Understanding performance of public hospitals: operational strategies approach in Kajiado County, Kenya

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Abstract

The performance of the healthcare sector is crucial for delivering optimal patients care and creating efficient healthcare systems. However, Kajiado County in Kenya faces various challenges that obstruct effective performance. This paper aims to assess the impact of operational strategies on performances of public hospitals in Kajiado County, Kenya. Specifically, it aimed to investigate the effect of information management strategy, continuous quality improvement strategy, innovation strategy, and resources management strategy on hospital performance. This study was anchored on balanced scorecard model, resource-based theory, quality improvement theory, and technology acceptance model, and employed a descriptive research design. Primary data was gathered through questionnaires distributed to full-time healthcare workers, following a successful pilot study in Narok County. Data collection utilized the drop-and-pick later method. Statistical Package for the Social Sciences software was used to analyze the data, involving descriptive statistics such as percentages, frequencies, means, and standard deviations while multiple regression model was used to test the relationship between independent variables and the dependent variable. Main findings of the study revealed that there exists a statistically significant relation between information management strategy and hospital performance, as well as continuous quality improvement strategy, innovation strategy, and resources management strategy, respectively. Consequently, the study recommended that the County Health Department should initiate a comprehensive training program for healthcare professionals, collaborate with hospital management to adopt innovative technologies, and identify and address skill gaps while promoting a positive work environment within public hospitals in Kajiado County. These actions aim to enhance hospital performance and ultimately improve patient care in the region.

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Introduction

Public hospitals play a pivotal role in providing essential healthcare services to the population. These institutions serve as critical components of healthcare systems in many countries, catering to diverse communities with a wide range of medical needs, (Davis & Turner 2019). The performance of public hospitals is a multifaceted concept that involves various dimensions, including efficiency, quality of care, patient satisfaction, financial sustainability, and accessibility.

Therefore, the performance of public hospitals can be defined as the effectiveness and efficiency with which these institutions deliver healthcare services to the population they serve (Becker et al., 2020). This definition encompasses a range of aspects, such as medical outcomes, patient experiences, resource utilization, and financial management, (Wong et al., 2021). It goes beyond mere medical treatment and extends to encompass the overall patient journey, from admission to discharge, and the impact of the hospital’s services on the community’s health and well-being.

Evaluating and improving the performance of public hospitals is crucial to ensuring that citizens receive the best possible healthcare services, (Amoako et al., 2019). Measuring the performance of public hospitals holds significant importance for several reasons. Firstly, it allows policymakers and healthcare administrators to identify areas of improvement and allocate resources effectively,
(Khumalo et al., 2019). This ensures that limited resources are used optimally to provide the best possible care to patients. Secondly, performance measurement fosters accountability and transparency in the healthcare system. By setting clear metrics and evaluating performance against those standards, hospitals are held accountable for their actions and outcomes, (Wanjiku et al., 2020). Thirdly, assessing performance enables benchmarking against other hospitals and healthcare institutions, both nationally and internationally, facilitating knowledge sharing and best practice adoption.

Public hospitals across the world operate within unique healthcare systems, facing distinct challenges and harnessing specific strengths. For example, public hospitals in the United States have witnessed trends that reflect the complexity of the healthcare landscape. The emphasis on healthcare reform, particularly the Affordable Care Act (ACA), aimed to expand access and improve quality, (Centers for Medicare & Medicaid Services (CMS, 2021).

Ensuring optimal performance in the health sector is vital for delivering high-quality patient care and maintaining efficient healthcare systems. Improved patient health outcomes stand as a primary advantage of a well-functioning health sector (Kruk, 2018). However, Kajiado County grapples with numerous challenges that hinder its health sector’s performance, most notably a severe shortage of medical personnel. According to data from the Kenya Medical Practitioners and Dentists Council, (2020), Kajiado County had only 26 doctors and 166 nurses serving a population exceeding 1 million in 2020. This translates to a doctor-to-population ratio of 1:38,500 and a nurse-to-population ratio of 1:6,000. Such a scarcity of medical personnel results in prolonged wait times and inadequate care, particularly for patients requiring complex medical attention.

