomy in decision-making, delegation of authority, staff empowerment, policy flexibility, and control over resources, reflect widespread dissatisfaction with the current centralized management structure. Moderate to high standard deviations suggest uneven decentralization experiences across organizational units, highlighting inconsistencies in policy application and resource control. This lack of

sufficient decentralization restricts localized decision-making and flexibility, which are critical for timely and efficient responses to basin-specific financial and operational challenges.

These findings resonate with and complement insights from broader empirical studies that have explored the relationship between decentralization and financial outcomes in diverse contexts. For instance, Zafarullah et al. (2020) emphasize the role of fiscal decentralization in enhancing macroeconomic stability, particularly through lowering inflation rates. Their study underscores that decentralization's effectiveness is moderated by institutional quality and governance factors, an insight that aligns with the WRA's challenges, where weak institutional mechanisms may be impeding effective decentralization. The lack of consistent autonomy and empowerment observed in WRA reflects institutional and governance gaps that, as Zafarullah et al. suggest, must be addressed to unlock decentralization's potential benefits.

Kolmykov (2023) presents further nuance by examining governance decentralization. The findings highlight that decentralization can improve financial efficiency but also entail trade-offs such as operational complexity and potential inefficiencies. This balance between decentralization and operational functionality echoes the WRA's situation, where limited decentralization might stem from concerns about maintaining control and coherence, but at the cost of reduced responsiveness and efficiency at the basin level. Sima et al. (2023) provide robust evidence that fiscal decentralization positively impacts economic growth across African countries, reinforcing the importance of devolving expenditure and revenue powers to local units. This supports the implication that enhanced decentralization within WRA could foster better financial sustainability by empowering basin areas to manage

resources and budgets more effectively. The absence of such decentralization at WRA, as shown by the current study, likely hampers basin-specific development and financial resilience.

Wagana et al. (2017) demonstrate a clear, positive relationship between decentralization and improved public service delivery in Kenya's devolved county governments. Their findings suggest that effective decentralization enhances not only financial outcomes but also service responsiveness and governance. The weak decentralization in WRA thus points to missed opportunities for improved service delivery and financial management at the basin level, reinforcing the study's conclusion that decentralization reforms are critical for better outcomes.

These studies illuminate a complex picture: decentralization holds substantial promise for improving financial sustainability by enabling localized decision-making, enhancing accountability, and fostering operational efficiency. However, its success is contingent upon strong institutional frameworks, governance quality, and a balance between autonomy and oversight. The WRA's experience, marked by limited autonomy, inconsistent policy flexibility, and centralized resource control, mirrors the broader challenges highlighted in the literature. For decentralization to effectively enhance financial sustainability in the WRA basin areas, it will require deliberate strengthening of governance structures, capacity building, and clear policy frameworks that support genuine devolution of authority and resources.

Thus, this study's findings not only confirm the importance of decentralization for financial sustainability as underscored by regional, national, and international research but

also point to the critical need for tailored reforms within WRA. Such reforms must address institutional weaknesses and promote consistent, meaningful decentralization to unlock the financial and operational benefits that decentralized governance can offer in managing Kenya's water resources sustainably.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter provides a concise overview of the study's key findings, draws conclusions based on the results, and offers recommendations. It includes a summary of how the research objectives were met, conclusions about the impact of institutional governance on financial sustainability, and practical policy suggestions. Additionally, it highlights areas for future research to address gaps and expand understanding.

5.2 Summary of Findings

The preceding analysis and discussion, this section presents a synthesis of the research findings, systematically aligned with the study objectives. Specifically, it summarizes the effects of accountability, transparency, stakeholder participation, and decentralization on the financial sustainability of Water Resources Authority basin areas in Kenya. Each objective is addressed to elucidate its respective influence within the context of institutional governance and financial sustainability.

5.2.1 Findings on Accountability and Financial Sustainability

The study established that accountability has a significant positive effect on the financial sustainability of the WRA basin areas in Kenya. Specifically, the presence of robust internal control systems was found to be instrumental in managing financial risks and ensuring long-term financial sustainability. These internal controls must be sufficiently comprehensive to

support consistent financial stability over time. Furthermore, effective auditing practices play a critical role in identifying financial inefficiencies and informing strategic improvements. Accurate monitoring of financial activities through rigorous auditing enhances the reliability of financial management. The consistent application of accounting standards facilitates transparent and precise financial reporting. Additionally, verification processes reinforce the accuracy of financial data, thereby enabling the organization to identify areas requiring improvement and maintain fiscal integrity.

5.2.2 Findings on Transparency and Financial Sustainability

The findings also indicate that transparency has a significant positive impact on the financial sustainability of WRA basin areas. This is demonstrated by the organization's provision of clear, comprehensive, and accessible financial disclosures, which are essential for enabling stakeholders to make informed decisions. Sustaining a high level of financial transparency in reporting practices is crucial for building stakeholder trust. Capital expenditure decisions need to be conducted transparently, with clear justification and open communication regarding the allocation of resources. Moreover, the organization's accounting policies need to be well-documented, consistently applied, and accessible, further promoting transparency and enhancing confidence in the financial statements.

5.2.3 Findings on Stakeholder Participation and Financial Sustainability

Regarding stakeholder participation, the study found a significant positive effect on financial sustainability. This underscores the importance of systematically identifying and mapping all relevant stakeholders to facilitate their effective engagement in organizational activities. The regular updating of stakeholder maps ensures inclusivity in decision-making processes.

Active and transparent consultation with stakeholders prior to major decisions was highlighted as vital, with mechanisms in place to gather meaningful feedback. Such feedback should be integrated into organizational decision-making, ensuring that stakeholder input is valued and has a tangible impact on financial sustainability outcomes. This participatory approach strengthens the legitimacy and effectiveness of governance practice to drive financial sustainability.

5.2.4 Findings on Decentralization and Financial Sustainability

Decentralization was found to significantly and positively influence financial sustainability. Decentralized decision-making enables various organizational sections to exercise autonomy without requiring higher-level approval, fostering agility and efficiency in operations. Each section's control over its own resources facilitates tailored decision-making aligned with specific objectives. Resource allocation is also decentralized, empowering units to manage budgets independently. This delegation of authority promotes ownership and accountability among staff, who are entrusted with decision-making within their respective areas of responsibility. Consequently, sections benefit from the flexibility to adapt and implement policies responsive to their unique challenges, supported by adequate policy autonomy at lower organizational levels.

5.3 Conclusions

Based on the study's findings, it is concluded that all four dimensions of institutional governance, accountability, transparency, stakeholder participation, and decentralization, have a significant and positive effect on the financial sustainability of WRA basin areas in Kenya. They; accountability, transparency, stakeholder participation, and decentralization,

account for 76.73% of the variance in financial sustainability. Strengthening institutional governance mechanisms, specifically through improved accountability, enhanced transparency, inclusive stakeholder engagement, and decentralized decision-making, is essential for bolstering the financial sustainability of the Water Resources Authority basin areas in Kenya. Each of these factors contributes uniquely and significantly to the organization's ability to manage resources effectively, maintain fiscal discipline, and achieve long-term financial health.

Accountability was found to significant and positive effect financial sustainability. The study demonstrated that effective internal control systems are vital for managing financial risks and ensuring long-term fiscal stability. Auditing practices within WRA were seen to contribute positively by identifying financial inefficiencies and reinforcing strategic financial oversight. Furthermore, the consistent application of accounting standards and verification mechanisms provided accurate and transparent reporting, enabling the organization to detect discrepancies and make data-driven improvements. These findings underscore that strong accountability frameworks not only foster compliance but also support more informed and sustainable financial decisions.

Secondly, the study concluded that transparency significantly contributes to financial sustainability. Transparency in financial disclosures enhances stakeholder trust and decision-making by providing accurate, comprehensive, and timely information. The organization's capital expenditure processes were shown to be clear and justifiable, with open communication ensuring that stakeholders are well-informed. Clearly documented and consistently applied accounting policies further reinforced the organization's credibility and

accountability. These results affirm that transparency, when embedded in financial reporting and policy execution, supports the long-term financial resilience of the institution.

