

**KNOWLEDGE MANAGEMENT STRATEGIES AND ORGANIZATIONAL
PERFORMANCE IN MIDDLE-LEVEL MEDICAL TRAINING COLLEGES IN
NAIROBI COUNTY, KENYA**

BY

LYNETTE NJERI GATHIGIA

MASTER OF SCIENCE IN KNOWLEDGE MANAGEMENT AND INNOVATION

KCA UNIVERSITY

2025

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**A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE AWARD OF MASTER OF SCIENCE IN
KNOWLEDGE MANAGEMENT AND INNOVATION IN THE SCHOOL OF
BUSINESS AT KCA UNIVERSITY**

NOVEMBER 2025

DECLARATION

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

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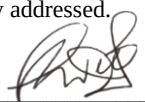
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I do hereby confirm that I have examined the master's dissertation of;

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And certified that all revisions the dissertation panel and examiners recommended have been adequately addressed.

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Date: 5/11/25

Dr. Brigitte Okonga-Wabuyabo

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ABSTRACT

This study critically examines the effect of Knowledge Management (KM) strategies on the organisational performance of middle-level Medical Training Colleges (MTCs) located in Nairobi County, Kenya. In the rapidly changing healthcare landscape, this research highlights the vital role of KM in enhancing institutional effectiveness, improving service delivery, and encouraging pedagogical innovation. While much of the academic discussion tends to focus on universities, this study specifically addresses the often-overlooked MTCs, which are key in training frontline health professionals essential for achieving Universal Health Coverage. The investigation concentrates on the influence of four interconnected KM pillars: knowledge creation, storage, sharing, and utilisation. To establish a strong theoretical foundation, this research integrates several theories, including the Organisation Knowledge Creation Theory, the Resource-Based View (RBV), Social Exchange Theory, and Dynamic Capabilities Theory. Using a mixed-methods research approach, the study involves a diverse group of 253 respondents, including heads of departments, lecturers, and administrative staff from ten purposely selected MTCs. Data collection was carried out using structured, pilot-tested questionnaires, which were then analysed using both descriptive and inferential statistics in SPSS. The findings show that knowledge creation, storage, and utilisation are significant positive indicators of organisational performance. Conversely, a notable suppression effect was observed in knowledge sharing; despite its theoretical importance, its empirical impact appeared to be obscured by its strong correlation with other key KM processes. Additionally, systemic barriers such as faculty shortages and poor documentation practices hinder effective knowledge transfer within the institutions. In light of these findings, the study recommends the formal integration of KM into institutional strategic policies and suggests including knowledge-sharing metrics in staff performance assessments. By managing faculty workloads strategically to improve documentation practices, MTCs can advance toward a more sustainable, knowledge-driven operational model. Ultimately, this research fills an important gap in the existing literature and provides valuable insights for educational policymakers in Kenya and comparable developing economies, thereby contributing to the discussion on improving educational outcomes and health service delivery.

Keywords: Knowledge Management, Organisational Performance, Medical Training Colleges, Knowledge Creation, Knowledge Sharing, Kenya, Health Professional Education, Institutional Effectiveness.

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ACKNOWLEDGMENT

I give all glory and honor to God Almighty, the author and finisher of my faith, for His divine wisdom, strength, and provision that have guided me throughout this academic journey. Without His grace, this achievement would not have been possible.

I express my sincere gratitude to my supervisor, Dr. Brigitte Okonga-Wabuyabo, for her invaluable guidance, constructive feedback, and unwavering support. Her expertise and commitment were instrumental in shaping and refining this research.

My most profound appreciation goes to my family for their unconditional love, encouragement, and belief in me. Your sacrifices and emotional support have strengthened me every step of the way.

Special thanks to Edwin Mwaura for keeping me company during late-night writing sessions and providing technical expertise from the very beginning of this research. Your support made the journey smoother and more manageable.

I am deeply thankful to my cousin and best friend, George Kiragu, for his help in refining and reviewing my work. Your insights and support have been truly invaluable.

I also want to sincerely thank Brian Orwa, my classmate and friend, for his motivation, accountability, and academic guidance that helped me stay focused and complete this work.

Finally, I acknowledge Data Research 254, whose support in data collection and analysis significantly contributed to the rigor and credibility of this study.

To everyone who contributed directly or indirectly to the success of this research, thank you. Your input has made a meaningful difference in achieving this academic milestone.

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DEDICATION

This work is dedicated to God Almighty for His unfailing grace and strength throughout this journey.

To my mother, Gathigia Mwangi, whose love, sacrifices, and unwavering belief in my potential have been my greatest source of motivation, thank you for lighting the path that has brought me this far.

To my family, who have stood by me with encouragement and support, this accomplishment is as much yours as it is mine.

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ABBREVIATIONS AND ACRONYMS

COPs	Communities of Practice
CVF	Competing Values Framework
EFA	Exploratory Factor Analysis
ICT	Information, Communication, and Technology
KM	Knowledge Management
KMTC	Kenya Medical Training College
MTC	Medical Training College
NTCs	National Teachers Colleges
OCBs	Organizational Citizenship Behaviors
RBV	Resource-Based View
SET	Social Exchange Theory
UHC	Universal Health Coverage
VIF	Variance Inflation Factor
VRIN	Valuable, Rare, Inimitable, and Non-Substitutable
WHO	World Health Organization

TERMS AND DEFINITIONS

Term	Adopted Definition	Citation
Knowledge Management (KM)	Refers to the deliberate and systematic coordination of an organization's people, technology, processes, and organizational structure to add value through reuse and innovation by creating, capturing, storing, sharing, and applying knowledge.	Dalkir (as cited in Boyes, 2025)
Knowledge Creation	The process of generating new insights, practices, or innovations within an organization often involves collaboration, research, and the transformation of tacit knowledge into explicit knowledge among staff members.	Abou-Moghli (2025)
Knowledge Storage (or Retention)	The systematic documentation, organization, and preservation of both tacit and explicit knowledge in accessible repositories and institutional records to ensure continuity, reduce knowledge depreciation, and support continuous learning.	Naim & Lenkla (as cited in The Impact of Knowledge Sharing..., 2025)
Knowledge Sharing	The intentional transfer and dissemination of knowledge, expertise, and experiences among individuals, departments, and institutions to enhance collective learning, problem-solving, and overall organizational effectiveness.	Nguyen et al. (as cited in Knowledge Sharing in Organization, 2023)
Knowledge Utilization (Application)	The practical application of acquired and shared knowledge to improve decision-making, problem-solving, service delivery, and institutional innovation maximizes the effectiveness of the organization's collective expertise.	Valamis (2024)
Organizational Performance	The extent to which an institution effectively achieves its goals and objectives. In this study, it is measured through indicators such as student graduation rates, employee satisfaction,	Richard et al. (as cited in Organizational Performance: The Role of Knowledge Sharing, 2024)

Term	Adopted Definition	Citation
	quality of training outcomes, and resource efficiency.	
Tacit Knowledge	Personal, experiential knowledge that is difficult to articulate, codify, or transfer, often embedded in skills, intuition, know-how, and context-specific experience.	Helpjuice (2025)
Explicit Knowledge	Codified and documented knowledge that is straightforwardly expressed, recorded, and transferred (e.g., manuals, procedures, or reports), making it easily accessible and reusable throughout the organization.	Document360 (2025)

CHAPTER ONE INTRODUCTION

1.1 Background of the Study

In today's knowledge-driven economy, organizational success increasingly depends on how effectively institutions generate, share, and utilize knowledge to improve performance and innovation. Globally, organizations—both public and private—are investing in knowledge management (KM) systems to enhance efficiency, decision-making, and competitiveness (Al-Kurdi et al., 2020). Knowledge has emerged as a strategic asset that enables institutions to adapt to change, leverage expertise, and sustain performance (Darmawan et al., 2023). Over the last five years, the expansion of digital technologies, cloud-based collaboration platforms, and learning management systems has accelerated the creation and dissemination of organizational knowledge across sectors, including education and healthcare (Marchegiani, 2021).

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In the education sector, KM is increasingly recognized as a driver of institutional effectiveness, academic quality, and innovation (Iqbal, 2021). Institutions that systematically manage knowledge—through documentation of best practices, ongoing professional development, and digital information systems—tend to achieve higher staff productivity, enhanced service delivery, and greater stakeholder satisfaction (Vyas, 2024). This aligns with the global trend toward transforming learning institutions into knowledge-based organizations that focus on evidence-driven management and continuous improvement.

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Within Kenya's higher education sector, the adoption of KM practices has become increasingly important due to the rapid growth of technical and vocational institutions, increasing student populations, and the need for high-quality training aligned with national development goals

(Endende et al., 2022). Middle-Level Medical Training Colleges (MTCs) are vital in producing skilled healthcare workers to support both county and national health systems. However, these colleges often face challenges such as limited resources, high staff turnover, fragmented knowledge-sharing systems, and insufficient institutional documentation, all of which hinder organizational learning and performance (Muleke et al., 2023). Improving KM processes can help MTCs retain institutional memory, enhance coordination, and improve service quality. Empirical studies in Kenya and other African contexts have demonstrated that KM practices—especially knowledge creation, storage, sharing, and utilization—positively impact organizational performance in educational and healthcare institutions (Cherotich & Senaji, 2023). However, many public training institutions still lack formal structures for effectively managing knowledge. Enakire and Smuts (2023) note that while staff produce valuable operational and pedagogical knowledge, it often remains undocumented and underused. This hampers innovation, operational efficiency, and adaptability in a rapidly changing learning environment.

In Nairobi County, MTCs operate in a highly competitive, resource-limited environment where success depends on integrating knowledge from various sources—academic, administrative, and clinical practice. Despite the availability of digital tools and government-led capacity-building efforts, the adoption of structured KM strategies remains inconsistent across institutions (Amboyi et al., 2024). The lack of systematic KM frameworks results in duplicated efforts, knowledge loss during staff transfers or retirements, and inefficient decision-making.

Therefore, it is crucial to examine how KM strategies can enhance the organizational performance of MTCs in Nairobi County—understanding how specific KM components—knowledge creation, storage, sharing, and utilization—affect institutional outcomes can guide

evidence-based management practices and policy decisions in Kenya's health-training sector. Addressing these gaps, the present study contributes to the broader discussion on KM as a catalyst for improved organizational performance and sustainable institutional growth in the public education sector.

1.1.1 Knowledge Management Strategies

Knowledge Management Strategies (KM) are vital for organizations that leverage intellectual assets and enhance overall performance. These strategies encompass methods for creating, capturing, storing, sharing, and applying knowledge. They necessitate a holistic approach that integrates human resources, organizational processes, and technological tools to foster a knowledge-centric culture (Chow, 2024). From a global perspective, knowledge management (KM) is widely recognized as a crucial strategic asset that significantly enhances organizational performance by improving operational efficiency, fostering innovation, and helping organizations adapt to rapidly changing external environments. A systematic review highlights the critical importance of Knowledge Management (KM) practices, such as capturing, storing, and sharing knowledge, in sustaining performance and promoting continuous learning (Gates, 2024). For instance, research in Silicon Valley illustrates how knowledge sharing within innovation ecosystems can effectively drive technological progress. Similarly, studies conducted in Japan emphasize the ongoing creation and transfer of knowledge as essential components for successful product development (Chow, 2024).

The need for robust knowledge management (KM) strategies is becoming increasingly evident in Africa as nations strive for socio-economic advancement and foster innovation. The African Union's Agenda 2063 emphasizes the sharing of knowledge and leveraging information and

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communication technologies (ICT) to propel Africa's developmental trajectory (African Union Commission, 2015). However, the continent grapples with significant regional disparities in infrastructure and digital literacy, which present considerable obstacles to the effective implementation of KM. For example, while urban centers in countries like South Africa may possess sophisticated digital networks and a higher degree of digital literacy (Aruleba & Jere, 2022), rural areas in nations such as Ethiopia often encounter limited connectivity and resource constraints, thereby impeding the widespread adoption and utilization of KM systems (World Bank, 2019).

Kenya, in particular, has gained recognition as a hub for technological innovation within Africa, primarily due to initiatives like “Vision 2030,” which highlights the importance of knowledge sharing for economic growth (Kenya Vision 2030 Secretariat, 2007). However, while Kenya shows promise in its mobile technology landscape, systemic issues persist in education and access to information. Reports indicate that although digital tools provide opportunities for knowledge sharing, the disparities in digital literacy may prevent equitable access among various economic segments (World Bank, 2020). Research in Nairobi's tech startup hubs has delved into how co-working spaces and mentorship programs facilitate knowledge exchange among entrepreneurs (Muathe et al., 2022). Conversely, studies on rural artisanal businesses have revealed that a lack of access to market information and financial literacy is a significant barrier to growth (Kenyanya & Ndegwa, 2024).

Communities of Practice (CoPs) have emerged as a critical knowledge management (KM) strategy in Kenya, facilitating knowledge sharing and capacity building across various sectors. These forums allow professionals to collaborate, share insights, and engage in informal learning, significantly enhancing the transfer of tacit knowledge (Oranga, 2023). Organizations

like the Kenya Institute of Management play a pivotal role in fostering Communities of Practice (CoPs), demonstrating a commitment to mentorship and professional development that bolsters the dissemination of expertise. Moreover, the digital transformation, driven by advancements in cloud computing, big data analytics, and mobile technology, reshapes KM practices both regionally and locally. In Kenya, the adoption of cloud-based knowledge management (KM) systems in the public sector has improved information accessibility and service delivery, showcasing the potential of digital platforms to enhance KM practices (Ondari-Okemwa & Smith, 2014). Nevertheless, ongoing challenges stemming from unequal digital infrastructure and low levels of digital literacy, especially in rural communities, hinder broader adoption of these innovations.

Despite the growing recognition of Communities of Practice (CoPs) as effective knowledge management (KM) strategies in Kenya, significant challenges persist in the realms of knowledge discovery, capture, organization, optimization, and sharing. While CoPs facilitate collaboration and the informal exchange of tacit knowledge among professionals (Oranga, 2023), a lack of systematic approaches remains to leverage collective expertise for enhancing knowledge discovery and optimizing knowledge sharing. The digital transformation in Kenya, characterized by advancements in cloud computing and mobile technology, presents opportunities to improve KM practices (Sánchez & de Pablos, 2020). However, the adoption of cloud-based KM systems in the public sector has been uneven, and barriers related to unequal digital infrastructure and low levels of digital literacy, particularly in rural areas, impede broader access to these innovations (Khan et al., 2022). This inequality poses a significant challenge to the democratization of knowledge sharing and the optimization of KM practices, as rural communities may be excluded from the benefits of digital advancements. Therefore, addressing these socio-economic barriers is crucial for maximizing the potential of

CoPs and digital technologies to enhance knowledge management across various sectors in Kenya. As they navigate the evolving landscape, strong KM practices will help organizations respond adeptly to emerging challenges and opportunities, thereby fulfilling Africa's broader sustainable development goals, as well as informing policy formulation and implementation (Kippra, 2025).

1.1.2 Middle-Level Medical Training Colleges

Globally, training healthcare professionals is recognized as a cornerstone for enhancing public health outcomes. In the United States, for instance, community colleges play a pivotal role in educating nurses and allied health professionals, prioritizing accessible education to address local health needs (Johnson, 2016). Similarly, in countries like India, establishing medical colleges has become essential in meeting the vast healthcare demands of a large and growing population (Charmode et al., 2020). In Africa, many nations face a shortage of skilled healthcare workers, posing a significant challenge to their healthcare systems (Oleribe et al., 2019). For example, Uganda has launched various initiatives to enhance the training of healthcare providers. The Health Workers Training Programme is one such initiative designed to boost the number of qualified personnel in both urban and rural settings (World Health Organization, 2019). Likewise, Tanzania has implemented strategies to enhance the quality of health training colleges, leading to improvements in healthcare delivery (Strelzer et al., 2024).

Middle-Level Training Colleges (MTCs) in Kenya, such as the Kenya Medical Training College (KMTC), are vital components of the country's healthcare system. Established to address the growing need for skilled healthcare professionals, these colleges provide training for various mid-level medical roles, including nurses, clinical officers, and other allied health professionals. (KMTC, 2025). The KMTC was established in 1927 and became a state corporation through an Act of Parliament in 1990. It has since become the cornerstone of

medical training in Kenya, operating under the Kenya Medical Training College Act (Cap 265) of 1990. This act outlines the framework for establishing and operating medical training colleges, ensuring they adhere to set standards for education and training (Kenya Medical Training College Act, 2012).

Despite their importance, MTCs face various challenges. Studies have indicated inadequate funding, insufficient infrastructure, and a shortage of qualified teaching staff (Kondo et al., 2023). These challenges can impact the quality of education and training, ultimately affecting the country's supply of skilled healthcare workers. Furthermore, logistical hurdles in rural areas may hinder outreach and access to these essential training programs (Mamo et al., 2020). Research on KMTC has highlighted the need for reforms and improvements in curriculum, faculty development, and infrastructure to enhance the overall training experience (Kondo et al., 2023). Addressing these challenges is crucial for MTCs' continued success in producing a competent healthcare workforce, which is essential for improving healthcare accessibility and quality in Kenya.

The presence of well-trained medical personnel is directly linked to improved health outcomes, positively affecting the population's overall well-being. Improved healthcare services lead to better health outcomes and contribute to increased productivity and economic growth (Boyce & Brown, 2019). Therefore, the contributions of middle-level medical training institutions are vital for both public health and economic stability in Kenya (World Health Organization, 2017). Middle-level Medical Training Colleges are crucial to Kenya's economic growth, underscoring the need for tailored knowledge management (KM) strategies. These strategies are expected to improve information access, promote skills development, and enhance technology adoption. Recent studies emphasize the role of digital KM tools in boosting

organizational competitiveness (Mutuku & Odera, 2021) and formalizing knowledge for greater efficiency and sustainable growth.