Moreover, public hospitals in Kajiado County face significant challenges due to insufficient medical equipment and supplies. A 2021 report by the Ministry of Health revealed that only 40% of the hospitals in the county possessed adequate medical equipment, while the rest lacked essential supplies such as drugs, surgical equipment, and diagnostic tools. This shortage of equipment and supplies poses challenges for healthcare workers in providing necessary care, resulting to suboptimal health outcomes for patients. Moreover, Kajiado County contends with a substantial burden of communicable and non-communicable diseases, including HIV/AIDS, tuberculosis, malaria, and diabetes. Many hospitals in the county lack fundamental amenities such as clean water, electricity, and proper sanitation facilities further hindering healthcare provision, particularly during emergencies. Inadequate infrastructure also makes it challenging to attract and retain medical personnel, as they are often reluctant to work in poorly equipped and unsafe environments.

Several studies have explored the relationship between operational strategy on performance in public hospitals. For instance, Chmielewska, (2022) investigated organizational performance in public hospitals in Nigeria, finding that while social factors and technical elements play a significant role in management, their impact on hospital operations is minimal. In a separate study, Lubanga (2019) examined the non-financial performance and strategic control processes at Nairobi Hospital.

The research concluded that the standard-setting process effectively assesses how strategic objectives are achieved, thereby enhancing services quality. However, worth noting that Lubanga’s study focused on the strategic control process at Nairobi Hospital and utilized qualitative data exclusively. In contrast, the current study focuses on operational strategies within Kajiado County, employing a descriptive research design that incorporates both qualitative and quantitative data.

Additionally, Magak & Kimenchu, (2021) conducted a study on the performance and reorganization of Aga Khan hospital in Mombasa. The findings revealed an inverse relationship between hospital performance and the implemented turnaround strategy. Furthermore, the study identified resistance to change among hospital personnel, negatively affecting the effectiveness of the turnaround plan. It’s important to highlight that the Magak’s study concentrated on organizational restructuring strategies, whereas the current research focuses on operational strategies. Thus, the objective of the present study is to evaluate the influence of operational strategies on the performance of public hospitals in Kajiado County, Kenya.

This paper is organized as follows: following the introduction part, a second part is a literature review with theoretical and empirical studies that shed a light on linkage between theory and practice. The third part introduces the background information on research and methodology. After analysis and findings of the study, authors provide discussions and implications. Finally, this paper concludes with key points, recommendations, future research directions and limitations.

**Literature Review**

This section provides an in-depth review of the theoretical framework that anchors the study variables that includes information management, continuous quality improvement, innovation, resource management and performance.

**Theoretical and Conceptual Background**

**Theoretical Review**

The research design employed in this study is grounded in a comprehensive theoretical framework that interrogates the complex relationship between information management, continuous quality improvement, innovation, resource management, and performance. The conceptual framework that informs this research is rooted in the balanced scorecard model, resource-based theory, quality improvement theory, and the Technology Acceptance Model.
Balanced Scorecard Model

The Balanced Scorecard theory, introduced by Kaplan and Norton in 1992, is a performance management framework designed to provide organizations with a holistic view of their performance (Kaplan & Norton, 1992). It emphasizes that financial metrics alone are insufficient to gauge an organizational success and advocates for the consideration of multiple perspectives: internal processes, customer satisfaction, financial health, and learning and growth (Kaplan & Norton, 2001).

These perspectives are translated into Key Performance Indicators (KPIs) to measure and monitor performance across various dimensions. By incorporating both the financial and non-financial variables, the Balanced Scorecard aligns organizational strategy with performance measures, ensuring that all critical aspects are addressed (Niven, 2002). It facilitates communication of strategic objectives throughout the organization, from top management to individual departments and employees, fostering alignment and focus (Epstein & Wisner, 2001).