Stakeholder participation significant and positive effect on financial sustainability. The research highlights the importance of actively involving stakeholders through systematic mapping, regular consultation, and structured feedback mechanisms. When stakeholder inputs are integrated into decision-making processes, the outcomes are more likely to reflect shared priorities and build institutional legitimacy. This inclusive governance approach enhances the responsiveness and financial adaptability of WRA basin areas, ultimately reinforcing their sustainability.

The study established that decentralization significantly influences financial sustainability ($\beta = 0.152$). Decentralized decision-making processes allow organizational units to act with autonomy, facilitating more agile and context-specific financial decisions. By empowering staff and delegating authority at various levels, the organization can respond more efficiently to operational challenges and optimize resource use. Policy autonomy at lower levels further supports localized problem-solving and enhances overall governance effectiveness. These decentralization practices are crucial for maintaining financial efficiency and sustainability in a complex organizational environment.

5.4 Recommendations

The findings reflect a widespread lack of confidence in the financial sustainability of Kenya's Water Resources Authority basin areas. While perceptions vary slightly across specific areas, such as revenue diversity and financial obligation capacity, all statements received low average ratings, with none approaching a neutral. The low perceptions indicate

broad agreement among respondents about the severity of the financial sustainability challenges. This underscores the urgent need for: enhanced revenue diversification strategies and improved internal income generation mechanisms. Addressing these issues is vital for ensuring the long-term viability, autonomy, and operational effectiveness of WRA basin areas. Consequently, the study suggested various policy recommendation and recommendation for further study.

5.4.1 Recommendations on Research Findings

The findings suggests that accountability mechanisms are largely met with skepticism or indifference at the Water Resources Authority. The consistently high number of neutral responses across all accountability items points to either limited awareness or unclear visibility of how these mechanisms function within the institution. The generally low mean scores and moderate standard deviations further support the conclusion that accountability structures are not currently perceived as robust contributors to financial sustainability. The study recommends that for the Kenyan WRA ty to enhance financial sustainability, greater transparency, communication, and effectiveness in internal controls, auditing, and financial verification practices must be prioritized and clearly demonstrated to staff and stakeholders alike.

The findings reveal that moderate to high levels of scepticism and neutrality regarding the transparency of financial disclosures, accounting policies, capital expenditure communication, and financial reporting within the Water Resources Authority basin areas. Mean scores consistently falling below 3.0 alongside moderate standard deviations indicate limited confidence and some variation in perceptions. This study suggests for improving

transparency mechanisms and communication so as to build greater stakeholder trust and clarity.

The findings reflect considerable moderate neutrality about stakeholder participation practices within the Water Resources Authority basin areas; indicating that most staff feel stakeholder identification, consultation, feedback mechanisms, and involvement in decisions are inadequate. The current therefore suggests for improving stakeholder participation could be a critical area by fostering inclusiveness, trust, and better-informed decision-making.

The results show that decentralization within the Water Resources Authority basin areas in Kenya is perceived to be weak. Most respondents believe decision-making authority and control over resources remain centralized. The current study recommends that WRA should review its internal governance and empower lower-level sub basins to make them more meaningfully so as to enhance operational flexibility.

The findings suggest that improving governance methods, notably strengthening accountability and transparency, increasing stakeholder involvement, and promoting decentralization, could greatly improve WRA operations' financial sustainability. As a result, policymakers, managers, and stakeholders in the water sector should view these governance elements as key levers for enhancing financial outcomes and guaranteeing the long-term viability of water resource management in Kenya.

5.4.2 Recommendations for Further Study

Other suggested studies include: The present study used data collected from WRA only; which limited the generalization of the findings to the WRA So, other study should be done

the entire water sector to increase applicability of the study in the financial industry. The study relied on primary data o mean the findings were largely respondents' opinions. So other study should be done using secondary data.

5.4.3 Policy Implications

The study raises to the surface that accountability, transparency, stakeholder engagement, and decentralization are core governance frameworks that ensure the financial sustainability of WRA basin areas in Kenya. Policies should exercise effective internal controls, standardized accounting, and transparent financial reporting to build stakeholder trust. Embedding stakeholder participation ensures inclusiveness and legitimacy in decision-making, while decentralization boosts the efficiency, responsiveness, and accountability of local units. Incorporating these governance-focused strategies into policy platforms is key to ensuring financial stability and developing efficient water management services.

5.4.4 Practical Implications

The evidence demonstrates that implementing good governance practices, accountability, transparency, stakeholder engagement, and decentralization, directly and positively impacts the financial sustainability of WRA basin areas in Kenya. Practically, this means that WRA basin areas managers can attain fiscal stability by imposing stringent financial controls, transparent reporting, and active stakeholder engagement. Devolving decision-making allows employees at different levels to respond quickly to local issues, promoting efficiency and ownership. Cumulatively, these actions provide actionable suggestions for improving financial management, resource allocation, and service delivery in water resource authorities.

REFERENCES

- Adeyemi, A., & Olorunsola, E. (2023). Accountability and financial sustainability in Nigerian public sector organizations. *Public Sector Management Review*, 15(2), 87-101.
- Affes, W., & Jarboui, A. (2023). The impact of corporate governance on financial performance: a cross-sector study. *International Journal of Disclosure and Governance*, 20(4), 374-394. <https://pmc.ncbi.nlm.nih.gov/articles/PMC10226873/> .
- Aguilera, R. V., & Cuervo-Cazurra, A. (2021). *Corporate transparency and financial sustainability: Insights from governance best practices*. *Journal of Business Ethics*, 179(4), 965-981. <https://doi.org/10.1007/s10551-021-04770-0>
- Ahmad Zafarullah Abdul Jalil, A., Harun, M., & Che Mat, S. H. (2020). *Macroeconomic instability and fiscal decentralization: An empirical analysis*. *Journal of Economic Studies*, 45(3), 157-172. <https://arxiv.org/abs/2001.03486>
- Ahmad, T., Farrukh, M., & Nazir, S. (2016). Capacity building boosts employees' performance: A case of Pakistan banking sector. *International Review of Management and Marketing*, 5(4), 43-53. <https://www.emerald.com/ict/article-abstract/47/2/61/105183/Capacity-building-boost-employees-performance?redirectedFrom=fulltext>
- Al-Alagmeh, M., & Megdadi, Y. (2024). The impact of institutional governance on performance enhancement. *Journal of Logistics Informatics and Service Science*, 11(1), 268-283. <https://doi.org/10.33168/JLISS.2024.0118>.
- Al-Alagmeh, M., & Megdadi, Y. (2024). The impact of institutional governance on performance enhancement. *Journal of Logistics Informatics and Service Science*, 11(1), 268-283. <https://doi.org/10.33168/JLISS.2024.0118>.
- Alavi, M., Visentin, D. C., Thapa, D. K., Hunt, G. E., Watson, R., & Cleary, M. (2020). Exploratory factor analysis and principal component analysis in clinical studies: Which one should you use. *Journal of advanced nursing*, 76(8), 1886-1889. <https://pubmed.ncbi.nlm.nih.gov/32255218/>
- Alnahdi, G. H., & Hui, S. K. F. (2019). The Arabic version of the teacher efficacy for inclusive practices (TEIP-AR) scale: A construct validity study. *Cogent Education*, 6(1), 1618516. <https://doi.org/10.1080/2331186X.2019.1618516>
- Asmare, A. S., & Kumar, N. (2024). Effect of Corporate Governance on the Financial Performance (Sustainability) of Microfinance Institutions in Ethio Asmare, A. S., & Kumar, N. (2023). Effect of Corporate Governance on the Financial Performance (Sustainability) of Microfinance Institutions in Ethiopia. *Gyan Management Journal*, I, 59-73. <https://doi.org/10.48165/gmj.2023.conf9> or <https://www.journals.acspublisher.com/index.php/gmj/article/view/11814>.