1.1.3 Organizational Performance

Organizational performance in middle-level medical training colleges (MTCs) within Nairobi County can be understood as the institution's ability to achieve its educational objectives efficiently and effectively, while maintaining adaptability, accountability, and stakeholder satisfaction. These colleges play a pivotal role in producing competent healthcare workers to meet the needs of Kenya's evolving health system. Their performance, therefore, reflects not only academic outcomes but also institutional governance, operational efficiency, and responsiveness to healthcare sector demands (Ngwiri & Gitonga, 2025).

One major factor affecting organizational performance among Nairobi MTCs is the effectiveness of how strategies are put into action. These colleges' strategic plans usually align with the Ministry of Education's Technical and Vocational Education and Training (TVET) policy framework and the Ministry of Health's workforce priorities. However, successful implementation depends on leadership commitment, staff involvement, adequate resources, and continuous monitoring. Studies of similar institutions show that well-executed strategies, which include participatory planning, clear communication, and systematic monitoring, are associated with better student outcomes, improved curriculum delivery, and greater institutional sustainability. Conversely, structural inefficiencies, resource shortages, and communication breakdowns have been linked to poor implementation results (Onwujekwe et al., 2024).

A second crucial factor influencing performance is leadership behavior, especially transformational leadership. Research in TVET institutions across the Nairobi Metropolis shows that transformational leadership behaviors, particularly individualized consideration, where leaders mentor, motivate, and provide feedback to staff, significantly improve institutional performance (Ngwiri & Gitonga, 2025). Within MTCs, such leadership practices encourage teamwork, motivation, and knowledge sharing among educators, which in turn helps achieve strategic goals and student success.

Additionally, learner support systems directly influence institutional performance. A study by Amref International University revealed that about 75% of nursing students in middle-level colleges in Nairobi viewed existing clinical learner support systems as effective. However, gaps persisted in supervision, coordination of clinical placements, and student feedback mechanisms (Oyugi et al., 2024). These findings indicate that while student support processes positively impact overall performance, improvements could be made through better integration of knowledge-sharing mechanisms among academic and clinical supervisors.

To address performance challenges, the integration of knowledge management (KM) strategies has become increasingly important. KM involves systematic processes of creating, sharing, and applying institutional knowledge to enhance decision-making and operational results (Kigungu et al., 2021). For Nairobi's MTCs, effective KM strategies might include forming internal communities of practice among lecturers, establishing digital repositories for teaching resources, conducting regular knowledge audits to identify capability gaps, and capturing tacit knowledge through mentorship and peer-learning initiatives. These strategies promote organizational learning, boost innovation in teaching methods, and help preserve institutional memory during staff transitions (Ul-Durar et al., 2023).

Furthermore, the connection between strategic implementation and knowledge management is essential. Performance improvements are most significant when strategic plans explicitly include KM processes such as regular knowledge sharing, capacity building, and technology-enabled collaboration (Kigungu et al., 2021). MTCs that incorporate KM initiatives into their strategic plans are better positioned to improve instructional quality, simplify operations, and maintain performance gains over time. Evidence from related Kenyan contexts supports this view, showing that organizations that use knowledge-based strategies achieve greater adaptability and performance in changing environments (Ngwiri & Gitonga, 2025).

1.1.4 Nairobi County, Kenya

Nairobi County, the capital of Kenya, serves as a vibrant and dynamic economic and administrative hub for East and Central Africa. Often referred to as the “Green City in the Sun,” Nairobi skillfully integrates a bustling modern infrastructure with rich cultural heritage and unique natural surroundings, including the well-known Nairobi National Park. Its rapid urbanization and diverse population have established the city as a prominent center for commerce, governance, education, and healthcare, making it a compelling focus for scholarly research. (Kenya National Bureau of Statistics, 2023).

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Focusing on Nairobi County for this study presents an invaluable opportunity to investigate these multifaceted dynamics. The city boasts an unmatched concentration of healthcare and educational institutions, thus creating a rich environment for comprehensive data collection. As Kenya's epicenter of medical education, Nairobi is home to many public and private colleges, which provide a broad and representative research sample. Notable institutions, such as the University of Nairobi's Faculty of Health Sciences, maintain crucial partnerships with

major national referral hospitals, including Kenyatta National Hospital (University of Nairobi, 2025). This institutional interconnectedness is essential, enabling the research to yield practical insights from a broad spectrum of institutional contexts and professional experiences.

Moreover, Nairobi's urban landscape is particularly pertinent for exploring issues related to knowledge management. The professional environment within the city, characterized by rapid change and complex organizational structures, presents unique challenges. Research conducted by Ouko and Gatero (2023) indicates that organizations in Nairobi encounter substantial barriers to effective knowledge sharing, including insufficient cultural support for collaboration and significant technological deficiencies. By scrutinizing middle-level medical training colleges within this specific context, this study aims to clarify how these pervasive obstacles impact institutional performance. It provides a crucial foundation for developing effective, context-sensitive strategies that tackle these challenges, ultimately enhancing organizational efficiency and knowledge flow.

Finally, Nairobi's status as the seat of government adds an essential dimension to the strategic value of this research. The findings of this study hold the potential for direct and meaningful implications for national policy. Key regulatory and governmental bodies, such as the Ministry of Health and the Technical and Vocational Education and Training Authority (TVETA), are headquartered in Nairobi, rendering it an ideal research setting that can inform and influence national strategies in medical education, quality assurance, and institutional governance (World Bank, 2024). Therefore, the decision to focus on Nairobi is not merely a convenience; it is a strategic choice aimed at ensuring the findings contribute meaningfully to the ongoing development of Kenya's healthcare and education sectors. This positions the research to have a lasting impact that extends well beyond academia.

1.2 Statement of the Problem

Middle-level Medical Training Colleges (MTCs) in Nairobi County, Kenya, play an essential role in the country's healthcare system by supplying a significant portion of the primary health workforce needed to achieve Universal Health Coverage (UHC) (World Health Organization, 2023). Therefore, effective management of knowledge, including the strategic creation, storage, sharing, and use of institutional knowledge, is crucial for these institutions to maintain operational efficiency, foster innovation, and deliver high-quality training outcomes (Migdadi, 2022).

Nevertheless, MTCs in Nairobi are currently hindered by numerous organizational and systemic challenges that weaken their effectiveness. These institutions face ongoing deficiencies, such as poor knowledge documentation practices, limited use of strong information and communication technology (ICT) systems for knowledge retention, and, notably, a weak knowledge-sharing culture often blocked by technological limitations and hierarchical barriers (Imran et al., 2022). Furthermore, the use of knowledge in key planning and quality assurance activities remains limited, which negatively impacts evidence-based decision-making (Shahmoradi et al., 2017).

These persistent gaps in knowledge management practices directly lead to various negative consequences. They contribute to training and administrative inefficiencies, result in the inevitable loss of critical institutional knowledge when experienced personnel leave, and, ultimately, jeopardize the quality of training provided to future health professionals (Sharma,

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2021). This instability hampers the MTCs' ability to fulfill their core mandates and significantly undermines Kenya's progress toward achieving national healthcare objectives.

Although extensive global and regional literature highlights the link between effective knowledge management and performance across various sectors (Kosklin et al., 2023), a significant empirical and contextual gap remains. Specifically, there is a lack of research examining how the four core knowledge management strategies—creation, storage, sharing, and utilization—interact together to influence organizational performance in the unique, resource-constrained, and dynamic setting of Kenyan medical training (Abbas et al., 2022). This gap leaves institutional managers and policymakers without the specific, empirical data needed to develop targeted, practical interventions to improve systems.

Therefore, this study aims to examine the effect of knowledge management strategies—specifically knowledge creation, storage, sharing, and utilization—on the organizational performance of MTCs in Nairobi County, Kenya. By providing context-specific, data-driven insights, this research will inform policy decisions and guide strategic resource allocation, ultimately improving institutional efficiency and workforce readiness.

1.3 Objectives of the Study

The main objective of this study is to determine the effect of knowledge management strategies on the organizational performance of middle-level medical training colleges in Nairobi, Kenya. The following are the specific objectives;

- i. To establish the effect of knowledge creation strategies on organizational performance in Medical Training Colleges in Nairobi, Kenya.

- ii. To determine the effect of knowledge storage strategies on organizational performance in Medical Training Colleges in Nairobi, Kenya.
- iii. To determine the effect of knowledge sharing strategies on organizational performance in Medical Training Colleges in Nairobi, Kenya.
- iv. To find out the effect of knowledge utilization strategies on organizational performance in Medical Training Colleges in Nairobi, Kenya.

1.4 Research Questions

- i. How do knowledge creation strategies affect the organizational performance of middle-level medical training colleges in Nairobi, Kenya?
- ii. How do knowledge-storing strategies affect the organizational performance of middle-level medical training colleges in Nairobi, Kenya?
- iii. To what extent do knowledge-sharing strategies affect the organizational performance of middle-level medical training colleges in Nairobi, Kenya?
- iv. How do knowledge utilization strategies enhance organizational performance in middle-level medical training colleges in Nairobi, Kenya?

1.5 Justification of the Study

Knowledge management strategies are crucial for enhancing organizational performance within middle-level medical training colleges. Understanding the factors that influence staff engagement with knowledge management practices in these institutions is vital. Effective knowledge sharing can significantly enhance educational outcomes, foster collaboration among faculty, and streamline administrative processes, ultimately improving training for future healthcare professionals.

Fostering a knowledge management culture encourages innovation and continuous improvement in teaching methodologies and curriculum development. It can also help maintain accountability and mitigate unethical practices in academic environments, strengthening public confidence in the quality of education provided. The insights gained from this research can inform the development of tailored training initiatives and policies designed to enhance knowledge management practices. This will ultimately lead to a more effective educational framework that prepares graduates to meet the challenges of the healthcare sector.

1.6 Significance of the Study

This study is significant because it addresses a critical gap in understanding how Knowledge Management (KM) strategies affect the organizational performance of Medical Training Colleges (MTCs) in Nairobi County and, by extension, Kenya. These institutions, particularly the Kenya Medical Training College (KMTC), produce the bulk of the country's middle-level healthcare workforce and are therefore central to achieving Universal Health Coverage (UHC) (WHO, 2025). However, persistent challenges, including limited teaching resources, poor knowledge-sharing cultures, and inadequate infrastructure, continue to undermine training quality and institutional effectiveness (Kondo et al., 2023).

Through an empirical examination of KM strategies — such as knowledge creation, storage, sharing, and utilization — this study will generate insights to strengthen curriculum development, mentorship, and decision-making in MTCs. These findings are expected to inform policymakers on practical interventions to optimize institutional performance and workforce readiness (Moses et al., 2021). Furthermore, the study contributes to academic scholarship by filling the limited body of literature on KM in middle-level medical training

institutions, offering a framework applicable to similar contexts in other developing countries (Abubakar et al., 2019).

1.7 Scope of the Study

The study will focus on Medical Training Colleges (MTCs) in Nairobi County, Kenya, aiming to collect data from a diverse range of personnel, including both staff and faculty. MTCs are essential for training healthcare professionals at diploma and certificate levels, and Nairobi hosts a significant number of these institutions, including the primary campus of the Kenya Medical Training College (KMTC) and various private colleges.

Participants will include academic staff, such as lecturers, senior lecturers, Heads of Departments (HODs), and clinical instructors who supervise students during clinical placements. Non-academic staff will also be involved, including administrative officers (registrars, human resource managers, finance officers), technical support staff (laboratory technicians, IT support, librarians), and general support staff responsible for campus maintenance and security. This comprehensive approach will capture insights from various professional groups within the MTCs, allowing for a well-rounded understanding of the research topic.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter comprehensively reviews the existing literature on knowledge management strategies and their impact on the organizational performance of middle-level Medical Training Colleges in Nairobi, Kenya. The literature review aimed to explore relevant theoretical and empirical studies related to this topic. The findings from this review will contribute to a better understanding of the factors influencing organizational performance in the context of knowledge strategies. They will provide a theoretical framework for the current research study.

2.2 Theoretical Review

These theories will provide an analytical framework for examining the impact of knowledge management strategies on the organizational performance of middle-level medical training colleges in Nairobi, Kenya.

2.2.1 Organizational Knowledge Creation Theory

The Organizational Knowledge Creation Theory, originally developed by (Nonaka & Takeuchi, 1995), posits that knowledge is not merely transferred within organizations but is continually created through active interactions among individuals and groups. This theory distinguishes between tacit knowledge, personal, experiential, and difficult to formalize, and explicit knowledge, which is structured, systematic, and easily documented (Almalki & Al-Shammari, 2023). At the heart of the theory is the Socialization, Externalization, Combination, and Internalization (SECI) model, which explains how knowledge continuously moves between tacit and explicit forms, fostering organizational growth and innovation. This ongoing

process of conversion helps embed new skills and makes knowledge creation a vital strategic resource for enhancing performance (Kodama, 2025).

For Medical Training Colleges (MTCs) in Nairobi County, knowledge creation directly affects key institutional performance indicators, including the quality of academic delivery, the clinical competence of graduates, and operational efficiency. Instructors and clinical educators have implicit expertise gained from real-world healthcare practice. When this knowledge is externalized through mentorship, simulation teaching, curriculum updates, and collaborative scholarly research, it enriches the institution's knowledge base (Sadilla & Wahyuningtyas, 2023). Likewise, socialization through peer interactions during clinical rotations promotes experiential learning and improves students' ability to respond to emerging medical challenges. Effective knowledge creation is therefore a vital factor in institutional competitiveness, especially in regions like Kenya, where health worker shortages demand highly qualified graduates (Amboyi et al., 2024).

The theory further emphasizes enabling conditions such as organizational culture, leadership, and shared decision-making, which support knowledge flow (Abubakar et al., 2019). In the context of MTCs, leadership commitment to innovation, as evidenced by investment in skill development, research, and structured collaboration, creates an environment that promotes ongoing knowledge generation (Mwangi & Mwanzu, 2023). The concept of Ba, introduced by Nonaka and Toyama (2000), highlights shared physical or virtual spaces where people interact meaningfully to develop new knowledge. Within MTCs, classrooms, digital learning platforms, and clinical practicum sites serve as Ba, facilitating strong connections between theory and medical practice. These knowledge creation processes enhance organizational

learning and responsiveness, ultimately improving student outcomes, accreditation status, and stakeholder trust (Santos et al., 2024).

However, the theory has been subject to scholarly criticism. Gourlay (Gourlay, 2006) argues that SECI oversimplifies the process of converting tacit knowledge by assuming individuals can easily articulate deeply embedded expertise. This issue is clear in medical training, where hands-on, experiential skills often resist documentation despite formal efforts. Bratianu (2018) also questions the model's claim of universal applicability, noting that factors such as resource constraints, trust, and cultural norms influence whether knowledge spirals can operate fully. In low-resource MTC settings in Kenya, challenges such as poor ICT infrastructure, resistance to sharing knowledge, a weak documentation culture, and heavy workloads hinder systematic knowledge creation (Goshtasbpour et al., 2023). These challenges threaten to slow curriculum progress and limit the ability to adapt to evolving healthcare technologies and policies.

Nevertheless, recent studies show that institutions that organize knowledge-creation practices achieve significant improvements in innovation, service quality, and academic performance (Darmawan et al., 2023; (Mohaghegh et al., 2024). Therefore, while the theory does not fully address contextual barriers, it provides a strong conceptual foundation for evaluating how structured knowledge-creation strategies boost the organizational performance of middle-level MTCs in Nairobi County. The theory supports the idea that ongoing knowledge generation is a crucial driver of institutional relevance and sustainability within Kenya's rapidly changing healthcare landscape.

2.2.2 Resource-Based View Theory

The Resource-Based View (RBV), introduced by Wernerfelt (1984) and refined by Barney (J. Barney, 1991), states that an organization's competitive advantage comes from unique internal resources and capabilities that are valuable, rare, inimitable, and non-substitutable (VRIN). In modern organizational research, knowledge is seen as one of the most essential strategic resources that institutions can use to achieve better, sustainable (Barney et al., 2021). RBV, therefore, provides a solid theoretical basis for examining knowledge storage as a key knowledge management strategy that sustains the institutional memory needed for operational continuity, organizational learning, and innovation.

Within MTCs in Nairobi County, knowledge storage involves systematically capturing and organizing explicit knowledge, such as medical curricula, clinical guidelines, simulation protocols, and administrative procedures, as well as tacit knowledge embedded in experienced faculty and clinical preceptors (Feiz et al., 2019). When this knowledge is stored in accessible repositories, including digital libraries, databases, and enterprise content systems, it becomes a strategic resource that improves training quality, ensures continuity in service delivery, and reduces disruptions caused by staff turnover or curriculum changes (Rotich & Kipchumba, 2023). This directly enhances the institution's ability to maintain consistent academic standards, meet accreditation requirements, and support evidence-based medical education.

RBV emphasizes that, for knowledge to function as a VRIN resource, it must be deeply embedded in organizational routines, refined through collective experience, and protected from erosion (Teece, 2018). In MTCs, the uniqueness of stored instructional materials and clinical insights is shaped by Kenya's healthcare context, disease patterns, cultural behavioral health nuances, and national health policies, making this knowledge difficult for competing institutions to replicate. The preservation of such contextualized expertise enhances operational

efficiency by reducing repetitive learning cycles and enabling faster, evidence-based decision-making rooted in validated institutional experience (Miller, 2019). Effective knowledge storage thus creates a strategic advantage by transforming individual contributions into durable institutional assets that support long-term performance improvement.

However, the application of RBV has faced scholarly critique. Priem and Butler (2001) argue that RBV can be tautological, with resource value often defined after high performance is observed, making empirical testing difficult. Critics of dynamic capabilities further claim that the RBV does not adequately account for environmental turbulence, technological change, and knowledge obsolescence, factors that are especially important in health education, where clinical knowledge evolves quickly (Kraaijenbrink et al., 2010). In MTCs within Nairobi, infrastructural limitations, inconsistent documentation methods, and resistance to knowledge codification hinder the preservation of tacit expertise among lecturers and clinical instructors (Ntorukiri et al., 2022). These contextual challenges may weaken the VRIN attributes of institutional knowledge by restricting its accessibility, reliability, and long-term value.