However, effective implementation of the Balanced Scorecard requires meticulous planning and commitment from upper-level management to drive transformation and integrate Scorecard into the organization’s performance management systems (Marr & Adams, 2004). Critics argue that the framework can be complex and resource intensive, with challenges in meaningful KPIs and collecting relevant data (Ittner & Larcker, 1998). Moreover, some contend that its cause-and-effect relationships may oversimplify organizational dynamics and lead to focus on measurement rather than actionable behaviours and innovation (Neely, 2005). Despite these criticisms, the Balanced Scorecard may not work for all businesses. Its framework and perspectives may not capture the unique characteristics and challenges of certain sectors, limiting its applicability in diverse contexts.

The Balanced Scorecard offers valuable insights for organizations seeking to align strategy with performance measures. Its emphasis on multiple perspectives encourages a more comprehensive understanding of success factors, including customer satisfaction, operational efficiency, and employee development. This broader perspective can lead to a more balanced and sustainable approach for performance management, particularly relevant for public hospitals in Kajiado County, Kenya, where traditional financial metrics may not capture the full scope of hospital performance.

Resource-Based Theory

Resource-Based View (RBV) theory in management emphasizes the role of resources and capabilities in achieving and sustaining competitive advantage. Unlike traditional industry-based approaches to strategy, RBV shifts focus to internal factors within organizations (Kaplan & Norton, 1992). Resources encompass tangible and intangible assets such as physical assets, financial resources, human capital, intellectual property, brand reputation, relationships, and organizational culture. These resources are valuable if they enable a firm to exploit opportunities, mitigate threats, and create value for customers. Capabilities on the other hand, refer to the firm’s ability to effectively deploy its resources to achieve specific outcomes, including technical know-how, managerial expertise, innovation capabilities, and coordination skills (Birbirs et al., 2022).

Resource-Based View posits that firms can achieve and sustain competitiveness by owning and leveraging valuable, rare, and hard-to-duplicate resources and capabilities (often referred to as VRIO resources). These resources provide a basis for differentiation or cost leadership, enabling firms to outperform its rivals. RBV emphasizes resources immobility, suggesting that some resources may be difficult for competitors to acquire, imitate, or substitute (Ngoma, 2018), thus creating sustainable competitive advantages. Dynamic capabilities, which involve a firm’s ability to adapt and renew resources over time, are also crucial for long-term success.

Critics of RBV argue that it focuses narrowly on internal factors, neglecting external influences like market dynamics, and customer preferences. Some view it as tautological, defining valuable resources as those that lead to competitive advantage (Jaafreh et al., 2013). Moreover, RBV lacks clear prescriptive guidance on resource identification, development, and deployment. Despite these criticisms, RBV has significantly influenced operations strategic management, fostering scholarly research and practical implementations.

In the context of this research, RBV elucidates how public hospitals in Kajiado County, can utilize resource-based approach to understand their unique strengths and limitations. By doing so, hospitals can identify areas for differentiation and make informed strategic decisions to enhance performance outcomes. Therefore, the inclusion of RBV in the study aims to explore the impact of resource management strategies on the performance of public hospitals in the region.

Quality Improvement Theory

The theory, proposed and developed by Deming (1986), emphasizes continuous improvement as essential for achieving seamless manufacturing process. It underscores product improvement to reduce waste, enhance customer loyalty, and minimize staff litigation. Key components of the theory include statistical quality control, and shop-floor involvement, and senior management involvement, as highlighted by Deming (2011). Senior management’s role is crucial in investing in procedures, establishing company culture, selecting suppliers, and cultivating long-term partnerships.