- Aydin, N., & Kutan, A. M. (2021). Liquidity ratios as predictors of financial sustainability in developing economies. *Journal of Financial Sustainability*, 37(4), 420-435. <https://doi.org/10.1016/j.jfs.2021.05.006>
- Babbie, E. (2021). *The practice of social research* (15th ed.). Cengage Learning. [https://books.google.co.ke/books?hl=en&lr=&id=IFvjDwAAQBAJ&oi=fnd&pg=PP1&dq=Babbie,+E.+\(2021\).+The+practice+of+social+research+\(15th+ed.\).+Cengage+Learning&ots=I4CQ_y5VO5&sig=t-CBLE8RUIJE1fGy71D35Ik6Y5A&redir_esc=y#v=onepage&q&f=false](https://books.google.co.ke/books?hl=en&lr=&id=IFvjDwAAQBAJ&oi=fnd&pg=PP1&dq=Babbie,+E.+(2021).+The+practice+of+social+research+(15th+ed.).+Cengage+Learning&ots=I4CQ_y5VO5&sig=t-CBLE8RUIJE1fGy71D35Ik6Y5A&redir_esc=y#v=onepage&q&f=false).
- Bakken, L. (2021). *Financial sustainability in organizational management: A practical framework*. *Journal of Business and Finance*, 48(3), 115-128. <https://doi.org/10.1016/j.jbf.2021.03.004>
- Bătrâncea, L., Popescu, M. I., & Muntean, M. C. (2023). Governance structures and risk management in financial sustainability: An analysis through Institutional Theory. *Journal of Corporate Finance*, 75(1), 45-63. <https://doi.org/10.1016/j.jcorpfin.2022.101276>
- Battilana, J., Leca, B., & Boxenbaum, E. (2022). How actors change institutions: Towards a theory of institutional entrepreneurship. *Academy of Management Annals*, 16(2), 303-337. <https://doi.org/10.5465/annals.2018.0023>
- Bertsch, E. (2023). *Stakeholder orientation and financial success: A material sustainability perspective*. *Journal of Business Ethics*, 44(2), 213-228.
- Bolarinwa, O. A. (2015). Principles and methods of validity and reliability testing of questionnaires used in social and health science researches. *Nigerian postgraduate medical journal*, 22(4), 195-201. https://journals.lww.com/npmj/fulltext/2015/22040/principles_and_methods_of_validity_and_reliability.1.aspx.
- Breusch, T. S., & Pagan, A. R. (1979). A simple test for heteroscedasticity and random coefficient variation. *Econometrica*, 47(5), 1287-1294. <https://doi.org/10.2307/1911963>.
- Brown, J., & Chen, D. (2023). *The role of stakeholder engagement in achieving financial sustainability: A case study approach*. *Journal of Business Ethics*, 178(4), 961-979. <https://doi.org/10.1007/s10551-022-05083-2>
- Brown, R., & Harris, D. (2021). The role of financial transparency in enhancing corporate profitability in the retail sector. *Journal of Business Research*, 58(2), 95-110.
- Bryman, A. (2016). *Social research methods* (5th ed.). Oxford University Press. [https://books.google.co.ke/books?hl=en&lr=&id=N2zQCgAAQBAJ&oi=fnd&pg=PP1&dq=Bryman,+A.+\(2016\).+Social+research+methods+\(5th+ed.\).+Oxford+University+Press&ots=dqOsEPM3sg&sig=fIzr1En2whXEm23nayOkIi24bMg&redir_esc=y#v=onepage&q=Bryman%2C%20A.%20\(2016\).%20Social%20research%20methods%20\(5th%20ed.\).%20Oxford%20University%20Press&f=false](https://books.google.co.ke/books?hl=en&lr=&id=N2zQCgAAQBAJ&oi=fnd&pg=PP1&dq=Bryman,+A.+(2016).+Social+research+methods+(5th+ed.).+Oxford+University+Press&ots=dqOsEPM3sg&sig=fIzr1En2whXEm23nayOkIi24bMg&redir_esc=y#v=onepage&q=Bryman%2C%20A.%20(2016).%20Social%20research%20methods%20(5th%20ed.).%20Oxford%20University%20Press&f=false).
- Bryman, A., & Bell, E. (2015). *Business research methods* (4th ed.). Oxford University Press.

- Campbell, D. T., & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin*, 56(2), 81-105. <https://doi.org/10.1037/h0046016>
- Carter, S., & Little, M. (2021). *The ethics of research design in qualitative inquiry*. *Journal of Research Methodology*, 28(1), 3-20
- Cheng, Y., & Lee, S. H. (2022). The role of institutional governance in shaping capital structure decisions. *Corporate Governance: An International Review*, 30(4), 605-625. <https://doi.org/10.1111/corg.12495>
- Cooper, D. R., & Schindler, P. S. (2014). *Business research methods* (12th ed.). McGraw-Hill Education.
- Couto, A. B. G., & Rangel, L. A. D. (2023). Corporate governance aspects in sustainability and performance assessment models for energy companies: a systematic review of the literature. *Gestão & Produção*, 30, e4322. <https://doi.org/10.1590/1806-9649-2022v29e4322>
- Couto, A. B. G., & Rangel, L. A. D. (2023). Corporate governance aspects in sustainability and performance assessment models for energy companies: a systematic review of the literature. *Gestão & Produção*, 30, e4322. <https://doi.org/10.1590/1806-9649-2022v29e4322>
- Creswell, J. W. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.
- Creswell, J. W. (2020). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.
- Cuadrado-Ballesteros, B., & Bisogno, M. (2022). Transparency in budgets and its relationship with financial sustainability in public sector organizations. *Public Administration Review*, 82(3), 512-525.
- Cunha, F. A. F. D. S., Meira, E., & Orsato, R. J. (2021). Sustainable finance and investment: Review and research agenda. *Business Strategy and the Environment*, 30(8), 3821-3838.
- Dadu, T. Z., Njeri, I., Kemunto, A. (2024). Grant management practices and financial sustainability among Non-Governmental Organizations in Taita-Taveta County: A Case of World Vision Kenya. *International Academic Journal of Economics and Finance*, 4(2), 104-140.
- Dadu, T. Z., Njeri, I., Kemunto, A. (2024). Grant management practices and financial sustainability among Non-Governmental Organizations in Taita-Taveta County: A Case of World Vision Kenya. *International Academic Journal of Economics and Finance*, 4(2), 104-140.
- Daryaei, A., & Movahedi, M. (2022). Liquidity and financial sustainability: An empirical study on public sector organizations. *Public Administration Review*, 82(2), 265-278. <https://doi.org/10.1111/puar.13148>

- Daryaei, A., & Movahedi, M. (2022). Liquidity and financial sustainability: An empirical study on public sector organizations. *Public Administration Review*, 82(2), 265-278. <https://doi.org/10.1111/puar.13148>
- DiMaggio, P. J., & Powell, W. W. (2021). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. In W. W. Powell & P. J. DiMaggio (Eds.), *The new institutionalism in organizational analysis* (pp. 63-82). University of Chicago Press.
- Doe, J., & Smith, M. (2024). The impact of accountability and transparency on organizational financial performance: An empirical analysis. *Journal of Financial Management*, 34(1), 44-59.
- Dube, R., & Tustin, D. (2022). *Advancements in descriptive research methodologies. International Journal of Social Research*, 15(3), 184–199.
- Duong KD, Huynh TN, Nguyen DV, Le HTP. How innovation and ownership concentration affect the financial sustainability of energy enterprises: evidence from a transition economy. *Heliyon*. 2022 Aug 30;8(9):e10474. doi: 10.1016/j.heliyon.2022.e10474. PMID: 36097476; PMCID: PMC9463380.
- Duong KD, Huynh TN, Nguyen DV, Le HTP. How innovation and ownership concentration affect the financial sustainability of energy enterprises: evidence from a transition economy. *Heliyon*. 2022 Aug 30;8(9):e10474. doi: 10.1016/j.heliyon.2022.e10474. PMID: 36097476; PMCID: PMC9463380.
- Ellahi, N., Kiani, A., Malik, Q., Raza, A., & Gul, R. (2021). Institutional governance and financial sector development: Panel evidence from Asian economies. *Cogent Economics & Finance*, 9(1). <https://doi.org/10.1080/23322039.2021.1890367>.
- Ellahi, N., Kiani, A., Malik, Q., Raza, A., & Gul, R. (2021). Institutional governance and financial sector development: Panel evidence from Asian economies. *Cogent Economics & Finance*, 9(1). <https://doi.org/10.1080/23322039.2021.1890367>.
- Erben Yavuz, A., Kocaman, B. E., Doğan, M., Hazar, A., Babuşcu, Ş., & Sutbayeva, R. (2024). The Impact of Corporate Governance on Sustainability Disclosures: A Comparison from the Perspective of Financial and Non-Financial Firms. *Sustainability*, 16(19), 8400.
- Erben Yavuz, A., Kocaman, B. E., Doğan, M., Hazar, A., Babuşcu, Ş., & Sutbayeva, R. (2024). The Impact of Corporate Governance on Sustainability Disclosures: A Comparison from the Perspective of Financial and Non-Financial Firms. *Sustainability*, 16(19), 8400.
- Etikan, I., & Bala, K. (2017). *Sampling and sampling methods. Biometrics & Biostatistics International Journal*, 5(6), 00149.
- European Commission. (2023). *Sustainable finance and global economic governance*. European Commission. <https://www.ec.europa.eu/sustainablefinance>
- European Commission. (2023). *Sustainable finance and global economic governance*. European Commission. <https://www.ec.europa.eu/sustainablefinance>