Despite these limitations, RBV remains highly relevant for analyzing how strong knowledge storage contributes to better organizational performance. Recent studies show that institutions that protect knowledge effectively boost staff productivity, innovation, and service quality (Abou-Moghli, 2025). In the context of Kenyan health training, structured knowledge storage practices enable smooth handovers, improve pedagogical consistency, and support compliance with standards set by professional bodies such as the Nursing Council of Kenya and the Clinical Officers Council (Amboyi et al., 2024). These results directly improve stakeholder satisfaction, graduate employability, and institutional competitiveness.

Therefore, RBV offers a strong theoretical basis for this study's hypothesis that effective knowledge storage significantly boosts the organizational performance of middle-level MTCs in Nairobi County. By framing knowledge as a strategic resource, RBV emphasizes that protecting institutional memory is crucial for maintaining operational excellence, ensuring high-quality training, and supporting ongoing improvement in a challenging healthcare training setting.

2.2.3 Social Exchange Theory

Social Exchange Theory (SET), first introduced by Homans (1958) and later expanded by Blau (Blau et al., 1964), suggests that individuals participate in social interactions based on rational assessments of potential rewards and costs. In organizational settings, knowledge sharing is seen as a reciprocal exchange behavior motivated by expectations of personal or collective benefits, such as recognition, trust, or professional support (Imran et al., 2025). SET thus offers a solid behavioral foundation for analyzing knowledge sharing as a key knowledge management strategy that enhances organizational performance by fostering collaboration, innovation, and operational coordination.

At the core of SET is the principle of reciprocity, which states that knowledge is more freely shared when organizational members see fairness, appreciation, and chances for mutual benefit (Whitener et al., 2013). In middle-level Medical Training Colleges (MTCs) in Nairobi County, knowledge sharing happens through formal channels like academic seminars, departmental meetings, and clinical case reviews, as well as through informal mentoring, peer consultations, and student–instructor interactions during practicum placements (Sharif et al., 2025). When employees trust the institution and feel psychologically safe, they are more likely to share tacit

expertise and real-world medical insights that enhance teaching quality and clinical training outcomes (Ahmad et al., 2023). These reciprocal exchanges ultimately boost organizational performance, as measured by graduate competence, academic efficiency, and regulatory compliance.

Perceived organizational support plays a vital mediating role in promoting knowledge-sharing behavior. When faculty and clinical trainers believe that the institution values their professional contributions, SET predicts increased voluntary participation in knowledge exchange activities (Rhoades & Eisenberger, 2002). This is particularly important in MTCs where knowledge is crucial for coordinating clinical instruction, updating medical curricula, and sharing best practices aligned with Kenya's changing healthcare standards. The theory thus helps explain why knowledge sharing improves operational outcomes, such as reducing duplication of effort, enhancing decision-making quality, and enabling the smooth implementation of new training methods (Sadilla & Wahyuningtyas, 2023).

However, SET also recognizes barriers to sharing knowledge. Knowledge hoarding can happen when individuals fear losing power, status, or a competitive edge, especially in environments with few promotion chances or high job insecurity (Cropanzano et al., 2017). In Kenya's medical training context, demographic differences such as generational gaps between senior tutors and younger faculty may block effective knowledge exchange, especially when trust is missing or mentorship systems are weak (Cherotich & Senaji, 2023). Cultural norms can also slow reciprocity; in some organizational settings, speaking up or sharing innovative ideas might be seen as challenging authority, discouraging open collaboration (Emerson, 1976).

Despite its strengths, SET faces critiques concerning its assumptions. Scholars argue that the theory oversimplifies human motivation by emphasizing cost-benefit logic while

underestimating intrinsic altruism, professional pride, and communal values that also drive knowledge sharing (Dee & Leisyte, 2017). Additionally, SET does not fully account for structural influences such as organizational culture and resource availability, which can constrain or enable knowledge flows independent of individual intentions (Kozhakhmet & Nazri, 2017). These criticisms are especially relevant to MTCs, where infrastructural limitations—such as inconsistent digital platforms—may hinder knowledge distribution regardless of employee willingness.

Nonetheless, SET remains a strong explanatory mechanism for linking knowledge sharing to organizational performance in educational institutions. Recent empirical evidence confirms that knowledge exchange promotes service responsiveness, fosters innovation, and enhances student outcomes by enabling collaborative problem-solving and collective learning (Sharif et al., 2025; Deng & Lu, 2022). In Nairobi County MTCs, where performance effectiveness is critical to addressing healthcare workforce demands, Social Exchange Theory reinforces the idea that a supportive, trust-based environment significantly strengthens the institution's ability to deliver high-quality, practical health training.

Thus, SET serves as a core theoretical foundation for this study by explaining how reciprocal interactions among employees promote knowledge sharing, thereby boosting the organizational performance of middle-level MTCs in Nairobi County. The theory supports the idea that environments that foster fairness, trust, and professional appreciation encourage knowledge exchange, leading to better institutional outcomes.

2.2.4 Dynamic Capabilities Theory

Dynamic Capabilities Theory (DCT), advanced by Teece, Pisano, and Shuen (Teece et al., 1997), expands on the Resource-Based View by arguing that competitive advantage comes not just from having valuable resources but from the organization's ongoing ability to integrate, reconfigure, and leverage those resources in rapidly changing environments. DCT focuses on three main capability areas: sensing new opportunities or threats, seizing them through strategic actions, and transforming organizational processes to remain relevant and effective (Teece, 2018). In knowledge-driven organizations such as Medical Training Colleges (MTCs), this theory offers a solid foundation for understanding how knowledge use supports adaptive performance.

In Nairobi County's middle-level MTCs, effective use of knowledge is vital for ensuring that curriculum delivery keeps pace with emerging healthcare demands, new treatment technologies, and regulatory changes established by national professional bodies. When institutional knowledge, gained through clinical training, research insights, or administrative lessons, is actively implemented, MTCs can enhance instructional methods, incorporate updated medical guidelines, and improve the quality of clinical simulation, leading to better-prepared graduates (Mwangi & Mwanzu, 2023). Additionally, knowledge utilization boosts operational efficiency by promoting evidence-based decision-making and removing outdated or redundant processes, directly contributing to institutional performance metrics such as student retention, exam pass rates, stakeholder satisfaction, and resource management (Ali, 2024).

DCT stresses that knowledge must be actionable; knowledge that remains unused does not generate value (Teece, 2018). Therefore, the strategic use of knowledge is essential for fostering innovation, differentiating programs, and enabling institutions to sense and respond

to changes in Kenya's dynamic healthcare sector (Sadilla & Wahyuningtyas, 2023). For instance, applying knowledge from tracer studies can help revise curricula to address workforce competency gaps in Nairobi health facilities. Likewise, using knowledge from medical research and feedback from accreditation agencies improves compliance and institutional reputation. Through these mechanisms, knowledge utilization directly contributes to sustainable performance outcomes.

Despite its importance, DCT faces significant academic criticism. Arend and Bromiley (2009) contend that the theory suffers from conceptual ambiguity, with definitions of "capabilities" differing widely across studies. Winter (Winter, 2003) questions its operational clarity, noting difficulty in distinguishing dynamic capabilities from routine organizational activities, which creates measurement and validation issues. In educational institutions like MTCs, where changes tend to be incremental and heavily regulated, identifying distinct transformative capabilities can be complicated. Additionally, DCT has been criticized for assuming resource availability, yet many MTCs in Nairobi operate under constraints such as limited ICT infrastructure, instructor shortages, bureaucratic procurement systems, and inadequate funding (Asad et al., 2022). Such barriers may hinder the timely conversion of knowledge into improved practices, diminishing the ability to sense and seize emerging opportunities.

However, recent research supports the effectiveness of DCT in explaining performance differences in resource-limited settings. Organizations that focus on learning agility and the consistent use of knowledge, rather than simply possessing knowledge, show higher levels of innovation, adaptability, and responsiveness (Bleady et al., 2018). Therefore, in MTCs, knowledge utilization becomes a vital factor for organizational competitiveness and alignment with Kenya's Universal Health Coverage goals. This makes DCT a strong theoretical

framework for the current study, confirming that organizational performance improves when knowledge is effectively turned into educational, clinical, and administrative value.

Overall, Dynamic Capabilities Theory supports the study's idea that systematically using knowledge extensively improves the organizational performance of middle-level MTCs in Nairobi County. When institutions actively leverage internal and external knowledge, they build stronger capacity to innovate, maintain high training quality, and adapt to ongoing changes in healthcare education and service delivery, something essential in Kenya's evolving medical landscape.

2.3 Empirical Review

An empirical review of the independent variable of organizational performance highlights the intricate relationships among the dependent variables of organizational culture, employee training and development, technological integration, and systems for reward and recognition. When managed effectively, these elements significantly enhance an organization's capacity to meet its objectives and maintain a competitive advantage in the marketplace.

2.3.1 Knowledge Creation and Organizational Performance

Empirical evidence consistently shows a positive link between knowledge creation and organizational performance, especially in knowledge-intensive institutions like medical and technical training organizations. Hadziahmetovic and Dinc (2023) demonstrated in a study of universities in Central and Eastern Europe that knowledge creation significantly predicts institutional performance. However, their findings mainly rely on academic staff self-reports,

raising concerns about subjectivity and limiting how well these results apply to medical training environments, where clinical performance indicators are crucial. Similarly, Albalwy (2024) found that Saudi universities investing in new knowledge development through research and innovation achieve better performance outcomes. While the study emphasizes the global importance of knowledge creation in higher education, the context of well-funded institutions differs from resource-limited settings like Kenya.

African research confirms these positive findings but also highlights contextual challenges. Mwangi and Mwanzu (2023) found that knowledge creation drives competitive advantage in Kenya's telecommunications industry; however, applying this to educational institutions remains theoretical due to sector differences. More relevantly, Endende et al. (2022), studying public Technical and Vocational Education and Training (TVET) institutions in Kenya, reported that knowledge creation significantly enhances employee performance, a key factor in institutional success. Still, performance measures focused on staff productivity rather than student outcomes limit their applicability to health-training institutions, where performance is evaluated through competency-based medical assessments and regulatory compliance.

A recent synthesis by Andrea and Wanyoike (2024) confirmed that organizations across various sectors that promote creativity, experimentation, and documentation of tacit knowledge achieve higher levels of innovation and service quality. However, many studies suffer from methodological weaknesses such as narrow sample frames, cross-sectional designs that hinder causal inference, and limited contextual control. Furthermore, Mehralian et al. (2018) identified knowledge creation as a mediator between KM practices and performance in the pharmaceutical sector; however, their findings predate the rapid digital transformation and evolving healthcare demands, highlighting the need for more current empirical analysis.

Critically, gaps remain regarding how knowledge creation impacts training quality, clinical competence, and institutional responsiveness within middle-level Medical Training Colleges (MTCs). Despite Kenya's competence-based training policies, few empirical studies measure how new knowledge creation in teaching and clinical practice influences key indicators such as licensing examination performance, clinical placement evaluations, or accreditation outcomes. Additionally, existing studies have disproportionately focused on universities and corporations in Nairobi, leaving a geographical and institutional gap for MTCs, whose operating environments, staffing structures, and knowledge dynamics are different (Sharif et al., 2025).

Overall, empirical studies strongly suggest that fostering knowledge creation improves performance, but there are notable contextual and methodological limitations. There is still limited empirical evidence on how knowledge creation strategies specifically enhance the operational effectiveness and educational outcomes of MTCs in Nairobi County. This gap highlights the need for research in settings where institutional performance is directly connected to improving healthcare workforce readiness and achieving Kenya's Universal Health Coverage goals.

2.3.2 Knowledge Storage and Organizational Performance

Effective mechanisms for storing knowledge are essential for preserving valuable organizational memory, ensuring that it remains accessible and can be leveraged for future decision-making, problem-solving, and innovation. This practice significantly contributes to an organization's sustained competitive advantage. This aligns with the principles of the Resource-Based View (RBV), which posits that knowledge, when effectively managed and

safeguarded, transforms into a rare, valuable, inimitable, and non-substitutable resource that enhances superior performance (Barney, 1991; Miller, 2019).

A recent empirical study conducted by Odubuker et al. (2023) on National Teachers' Colleges (NTCs) in Uganda provides compelling evidence in support of this relationship. Their research found a significant positive correlation between knowledge storage and the performance of these institutions, showing that knowledge storage accounted for a notable portion of the variations in NTCs' performance. These findings highlight the importance of NTCs integrating their knowledge assets, including databases, human expertise, systems, policies, and procedures, into comprehensive knowledge management strategies designed to enhance overall performance. The relevance of this study is that it extends to Medical Training Colleges (MTCs) in Nairobi within the educational context of East Africa. This cross-sectoral validation in similar East African public training institutions provides a strong empirical bridge for this study, confirming that the effective safeguarding and institutionalization of educational knowledge is a critical determinant of superior Organizational Performance in the region.

Supporting this perspective, (Caroline et al., 2015) established a clear connection in a study of public technical institutions between knowledge storage, retrieval, and employee performance. This research emphasized that adequate knowledge storage, whether through "soft" methods (e.g., individual memory retained through human processes) or "hard" methods (e.g., technical infrastructure such as modern information systems), ensures that codified knowledge is readily accessible. This accessibility not only saves time and resources but also enhances performance by alleviating the need to recreate or extensively search for information. The study confirmed a significant relationship between effective knowledge storage, retrieval, and employee

performance, underscoring the operational efficiency gained from well-managed knowledge repositories.

Further reinforcing these findings, Albalwy (2024) identified knowledge capture and storage as integral aspects of knowledge management processes that positively affect organizational performance in their empirical research focused on Saudi universities. Their work, along with other scholarly contributions, illustrates how the ability to collect, organize, and disseminate knowledge forms the foundation for subsequent knowledge sharing and application, thereby enhancing organizational effectiveness (Sadilla & Wahyuningtyas, 2023).

Broader empirical studies on knowledge management also highlight the significance of capturing and storing knowledge. For example, research conducted at Halabja University (Saeed, 2017) demonstrated that knowledge storage, along with creation, sharing, and application, positively and significantly influences employee performance, IT performance, and customer satisfaction, emphasizing its foundational role in the broader development of organizations. Another empirical investigation, focusing on Kuwaiti organizations (Elmorshidy, 2018), similarly found that various knowledge management processes, including knowledge storage, had a positive and significant impact on organizational performance.

2.3.3 Knowledge Sharing and Organizational Performance

Empirical studies consistently emphasize that knowledge storage is a critical determinant of organizational performance, particularly in sectors where institutional memory and standardized practices directly influence service quality and learning outcomes. Odubuker et al. (Odubuker et al., 2023), in a study involving National Teachers' Colleges in Uganda, found a strong positive relationship between knowledge storage and organizational performance, demonstrating that documented procedures, accessible repositories, and codified expertise

promote efficiency and informed decision-making. However, their performance assessment lacked indicators relevant to clinical training institutions, such as accreditation compliance and student competence development, thereby limiting its direct applicability to MTCs.

In the Kenyan context, Caroline et al. (2015) confirmed that structured storage of institutional knowledge enhances employee performance by improving knowledge accessibility and reducing redundancy. Nonetheless, the study relied heavily on staff-centered metrics and did not sufficiently examine training quality or student performance outcomes, which are the primary indicators of success in MTCs. More recent work by Albalwy (2024) in Saudi higher education showed that knowledge capture and storage strongly predict institutional effectiveness. However, these results were obtained in a highly digitized context and may not translate seamlessly to Kenyan MTCs, where disparities in technological resources and documentation culture persist (Ondiek & Ombui, 2023).

Studies in health training settings provide further support for the value of knowledge storage. Abuaddous et al. (Abuaddous et al., 2018) demonstrated that proper storage of clinical guidelines and learning materials contributes to improved continuity in clinical instruction. However, their research did not account for structural challenges such as staff turnover and limited digital tools, which can lead to knowledge attrition in resource-constrained environments like Nairobi County. Similarly, Rotich and Kipchumba (2023) found that storing simulation outcomes and academic records improved learning consistency by ensuring standardization across instructors. Nevertheless, these findings were based on small-scale institutional samples, raising concerns over representativeness.

Across the reviewed empirical studies, several methodological limitations emerge. Most utilized cross-sectional research designs limit causal inference and fail to capture the long-term effects of knowledge storage on organizational performance. Additionally, the majority emphasized technological storage solutions while neglecting the retention of tacit clinical knowledge held by experienced medical educators, knowledge essential to competency-based training. Furthermore, limited attention has been devoted to analyzing how knowledge storage affects context-specific performance indicators in MTCs, including regulatory audit outcomes, seamless transitions of teaching responsibilities, timely coordination of clinical placements, and graduate examination performance.

Finally, there is insufficient consideration of environmental challenges within Nairobi-based MTCs, including inconsistent ICT infrastructure, gaps in digital literacy among instructors, and fragmented documentation practices. These constraints limit the ability of such institutions to systematically preserve institutional memory and leverage knowledge resources for improved operational performance (Sharif et al., 2025).

Therefore, while empirical research confirms that knowledge storage positively influences organizational performance by strengthening institutional continuity and decision-making, the existing studies are limited in terms of context, metrics, and methodological depth. There is a clear need for focused empirical investigation into how knowledge storage practices specifically contribute to enhanced performance in middle-level Medical Training Colleges in Nairobi County. Addressing this gap is essential for optimizing healthcare education outcomes in Kenya.