The plan-do-check-act (PDCA) cycle is integral to quality improvement efforts, offering a strategic framework for businesses to address quality control concerns efficiently. Management behaviour plays a pivotal role in shaping corporate attitude and determining factors for organizational success and long-term viability. This fosters continuous enhancement of procedures, goods, and services
while promoting employee satisfaction. Customer attention is paramount for organizational existence, as emphasized by Hardie (2013).

Quality Improvement Theory centers on addressing quality issues within an organizational framework that promotes collaboration and knowledge acquisition, leading to improved performance, according to (Jaafreh et al., 2013). Lamport (2010) underscores top management’s responsibility for quality issues and provision of explicit guidance and suitable environments for employees to attain standards.

This theory holds significance for the present study, highlighting top management’s dedication to implementing principles and practices that reduce costs, minimize waste, enhance quality, customer loyalty, and employee satisfaction. This theoretical framework elucidates the impact of implementing a continuous quality improvement approach on service provision at public hospitals in Kajiado County.

Technology Acceptance Model

Technology Acceptance Model (TAM), postulated by Fred Davis in 1986, provides a framework for understanding users’ adoption behaviour of technology (Venkatesh& Davis, 2000). TAM focuses on two key constructs: perceived ease of use and perceived usefulness (Straub, 2007). Perceived ease of use refers to user’s belief that a technology is effortless to use, while perceived usefulness refers to users' belief that a technology enhances their performance or productivity. TAM’s simplicity and predictive power make it valuable for organizations to assess the potential success of new technology implementations across various contexts. However, TAM has limitations. It primarily examines individual views without considering contextual elements that may impact technology adoption, and it does not address social and organizational factors that can influence acceptance (Mathieson, 2008). Additionally, TAM’s focus on perceived ease of use and usefulness may oversimplify user decision-making, and it does not inherently account for emotions in technology adoption.

Despite these limitations, TAM is relevant to the current study, as it explains how individuals accept and use technologies. In the context of supply chain integration and innovation in hospitals, TAM suggests that stakeholders’ perceptions of integrated technological solutions such as user-friendly and beneficial can impact the performance of public hospitals in Kajiado County.

Empirical Review and Hypothesis Development

This section provides a review of past studies guided by the objectives of the study.

Information Management Strategy and Performance

Ozden & Ongel (2021) conducted a study examining the relationship between information management, organizational intelligence, and innovation performance in Turkish IT organizations within the Marmara Region. They collected data from 495 managers between 2018 to 2019, revealing a significant correlation between information management practices and the innovation, financial, and growth performance. Additionally, Osman (2022) explored the link between information management and organizational performance, highlighting the importance of investments in information management over information technology for organizational success. Identified obstacles included resource deficiencies and lack of managerial support, emphasizing the need for aligned policies and senior management backing.

Brouns (2019) investigated the impact of information management strategy on customer satisfaction in the tourism industry, finding that the adoption of virtual reality technology positively affects satisfaction levels. Gupta (2018) studied the adoption of mobile technology in Indian healthcare, concluding that it enhances service quality through improved communication and access to medical information.

Hirsila (2019) explored the effect of social media technology on customer satisfaction in hospitality, noting its positive impact on personalized communication and engagement. Similarly, Kim (2020) examined Artificial Intelligence (AI) technology adoption retail, finding it enhances service quality through customization and efficiency. Lastly, Wang (2021) investigated blockchain technology’s impact on service quality, revealing significant positive effects, particularly in security and transparency.

Continuous Quality Improvement Strategy and Performance

Shin (2021) investigated the impact of continuous quality improvement (CQI) on patient outcomes in South Korean hospitals, revealing a significant positive effect, especially from staff training and quality improvement programs. Similarly, Wang (2019) studied the CQI’s influence on service quality in Chinese Outpatient Departments (OPDs), finding that factors like staff communication and collaboration significantly enhance service quality. Chang (2019) explored the integration of quality improvement and performance aspects within comprehensive quality organizations, emphasizing the importance of measurement methods in facilitating continuous improvement.