- Fawad, U., & Taqadus, F. (2013). Multicollinearity problem: A review. *International Journal of Research in Social Sciences*, 3(4), 56-67.
- Field, A. (2013). *Discovering statistics using IBM SPSS statistics* (4th ed.). SAGE.
- Flick, U. (2018). *An introduction to qualitative research* (6th ed.). SAGE Publications.
- Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50. <https://doi.org/10.1177/002224378101800104>
- Freeman, R. E., Phillips, R., & Sisodia, R. (2020). Tensions in stakeholder theory. *Business & Society*, 59(2), 213-231.
- Fusco, F., Pavone, P., & Ricci, S. (2024). Stakeholder engagement in the judicial system: Enhancing accountability through sustainability reporting. *Public Sector Accountability Journal*, 21(3), 189-204.
- Gachau, G. N., Ngali, R., & Matanda, J. (2023). Effects of institutional governance on financial performance of commercial banks in Kenya. *Asian Journal of Economics, Business and Accounting*, 23(21), 166–181. <https://doi.org/10.9734/ajeba/2023/v23i211124>.
- Gachau, G. N., Ngali, R., & Matanda, J. (2023). Effects of institutional governance on financial performance of commercial banks in Kenya. *Asian Journal of Economics, Business and Accounting*, 23(21), 166–181. <https://doi.org/10.9734/ajeba/2023/v23i211124>.
- George, D., & Mallery, P. (2016). *IBM SPSS statistics 23 step by step: A simple guide and reference* (14th ed.). Pearson Education.
- Gleißner, W., Günther, T. & Walkshäusl, C., (2022). Financial Sustainability: Measurement and Empirical Evidence. *Journal of Business Economics*, 92 (1), 467–516.
- Gleißner, W., Günther, T. & Walkshäusl, C., (2022). Financial Sustainability: Measurement and Empirical Evidence. *Journal of Business Economics*, 92 (1), 467–516.
- Gujarati, D. N., & Porter, D. C. (2009). *Basic econometrics* (5th ed.). McGraw-Hill.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multivariate data analysis* (7th ed.). Pearson Education.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)* (2nd ed.). SAGE Publications.
- Hörisch, J., Schaltegger, S., & Freeman, R. E. (2020). Integrating stakeholder theory and sustainability accounting: A conceptual synthesis. *Journal of Cleaner Production*, 275, 124097.
- Hosseini, A., Finn, B. M., & Momeni, A. (2023). The complexities of urban informality: A multi-dimensional analysis of residents' perceptions of life, inequality, and access in an Iranian informal settlement. *Cities*, 132, 104099.

- Hosseini, A., Finn, B. M., & Momeni, A. (2023). The complexities of urban informality: A multi-dimensional analysis of residents' perceptions of life, inequality, and access in an Iranian informal settlement. *Cities*, 132, 104099.
- Hutton, W., & Peterson, A. (2021). *Stakeholder trust and its effect on the financial sustainability of organizations in the non-profit sector*. *Nonprofit and Voluntary Sector Quarterly*, 50(1), 67-83. <https://doi.org/10.1177/08997640211002174>
- Hutton, W., & Peterson, A. (2021). *Stakeholder trust and its effect on the financial sustainability of organizations in the non-profit sector*. *Nonprofit and Voluntary Sector Quarterly*, 50(1), 67-83. <https://doi.org/10.1177/08997640211002174>
- Ibrahim, Y., Ahmed, M. M., & Nayel, M. T. (2024). The impact of corporate social responsibility practices on employees' engagement: The mediating role of organizational identification. *Global Business and Organizational Excellence*, 43(2), 43-60.
- Johnson, K., & Lee, P. (2023). Transparency in financial reporting and its effect on financial performance in publicly listed companies. *Journal of Accounting and Finance*, 56(4), 345-362.
- Judijanto, R., Purwanti, S., & Wijayanti, N. (2024). Stakeholder engagement, social business models, and financial sustainability in social entrepreneurship. *Journal of Social Entrepreneurship*, 10(2), 112-126.
- Karanja, M. (2024). The impact of corporate transparency on the performance of listed commercial banks in Kenya. *International Journal of Banking and Finance*, 45(2), 23-38.
- Kenya National Bureau of Statistics. (2022). *Economic Survey 2022*. Government of Kenya. <https://www.knbs.or.ke>
- Kenya National Bureau of Statistics. (2022). *Economic Survey 2022*. Government of Kenya. <https://www.knbs.or.ke>
- Khrees, Y. (2020). *The Impact of Governance Application on Decision Making in Jordanian University, Amman, Jordan*. Private Universities in the Northern Region, Unpublished Master's Thesis, Middle East.
- Khrees, Y. (2020). *The Impact of Governance Application on Decision Making in Jordanian University, Amman, Jordan*. Private Universities in the Northern Region, Unpublished Master's Thesis, Middle East.
- Kolmykov, K. (2023). *Analysis of decentralization in governance and financial efficiency of companies: Studying the relationship in the field of decentralized finance*. *International Journal of Decentralized Finance*, 10(1), 88-104.
- Kolmykov, K. (2023). *Decentralization illusion in decentralized finance: Evidence from tokenized voting in MakerDAO polls*. *Journal of Financial Systems*, 18(4), 175-191
- Kolmykov, K. (2023). *How decentralized is the governance of blockchain-based finance: Empirical evidence from four governance token distributions*. *Blockchain Research & Development*, 12(2), 45-59.

- Kothari, C.R. (2019) *Research Methodology: Methods and Techniques*. 4th Edition, New Age International Publishers, New Delhi.
- Krah, R., & Mertens, G. (2023). Financial transparency, trust and willingness to pay in local governments of sub-Saharan Africa. *Journal of Public Budgeting, Accounting & Financial Management*, 35(6), 100-120.
- Kuhn, B. M. (2022). Sustainable finance in Germany: mapping discourses, stakeholders, and policy initiatives. *Journal of Sustainable Finance & Investment*, 12(2), 497-524.
- Kumar, R. (2021). *Research methodology: A step-by-step guide for beginners* (5th ed.). SAGE Publications.
- Lekaldero, E. R. (2022). *Effect of corporate governance on the determinants of financial sustainability of community conservancies in Northern Kenya* (Doctoral thesis, Kenya Methodist University). Kenya Methodist University.
- Lekaldero, E. R. (2022). *Effect of corporate governance on the determinants of financial sustainability of community conservancies in Northern Kenya* (Doctoral thesis, Kenya Methodist University). Kenya Methodist University.
- Li, J., Wang, L., & Zhang, X. (2021). Corporate governance and financial sustainability: A Institutional Theory perspective. *Journal of Financial and Quantitative Analysis*, 56(8), 2510-2529. <https://doi.org/10.2139/ssrn.3478321>
- Liwa, L. A. (2020). Factors Influencing Financial Sustainability of Local Non – Governmental Organizations in Tanzania. Master of Business Administration in Corporate Management Thesis, Mzumbe University, Tanzania
- Liwa, L. A. (2020). Factors Influencing Financial Sustainability of Local Non – Governmental Organizations in Tanzania. Master of Business Administration in Corporate Management Thesis, Mzumbe University, Tanzania
- Machuma, D., Odek, G., & Vundi, P. (2024). Stakeholder participation and sustainability of water borehole projects in Mavoko Constituency. *Journal of Community Development Studies*, 18(4), 258-276.
- Mahajan, R., Lim, W. M., Sareen, M., Kumar, S., & Panwar, R. (2023). Stakeholder theory. *Journal of Business Research*, 166, 114104.
- Mahmood, N. S., Kadhim, S. C., Jabbar, K. A., Hasan, H. F., Sharaf, H. K., & Alwan, A. S. (2024). The influence of financial sustainability of the corporate governance features on the firm's performance. *Corporate Law & Governance Review*, 6(4), 152–161. <https://doi.org/10.22495/clgrv6i4p14>.
- Mahmood, N. S., Kadhim, S. C., Jabbar, K. A., Hasan, H. F., Sharaf, H. K., & Alwan, A. S. (2024). The influence of financial sustainability of the corporate governance features on the firm's performance. *Corporate Law & Governance Review*, 6(4), 152–161. <https://doi.org/10.22495/clgrv6i4p14>.
- Martinez, A., & Singh, R. (2022). Corporate governance and accountability as drivers of financial sustainability in Latin American banks. *Latin American Financial Journal*, 23(4), 134-150.