2.3.4 Knowledge Utilization and Organizational Performance

Knowledge utilization, defined as the intentional use of generated, stored, and shared knowledge in operational processes, pedagogy, and decision-making, represents the crucial stage where knowledge management produces measurable organizational benefits. Evidence shows that utilization, more than any specific upstream KM process, turns latent knowledge assets into better institutional results (Teece, 2018; Sadilla & Wahyuningtyas, 2023). Research in higher education and related fields consistently finds that institutions that embed knowledge application through evidence-based teaching, routine use of lessons learned, and standardized clinical protocols perform better on key indicators such as student learning outcomes, service efficiency, and stakeholder satisfaction (Tesgera, 2023).

In the context of Medical Training Colleges (MTCs) in Nairobi County, knowledge utilization is significant because the value of knowledge is measured by graduates' competence and the institution's ability to meet professional regulatory standards. Recent research indicates that when MTCs incorporate clinical best practices and simulation learning into standardized curricula and assessment procedures, it leads to improved clinical competence and higher pass rates on licensing exams (Leal-Costa et al., 2024). Similarly, (Bilal et al., 2019) found that public institutions that routinely apply knowledge through faculty development programs, regular curriculum reviews, and integrated clinical feedback loops experience improvements in operational performance and reductions in administrative errors. These practical outcomes align with Dynamic Capabilities Theory, which states that the ability to reconfigure practices and deploy knowledge quickly is key to institutional adaptability and success (Teece, 2018).

Despite supportive findings, several limitations weaken the generalizability of existing research to Nairobi MTCs. First, most empirical studies rely on cross-sectional survey data that

measure perceived utilization rather than objectively observable changes in practice or long-term institutional outcomes. Such designs risk common-method bias and cannot establish causality between utilization practices and performance indicators. Second, there is a tendency to equate utilization with the mere presence of policies or repositories; little research investigates the fidelity of implementation—how consistently knowledge is applied in clinical supervision, assessment design, or administrative decision-making. This fidelity gap is critical for MTCs, where inconsistent application of clinical standards can directly impact patient safety and graduate readiness.

Third, contextual constraints in Nairobi, such as variability in clinical placement quality, staff shortages, and limited procurement processes, often hinder the translation of knowledge into practice, even when knowledge is readily accessible. For instance, a college may have updated treatment protocols but lack simulation equipment or sufficient clinical placement opportunities to put those protocols into practice, a nuance underexplored in the current literature (Tesgera, 2023). Fourth, few studies break down utilization into sub-processes (e.g., pedagogical application, administrative process change, clinical protocol adoption), limiting detailed understanding of which types of utilization most strongly predict academic and institutional performance.

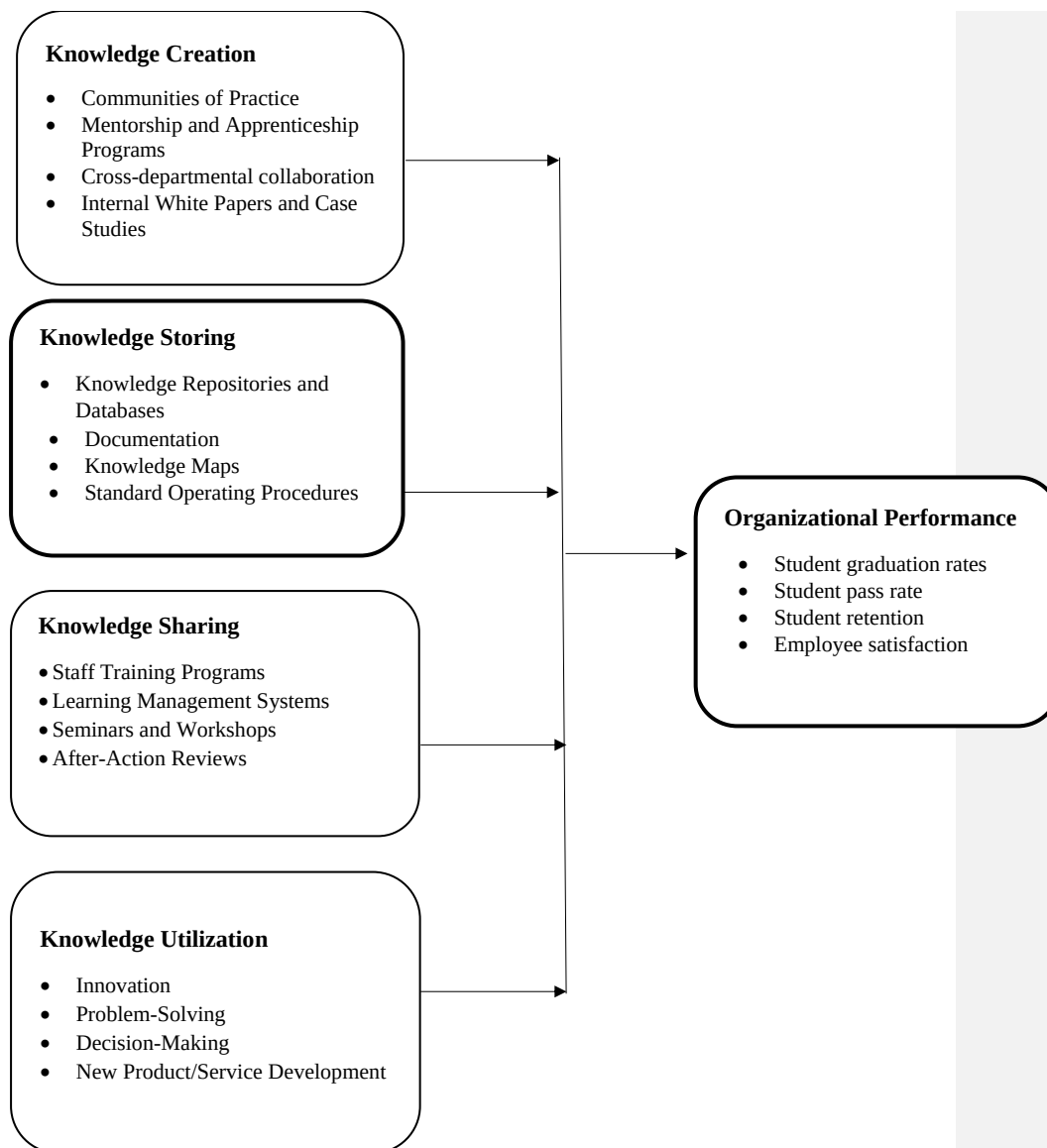
Methodologically, mixed-methods longitudinal research would better illustrate how utilization influences performance over time, revealing both implementation pathways and barriers. Specifically, objective performance metrics, such as licensing exam pass rates, clinical skills assessment scores, accreditation outcomes, and employer satisfaction, should be used alongside perceptual measures to strengthen causal claims.

Although evidence suggests that knowledge utilization is the closest KM strategy for enhancing organizational performance, there is limited, methodologically narrow empirical research specifically on middle-level MTCs in Nairobi. The ongoing gap concerns not whether utilization is important but how, under what conditions, and through which mechanisms it leads to measurable improvements in clinical training quality and organizational efficiency. Addressing these questions requires context-specific empirical research that combines solid outcome measures with process-oriented analysis of implementation fidelity, exactly what this study aims to provide.

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2.4 Conceptual Framework

FIGURE 1: Conceptual Framework



2.5 Research Gap

Despite extensive research on organizational performance, significant gaps remain in providing a comprehensive understanding of how internal dynamics interact to influence performance outcomes, particularly in dynamic environments. This study aims to address these gaps by examining the synergistic impact of knowledge management strategies within middle-level medical training colleges (MTCs) in Nairobi, Kenya.

A primary limitation in existing organizational performance literature, particularly studies grounded in the Resource-Based View (RBV), is their focus on identifying unique resources—both tangible and intangible—that contribute to competitive advantage (Barney & Clark, 2007; Zahra, 2021). However, the traditional RBV, with its static conceptualization, often overlooks the dynamic interplay between these resources and the rapidly evolving external environment (Priem & Butler, 2001; Sun et al., 2024). This study aims to address this gap by extending beyond the identification of static resources. While knowledge capture and storage strategies align with the RBV by focusing on securing valuable knowledge assets, our research incorporates dynamic processes of knowledge creation, sharing, and application. These objectives are grounded in dynamic theories such as the Organizational Knowledge Creation Theory (Konno & Schillaci, 2021), Social Exchange Theory (Ahmad et al., 2023), and Dynamic Capabilities Theory (Teece, 2018). By examining how MTCs dynamically create, share, and apply knowledge, this study investigates how organizations continuously adapt and reconfigure their knowledge resources to sustain performance in a volatile healthcare and educational landscape (Sun et al., 2024). This approach implicitly addresses the scarcity of longitudinal studies in the current literature, as understanding dynamic processes suggests a need for an evolving perspective often absent in cross-sectional studies.

Furthermore, while strategic management literature emphasizes the alignment of organizational strategies with industry structures and competitive forces (Porter, 2008), it often underrepresents the complexities of organizational culture and its interaction with strategic initiatives. Recent studies have highlighted the crucial role of adaptive organizational cultures in enhancing internal processes, including employee engagement, knowledge sharing, and innovation (SSBFNET, 2025; Emerald Insight, 2024). However, measuring the impact of cultural dimensions and establishing clear causality between culture and performance outcomes poses challenges, leading to ambiguities in the literature (Denison et al., 2014); (Saifi

et al., 2018). This research addresses this gap by investigating the strategies of knowledge creation, capture, sharing, and application, thereby underscoring that a supportive organizational culture is crucial for the successful implementation of knowledge management practices. For instance, knowledge creation flourishes in a culture of psychological safety, and knowledge sharing relies on a culture of trust and reciprocity. By focusing on operationalizing these strategies, the study contributes to understanding how practical manifestations of knowledge management, facilitated by cultural underpinnings, translate into performance, offering insights that extend beyond mere cultural measurement (GOSWAMI & Agrawal, 2020). This research also addresses the gap in employee engagement and training, highlighting how a supportive culture fosters greater involvement in knowledge management practices.

Lastly, while stakeholder theory advocates for organizations to consider diverse stakeholder interests for sustainable performance (Freeman et al., 2021), the literature lacks comprehensive frameworks that effectively reconcile competing stakeholder demands while addressing multifaceted performance measurement. Traditional approaches often rely heavily on financial indicators, frequently neglecting critical non-financial dimensions (Kaplan & Norton, 2001); Cupertino et al., 2023). This study directly addresses this gap by defining organizational performance, not solely in financial terms but through a comprehensive set of non-financial and strategic indicators relevant to MTCs. These indicators include educational quality and relevance, research and innovation output, operational efficiency, adaptability, responsiveness, reputation, and stakeholder satisfaction. By employing a multifaceted performance lens, the research aims to provide a more holistic understanding of organizational performance in this context.

2.6 Operationalization of Variables

TABLE 1
Operational Framework

Variable	Orientation	Objective	Indicators	Measurement Scale	Tool of Analysis
Knowledge Creation (X ₁)	Independent Variable	To determine the effect of knowledge creation on the organizational performance of MTCs in Nairobi, Kenya.	-Communities of practice; -Mentorship & apprenticeship; -Cross-department collaboration; -Internal research outputs	5-point Likert Scale	Descriptive statistics; Correlation; Regression analysis
Knowledge Storage (X ₂)	Independent Variable	To establish the effect of knowledge storage on the organizational performance of MTCs in Nairobi, Kenya.	-Knowledge repositories; -Documentation systems; -Knowledge maps; -Exit interviews	5-point Likert Scale	Descriptive statistics; Correlation; Regression analysis
Knowledge Sharing (X ₃)	Independent Variable	To determine the effect of knowledge sharing on the organizational performance of MTCs in Nairobi, Kenya.	-Staff training programs -ICT knowledge platforms; -Open communication channels; -After-action reviews	5-point Likert Scale	Descriptive statistics; Correlation; Regression analysis
Knowledge Utilization (X ₄)	Independent Variable	To assess the effect of knowledge utilization on the organizational	- Innovation; -Problem-solving;	5-point Likert Scale	Descriptive statistics; Correlation; Regression analysis

		performance of MTCs in Nairobi, Kenya.	-Decision-making; -Adoption of new training methods/services		
Organizational Performance (Y)	Dependent Variable	To assess the organizational performance outcomes of MTCs in Nairobi, Kenya.	-Quality of training outcomes; -Graduation rates; -Operational efficiency; -Employee satisfaction	5-point Likert Scale	Descriptive statistics; Correlation; Regression analysis

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter explores the dynamics of investigating “Knowledge Management Strategies and Their Effect on Organizational Performance in Middle-Level Medical Training Colleges in Nairobi County, Kenya.” It outlines the research methodology that guides the study, shaping the research questions and data assessment. The chapter details the research design, identifies the target population, and describes the sampling techniques employed. It outlines the data-collection instruments and procedures used, along with measures to ensure reliability and validity. The chapter concludes by discussing the data analysis methods and presenting the findings, aiming for a thorough and credible investigation.

3.2 Research Design

This study will use a sequential explanatory mixed-methods design, in which quantitative data collection and analysis precede qualitative inquiry. This approach allows for statistical measurement of the relationship between knowledge management strategies (knowledge creation, storage, sharing, and utilization) and organizational performance, with qualitative insights used to explain the quantitative results further (Creswell & Plano Clark, 2023).

The quantitative part will involve administering structured questionnaires to employees at middle-level Medical Training Colleges (MTCs) in Nairobi County. This part will test the study hypotheses and determine the strength and significance of the relationships among variables. The qualitative part will include semi-structured interviews and document reviews to enrich and contextualize the quantitative findings, enabling a deeper understanding of the factors affecting KM strategy implementation and performance outcomes.

The unit of analysis for this study is the organizational performance of middle-level MTCs in Nairobi County. In contrast, the unit of observation is the individual staff members (administrative

and academic personnel) who are directly involved in knowledge-related activities within the institutions.

Adopting this design strengthens methodological rigor through triangulation, improves internal validity by integrating numerical data with experiential accounts, and guarantees practical relevance in evaluating the effectiveness of KM strategy (Bans-Akutey & Tiimub, 2021). Therefore, the design offers both breadth through statistical generalization and depth by capturing institutional dynamics that affect KM strategy implementation.

3.3 Target Population

The foundation of a comprehensive research project lies in the accurate identification of its target population, which comprises distinct subsets defined by specific criteria aligned with the research objectives (William, 2024). This study focuses on employees of middle-level medical training colleges in Nairobi City County, Kenya. It aims to investigate their contribution to the knowledge management strategies employed by these institutions and their effects on organizational performance. Given these colleges' specialized functions and operational capacities, the research intends to extract meaningful insights into their information-sharing practices. By clearly delineating the target organization, this study aims to generate relevant and pragmatic findings to enhance performance in MTCs operating in Kenya. The target population of 687 employees comprises administrative staff, lecturers, and department heads across the 10 Medical Training Colleges (MTCs) selected for the study. The source of this data is the official institutional websites and human resource data from participating MTCs.

TABLE 2
Target Population

S/No.	MTCs	Location	Employees
1.	KMTC Nairobi Campus	Nairobi	311
2.	Catherine McAuley Nursing School	Nairobi	27
3.	AMREF International University	Nairobi	125
4.	Cecily McDonell College of Health Sciences	Nairobi	36
5.	Kenyatta National Hospital School of Nursing	Nairobi	43
6.	Kenyatta University Teaching and Referral Hospital and Research	Nairobi	22
7.	Macmillan Medical Training College	Nairobi	31
8.	Medprime Training College	Nairobi	23
9.	Cleveland Medical Training College	Nairobi	31
10.	Kreston Medical Training College	Nairobi	38
Total			687

Source: Official Institutional Websites and Published Reports

3.4 Sample Size and Sampling Procedure

The choice of sample size and the sampling approach are crucial aspects of designing any research study, as they significantly influence the credibility and applicability of the findings. A thoughtfully determined sample size ensures that the study can identify meaningful differences or effects. In contrast, a systematic sampling procedure reduces the risk of bias and enhances the generalization of results to a larger population (Hirose & Creswell, 2023). Researchers must consider various factors, such as the specific characteristics of the target population, anticipated effect sizes, and the overall context of the research, to construct a study design that yields reliable and relevant insights (Kale, 2025). Therefore, understanding the complexities of sample size and sampling techniques is crucial for conducting rigorous research that can significantly advance understanding of various phenomena.

Yamane's (1967) formula for determining sample size is given by:

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

Where:

n = Sample Size

N = Population Size

e = Margin of Error: 0.05 (i.e., $\pm 5\%$ precision level)

Therefore:

$N = 687$

$e = 0.05$

$$\begin{aligned}n &= \frac{687}{1 + (687 \times 0.05^2)} \\n &= \frac{687}{1 + 1.7175} \\n &= \frac{687}{2.7175} \\n &\approx 253\end{aligned}$$

Staff were categorised into three cadres: Heads of Departments (HoDs), Senior Lecturers, and Administrative Staff. Using Yamane's (1967) formula with a 95% confidence level and a 5% error margin, a sample size of 253 respondents was determined. Proportionate stratified random sampling was then employed to allocate sample quotas to each institution based on their respective staffing levels. Within each institutional quota, stratification was further applied to ensure representation of the three staff cadres using assumed proportions of 10% HoDs, 60% Senior Lecturers, and 30% Administrative Staff. The sample distribution across the selected institutions is indicated in Table 3 in Appendix 1.

3.5 Data Collection Instruments and Data Collection

This study will employ a mixed-methods approach to capture both quantitative and qualitative data on knowledge management strategies and organizational performance in middle-level Medical Training Colleges (MTCs) in Nairobi. Quantitative data will be collected using structured questionnaires administered to employees of selected MTCs. The questionnaire will include Likert-scale items to measure indicators of organizational performance (completion, pass-rate, employability, efficiency, satisfaction) and knowledge management strategies (creation, storage, sharing, utilization).

Qualitative data will be obtained through semi-structured interviews with departmental heads and selected staff to provide deeper insights into KM practices, challenges, and their perceived effect on institutional performance. In addition, document analysis will be conducted on institutional records, including strategic plans, annual reports, training manuals, and policy documents, to validate and complement the primary data.

3.6 Validity and Reliability

A pilot test will be conducted to assess the clarity, comprehensibility, and relevance of each questionnaire item for MTC employees, measure completion times, and identify technical issues, especially in an online format. Academic guidelines suggest involving 10 to 30 participants for effective testing (Lenzner et al., 2023), with a sample size of 50-60 (25%) employees, ideal for the main study of 253 participants. These participants will be selected from the same population as the main study. However, they will not be included in the final dataset if any modifications are made based on the pilot findings. The data analysis will focus on qualitative feedback from debriefing sessions and preliminary quantitative assessments, including completion rates and reliability measures such as Cronbach's Alpha. The insights gained will facilitate revisions to the questionnaire and improve data collection protocols, ultimately enhancing the quality, validity, and reliability of the final research outcomes.

Reliability is essential for assessing the quality of a study, as it indicates the stability and consistency of measurement instruments. This raises the critical question: "Will this instrument produce the same results when used repeatedly under similar conditions?" In this research, utilizing a quantitative questionnaire to gather data from employees in various MTCs in Nairobi, ensuring the instrument's reliability is crucial for the credibility of the findings. The study aims to evaluate the internal consistency of multi-item scales measuring constructs such as employee satisfaction and organizational commitment, ensuring that related items cohesively reflect the same underlying concept. Without this assurance, observed scores may reflect random error rather than genuine differences, jeopardizing validity (Hair et al., 2019). To assess internal consistency, Cronbach's Alpha (α) will be employed, with acceptable values generally set at 0.70; however,

slightly lower values may suffice in exploratory research. The Cronbach's Alpha coefficient is calculated using a specific formula (Pallant et al., 2020).

The Cronbach's Alpha coefficient is calculated using the following formula:

$$\alpha = \frac{k}{k-1} \left(1 - \frac{\sum_{i=1}^k \sigma_i^2}{\sigma_{test}^2} \right)$$

Where:

k = number of items in the test

σ_i^2 = the variance of item i

σ_{test}^2 = the test-score variance

Validity testing is crucial in research, as it verifies that the collected data accurately represent the constructs studied, thereby establishing the credibility of the findings and their applicability in real-world scenarios (Sürücü & Maslakci, 2020). In knowledge management, where the effectiveness of strategies can vary, it is vital to ensure that measurement instruments accurately capture relevant constructs to link strategies to performance outcomes (Sobaih et al., 2025). A comprehensive approach to validity testing will be employed, starting with expert feedback to assess content validity of the research instruments, followed by Exploratory Factor Analysis (EFA) to ensure construct validity. Additionally, correlation analysis will examine the relationships between knowledge management dimensions and performance indicators, verifying both convergent and discriminant validity. Criterion-related validity will be assessed by comparing the results with established benchmarks. At the same time, member checking will enable participants to provide feedback on the findings, thereby enhancing the study's credibility and reliability. This robust validity testing ensures that conclusions regarding the impact of knowledge management on organizational performance are reliable and actionable.

3.7 Data Analysis and Presentation

To align with the research objectives and framework, a mixed-methods approach will be employed for data analysis and presentation. This approach will facilitate a comprehensive understanding of the relationship between knowledge management strategies and organizational performance in middle-level medical training colleges in Nairobi, Kenya (Creswell & Creswell, 2017).

For quantitative data analysis, statistical tools such as SPSS will be utilized to interpret data gathered from questionnaires (Pallant et al., 2020). The data will be summarized using descriptive statistics, such as means, standard deviations, and frequencies, to provide an overview of the relevant variables. Additionally, the study will apply inferential statistics, including regression and correlation analyses, to explore the relationships between knowledge management strategies and organizational performance (Field, 2024). Specifically, multiple regression analysis will be employed to investigate the impact of various knowledge management approaches on different metrics of organizational performance (Hair et al., 2019). The multiple linear regression formula is:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$$

Where;

Y= Organizational Performance

α = Intercept term (constant)

X1= Reward and recognition

X2= Employee training and development

X3= Organizational culture

X4= Technologies

β_1 - β_4 = Regression coefficients

ϵ = Error term

Qualitative data analysis will involve thematic analysis to explore information obtained from focus groups, interviews, and document reviews. Following the guidance of Braun and Clarke (Braun & Clarke, 2023), this method entails identifying and summarizing recurring patterns or themes in the data. Key steps in this process include transcribing interviews, coding the data, identifying themes, and interpreting the findings.

To enhance understanding, both quantitative and qualitative data will be integrated, allowing for a comprehensive exploration of the research topic. This integration will enable the identification of converging and diverging patterns through the triangulation of multiple data sources, ultimately providing richer insights into the relationship between knowledge-sharing practices and organizational performance.

Data presentation will utilize tables, graphs, and charts for quantitative findings, while qualitative insights will be conveyed through thematic summaries and illustrative quotes from participants. The results will be communicated clearly and concisely, making them accessible to a diverse audience, including policymakers, practitioners, and scholars.

3.7.1 Diagnostic Tests

This study will employ diagnostic tests to verify that the regression models effectively represent the relationship between knowledge management strategies and the performance of MTCs. Initially, a general model evaluation will identify outliers and specification errors. Next, the Variance Inflation Factor (VIF) will assess multicollinearity, which could distort the impact of specific knowledge-sharing methods. The Breusch-Pagan test will evaluate heteroscedasticity, affecting the reliability of statistical inferences. Finally, the Shapiro-Wilk test will determine the normality of the residuals, which is essential for upholding regression assumptions. These assessments will enhance the validity and rigor of conclusions regarding the impact of knowledge management strategies on the performance of MTCs.

3.7.2 Multicollinearity

The Variance Inflation Factor (VIF) serves as a crucial tool for assessing multicollinearity, a phenomenon that arises when independent variables in a regression model display a significant degree of correlation. Values of VIF that exceed 10 are generally considered problematic, as they suggest that independent variables are so closely interrelated that discerning their individual effects on the dependent variable becomes challenging. This scenario can lead to unreliable and volatile regression outcomes (O'Brien, 2007). In light of the potential interdependencies among various knowledge-sharing strategies, it is crucial to address multicollinearity to accurately assess the

distinct impacts of each practice on the performance of MTCs. Such considerations are particularly relevant to our research.

3.7.3 Heteroscedasticity

To evaluate heteroscedasticity, which violates the assumption of constant error variance in regression models, the researcher will employ the Breusch-Pagan test, along with a visual inspection of residual plots. Heteroscedasticity can lead to inaccurate standard errors and unreliable p-values, as the error variability may differ across various levels of the independent variables, ultimately compromising the validity of our statistical inferences (Abadie et al., 2020). Given the potential for significant variations in MTC performance across differing levels of knowledge management strategies, assessing heteroscedasticity is crucial for ensuring the robustness of our study's findings.

3.7.4 Normality Test

The assessment of normality in residuals will be conducted through visual inspections of histograms and Q-Q plots, as this is vital for ensuring reliable conclusions in regression analysis. The validity of hypothesis testing and the computation of confidence intervals hinge on the assumption that residuals, defined as the differences between observed and predicted values, are normally distributed (Cohen et al., 2020). Confirming the normal distribution of residuals is crucial for validating the statistical significance of our regression coefficients and substantiating our findings within the investigation's context. The investigation aims to explore the impact of knowledge management strategies on MTC performance.

3.8 Legal and Ethical Considerations

Addressing legal and ethical considerations is essential to protecting study participants and upholding research integrity. This study will comply with relevant Kenyan regulations, including the Data Protection Act (Data Protection Act 2019.), to safeguard participant privacy and data

confidentiality. Before data collection, ethical approval will be obtained from the appropriate institutional authorities.

The principal investigator will provide informed consent detailing the study's objectives, methodologies, potential risks, and the participants' right to withdraw at any time. Each selected respondent will receive a Participant Information Sheet outlining the study's purpose, the voluntary nature of involvement, expected time commitment (approximately 15 minutes), and assurances of anonymity. Participants will be informed that no identifying details will be collected and that they may decline or discontinue participation at any point without negative consequences. After reviewing the information sheet, participants will indicate informed consent by completing and returning an anonymous questionnaire, which will constitute implied consent to participate.

Data collection and analysis will adhere to ethical guidelines, ensuring confidentiality and anonymity. Access to securely stored data will be restricted to authorized researchers conducting data collection and analysis impartially to minimize bias. Any conflicts of interest will be disclosed and managed transparently. Findings will be reported honestly and without misrepresentation, aligning with contemporary ethical standards for research involving human subjects. Prioritizing legal and ethical considerations, this study aims to contribute to knowledge while maintaining rigorous research integrity.

3.9 Community Considerations and Dissemination of Findings

This study recognizes the importance of disseminating research findings to stakeholders, including staff from participating middle-level medical training colleges, key policy actors, and the broader community that benefits from enhancements in institutional performance. This research investigates the impact of knowledge management strategies on organizational performance, aiming to yield practical insights that can foster more effective training institutions and, in turn, contribute to developing well-prepared healthcare professionals dedicated to serving the public.

To maximize the impact of dissemination while maintaining cost-efficiency, the findings will primarily be shared through established electronic communication channels. A concise report detailing key findings and actionable recommendations will be prepared in PDF format and distributed via email to the management of the participating institutions and relevant officials

within the Ministry of Health. Additionally, a summary of the results will be circulated through the institutional WhatsApp groups and email platforms commonly used by staff members.

The final research output will be archived in the university's institutional repository and made available on open-access electronic platforms, ensuring broader visibility without incurring additional costs related to printing or travel. Employing these cost-effective strategies, the study aims to make the knowledge generated accessible, practical, and beneficial to all relevant stakeholders and the wider community.

CHAPTER FOUR

DATA ANALYSIS, RESULTS, AND DISCUSSION

4.1 Introduction

This chapter presents the study's empirical findings and interpretation. The quantitative results are presented first (frequencies, cross-tabulations, means, and standard deviations) to describe participant characteristics and the distribution of responses on the knowledge management dimensions. Diagnostic checks for normality, multicollinearity, heteroscedasticity, and other assumptions are also reported. Inferential analysis uses correlation and multiple regression to test the hypothesized relationships between knowledge creation, storage, sharing, and utilization, and organizational performance. All quantitative analyses are conducted in Excel and SPSS and are accompanied by appropriate tables and charts.

4.2 Response Rate

The study sought information from 253 employees drawn from the selected medical training colleges in Nairobi County, Kenya. There were 253 questionnaires distributed, and 204 were returned and completed correctly for analysis. This represented an overall response rate of $(204/253 \times 100) = 80.63$ percent. Mugenda and Mugenda (2012) suggest that a response rate of 50 percent is sufficient to analyze and report, a 60 percent rate is good, and a 70 percent or more is considered excellent. The 80.63 percent response rate obtained in this study was deemed excellent and sufficient for providing credible and representative data. The detailed response rate is presented in Table 3.

TABLE 3
Response Rate

Status	Frequency	Percentage (%)
Responded	204	80.63
Did not respond	49	19.37
Total	253	100.00

4.3 Background Information of the Respondents

TABLE 4

Demographics of the Respondents

Variable		Frequency (n=204)	Percentage (%)
Gender	Male	96	47.0
	Female	108	53.0
Age (Years)	Under 25	22	10.8
	25 – 34	61	29.9
	35 – 44	68	33.3
	45 – 54	35	17.2
	55 – 64	14	6.9
	65 and above	4	2.0
Education Level	Secondary School Certificate	8	3.9
	Certificate	13	6.4
	Diploma	37	18.1
	Higher Diploma	19	9.3
	Bachelor's Degree	90	44.1
	Master's Degree	34	16.7
	Doctorate (Ph.D.)	3	1.5
Employment Status	Full-time	161	78.9
	Part-time	20	9.8
	Contract	17	8.3
	Intern/Attachment	6	2.9
Years of Service	Less than 1 year	18	8.8
	1 – 5 years	61	29.9
	6 – 10 years	71	34.8
	11 – 15 years	32	15.7
	More than 15 years	22	10.8
Role/Cadre	Teaching Staff (Lecturer, Instructor, etc.)	122	59.8
	Administrative Staff (HR, Finance, Admin, etc.)	40	19.6
	Support Staff (Technician, Librarian, Maintenance, etc.)	28	13.7
	Management (Department Head, Coordinator, etc.)	14	6.9

The percentage of males amounted to 47.0% of the respondents, and that of females was 53.0%. This shows that both male and female employees were fairly represented in the study sample. The majority (33.3%) of the respondents were aged between 35 and 44 years, followed by 29.9% who were between 25 and 34 years. Respondents aged between 45 and 54 years accounted for 17.2%, while 10.8% were under 25 years. A smaller proportion (6.9%) were aged between 55 and 64 years, and only 2.0% were aged 65 years and above. This indicates that most employees in the sampled medical training colleges are part of the active working-age group.

3.9% of the respondents had completed secondary school, 6.4% held a certificate, and 18.1% had a diploma qualification. Those with higher diplomas accounted for 9.3%, while the majority, 44.1%, possessed a bachelor's degree. Respondents with a master's degree constituted 16.7% and 1.5% had attained a doctorate. This distribution indicates that most respondents had university-level education.

The study further asked about the respondents' current employment status. 78.9% of the respondents were employed on a full-time basis, 9.8% were on part-time terms, 8.3% were serving under contract arrangements, while 2.9% were interns or attachment students. On the respondents' duration of service in their respective medical training colleges, 8.8% of the respondents had served for less than one year, 29.9% had been employed for between one and five years, while 34.8% had worked for between six and ten years. Respondents with between eleven and fifteen years of service accounted for 15.7%, whereas 10.8% had served for more than fifteen years. The findings suggest that a significant number of respondents had gained enough institutional experience to offer reliable insights into knowledge management practices within their organizations.

59.8% of the respondents were teaching staff such as lecturers and instructors, 19.6% were administrative personnel, including human resources, finance, and office administrators. In comparison, 13.7% served as support staff, including technicians, librarians, and maintenance officers. In addition, 6.9% of the respondents occupied management positions such as department heads and coordinators. This distribution indicates that the majority of participants were directly involved in teaching and academic processes.

4.4 Knowledge Management

This section presents the descriptive results of the main study variables, which include knowledge creation, knowledge storage, knowledge sharing, knowledge utilization and organizational performance. The results are summarized in Tables 5 to 8

4.4.1 Knowledge Creation

The study assessed knowledge-creation practices within medical training colleges using nine indicators measured on a five-point Likert scale. As shown in Table 5, the mean scores ranged from 3.74 to 4.16 with an overall mean of 3.95 and a standard deviation of 0.66. The overall mean of 3.95 and a relatively low standard deviation of 0.66 indicate consistent agreement among respondents, implying uniform KM practices across institutions. This widespread engagement in generating new ideas and collaboration provides practical validation for the Organizational Knowledge Creation Theory (Nonaka & Takeuchi, 1995), demonstrating that the socialization and combination of knowledge are active processes within these institutions.

TABLE 5***Perceived Levels of Agreement on Knowledge Creation Strategies***

Statement	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	Std. Dev.
1. There are informal or formal groups at our MTC where staff regularly share knowledge related to their work.	3.4	8.8	12.3	49.0	26.5	4.02	0.65
2. Our MTC encourages staff to share new or developing ideas openly.	2.9	7.4	11.3	51.5	26.9	4.10	0.63
3. There are spaces (physical or virtual) where staff interact regularly for knowledge-sharing purposes.	4.9	10.3	14.2	47.5	23.0	3.87	0.68
4. Staff are supported in applying newly introduced guidelines in their day-to-day roles.	3.9	9.8	12.7	50.0	23.6	3.92	0.71
5. Staff are given opportunities to practice new knowledge in real work settings.	4.4	11.8	13.7	48.0	22.1	3.84	0.72
6. Our MTC encourages collaboration between departments to solve problems or improve practice.	2.5	6.9	10.8	54.4	25.5	4.16	0.61
7. Information from different departments is used to develop new learning materials or programs.	3.4	8.3	13.7	50.5	24.0	3.89	0.67

8. Staff are encouraged to document and share their work experiences as learning resources.	5.4	10.8	16.2	45.6	22.0	3.74	0.69
9. Staff are supported in converting their personal expertise into formal guidelines or manuals.	4.9	9.8	14.7	47.0	23.6	3.86	0.70
Overall Mean	—	—	—	—	—	3.95	0.66

The results in Table 5 indicate that most respondents acknowledged the presence of structured and informal mechanisms for knowledge sharing within their medical training colleges. A large majority (75.5%) agreed or strongly agreed that there are informal or formal groups where staff regularly share knowledge related to their work. This had a mean score of 4.02 and a standard deviation of 0.65. Likewise, the respondents reported that their institutions actively encourage staff to share new or developing ideas openly with a mean of 4.10 and a standard deviation of 0.63.

Moreover, the results show that 70.5% of the respondents agreed or strongly agreed that there are designated physical or virtual spaces where regular staff can interact for knowledge sharing. The mean and the standard deviation of this statement were 3.87 and 0.68, respectively, indicating moderate to high collaboration between departments. Regarding institutional support for applying newly introduced guidelines, 73.6% of respondents agreed or strongly agreed that they received support in implementing new procedures in their day-to-day roles. The corresponding mean score was 3.92 with a standard deviation of 0.71.

Analysis of opportunities for practicing newly acquired knowledge revealed that 70.1% of the respondents agreed or strongly agreed that they are given adequate opportunities to apply new knowledge in real work settings. The mean score for this item was 3.84 with a standard deviation of 0.72, suggesting relatively consistent agreement across respondents. Further, the statement that

the MTC encourages collaboration between departments to solve problems or improve practice attracted the highest mean score of 4.16 with a standard deviation of 0.61. Approximately 79.9% of the respondents agreed or strongly agreed with this item, indicating widespread acknowledgment that interdepartmental collaboration is promoted within their institutions.