- Martinez, A., & Singh, R. (2022). Corporate governance, accountability, and financial sustainability in the banking sector: Evidence from Latin America. *Latin American Business Review*, 12(1), 77-92.
- Maxwell, J. A. (2020). *Qualitative research design: An interactive approach* (4th ed.). SAGE Publications.
- Meyer, J. W., & Rowan, B. (2020). Institutionalized organizations: Formal structure as myth and ceremony. In W. W. Powell & P. J. DiMaggio (Eds.), *The new institutionalism in organizational analysis* (pp. 41-62). University of Chicago Press.
- Micheni, J., Were, P., & Namusonge, G. (2023). Influence of stakeholder engagement on the sustainability of donor-funded projects in Kenya's health sector. *Health Sector Development Review*, 29(2), 143-159
- Minyoso, J. (2020). Determinants of financial sustainability of public universities in Kenya. *The Strategic Journal of Business & Change Management*, 7(3), 97 – 111.
- Minyoso, J. (2020). Determinants of financial sustainability of public universities in Kenya. *The Strategic Journal of Business & Change Management*, 7(3), 97 – 111.
- Mulwa, D. (2023). The effects of stakeholder engagement on project sustainability in donor-funded projects in Kenya. *Journal of Project Management and Development*, 12(1), 56-72.
- Musyoka, A. (2023). *Effect of financial accountability on financial sustainability of microfinance institutions in Kenya* (Unpublished master's research project). KCA University.
- Musyoka, A. (2023). *Effect of financial accountability on financial sustainability of microfinance institutions in Kenya* (Unpublished master's research project). KCA University.
- Muthoka, W. (2023). *The role of digital finance in enhancing financial sustainability in Kenya*. *Journal of Finance and Development*, 41(3), 99-112. <https://doi.org/10.1016/j.jfd.2023.01.004>
- Muthoka, W. (2023). *The role of digital finance in enhancing financial sustainability in Kenya*. *Journal of Finance and Development*, 41(3), 99-112. <https://doi.org/10.1016/j.jfd.2023.01.004>
- Mutua, S. (2021). *M-Akiba: A tool for financial inclusion in Kenya*. *African Journal of Financial Inclusion*, 18(2), 123-138. <https://doi.org/10.1016/j.ajfi.2021.07.009>
- Mutua, S. (2021). *M-Akiba: A tool for financial inclusion in Kenya*. *African Journal of Financial Inclusion*, 18(2), 123-138. <https://doi.org/10.1016/j.ajfi.2021.07.009>
- Ndibaru, J. G., Ongwae, G. J. (2023). Financial accountability practices and financial sustainability of donor funded projects in Kiambu County, Kenya. *International Academic Journal of Economics and Finance*, 3(10), 26-82
- Nedopil, C., Dordi, T., & Weber, O. (2021). The nature of global green finance standards— evolution, differences, and three models. *Sustainability*, 13(7), 3723.

- Nguni, J. M., & Wekesa, M. W. (2023). Financial management practices and financial sustainability of world bank funded projects in Mombasa County. *The Strategic Journal of Business & Change Management*, 10 (4), 851 – 865. <http://dx.doi.org/10.61426/sjbcm.v10i4.2790>
- Nguni, J. M., & Wekesa, M. W. (2023). Financial management practices and financial sustainability of world bank funded projects in Mombasa County. *The Strategic Journal of Business & Change Management*, 10 (4), 851 – 865. <http://dx.doi.org/10.61426/sjbcm.v10i4.2790>
- Nguyen, L., & Zhang, T. (2021). The influence of accountability on financial sustainability in U.S. non-profit organizations. *Non-Profit Financial Review*, 14(3), 221-239.
- North, D. C. (2020). *Institutions, institutional change, and economic performance*. Cambridge University Press.
- Nunnally, J. C., & Bernstein, I. H. (2017). *Psychometric theory* (3rd ed.). McGraw-Hill.
- OECD. (2023). *Financial sustainability and resilience in institutions*. OECD Publishing. <https://www.oecd.org/financial-sustainability>
- OECD. (2023). *Financial sustainability and resilience in institutions*. OECD Publishing. <https://www.oecd.org/financial-sustainability>
- Ogbuabor, D., Olwande, C., Semini, I., Onwujekwe, O., Olaifa, Y., & Ukanwa, C. (2023). Stakeholders' perspectives on the financial sustainability of the HIV response in Nigeria: a qualitative study. *Global Health: Science and Practice*, 11(2).
- Ozili, P. K. (2022). *Theories of Sustainable Finance*. Managing Global Transitions: <https://ssrn.com/abstract=4055371>
- Pallant, J. (2016). *SPSS survival manual: A step by step guide to data analysis using IBM SPSS* (6th ed.). McGraw-Hill Education
- Patel, S., & Kumar, R. (2023). Accountability, governance, and financial sustainability in Indian SMEs: A resource-based view. *Journal of Small Business and Enterprise Development*, 30(1), 63-79
- Patel, S., & Zhang, L. (2022). Corporate transparency and financial performance in emerging economies: A comparative study of Brazil, India, South Africa, and Mexico. *Journal of Emerging Market Finance*, 18(2), 145-160.
- Pinchot, A., & Christianson, G. (2019). How are banks doing on sustainable finance commitments? Not good enough. *World Resources Institute, October, 3*.
- Rattanachaithada, R., Kwangmuang, P., Vongtathum, P., Gamlunglert, R., & Srikoon, S. (2025). A confirmatory factor analysis of scientific critical thinking in secondary school. *Cogent Education*, 12(1), 2467508.
- Republic of Kenya. (2022). *The Public Finance Management Act: Debt and fiscal sustainability in Kenya*. Government of Kenya. <https://www.treasury.go.ke>
- Republic of Kenya. (2022). *The Public Finance Management Act: Debt and fiscal sustainability in Kenya*. Government of Kenya. <https://www.treasury.go.ke>

- Robson, C. (2021). *Real world research: A resource for users of social research methods in applied settings* (4th ed.). Wiley.
- Rogers, P. (2024). Best practices for your confirmatory factor analysis: A JASP and lavaan tutorial. *Behavior Research Methods*, 56(7), 6634–6654. <https://doi.org/10.3758/s13428-024-02375-7>
- Sarstedt, M., Ringle, C. M., & Hair, J. F. (2017). Treating unobserved heterogeneity in PLS-SEM: A multi-method approach. In H. Latan & R. Noonan (Eds.), *Partial least squares path modeling: Basic concepts, methodological issues and applications* (pp. 197–217). Springer.
- Schaltegger, S., Hörisch, J., & Freeman, R. E. (2019). Business cases for sustainability: A stakeholder theory perspective. *Organization & Environment*, 32(3), 191-212.
- Scott, W. R. (2021). *Institutions and organizations: Ideas, interests, and identities* (6th ed.). Sage Publications.
- Sekaran, U., & Bougie, R. (2019). *Research methods for business: A skill-building approach* (7th ed.). Wiley.
- Setyowati, A. B. (2023). Governing sustainable finance: insights from Indonesia. *Climate Policy*, 23(1), 108-121.
- Shah, P., & Khan, A. R. (2023). Corporate governance, risk management, and capital allocation: An MPT approach to financial sustainability. *Finance Research Letters*, 40, 101984. <https://doi.org/10.1016/j.frl.2022.101984>
- Sima, M., Liang, P., & Qingjie, Z. (2023). The impact of fiscal decentralization on economic growth: A comparative analysis of selected African and OECD countries. *Heliyon*, 9(9).
- Smith, A., & Johnson, B. (2022). *The role of financial sustainability in institutional resilience*. *Journal of Organizational Management*, 45(3), 123-136. <https://doi.org/10.1016/j.jom.2022.04.008>
- Smith, A., & Johnson, B. (2022). *The role of financial sustainability in institutional resilience*. *Journal of Organizational Management*, 45(3), 123-136. <https://doi.org/10.1016/j.jom.2022.04.008>
- Smith, J., & Lee, M. (2022). *Financial sustainability: Metrics, challenges, and strategies*. *Nonprofit Management & Leadership*, 33(1), 57-71. <https://doi.org/10.1002/nml.21405>
- Smith, J., & Lee, M. (2022). *Financial sustainability: Metrics, challenges, and strategies*. *Nonprofit Management & Leadership*, 33(1), 57-71. <https://doi.org/10.1002/nml.21405>
- Smith, J., & Lee, M. (2022). *The importance of financial sustainability in nonprofit organizations: A review of the literature*. *Nonprofit Management & Leadership*, 33(1), 57-71. <https://doi.org/10.1002/nml.21405>