The findings also show that 74.5% of respondents agreed or strongly agreed that information from different departments is used to develop new learning materials or programs. This statement recorded a mean of 3.89 and a standard deviation of 0.67. Regarding the documentation and sharing of experiences, 67.6% of respondents agreed or strongly agreed that staff are encouraged to document and share their work experiences as learning resources, with a mean of 3.74 and a standard deviation of 0.69. These results suggest that mechanisms for cross-departmental learning and documentation of work experiences are moderately established across the institutions. 70.6% of the respondents agreed or strongly agreed that staff are supported in converting their personal expertise into formal guidelines or manuals. This statement obtained a mean score of 3.86 and a standard deviation of 0.70.

4.4.2 Knowledge Storage

This section presents the descriptive results on knowledge storage practices within the medical training colleges. As summarized in Table 6, the mean scores for all items ranged between 3.68 and 4.07 with an overall mean of 3.88 and a standard deviation of 0.69.

TABLE 6
Perceived Levels of Agreement on Knowledge Storage Strategies

Statement	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	Std Dev.
1. Our MTC regularly conducts “lessons learned” sessions to document project insights.	4.4	9.8	14.7	48.0	23.1	3.76	0.74
2. Organizational knowledge in our MTC is documented in a structured and standardized manner.	3.9	8.8	13.7	50.5	23.1	3.80	0.70
3. Our MTC maintains dedicated knowledge repositories or databases for storing key information.	3.4	7.4	12.3	52.5	24.4	3.87	0.67
4. I can easily locate and retrieve information from the MTC’s knowledge repositories or databases.	3.9	9.3	11.8	51.5	23.5	3.82	0.71
5. The knowledge stored in our systems is regularly reviewed for accuracy and usefulness.	4.9	9.8	13.2	48.5	23.6	3.77	0.72
6. Our MTC has a clear process for archiving or deleting outdated information from knowledge storage systems.	3.4	8.8	14.2	50.0	23.6	3.81	0.69
7. Knowledge maps (e.g., who knows what) are used in our MTC to guide access to expertise.	5.4	10.3	15.2	45.6	23.5	3.72	0.75
8. Exit interviews in our MTC are used to capture departing employees’ critical knowledge.	4.9	9.8	14.7	49.0	21.6	3.78	0.71
Overall Mean	—	—	—	—	—	3.88	0.69

The findings in Table 6 reveal that most respondents acknowledged the presence of formal and informal efforts to capture institutional knowledge. A total of 71.1% of the respondents agreed or strongly agreed that their MTCs conduct “lessons learned” sessions to document project insights,

with a mean of 3.76 and a standard deviation of 0.74. Similarly, 73.6% indicated that organizational knowledge in their institutions is documented in a structured and standardized manner, reflected in a mean of 3.80 and a standard deviation of 0.70. These results suggest that documentation processes are moderately established and that respondents perceive an ongoing effort to systematize institutional knowledge for future reference and use.

A notable proportion of the respondents, 76.9%, agreed or strongly agreed that their MTCs maintain dedicated knowledge repositories or databases for storing key information. This item recorded a mean score of 3.87 and a standard deviation of 0.67, suggesting broad recognition of formal storage mechanisms. In addition, 75.0% agreed or strongly agreed that they can easily locate and retrieve information from these repositories. The statement provided a mean of 3.82 and a standard deviation of 0.71. The results demonstrate that information retrieval systems are reasonably functional and accessible to employees across departments.

Regarding the accuracy and maintenance of stored information, 72.1% of the respondents agreed or strongly agreed that knowledge stored in their systems is regularly reviewed for accuracy and usefulness, yielding a mean of 3.77 and a standard deviation of 0.72. Similarly, 73.6% indicated that their institutions have clear procedures for archiving or deleting outdated information from the storage systems, with a mean of 3.81 and a standard deviation of 0.69. These findings suggest that employees are aware of ongoing review and archiving practices designed to ensure that institutional knowledge remains relevant and up to date.

Regarding specialized mechanisms for knowledge retention, 69.1% of respondents agreed or strongly agreed that knowledge maps are used to guide access to expertise within their institutions.

The statement registered a mean score of 3.72 with a standard deviation of 0.75, showing moderate agreement. Similarly, 70.6% of the respondents agreed or strongly agreed that exit interviews are conducted to capture critical knowledge from departing employees, with a mean of 3.78 and a standard deviation of 0.71. These results suggest that while formal knowledge mapping and exit interview practices exist in many institutions, they may not yet be uniformly institutionalized across all medical training colleges. Overall, the combined means for knowledge storage strategies are consistently above the neutral point, indicating established documentation processes. The overall mean of 3.88 and a standard deviation of 0.69 suggest moderate agreement with some variation in experiences across departments. These efforts to systematically document and retain knowledge align with the Resource-Based View (RBV), treating institutional knowledge as a valuable, intangible asset that can be preserved to secure a competitive advantage and mitigate knowledge loss. However, the lower scores for knowledge maps and exit interviews indicate that informal expertise and knowledge from departing employees are not being captured as effectively as formal, documented knowledge.

4.4.3 Knowledge Sharing

This section presents descriptive results on knowledge-sharing practices within the sampled medical training colleges. Seven statements were used.

TABLE 7***Perceived Levels of Agreement on Knowledge Sharing Strategies***

Statement	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	Std. Dev.
18. New employees in our MTC are introduced to essential knowledge through structured orientation sessions.	2.9	8.3	12.7	49.5	26.6	3.89	0.68
19. Our MTC offers regular training sessions focused on sharing practices and organizational knowledge.	3.9	7.8	10.3	52.0	26.0	3.89	0.70
20. Learning Management Systems (LMS) are actively used in our MTC to distribute training materials and knowledge resources.	3.4	9.8	11.3	50.5	25.0	3.84	0.71
21. Email, video calls and similar tools are used effectively in our MTC to share knowledge across departments.	2.5	7.4	9.8	54.9	25.5	3.93	0.66
22. Staff in our MTC feel safe and supported when they share their ideas or knowledge.	2.0	6.9	9.8	54.9	26.4	3.97	0.64
23. Leadership at our MTC actively encourages and role models knowledge-sharing behaviors among all staff.	1.5	6.4	9.3	55.4	27.4	4.02	0.61
24. Our MTC conducts after-action reviews to collect and share lessons learned from completed projects.	3.4	8.3	12.7	50.0	25.6	3.85	0.70
Overall Mean	—	—	—	—	—	3.96	0.64

The findings in Table 7 show that a majority of respondents acknowledged structured opportunities for knowledge sharing within their institutions. A total of 76.1% agreed or strongly agreed that

new employees are introduced to essential knowledge through formal orientation sessions, with a mean of 3.89 and a standard deviation of 0.68. Similarly, 78.0% reported that their institutions offer regular training sessions focused on sharing organizational knowledge, reflected in a mean of 3.89 and a standard deviation of 0.70. These results demonstrate that most employees experience a structured onboarding and training environment designed to encourage continuous learning.

In relation to the use of digital tools, 75.5% of the respondents agreed or strongly agreed that Learning Management Systems (LMS) are used to distribute training materials and institutional knowledge resources. This item recorded a mean score of 3.84 and a standard deviation of 0.71. Likewise, 80.4% agreed or strongly agreed that email, video calls, and similar tools are effectively used to share knowledge across departments, with a mean of 3.93 and a standard deviation of 0.66. The results suggest that technology-based communication platforms play a key role in facilitating collaboration and knowledge transfer among employees in the sampled medical training colleges.

The findings also show that most respondents viewed their work environments as psychologically safe for sharing knowledge. Approximately 81.3% of respondents agreed or strongly agreed that staff feel safe and supported when expressing their ideas, yielding a mean of 3.97 and a standard deviation of 0.64. In addition, 82.8% agreed or strongly agreed that leadership actively encourages and models knowledge-sharing behaviours among staff members. This item recorded a mean score of 4.02 with a standard deviation of 0.61, indicating that many employees perceive management as being positively engaged in reinforcing open communication.

Finally, 75.6% of the respondents agreed or strongly agreed that their MTCs conduct after-action reviews to collect and disseminate lessons learned from completed projects. The corresponding mean was 3.85 and the standard deviation 0.70, showing moderate to high agreement levels. Overall, the mean scores for knowledge sharing ranged between 3.84 and 4.02 with an aggregate mean of 3.96 and standard deviation of 0.64, suggesting a strong and consistent positive perceptions among staff regarding communication and leadership support for sharing. The high levels of perceived safety and leadership support for sharing reflect the principles of Social Exchange Theory (SET). Staff are willing to engage in the vulnerable act of sharing their expertise because they trust the organization and its leaders to reciprocate with support and recognition, fostering a cooperative environment. The fact that leadership role-modelling scored highest (Mean = 4.02) underscores the critical influence of management in setting the tone for a collaborative culture.

4.4.4 Knowledge Utilization

This section presents the descriptive findings on how knowledge is applied within medical training colleges to support decision-making, innovation and operational improvement. Seven statements were used to measure knowledge application strategies on a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). As summarized in Table 4.6, the mean scores ranged from 3.81 to 3.97 with an overall mean of 3.94 and a standard deviation of 0.67, indicating generally favorable perceptions toward the use of knowledge in institutional processes.

TABLE 8***Perceived Levels of Agreement on Knowledge Utilization Strategies***

Statement	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	Std. Dev.
25. Knowledge acquired from training, meetings, or experience is used to solve day-to-day operational challenges in our MTC.	2.9	7.8	11.8	52.5	25.0	3.89	0.68
26. Decision-making processes at our MTC are guided by relevant and current knowledge.	2.5	7.4	10.3	54.9	24.9	3.92	0.66
27. Our MTC uses knowledge to review and improve internal processes such as student registration or curriculum implementation.	2.5	6.9	9.8	56.4	24.4	3.93	0.64
28. Knowledge is applied to design and implement new teaching methods, educational programs, or clinical services.	1.9	6.9	10.8	55.9	24.5	3.95	0.63
29. Our MTC applies knowledge to develop innovative ideas and improve medical training practices.	2.0	6.4	9.8	56.4	25.4	3.97	0.62
30. Our MTC uses knowledge to adapt to changes in healthcare regulations and training policies.	2.5	7.4	10.8	55.4	23.9	3.91	0.67
31. We use knowledge to anticipate future trends and update our strategies accordingly.	3.4	8.8	11.3	52.5	24.0	3.81	0.70
Overall Mean	—	—	—	—	—	3.94	0.67

Commented [N9]: Refer to article 4.4 page 8 of the KCA University Dissertation Style and Requirement manual and adopt the format on naming figures and tables. Correct this throughout the document.

The results in Table 8 indicate that the majority of respondents affirmed the consistent application of acquired knowledge in addressing operational challenges within their institutions. A total of 77.5% agreed or strongly agreed that knowledge gained from training, meetings, and experience is used to solve day-to-day operational challenges, yielding a mean of 3.89 and a standard deviation of 0.68. Similarly, 79.8% agreed or strongly agreed that decision-making processes are guided by relevant and current knowledge, with a mean of 3.92 and a standard deviation of 0.66. These results

demonstrate that most employees perceive their institutions as effectively integrating experiential and formal knowledge into routine and strategic decision-making.

Furthermore, 80.8% of respondents agreed or strongly agreed that knowledge is used to review and improve internal processes, including student registration and curriculum implementation. This statement registered a mean of 3.93 and a standard deviation of 0.64, indicating consistent agreement across institutions. Similarly, 80.4% reported that knowledge is applied to design and implement new teaching methods, educational programs, or clinical services. The mean score for this statement was 3.95 with a standard deviation of 0.63.

In addition, 81.8% of respondents agreed or strongly agreed that their institutions use knowledge to develop innovative ideas and improve medical training practices. This item yielded a mean of 3.97 and a standard deviation of 0.62, which was the highest among all the knowledge application indicators. Moreover, 79.3% agreed or strongly agreed that knowledge is used to adapt to changes in healthcare regulations and training policies, producing a mean score of 3.91 and a standard deviation of 0.67.

Finally, 76.5% of the respondents agreed or strongly agreed that knowledge is used to anticipate future trends and update institutional strategies accordingly. This item recorded a mean of 3.81 and a standard deviation of 0.70, representing the lowest mean score among the indicators, though still within the range of general agreement. Overall, the mean scores for knowledge application ranged from 3.81 to 3.97, with a composite mean of 3.94 and a standard deviation of 0.67. This suggests that MTCs are effectively applying knowledge with a moderate degree of consensus

among respondents. This strong focus on applying knowledge is the core of Dynamic Capabilities Theory. It shows that the colleges are not just repositories of information but are actively 'seizing' opportunities by using their knowledge to innovate, adapt, and reconfigure their teaching and administrative processes for improved performance.

4.4.5 Organizational Performance

This section presents the descriptive findings on the overall organizational performance of the sampled medical training colleges. Eleven statements were used to assess performance outcomes in areas such as goal achievement, service quality, operational efficiency, resource management, adaptability, and reputation. As shown in Table 9, mean scores ranged from 3.84 to 4.18, with an overall mean of 4.02 and a standard deviation of 0.63, indicating generally positive perceptions of institutional performance. These strong results across diverse indicators from student outcomes to financial management and reputation reflect a multi-faceted institutional effectiveness. This aligns with a stakeholder theory perspective, suggesting that the colleges are successfully meeting the expectations of key groups such as students, employers and regulatory bodies.

TABLE 9
Perceived Levels of Agreement on Organizational Performance

Statement	SD (%)	D (%)	N (%)	A (%)	SA (%)	Mean	Std. Dev.
32. Our MTC consistently meets its goals for student intake and graduation rates.	2.0	6.9	11.3	54.4	25.4	3.95	0.64
33. Students and employers highly regard the quality of training offered at our MTC.	1.5	5.9	9.8	56.9	25.9	4.00	0.61

34. Student satisfaction with services and education at our MTC is high.	2.0	6.4	10.3	55.9	25.4	3.98	0.63
35. Administrative processes at our MTC are efficient and effective.	1.9	7.4	10.8	54.9	25.0	3.95	0.65
36. Resources (financial, human, material) are managed efficiently at our MTC.	2.5	8.3	10.8	54.0	24.4	3.90	0.66
37. Our MTC adapts quickly to changing regulations and industry standards.	2.0	6.9	9.8	56.4	24.9	3.95	0.64
38. Our MTC demonstrates financial stability and responsibility.	2.5	7.4	11.8	55.4	22.9	3.89	0.67
39. The MTC effectively manages its budget to achieve its objectives.	2.9	7.8	12.7	53.4	23.2	3.87	0.68
40. Our MTC maintains strong positive relationships with external stakeholders (e.g., Ministry of Health, hospitals, community).	1.9	6.9	9.8	56.9	24.5	3.96	0.62
41. Our MTC has a strong reputation within the healthcare education sector.	1.5	6.4	9.3	56.9	25.9	4.00	0.60
Overall Mean	—	—	—	—	—	4.02	0.63

The results in Table 9 show that most respondents viewed their institutions as performing well across key operational and academic indicators. About 79.8% of respondents agreed or strongly agreed that their MTCs consistently meet student intake and graduation targets, reflected in a mean of 3.95 and a standard deviation of 0.64. A total of 82.8% indicated that students and employers highly regard the quality of training offered, yielding a mean of 4.00 and a standard deviation of 0.61. Similarly, 81.3% reported high student satisfaction with services and instruction (mean = 3.98, SD = 0.63), while 79.9% agreed that administrative processes are efficient and effective (mean = 3.95, SD = 0.65).

Regarding resource utilization and adaptability, 78.4% of respondents agreed or strongly agreed that resources are managed efficiently, resulting in a mean of 3.90 and an SD of 0.66. A

comparable 81.3% confirmed that their MTCs adapt quickly to changing regulations and industry standards (mean = 3.95, SD = 0.64). In addition, 77.9% agreed that their institutions demonstrate financial stability and responsibility, with a mean of 3.89 and SD 0.67, while 76.6% acknowledged effective budget management (mean = 3.87, SD = 0.68). These findings indicate that respondents generally recognized prudent resource use and financial accountability as components of institutional performance.

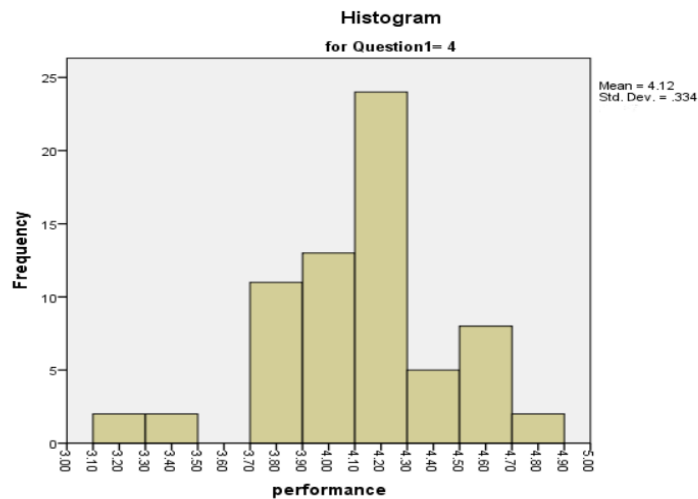
The findings also reveal a strong consensus concerning external engagement and reputation. A large majority (81.4%) of respondents agreed or strongly agreed that their MTCs maintain positive relationships with key external stakeholders (mean = 3.96, SD = 0.62). Similarly, 82.8% indicated that their institutions enjoy a strong reputation within the healthcare education sector (mean = 4.00, SD = 0.60). These results demonstrate that stakeholder relations and sectoral standing are perceived as important aspects of institutional success.

4.5 Diagnostic tests

4.5.1 Normality Test

Normality was assessed using both graphical and statistical approaches. The histogram of standardized residuals showed that the data points were approximately aligned along the diagonal line. That suggested a near-normal distribution.

FIGURE 2
Histogram of Standardized Residual



4.5.2 Multicollinearity Test

The results in Table 10 show that all VIF values for the independent variables are below the critical threshold of 10, which indicates no serious multicollinearity problem. According to Hair et al. (2019), VIF values below 5 are generally acceptable, while values between 5 and 10 may suggest moderate correlation but not enough to distort regression estimates.

TABLE 10
VIF Results

Variable	VIF
Constant	12.59
Knowledge Creation	2.77
Knowledge Storage	4.75
Knowledge Sharing	3.36

Knowledge Utilization	7.48
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In this dataset, knowledge utilization (VIF = 7.48) and knowledge storage (VIF = 4.75) show relatively higher intercorrelations, which is expected since different dimensions of knowledge management are conceptually related. However, the values remain within acceptable limits, confirming that each variable contributes unique explanatory power to the regression model.

4.5.3 Data Reliability

The Cronbach's alpha coefficient was used to test the reliability of the research instrument, evaluating the internal consistency of the measurement items. The results in Table 11 showed that all study constructs exceeded the recommended threshold of 0.70, confirming acceptable reliability. In particular, knowledge creation ($\alpha = 0.87$), knowledge storage ($\alpha = 0.84$), knowledge sharing ($\alpha = 0.82$), knowledge utilization ($\alpha = 0.89$), and organizational performance ($\alpha = 0.91$) demonstrated high reliability. According to Hair et al. (2019), alpha values above 0.70 indicate satisfactory internal consistency. The questionnaire items used in this study were suitable for further statistical analysis.

TABLE 11
Cronbach's Alpha Results

Construct	Number of Items	Cronbach's Alpha	Reliability Level
Knowledge Creation	9	0.87	Good
Knowledge Storage	8	0.84	Good
Knowledge Sharing	7	0.82	Good
Knowledge Utilization	7	0.89	Good

Organizational Performance	10	0.91	Excellent
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Source: Survey Data (2025)

4.6 Correlation Analysis

This section presents the correlation analysis between the independent variables (knowledge creation, knowledge storage, knowledge sharing, and knowledge utilization) and the dependent variable (organizational performance). The analysis was conducted using the Pearson Product-Moment Correlation Coefficient (r) to determine the strength and direction of linear relationships among the study variables.

TABLE 12

Correlation Analysis Results

Variable	Creation	Storage	Sharing	Utilization	Organizational Performance
Creation	1.000	0.654	0.612	0.672	0.547
Storage	0.654	1.000	0.755	0.661	0.518
Sharing	0.612	0.755	1.000	0.714	0.492
Utilization	0.672	0.661	0.714	1.000	0.611
Organizational Performance	0.547	0.518	0.492	0.611	1.000

Source: Survey Data (2025)

All the independent variables, as indicated in Table 12, had positive and significant correlations with organizational performance. Knowledge utilization had the strongest association with organizational performance ($r = 0.611$), followed by knowledge creation ($r = 0.547$), knowledge storage ($r = 0.518$), and knowledge sharing ($r = 0.492$). These findings suggest that the better the level of every dimension of knowledge management, the more likely the general performance of the organization of the medical training colleges is likely to improve.

The results also show that there is a significant interrelationship between the constructs of knowledge management itself. For instance, knowledge storage and knowledge sharing recorded a strong positive correlation ($r = 0.755$), while knowledge creation and knowledge utilization showed a similarly strong association ($r = 0.672$). All correlations were positive, ranging from $r = 0.492$ to $r = 0.755$, which suggests a high degree of complementarity among the four dimensions of knowledge management. Therefore, enhancing any one of these aspects is likely to reinforce others, collectively leading to improved institutional effectiveness.

4.7 Regression Analysis

The research involved a multiple linear regression analysis to assess the impact of dimensions such as knowledge management, knowledge creation, knowledge storage, knowledge sharing, and knowledge utilization on the performance of an organization among medical training colleges. The results of the regression model are summarized in Table 4.11, which includes the model summary, analysis of variance (ANOVA), and regression coefficients.

The model provided an R-squared of 0.416 and an adjusted R-squared of 0.404, indicating that about 41.6 percent of the variation in organizational performance can be attributed to the four independent variables. The F-statistic ($F = 35.38$, $p < 0.001$) confirms the positive statistical significance of the regression model, indicating that the independent variables, as a whole, significantly affect the performance of the organization in the sampled institutions.

TABLE 13
Regression Model Summary

Statistic	Value
R	0.645
R ²	0.416
Adjusted R ²	0.404
F-Statistic	35.38
Sig. (p-value)	0.000
N	204

Source: Survey Data (2025)

The ANOVA results in Table 13 indicate that the regression model is significant at the 0.05 level ($F = 35.38$, $p < 0.001$). This suggests that at least one of the knowledge management dimensions significantly predicts organizational performance.

TABLE 14
ANOVA Results

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	26.38	4	6.595	35.38	0.000
Residual	37.13	199	0.187	—	—
Total	63.51	203	—	—	—

Source: Survey Data (2025)

As shown in Table 14, the regression coefficients indicated that knowledge utilization ($\beta = 0.425$, $p < 0.001$) and knowledge creation ($\beta = 0.239$, $p = 0.012$) had statistically significant positive effects on organizational performance. This means that the improvements in knowledge creation and utilization would enhance institutional performance outcomes. Knowledge storage ($\beta = 0.146$, $p = 0.124$) and knowledge sharing ($\beta = -0.021$, $p = 0.827$), on the other hand, did not exhibit statistically significant effects. This suggests that, although they are positive contributors, they do not have a significant impact on their own when considered alongside other variables.

TABLE 15
Regression Coefficients

Variable	Unstandardized Coefficient (B)	Std. Error	t-value	Sig.	95% Confidence Interval
Constant	0.274	0.178	1.545	0.124	(-0.076, 0.625)
Knowledge Creation	0.239	0.094	2.532	0.012	(0.053, 0.425)
Knowledge Storage	0.146	0.095	1.545	0.124	(-0.040, 0.333)
Knowledge Sharing	-0.021	0.096	-0.219	0.827	(-0.211, 0.168)
Knowledge Utilization	0.425	0.092	4.626	0.000	(0.244, 0.606)

Source: Survey Data (2025)

4.8 Qualitative analysis

Participants were asked to provide recommendations on how to improve the five variables within their MTCs. The qualitative data were analyzed thematically. The integration of both quantitative and qualitative findings in this study offered a more comprehensive understanding of the topic. Quantitative results showed that knowledge creation and utilization had statistically significant effects on performance. Storage and sharing, although positive, were not significant predictors. The qualitative data enriched these findings by highlighting practical challenges and contextual factors that explain the numerical trends. Participants emphasized the importance of leadership support, digital platforms, mentorship, and staff engagement. These factors correspond with the quantitative indicators of knowledge creation and utilization. As a result, respondents explained the limited impact of knowledge storage and sharing by citing weak institutional structures, a lack of ICT infrastructure, and inconsistent communication. Therefore, the qualitative insights validated and contextualized the statistical findings. It demonstrated that the effectiveness of knowledge management depends on both institutional systems and human factors that foster active knowledge use.

4.8.1 Knowledge Creation

Participatory engagement emerged as the most dominant theme. Many participants emphasized the need for inclusivity and collaboration in decision-making processes. One respondent urged management to “engage the staff in the process” and promote “participation in decision making with the management, including the board of directors.” Others called for more openness, noting that “end-to-end interaction for knowledge creation and implementation” would ensure ideas from all cadres were valued. The second theme was continuous training and mentorship, which participants described as vital to sustaining creativity and learning. Responses such as “training to all staff,” “offer short courses and workshops frequently,” and “regular staff and student meetings between management and staff” were common. Several participants proposed “serious mentorship” programs and “regular training of staff on new trends.”

Policy and leadership support also featured prominently. Respondents called for formal structures to govern knowledge creation. Some suggest “we should have a policy on knowledge creation” and “create a department to deal with knowledge creation, storage, and dissemination.” Others highlighted the role of management, emphasizing that “leadership needs to follow resource to function” and “after-action reviews should be institutionalised and management should emphasise the importance of knowledge creation throughout the organisation.” These reflections align with Endende et al. (2022), who argue that leadership commitment and institutional policies are crucial in embedding knowledge-creation practices into daily operations. Several respondents stressed the importance of “carrying out research,” “organization of sponsorship for career progression,” and “fostering a strong research culture by encouraging faculty and student-led studies.” Kenyan universities.

4.8.2 Knowledge Storage

Digitization and technological advancement emerged as the key theme. Many respondents strongly advocated for transitioning from manual to digital systems with statements such as “use of electronic database storage as opposed to the manual currently in use,” “digitize current knowledge stored in a hard copy manner to make it easy to access and manage,” and “use of cloud to store reference materials.” Others emphasized the need for modernization, stating “upgrade the systems and ensure cybersecurity on staff database” and “develop online and offline storage mechanisms for easy retrieval.” These sentiments highlight a shared recognition that digital transformation is key to effective institutional memory.

Another theme was the establishment of structured systems and policies to standardize knowledge documentation and storage. Participants called for formalized frameworks, as seen in comments like “set a department to deal with knowledge storage,” “we should establish structures for knowledge storage,” and “develop a knowledge management policy to guide collection, storage, and sharing of information.” One participant summarized, “To improve knowledge storage, it is essential to establish a centralized and secure digital repository.” According to Alavi and Leidner (2001), effective knowledge management depends on systematic processes and organizational policies.

The following recurring theme was improving accessibility and retrieval of stored information. Several participants noted that stored knowledge must be “accessible easily,” suggesting that “central digital libraries” and “centralized repositories” would help staff retrieve institutional data efficiently. Another proposed “organizing content using relevant categories, tags, and keywords

for easy search and retrieval.” Similar conclusions were drawn by Onditi et al. (2023), who noted that accessibility determines whether institutional knowledge translates into actionable decision-making. Lastly, participants underscored the importance of data security and accountability. They called for “ensuring data is well secured and access controlled,” and “having adequate backups.” A few even suggested “allowing anonymity of knowledge being stored” to encourage open contributions. The call for “clear access control and backup systems” reflects awareness of risks related to data breaches and loss.

4.8.3 Knowledge Sharing

The central theme was the need to cultivate a culture of openness and collaboration. Respondents repeatedly emphasized teamwork, communication, and regular forums for interaction. Typical comments included “team building and creating a culture of sharing,” “regular staff and student meetings with management,” and “through workshops and retreats.” One participant observed that “the leadership should consider creating an enabling environment where knowledge is generated and shared.” At the same time, another noted that “participation and interaction with management and the lessons learnt distributed effectively” would make sharing more meaningful. These reflections suggest that knowledge sharing in MTCs is often hindered by hierarchical barriers and limited communication (Onditi et al., 2023).

The second key theme concerned leadership and policy support. Several participants pointed out that management must lead by example. One respondent stated, “Management needs to be on the frontline in modeling behaviors that encourage knowledge sharing.” Others called for formal structures and protection mechanisms, such as “we need a policy on knowledge sharing” and “safe

spaces should be created for open communication.” The presence of formalized policies also ensures continuity of knowledge flow even amid staff transitions.

The third emerging theme was structured mentorship and peer learning. Several respondents emphasized the role of guidance and experience sharing, writing “having a structured way for mentorship and coaching of staff,” “there can be time for CMEs,” and “through mentorship and training.” Others expressed concern that “leaders keep a distance for fear of mentoring,” implying a gap between senior and junior staff in knowledge transfer. Mentorship not only facilitates tacit knowledge exchange but also strengthens professional identity and institutional cohesion in healthcare research environments (Krishna et al., 2025). Finally, participants emphasized inclusivity and equal access to shared knowledge. They highlighted the need to “balance the knowledge to all cadres,” “give staff at lower levels opportunity in policy decisions,” and ensure that “information is shared equally to all staff.” This call for equity reflects an awareness that knowledge silos hinder organizational learning.

4.8.4 Knowledge Utilization

The most dominant theme was aligning knowledge with organizational goals. Participants consistently emphasized that knowledge should inform institutional decisions, with one stating, “Staff involvement in decision making,” and another adding, “Utilize knowledge to make informed decisions.” Several respondents stressed the need to “cascade the knowledge to relevant departments promptly” and ensure “participation by all departments.” Another elaborated that “the available knowledge should be used to predict the health landscape and inform decision making... if a particular health program may lose value, it should be customised to meet that demand.”

(Sivakumar & Kumar, 2019) and more recent work by (Saemaldaher & Emeagwali, 2025) argue that aligning knowledge with strategic and operational goals enhances institutional adaptability and performance.

A second key theme involved evidence-based decision-making and innovation. Many respondents emphasized that management must be proactive, not reactive with one noting, “The management needs to be more proactive in guiding innovations as opposed to being reactive.” Others echoed the need to “embrace change management practices” and “encourage research, creativity and innovation to keep up with trends.” Participants saw knowledge utilization as a dynamic process of experimentation and application. The third emerging theme was continuous sensitization and capacity building. Participants frequently called for regular staff development to ensure that employees can apply knowledge effectively. Comments such as “continuous sensitization,” “training of staff,” and “have an adequate system that helps everyone understand their role in knowledge utilization” were common. One participant explained that institutions should “create forums for discussion of acquired knowledge and strategize how to use it.” These insights emphasize the need for deliberate and sustained learning programs to reinforce the practical use of knowledge.

The final major theme was participatory leadership and feedback mechanisms. Participants emphasized the need for leadership engagement, accountability and follow-up on knowledge application. Several respondents stated that “feedback is key and implementation of the strategies” and “there should be action plans after knowledge sharing sessions.” Others advocated “encouraging openness without fear or favour” and “cultivating a friendly environment for open

sharing of information.” These responses indicate that employees value an inclusive management approach that not only gathers ideas but also follows through with action. This aligns with (Onditi et al., 2023), who found that active managerial involvement and feedback loops significantly increase the practical use of institutional knowledge.

4.8.5 Organizational Performance

Inclusive leadership and staff engagement emerged as the key theme. Many participants stressed the importance of involving staff in decision-making with comments such as “staff involvement,” “more engagement required,” and “include all staff in decision-making.” Others emphasized that “fostering an environment where staff can voice concerns without fear” would encourage transparency and improve morale. A few respondents called for “involvement of all stakeholders and students to give us an idea of improvements and capabilities.” These responses reveal a strong desire for participatory management that values input from all institutional levels. This finding aligns with Onditi et al. (2023), who observed that inclusive governance promotes collective ownership and enhances organizational outcomes in higher education institutions. Others mentioned “technology integration, rewards and recognitions, and capacity building” as essential for boosting performance.

The next central theme focused on resource management and efficiency. Many respondents emphasized prudent use of institutional resources, stating, “reduce spending on unnecessary matters which do not directly impact the core mandate,” “efficient utilization of resources,” and “the available resources should be channeled towards programs that are of high impact.” Others proposed “resource mobilization and independence” and “proper financial structure.” These responses underscore the need for transparent and results-oriented financial management.

According to (Chigada & Ngulube, 2016), sound resource governance is a cornerstone of sustained institutional performance, ensuring that knowledge, capital, and human resources are aligned toward organizational objectives.

The final theme was strategic planning and performance monitoring. Participants emphasized that “developing a realistic strategic plan,” “setting clear targets,” and “implementing a performance management system” are crucial. Some noted that “regular reviews on performance” and “feedback from customers and stakeholders” would support accountability and continuous improvement. One respondent summarized this comprehensively: “By strengthening strategic planning, empowering employees, improving collaboration, leveraging technology, enhancing monitoring and evaluation and managing resources efficiently, the organization will significantly improve its overall performance.” This view aligns with (Endende et al., 2022), who highlighted that strategic alignment, regular evaluation and clear goal-setting are vital for institutional excellence.

4.9 Discussion of Findings

The primary objective of this study was to examine how knowledge management practices influence the performance of medical training colleges. Descriptive statistics revealed that respondents generally held positive perceptions of all four knowledge management dimensions, with composite means ranging from 3.81 to 3.97 across the constructs. This indicates that most institutions had implemented knowledge management initiatives to a moderate or high degree. Respondents agreed that knowledge was frequently created, shared and applied in their

professional contexts, although challenges remained in knowledge documentation and retrieval.

The inferential statistics were used to answer the research questions as follows:

RQ1: What is the relationship between Knowledge creation and organizational performance in medical training colleges?

The correlation results revealed a positive and statistically significant association between knowledge creation and organizational performance ($r = 0.547$, $p = 0.000$). The regression analysis further confirmed that knowledge creation had a significant positive effect ($\beta = 0.239$, $p = 0.012$) on organizational performance. This finding provides strong empirical support for the Organizational Knowledge Creation Theory (Nonaka & Takeuchi, 1995) and is consistent with a body of international and local research. For instance, Hadziahmetovic & Dinc (2023) found that knowledge creation was a significant predictor of performance in Central and Eastern European universities, while Albalwy (2024) reported a markedly positive correlation in the Saudi higher education context. In Kenya, Mwangi & Mwanzu (2023) demonstrated that knowledge creation directly influences competitive advantage in the telecommunications sector. Most pertinently, Endende et al. (2022) found that knowledge creation significantly impacts employee performance in Kenyan public TVET institutions, a finding our study extends to the specific domain of medical training. This collective evidence affirms that institutions that foster innovation, collaboration and the continuous generation of new knowledge are better positioned to enhance their educational quality, operational efficiency, and strategic relevance (Koloniari et al., 2018; Amboyi et al., 2024).

RQ2: What is the relationship between knowledge storage and organizational performance in medical training colleges?