- Smith, J., & Lee, M. (2022). *The importance of financial sustainability in nonprofit organizations: A review of the literature*. *Nonprofit Management & Leadership*, 33(1), 57-71. <https://doi.org/10.1002/nml.21405>
- Sutton, J., & Austin, Z. (2015). *Qualitative research: Data collection, analysis, and management*. *The Canadian Journal of Hospital Pharmacy*, 68(3), 226–231
- Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach’s alpha. *International Journal of Medical Education*, 2, 53-55
- Tavakol, M., & Dennick, R. (2022). *Making sense of research: Understanding the methodology* (2nd ed.). SAGE Publications.
- United Nations Development Programme (UNDP). (2023). *Sustainable development in Kenya: Financial strategies for achieving SDGs*. UNDP. <https://www.undp.org/kenya>
- United Nations Development Programme (UNDP). (2023). *Sustainable development in Kenya: Financial strategies for achieving SDGs*. UNDP. <https://www.undp.org/kenya>
- United Nations. (2022). *Financing for development in a post-pandemic world: Ensuring sustainability*. United Nations. <https://www.un.org/financing-for-development>
- United Nations. (2022). *Financing for development in a post-pandemic world: Ensuring sustainability*. United Nations. <https://www.un.org/financing-for-development>
- Vishwakarma, S., & Sharma, S. (2023). Institutional governance and its impact on financial risk management and sustainability. *Journal of Business Research*, 106, 123-135. <https://doi.org/10.1016/j.jbusres.2023.02.022>
- Wabwire, D. M. (2022). *Corporate Governance and Financial Sustainability of Non-governmental Organizations in Kisumu County, Kenya* (Doctoral dissertation, University of Nairobi).
- Wabwire, D. M. (2022). *Corporate Governance and Financial Sustainability of Non-governmental Organizations in Kisumu County, Kenya* (Doctoral dissertation, University of Nairobi).
- Wagana, D. M., Iravo, M. A., Nzulwa, J. D., & Kihoro, J. M. (2017). Effect of financial and political decentralization on service delivery in county governments in Kenya. *International Journal of Academic Research in Business and Social Sciences*, 7(6), 381–400. <https://doi.org/10.6007/IJARBS/v7-i6/3020>
- Wang, F., & Li, Z. (2023). Governance structures and the efficient frontier: Aligning corporate strategies for financial sustainability. *Strategic Management Journal*, 44(5), 926-948. <https://doi.org/10.1002/smj.3324>
- Wang, Y. (2023). *Implementation of stakeholder theory in sustainability accounting: A literature review*. *Journal of Sustainable Finance & Accounting*, 8(1), 12-29.
- Water Resources Authority (2019). *Water resources authority strategic plan 2018 – 2022*. Nairobi, Kenya: Water Resources Authority

- Water Resources Authority (2019). *Water resources authority strategic plan 2018 – 2022*. Nairobi, Kenya: Water Resources Authority
- Water Resources Authority. (2023). *Mandate and functions of the Water Resources Authority*. Water Resources Authority. <https://www.wra.go.ke>
- Water Resources Authority. (2023). *Mandate and functions of the Water Resources Authority*. Water Resources Authority. <https://www.wra.go.ke>
- Kamel, & M. H. L.C.. (2016) Response rates in business and management research : an overview of current practice and suggestions for future directions. *British Journal of Management*, 27 (2). pp. 426-437
- Williams, D., & Roberts, T. (2022). Accountability and financial sustainability in the UK healthcare sector: A study of NHS Trusts. *Healthcare Financial Management Journal*, 49(2), 112-128.
- Williams, L., & Thompson, J. (2020). The impact of transparency on the financial stability of banks. *European Banking Review*, 44(3), 56-70.
- Wong, K. K.-K. (2013). Partial least squares structural equation modeling (PLS-SEM) techniques using SmartPLS. *Marketing Bulletin*, 24(1), 1–32.
- Wooldridge, J. M. (2016). *Introductory econometrics: A modern approach* (6th ed.). Cengage Learning.
- World Bank. (2023). *Financial sustainability and institutional resilience*. World Bank.
- World Bank. (2023). *Financial sustainability and institutional resilience*. World Bank.
- World Bank. (2023). *Kenya Economic Update: Financial sustainability in a changing economic landscape*. World Bank. <https://www.worldbank.org/kenya-economic-update>
- World Bank. (2023). *Kenya Economic Update: Financial sustainability in a changing economic landscape*. World Bank. <https://www.worldbank.org/kenya-economic-update>
- World Health Organization. (2021). *Water, sanitation, hygiene, and health: A primer for health professionals*. World Health Organization. https://www.who.int/water_sanitation_health
- World Health Organization. (2021). *Water, sanitation, hygiene, and health: A primer for health professionals*. World Health Organization. https://www.who.int/water_sanitation_health
- Yavuz, E., Koca, G., & Öztürk, A. (2024). *Corporate governance and sustainability disclosures: The impact of good governance practices*. *Corporate Governance Review*, 30(1), 45-62.
- Zhang, H., Chen, Y., & Han, Q. (2022). The impact of governance on risk diversification and portfolio management. *Financial Management*, 51(2), 467-485. <https://doi.org/10.1111/fima.12369>
- Zhang, Y., & Wang, Y. (2020). The influence of sample size on the performance of the Kolmogorov-Smirnov test. *Statistics in Medicine*, 39(10), 1381-1395.

APPENDICES

Appendix I: Letter To Respondents

Rogers Nyaoro

KCA University

Main Campus,

NAIROBI.

Dear Respondent,

RE: ACCEPTANCE LETTER

I am currently pursuing a Masters of Science in Commerce (Finance and Accounting) at KCA University and conducting a study titled “Effect of Institutional Governance on the Financial Sustainability of the Water Resources Authority basin areas in Kenya.” I have selected your esteemed organization to participate in this research. Rest assured, all information provided will be used strictly for academic purposes, and participants' identities and data will be kept confidential. All responses will be securely stored and not shared with third parties without consent. I kindly ask for your cooperation in completing the attached questionnaire, and I appreciate your valuable insights. Thank you for your time and assistance.

Your participation and valuable insights are highly appreciated. Thank you in advance for your time and assistance.

Yours truly,

Rogers Nyaoro
Reg no. KCA/09/02647

Appendix II: Questionnaire

EFFECT OF INSTITUTIONAL GOVERNANCE ON FINANCIAL SUSTAINABILITY OF WATER RESOURCES AUTHORITY BASIN AREAS IN KENYA

This questionnaire has been designed to gather data from the organizations listed under the Water Resources Authority basin areas. The information will strictly be utilized exclusively for research only and will remain strictly confidential, not being disclosed or made available to unauthorized individuals.

We kindly request that you dedicate a few moments to complete this questionnaire with precision and thoroughness. Your responses should be as accurate and truthful as possible to ensure the integrity of the research.

Your cooperation is greatly appreciated.

Kindly indicate your response by ticking the appropriate box provided next to each question.

SECTION A: BACKGROUND INFORMATION

1. Kindly indicate your sex? Please tick (✓) as appropriate

Male () Female ()

2. Highest education level attained. Please indicate your highest academic qualifications

Primary School () Secondary School ()

College () Undergraduate degree ()

Masters Degree () PhD Degree ()

Other () specify

3. Professional qualifications. Please indicate your highest professional qualifications

None()

Technician()

Diploma.....()

Professional()

4. How long have you worked at Water Resource Authority years?

Under 5years () 5 to 10 years () 11 to 15 Years ()

15 to 20 Years () 21 to 25 Years () over 25 years ()

SECTION B: FINANCIAL SUSTAINABILITY

5. Please you are respectfully requested to indicate your level of agreement with each of the statements provided below, which relate to the financial sustainability of your institution. Please indicate your response by placing a tick (√) in the box that most accurately reflects your viewpoint. The following response options are available for your selection:

Scale: Strongly Disagree =1; Disagree = 2; Neither =3; Agree = 4; Strongly Agree = 5

	Statement	5	4	3	2	1
(a)	The Water Resources Authority basin area has a diverse range of revenue sources to ensure long-term financial stability.					
(b).	The basin area consistently generates sufficient net income to support its operations and long-term objectives.					
(c)	The basin area is financially self-sufficient and can operate effectively without relying on external financial support.					
(d)	The basin area has the capacity to meet its long-term financial obligations and maintain a stable financial position					

SECTION C: ACCOUNTABILITY AND FINANCIAL SUSTAINABILITY

6. Please you are respectfully request to indicate the degree to which you agree or disagree with each of the following statements concerning accountability within your institution. Please indicate your response by placing a tick (√) in the box that most accurately reflects your level of agreement.

Scale: Strongly Disagree =1; Disagree = 2; Neither =3; Agree = 4; Strongly Agree =

5

	Accountability Indicator	5	4	3	2	1
a.	The internal controls in place effectively help in managing financial risks, ensuring the long-term financial sustainability of the organization.					
b.	The internal control systems are adequate to support consistent financial sustainability over time.					
c.	Auditing practices are effective in identifying financial inefficiencies and supporting strategies					
d.	The organization’s auditing practices ensure that financial activities are monitored accurately.					
e.	The consistent application of accounting standards provide accurate financial reporting.					
f.	The accounting standards in place promote transparency.					
g.	The verification results consistently support the accuracy of financial data					
h.	The results from financial verifications help the organization identify areas for improvement					

SECTION D: TRANSPARENCY AND FINANCIAL SUSTAINABILITY

7. Please you are respectfully requested to indicate the extent to which you agree or disagree with each of the following statements concerning the transparency of your institution. Your input is crucial for ensuring the accuracy and depth of this assessment.

Scale: Strongly Disagree =1; Disagree = 2; Neither =3; Agree = 4; Strongly Agree =

5

	Transparency Indicator	5	4	3	2	1
A	The organization provides clear and comprehensive financial disclosures that enhance transparency					
B	The financial disclosures provided are sufficient for stakeholders to make informed decisions					
C	The organization consistently maintains a high level of financial transparency in all its financial reporting.					
D	The financial information shared by the organization accurately reflects its financial					
E	The organization's capital expenditure decisions are made in a transparent manner, with clear justification for each investment					
F	The allocation of capital expenditures is openly communicated and available for review by stakeholders.					
G	The organization's accounting policies are clearly documented and accessible, ensuring transparency in financial reporting					
H	The accounting policies followed by the organization are consistent and transparent, supporting trust in financial statements					

SECTION E: STAKEHOLDER PARTICIPATION AND FINANCIAL SUSTAINABILITY

8. Please indicate your level of agreement with each statement regarding the stakeholder participation and financial sustainability of your business by ticking (√) the box that best reflects your perspective. Your input is vital for a thorough analysis of the topic.

Scale: Strongly Disagree =1; Disagree = 2; Neither =3; Agree = 4; Strongly Agree = 5

	Statement	5	4	3	2	1
a.	The organization clearly identifies and maps all relevant stakeholders for effective engagement in its activities.					
b.	Stakeholder mapping is regularly updated to ensure that all key stakeholders are involved in important decisions.					
c.	The organization actively consults stakeholders before making major decisions that may affect them.					
d.	The consultation processes used by the organization are transparent and provide opportunities for meaningful input.					
e.	The organization has effective feedback mechanisms in place to gather input from stakeholders on key issues.					
f.	Feedback provided by stakeholders is actively considered and used to inform decision-making within the organization.					
g.	Stakeholders are provided with meaningful opportunities to participate in key decision-making processes.					
h.	My participation in decision-making processes is valued and has an impact on the final outcomes					

SECTION E: DECENTRALIZATION AND FINANCIAL SUSTAINABILITY

9. Please indicate your level of agreement with each statement regarding the relationship between decentralization and the financial sustainability of your business by ticking the box that best represents your viewpoint. Your response will significantly contribute to the depth of this analysis.

Scale: Strongly Disagree =1; Disagree = 2; Neither =3; Agree = 4; Strongly Agree = 5

	Statement	5	4	3	2	1
A	Sections within the organization have the autonomy to make decisions without requiring approval from higher management.					
B	The decision-making process is decentralized, allowing for quicker and more efficient decisions at all levels.					
C	Each section is given enough control over its own resources to make decisions that support its specific goals.					
D	Resource allocation within the organization is decentralized, allowing individual units to manage their budgets effectively.					
E	The organization effectively delegates authority to lower levels, allowing employees to take ownership of their tasks.					
F	Staff are empowered to make decisions within my area of responsibility, reflecting a decentralized structure.					
G	Sections have the flexibility to adapt and implement policies according to their specific needs and goals.					
H	The organization allows sufficient policy autonomy at lower levels to address challenges effectively without excessive oversight					

Thank you for your cooperation

Appendix III: Sample Per Sub Basin Area

Basin Area	Sub Area	Managers
ATHI BASIN AREA	Main Office	8
	Kiambu Sub-Basin Area	4
	Nairobi Sub-Basin Area	8
	Loitokitok Sub -Basin Area	4
	Kibwezi Sub-Basin Area	4
	Mombasa Sub-basin Area	4
	Sub Total	32
EWASO NG'IRO NORTH	Main Office	8
	Nanyuki Sub -Basin Area	4
	Rumuruti Sub-Basin Area	4
	Isiolo Sub-Basin Area	4
	Wajir Sub-Basin Area	4
	Marsabit Sub-Basin Area	4
	Sub Total	28
RIFT VALLEY	Main Office	8
	Naivasha Sub-Basin Area	4
	Kabarnet Sub-Basin Area	4
	Narok Sub-Basin Area	4
	Kapenguria Sub-Basin Area	4
	Lodwar Sub-Basin Area	4
	Sub Total	28
LAKE VICTORIA NORTH	Main Office	8
	Kitale Sub-Basin Area	4
	Eldoret Sub-Basin Area	4
	Siaya Sub-Basin Area	4
	Sub Total	20
LAKE VICTORIA SOUTH	Main Office	8
	Kisumu Sub-Basin Area	4
	Kisii Sub-Basin Area	4
	Kericho Sub-Basin Area	4
	Sub Total	20
TANA BASIN AREA	Main Office	8
	Murang'a Basin-Area	4
	Kerugoya Basin-area	4
	Meru Basin-Area	4
	Kitui Basin-Area	4
	Garissa Basin-Area	4
	Sub Total	24

Appendix IV: Respondents Per Sub Basin Area

BASIN AREA	SUB-BASIN AREAS	NO. OF SENIOR STAFF	POSITION OF OFFICERS
ATHI BASIN AREA	Main Office	8	1. Basin Area Coordinator 2.Principal Hydrogeologist 3.Principal County Community Engagement Officer 4.Principal Hydrologist 5.Senior Lincensing Officer 6.Senior Accountant 7.Senior Commercial Officer 8.Senior Supply Chain Management Officer
	Kiambu Sub-Basin Area	4	1.Sub Basin Area Coordinator 2. Senior Commercial Officer 3.Senior Lincensing Officer 4.Senior Accountant
	Nairobi Sub-Basin Area	8	1.Sub Basin Area Coordinator 2.Principal Water Quality & Pollution Control Officer 3.Senior Lincensing Officer 4.Senior Accountant 5.Senior Commercial Office 6.Senior Hydrologist 7.Senior Hydrogeologist 8. Senior County Community Engagement Officer
	Loitokitok Sub -Basin Area	4	1.Sub Basin Area Coordinator 2.Senior Lincensing Officer 3.Senior Accountant 4.Senior Commercial Office
	Kibwezi Sub-Basin	4	1.Sub Basin Area Coordinator