The study found a moderate positive correlation between knowledge storage and organizational performance ($r = 0.518$, $p = 0.000$). Although the regression coefficient for knowledge storage was positive ($\beta = 0.146$), it was not statistically significant ($p = 0.124$). This finding presents a nuanced perspective. On one hand, the positive correlation aligns with the Resource-Based View (RBV) and studies like Odubuker et al. (2023), who found a significant positive correlation between knowledge storage and the performance of National Teachers' Colleges in Uganda. Similarly, Caroline et al. (2015) and Albalwy (2024) identified knowledge capture and storage as integral to enhancing performance. However, the lack of a significant unique effect in the regression model suggests that, in the context of Nairobi's MTCs, the mere possession of stored knowledge is not sufficient. This supports the critique by Priem and Butler (2001) that RBV can be static; the value of a knowledge resource is only unlocked through its active use. Our finding implies that while storage systems are in place (as confirmed by the descriptive statistics), their impact on performance is likely indirect, mediated by the processes of sharing and, more critically, utilization, a relationship hinted at in broader KM studies (Saeed, 2017; Elmorshidy, 2018).

RQ3: What is the relationship between knowledge sharing and organizational performance in medical training colleges?

The results indicated a positive correlation between knowledge sharing and organizational performance ($r = 0.492$, $p = 0.000$). However, in the regression model, the effect of knowledge sharing on performance was negative and statistically insignificant ($\beta = -0.021$, $p = 0.827$). This is an unexpected result that warrants specific discussion. The positive bivariate correlation confirms

that knowledge sharing is indeed related to better performance, which aligns with numerous studies, including Cherotich & Senaji (2023) in Kenyan libraries and Mullei & Misuko (2022) in state corporations. The anomalous negative coefficient in the regression is a classic indicator of a statistical suppression effect caused by multicollinearity. As shown in Table 4.15, knowledge sharing is highly correlated with both knowledge storage ($r = 0.755$, $p = 0.000$) and knowledge utilization ($r = 0.714$, $p = 0.000$). This high intercorrelation means that the unique variance in organizational performance explained by knowledge sharing alone is very small. When the other variables (especially the powerful predictor, knowledge utilization) are included in the model, the shared variance is accounted for, and the weak unique contribution of sharing is exposed, resulting in a near-zero, non-significant coefficient. Beyond the statistics, this finding points to a potential issue of weak institutionalization. The qualitative data revealed that sharing often occurs informally. Without formal structures and incentives, the act of sharing does not reliably translate into performance gains unless it is systematically captured (storage) and acted upon (utilization). This finding nuances the optimistic view of knowledge sharing presented in much of the literature (Sharif et al., 2025; Kozhakhmet & Nazri, 2017) by highlighting the critical contingent conditions for its effectiveness.

RQ4: What is the relationship between knowledge utilization and organizational performance in medical training colleges?

Knowledge utilization recorded the strongest positive correlation with organizational performance ($r = 0.611$, $p = 0.000$) and emerged as the most significant predictor in the regression model ($\beta = 0.425$, $p = 0.000$). This finding powerfully affirms the Dynamic Capabilities Theory (Teece, 2018) and is strongly supported by the empirical literature. Khoualdi & Saleh (2015) consistently found

a significant positive relationship between knowledge application and organizational performance in Saudi universities. A comprehensive systematic review by Sadilla & Wahyuningtyas (2023) synthesizing numerous studies concluded that the application of knowledge has a definitive positive impact on organizational performance across various sectors. Most compellingly, in a context very similar to this study, Tesgera (2023) found a significant positive correlation between knowledge application and organizational performance in Ethiopian public universities. Our result confirms that for MTCs in Kenya, the practical application of knowledge in decision-making, process improvement, and innovation is the decisive mechanism through which intellectual resources are transformed into tangible gains in efficiency, service quality, and institutional adaptability (Duffield & Whitty, 2016; Bleadly et al., 2018). This positions knowledge utilization not just as another KM step, but as the crucial capability that enables organizations to navigate changing environments and achieve sustained performance.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

This chapter presents the conclusions and recommendations derived from the study on knowledge management strategies and organizational performance in middle-level Medical Training Colleges (MTCs) in Nairobi County, Kenya. It draws conclusions based on the research findings and offers practical recommendations for institutional management, national policy bodies and future research.

5.1. Conclusion

The overall finding of this research is that organizational performance of Medical Training Colleges in Kenya is inextricably connected with the level of sophistication and the implementation of the Knowledge Management (KM) strategies. The results indicate that knowledge creation, storage, sharing and utilization are not only administrative functions but are strategic requirements that jointly define institutional effectiveness, adaptability and quality of training. The study establishes a clear hierarchy of influence among these strategies. The most important driver was knowledge utilization, which is the foundation of institutional performance. It is the decisive mechanism through which intellectual capital is converted into tangible improvements in decision-making, curriculum development and operational efficiency. This highlights the importance of the Dynamic Capabilities Theory, which emphasizes that the capacity of an MTC to utilize knowledge is what ultimately helps it to take advantage of opportunities and remain relevant in a changing healthcare environment. Moreover, knowledge creation was established as a major and positive performance contributor. This validates the Organizational Knowledge Creation Theory, showing that those institutions that actively promote innovation,

cooperation, and the development of new ideas are in a better position to improve the quality of their education and strategic positioning.

One of the most important discoveries of this study is the interdependence of these KM dimensions. The research concludes that although knowledge sharing is an essential cultural foundation, as described by the Social Exchange Theory, its direct influence on performance depends on strong supporting structures. In isolation, sharing is positively related to performance, but its distinct effect is not significant in an integrated model, which means that the value of sharing is achieved in full only when shared knowledge is successfully captured and utilized. Likewise, the potential of knowledge storage (which is consistent with the Resource-Based View) can only be unlocked when the stored knowledge is actively retrieved and used, but not just archived. Thus, a fragmented approach to the implementation of these strategies will not produce the best outcomes. The strong appeal to action among Kenyan MTCs is to embrace a holistic, integrated, and systemic approach to knowledge management, which makes it a strategic priority that is necessary to generate a competent healthcare workforce, attain sustainability, and meet their key strategic goal of Kenya Universal Health Coverage (UHC).

5.2.Recommendations

In order to convert these findings into practical action plans, the following multi-level recommendations are suggested:

5.2.1. Policy Recommendations

This study recommends that the Technical and Vocational Education and Training Authority (TVETA) and the Ministry of Health should jointly come up with and publish a National Knowledge Management Framework of Health Training Institutions. This framework would

institutionalize best practices in knowledge creation e.g., through mandated research and innovation programs, knowledge storage e.g., via standardized digital repository protocols and knowledge utilization e.g., through evidence-based curriculum review cycles. Moreover, it is recommended that national policymakers and funding agencies should encourage the use of knowledge by tying a part of performance-based funding to the evidence of institutional knowledge use in strategic decision-making and quality improvement efforts. Lastly, policymakers must lead the digital transformation in the education sector by promoting specific investments in ICT infrastructure and digital literacy training of MTC employees, which directly responds to the infrastructural barriers that impede the effective storage and sharing of knowledge.

5.2.2. Institutional Recommendations

For individual Medical Training Colleges, this study recommends that the priority should be given to the use of knowledge through its formal inclusion in the strategic plan. The management should institutionalize the processes like the mandatory after-action review of all major projects and evidence-based auditing of academic and administrative decisions to make sure that knowledge is applied systematically. It is also suggested that MTCs should invest in a centralized, cloud-based knowledge repository to digitalize and safeguard institutional memory, such as curricula, research outputs, and administrative SOPs, and make them readily available and searchable by all employees. Also, college leadership should institutionalize knowledge sharing and creation by creating and staffing formal structures like cross-departmental Communities of Practice, formal mentorship programs, and innovation hubs, with specific budgets and staff time to move these out of the informal realm and into institutional processes.

5.2.3. Recommendations for Further Studies

This study recommends that future studies should use a longitudinal design to monitor the causal links between KM strategies and organizational performance over time, thus giving stronger evidence of effect. It is also suggested that researchers should perform a comparative study of KM practices in public and private MTCs to determine contextual peculiarities and specific issues of various types of institutions. The mediating and moderating variables in the KM-performance relationship, including the influence of organizational culture, particular leadership styles, and technology adoption models, should also be explored in further research to create a more precise and predictive picture of how KM can be successful in various institutional settings.

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APPENDICES

Appendix 1: Sample Size

Sample Distribution by Institution and Staff Cadre

Institution	Population Size (N)	Sample Size (proportion *n)	Heads of Departments (10%)	Lecturers (60%)	Administrative Staff (30%)
KMTC Nairobi Campus	311	115	12	69	34
Catherine McAuley Nursing School	27	10	1	6	3
AMREF International University	125	46	5	28	13
Cecily McDonell College of Health Sciences	36	13	1	8	4
KNH School of Nursing	43	16	2	10	4
KU Teaching, Referral & Research Hospital	22	8	1	5	2
Macmillan Medical Training College	31	11	1	7	3
Medprime Training College	23	8	1	5	2
Cleveland Medical Training College	31	11	1	7	3
Kreston Medical Training College	38	14	2	8	4
Total	687	253	27	153	73

Appendix 2: Questionnaire

Part A: Introduction and Informed Consent

Dear Participant,

I am Lynette Gathigia, a student at KCA University pursuing a Master's in Knowledge Management and Innovation.

You are invited to participate in a research study titled “***Knowledge Management Strategies on Organizational Performance of Middle-Level Medical Training Colleges in Nairobi, Kenya.***”

This study explores employees' perceptions of how knowledge creation, knowledge storage, knowledge sharing, and knowledge utilization impact the performance of Medical Training Colleges (MTCs) in Nairobi, Kenya. Participation in this survey is voluntary, and you may withdraw at any time without penalty. Although you may not receive any direct benefit, the information you provide will contribute to a better understanding of how knowledge management strategies influence the performance of training institutions and may inform future policy and practice. All responses will be confidential and anonymous; please avoid including any identifying information. The survey will take approximately 10-15 minutes, and no known risks are associated with participation.

By completing this questionnaire, you confirm that:

- You have read and understood the information provided.
- You voluntarily agree to participate.
- You are an employee of a Medical Training College in Nairobi County, Kenya.

Thank you for your valuable contribution to this important research.

Part B: Demographic Information

Please tick (✓) the appropriate box or fill in the blank.

1. Gender:

- ☐ Male
- ☐ Female
- ☐ Prefer not to say

2. Age (in years):

- ☐ Under 25
- ☐ 25 - 34
- ☐ 35 - 44
- ☐ 45 - 54
- ☐ 55 - 64
- ☐ 65 and Above

3. Highest Level of Education Completed:

- ☐ Secondary School Certificate
- ☐ Certificate
- ☐ Diploma
- ☐ Higher Diploma
- ☐ Bachelor's Degree
- ☐ Master's Degree
- ☐ Doctorate (Ph.D.)
- ☐ Other (Please specify): _____

4. Current Employment Status:

- Full-time
- Part-time
- Contract
- Intern/Attachment
- Other (Please specify): _____

5. Years of Service at your current MTC:

- Less than 1 year
- 1 - 5 years
- 6 - 10 years
- 11 - 15 years
- More than 15 years

6. Your current primary role/cadre:

- Teaching Staff (Lecturer, Instructor, etc.)
- Administrative Staff (HR, Finance, Admin, etc.)
- Support Staff (Technician, Librarian, Maintenance, etc.)
- Management (Department Head, Coordinator, etc.)
- Other (Please specify): _____

7. Department/Section: _____

Part C: Knowledge Creation (Independent Variable)

Please indicate your level of agreement with the following statements regarding **knowledge creation** practices at your MTC. (1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree)

Knowledge Creation		1	2	3	4	5
1.	There are informal or formal groups at our MTC where staff regularly share knowledge related to their work.					
2.	Our MTC encourages staff to share new or developing ideas openly.					
3.	There are spaces (physical or virtual) where staff interact regularly for knowledge-sharing purposes.					
4.	Staff are supported in applying newly introduced guidelines in their day-to-day roles.					
5.	Staff are given opportunities to practice new knowledge in real work settings.					
6.	Our MTC encourages collaboration between departments to solve problems or improve practice.					
7.	Information from different departments is used to develop new learning materials or programs.					
8.	Staff are encouraged to document and share their work experiences as learning resources.					
9.	Staff are supported in converting their personal expertise into formal guidelines or manuals.					

Part D: Knowledge Storage (Independent Variable)

Please indicate your level of agreement with the following statements regarding **knowledge capture and storage** at your MTC. (1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree)

Knowledge Storage		1	2	3	4	5
10.	Our MTC regularly conducts "lessons learned" sessions to document project insights					
11.	Organizational knowledge in our MTC is documented in a structured and standardized manner.					
12.	Our MTC maintains dedicated knowledge repositories or databases for storing key information.					
13.	I can easily locate and retrieve information from the MTC's knowledge repositories or databases.					
14.	The knowledge stored in our systems is regularly reviewed for accuracy and usefulness.					
15.	Our MTC has a clear process for archiving or deleting outdated information from knowledge storage systems.					
16.	Knowledge maps (e.g., who knows what) are used in our MTC to guide access to expertise.					
17.	Exit interviews in our MTC are used to capture departing employees' critical knowledge.					

Part E: Knowledge Sharing (Independent Variable)

Please indicate your level of agreement with the following statements regarding the **knowledge sharing** at your MTC. (1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree)

Knowledge Sharing		1	2	3	4	5
18.	New employees in our MTC are introduced to essential knowledge through structured orientation sessions.					
19.	Our MTC offers regular training sessions focused on sharing practices and organizational knowledge.					
20.	Learning Management Systems (LMS) are actively used in our MTC to distribute training materials and knowledge resources.					
21.	Email, video calls, and similar tools are used effectively in our MTC to share knowledge across departments.					
22.	Staff in our MTC feel safe and supported when they share their ideas or knowledge.					
23.	Leadership at our MTC actively encourages and role models knowledge-sharing behaviors among all staff.					
24.	Our MTC conducts after-action reviews to collect and share lessons learned from completed projects.					

Part F: Knowledge Utilization Strategies (Independent Variable)

Please indicate your level of agreement with the following statements regarding the **Knowledge Application Strategies** used at your MTC. (1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree)

Knowledge Application Strategies		1	2	3	4	5
25.	Knowledge acquired from training, meetings, or experience is used to solve day-to-day operational challenges in our MTC.					
26.	Decision-making processes at our MTC are guided by relevant and current knowledge.					
27.	Our MTC uses knowledge to review and improve internal processes such as student registration or curriculum implementation.					
28.	Knowledge is applied to design and implement new teaching methods, educational programs, or clinical services.					
29.	Our MTC applies knowledge to develop innovative ideas and improve medical training practices.					
30.	Our MTC uses knowledge to adapt to changes in healthcare regulations and training policies.					
31.	We use knowledge to anticipate future trends and update our strategies accordingly.					

Part G: Organizational Performance (Dependent Variable)

Please indicate your level of agreement with the following statements regarding the overall **organizational performance** of your MTC. (1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree)

Organizational Performance		1	2	3	4	5
32.	Our MTC consistently meets its goals for student intake and graduation rates					
33.	Students and employers highly regard the quality of training offered at our MTC.					
34.	Student satisfaction with services and education at our MTC is high					
35.	Administrative processes at our MTC are efficient and effective					
36.	Resources (financial, human, material) are managed efficiently at our MTC					
37.	Our MTC adapts quickly to changing regulations and industry standards					
38.	Our MTC demonstrates financial stability and responsibility					
39.	The MTC effectively manages its budget to achieve its objectives					
40.	Our MTC maintains strong positive relationships with external stakeholders (e.g., the Ministry of Health, hospitals, and the community).					
41.	Our MTC has a strong reputation within the healthcare education sector					

Part H: Open-Ended Feedback (Optional)

42. Please provide any additional comments or suggestions on how knowledge creation, knowledge capture and storage, knowledge sharing, and knowledge application strategies could enhance the overall performance of your Medical Training College.

Thank you for participating.

*****ENDS*****

Appendix 3: Workplan

Activity	Week											
	1	2	3	4	5	6	7	8	9	10	11	12
Research Proposal Development & Approval	X	X	X									
Literature Review & Theoretical Framework	X	X	X									
Development of Data Collection Tools		X	X									
Pilot Testing of Instruments			X									
Data Collection (Quantitative)				X	X							
Data Collection (Qualitative)				X	X							
Data Cleaning & Coding					X	X						
Data Analysis (Quantitative)						X	X					
Data Analysis (Qualitative)						X	X					
Report Writing (Chapters 4 & 5)							X	X	X			
Draft Submission & Review									X	X		
Final Corrections & Submission										X	X	
Dissemination (Presentation/Defense)											X	X

Appendix 4: Budget

Budget Item	Description	Unit Cost (KES)	Quantity	Total (KES)
Proposal & Ethical Approval	Institutional fees, IRB/ethics clearance, printing & submission	3,000	1	3,000
Data Collection Tools	Printing questionnaires, interview guides, and stationery	10 per copy	300	3,000
Pilot Testing	Small pilot with ~20 respondents (printing, transport)	500 per respondent	10	5,000
Enumerator Training	Briefing assistants to administer questionnaires	2,000	1 days	2,000
Transport & Logistics	Field visits to MTCs in Nairobi (fuel and fare, researcher + assistant)	1,500 per day	10 days	15,000
Respondent Facilitation	Small tokens/refreshments for interview participants (ethically allowed)	50 per respondent	200	10,000
Data Entry & Cleaning	Typing survey data into SPSS/Excel, transcription of interviews	3,000	1 lump sum	3,000
Data Analysis Software	SPSS license / NVivo / Atlas.ti (or allowance for internet-based tools)	10,000	1	10,000
Report Writing & Printing	Drafting, binding thesis/dissertation copies	1,500 per copy	3	5,500
Contingency (10%)	To cover unforeseen expenses			5,650
Total				62,150

Appendix 5: NACOSTI License

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RESEARCH LICENSE	
	
This is to Certify that Miss. Lynette Gathigia of KCA University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: KNOWLEDGE MANAGEMENT STRATEGIES ON ORGANIZATIONAL PERFORMANCE OF MIDDLE-LEVEL MEDICAL TRAINING COLLEGES IN NAIROBI COUNTY, KENYA for the period ending : 12/September/2026	
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