BASIN AREA	SUB-BASIN AREAS	NO. OF SENIOR STAFF	POSITION OF OFFICERS
EWASO NG'IRO NORTH	Area		2.Senior Lincensing Officer 3.Senior Accountant 4.Senior Commercial Office
	Mombasa Sub-basin Area	4	1.Sub Basin Area Coordinator 2.Senior Lincensing Officer 3.Senior Accountant 4.Senior Commercial Office
	Main Office	8	1. Basin Area Coordinator 2.Principal Hydrogeologist 3.Principal County Community Engagement Officer 4.Principal Hydrologist 5.Senior Lincensing Officer 6.Senior Accountant 7.Senior Commercial Officer 8.Senior Supply Chain Management Officer
	Nanyuki Sub -Basin Area	4	1.Sub Basin Area Coordinator 2.Senior Lincensing Officer 3.Senior Accountant 4.Senior Commercial Office
	Rumuruti Sub-Basin Area	4	1.Sub Basin Area Coordinator 2.Senior Lincensing Officer 3.Senior Accountant 4.Senior Commercial Office
	Isiolo Sub-Basin Area	4	1.Sub Basin Area Coordinator 2.Senior Lincensing Officer 3.Senior Accountant 4.Senior Commercial Office
	Wajir Sub-Basin Area	4	1.Sub Basin Area Coordinator 2.Senior Lincensing Officer

BASIN AREA	SUB-BASIN AREAS	NO. OF SENIOR STAFF	POSITION OF OFFICERS
			3.Senior Accountant 4.Senior Commercial Office
	Marsabit Sub-Basin Area	4	1.Sub Basin Area Coordinator 2.Senior Lincensing Officer 3.Senior Accountant 4.Senior Commercial Office
RIFT VALLEY	Main Office	8	1. Basin Area Coordinator 2.Principal Hydrogeologist 3.Principal County Community Engagement Officer 4.Principal Hydrologist 5.Senior Lincensing Officer 6.Senior Accountant 7.Senior Commercial Officer 8.Senior Supply Chain Management Officer
	Naivasha Sub-Basin Area	4	1.Sub Basin Area Coordinator 2.Senior Licensing Officer 3.Senior Accountant 4.Senior Commercial Office
	Kabarnet Sub-Basin Area	4	1.Sub Basin Area Coordinator 2.Senior Lincensing Officer 3.Senior Accountant 4.Senior Commercial Office
	Narok Sub-Basin Area	4	1.Sub Basin Area Coordinator 2.Senior Lincensing Officer 3.Senior Accountant 4.Senior Commercial Office
	Kapenguria Sub-Basin Area	4	1.Sub Basin Area Coordinator 2.Senior Lincensing Officer 3.Senior Accountant 4.Senior Commercial Office

BASIN AREA	SUB-BASIN AREAS	NO. OF SENIOR STAFF	POSITION OF OFFICERS
	Lodwar Sub-Basin Area	4	1.Sub Basin Area Coordinator 2.Senior Lincensing Officer 3.Senior Accountant 4.Senior Commercial Office
LAKE VICTORIA NORTH	Main Office	8	1. Basin Area Coordinator 2.Principal Hydrogeologist 3.Principal County Community Engagement Officer 4.Principal Hydrologist 5.Senior Lincensing Officer 6.Senior Accountant 7.Senior Commercial Officer 8.Senior Supply Chain Management Officer
	Kitale Sub-Basin Area	4	1.Sub Basin Area Coordinator 2.Senior Lincensing Officer 3.Senior Accountant 4.Senior Commercial Office
	Eldoret Sub-Basin Area	4	1.Sub Basin Area Coordinator 2.Senior Lincensing Officer 3.Senior Accountant 4.Senior Commercial Office
	Siaya Sub-Basin Area	4	1.Sub Basin Area Coordinator 2.Senior Lincensing Officer 3.Senior Accountant 4.Senior Commercial Office
LAKE VICTORIA SOUTH		8	1. Basin Area Coordinator 2.Principal Hydrogeologist 3.Principal County Community Engagement Officer 4.Principal Hydrologist 5.Senior Lincensing Officer 6.Senior Accountant

BASIN AREA	SUB-BASIN AREAS	NO. OF SENIOR STAFF	POSITION OF OFFICERS
			7.Senior Commercial Officer 8.Senior Supply Chain Management Officer
	Kisumu Sub-Basin Area	4	1.Sub Basin Area Coordinator 2.Senior Lincensing Officer 3.Senior Accountant 4.Senior Commercial Office
	Kisii Sub-Basin Area	4	1.Sub Basin Area Coordinator 2.Senior Lincensing Officer 3.Senior Accountant 4.Senior Commercial Office
	Kericho Sub-Basin Area	4	1.Sub Basin Area Coordinator 2.Senior Lincensing Officer 3.Senior Accountant 4.Senior Commercial Office
TANA BASIN AREA			
	Main Office	8	1. Basin Area Coordinator 2.Principal Hydrogeologist 3.Principal County Community Engagement Officer 4.Principal Hydrologist 5.Senior Lincensing Officer 6.Senior Accountant 7.Senior Commercial Officer 8.Senior Supply Chain Management Officer
	Murang'a Basin-Area	4	 1.Sub Basin Area Coordinator 2.Senior Lincensing Officer 3.Senior Accountant 4.Senior Commercial Officer
	Kerugoya Basin-area	4	1.Sub Basin Area Coordinator 2.Senior Lincensing Officer 3.Senior Accountant

BASIN AREA	SUB-BASIN AREAS	NO. OF SENIOR STAFF	POSITION OF OFFICERS
			4.Senior Commercial Office
	Meru Basin-Area	4	1.Sub Basin Area Coordinator 2.Senior Lincensing Officer 3.Senior Accountant 4.Senior Commercial Office
	Kitui Basin-Area	4	1.Sub Basin Area Coordinator 2.Senior Lincensing Officer 3.Senior Accountant 4.Senior Commercial Office
	Garissa Basin-Area	4	1.Sub Basin Area Coordinator 2.Senior Lincensing Officer 3.Senior Accountant 4.Senior Commercial Office
	Total no.	160	

Appendix V: Revised Factors Loading

	Component			
	1	2	3	4
The Water Resources Authority basin area has a diverse range of revenue sources to ensure long-term financial stability.	0.674			
The basin area consistently generates sufficient net income to support its operations and long-term objectives.	0.571			
The basin area is financially self-sufficient and can operate effectively without relying on external financial support.	0.589			
The basin area has the capacity to meet its long-term financial obligations and maintain a stable financial position	0.630			
The organization actively consults stakeholders before making major decisions that may affect them.	0.630			
The internal controls in place effectively help in managing financial risks, ensuring the long-term financial sustainability of the organization.		0.660		
Auditing practices are effective in identifying financial inefficiencies and supporting strategies		0.811		
The organization’s auditing practices ensure that financial activities are monitored accurately.		0.716		
The consistent application of accounting standards provides accurate financial reporting.		0.737		
The accounting standards in place promote transparency.		0.658		
The verification results consistently support the accuracy of financial data.		0.583		
The results from financial verifications help the organization identify areas for improvement		0.694		
The organization provides clear and comprehensive financial disclosures that enhance transparency			0.592	
The financial disclosures provided are sufficient for stakeholders to make informed decisions			0.517	
The organization consistently maintains a high level of financial transparency in all its			0.501	

	Component			
	1	2	3	4
financial reportingg.				
The financial information shared by the organization accurately reflects its financial			0.528	
The organization's capital expenditure decisions are made in a transparent manner, with clear justification for each investment			0.561	
The allocation of capital expenditures is openly communicated and available for review by stakeholders.			0.500	
The accounting policies followed by the organization are consistent and transparent, supporting trust in financial statements			0.508	
Sections within the organization have the autonomy to make decisions without requiring approval from higher management.				0.694
The decision-making process is decentralized, allowing for quicker and more efficient decisions at all levels.				0.653
Resource allocation within the organization is decentralized, allowing individual units to manage their budgets effectively.				0.620
The organization effectively delegates authority to lower levels, allowing employees to take ownership of their tasks.				0.638
Staff are empowered to make decisions within my area of responsibility, reflecting a decentralized structure				0.528

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 7 iterations.