Khan et al., (2018) examined the effects of continuous improvement on organizational performance in Pakistan, highlighting the role of innovative practices in enhancing productivity and product quality across various sectors. Kovach (2019) investigated how quality improvement strategies impact learning, concluding that a well-developed organizational structure is crucial for continuous improvement and organizational change.
Otieno (2020) researched quality improvement techniques in Kenyan commercial banks, finding a positive association between organizational efficiency and techniques like customer focus, employee involvement, leadership, and factual decision making. Dossary (2021) explored CQI’s impact on patient satisfaction in Saudi Arabia emergency departments (EDs) noting significant positive effects, particularly from staff responsiveness and communication.

Kuwabara (2019) studied CQI’s effect on care quality in Japanese nursing homes, concluding that staff training and quality improvement programs significantly enhance care quality. Marquis (2018) examined CQI’s impact on patient outcomes in US home healthcare, finding a significant positive effect, especially from staff communication and collaboration.

Based on the collective findings of the studies mentioned, it can be concluded that continuous quality improvement (CQI) strategies have a significant positive impact across various sectors and settings. These strategies, including staff training, quality improvement programs, and effective communication and collaboration, consistently contribute to enhanced outcomes such as improved patient satisfaction, service quality, organizational performance, and care quality. Moreover, the studies highlight the importance of integrating performance measurement methods and innovative practices into comprehensive quality management frameworks to foster continuous improvement effectively.

**Innovation Strategy and Performance**

The research conducted by Johnson et al., (2018) in Florida examined the impact of innovative strategies on service delivery in public hospitals, found out that hospitals implementing innovative strategies experienced significant improvements in service delivery, including reduced wait times and enhanced patient satisfaction. Similarly, Thompson et al., (2019) conducted a qualitative case study in Denmark, focusing on innovation strategies public hospitals. By analyzing three purposefully selected public hospitals known for innovative approaches, they discovered that technology-driven solutions and patient-centric care models led to improved efficiency and enhanced patient experiences.

Garcia et al.,(2020) conducted a quantitative cross-sectional study on information management strategies in public hospitals, found that hospitals utilizing robust information management strategies experienced improved service delivery outcomes, emphasizing the importance of leveraging technology and effective data management. Anderson&Davis (2020) conducted a longitudinal study to examine the long-term impact of innovation strategies on service delivery in10 public hospitals over five years. They found that consistent implementation of innovative strategies resulted in sustained improvements in service delivery, including enhanced patient outcomes and reduced costs.

Clark &Taylor (2019) explored the role of leadership in driving innovation and service delivery in public hospitals concluded that effective leadership fostered a culture of innovation, which contributed to successful implementation of innovative practices and improved service delivery. Omondi et al., (2021) investigated the role of innovation in Kenyan Public Hospitals, finding that innovative strategies improved accessibility, efficiency, and quality care. They emphasized the need for continued investment in innovation to further enhance service delivery.

Lastly, Muthoni et al., (2019) examined challenges and opportunities of innovation in Kenyan Public Hospitals. They identified financial constraints and resistance to change as challenges but highlighted opportunities such as government support and stakeholder collaboration in driving successful innovation initiatives.

Together, these studies underscore the importance of innovation in improving service delivery in public hospitals, highlighting the need for effective leadership, investment in technology, and collaboration among stakeholders to drive innovation and enhance patient care.

**Resource Management Strategy and Performance**

Birbirsa et al.,(2022) conducted an analysis of the research on how improved Human Resources Management (HRM) practices can enhance business outcomes. Their findings emphasize the importance of HR professionals in higher education adopting innovative approaches to empower staff and faculty, enabling teams to adapt to dynamic environments and reach their full potential. Goklas et al., (2021) aimed to determine the significance of HRM strategies, identifying four main types: universalist, contingent, configuration, and contextual approaches.

Their research indicates that each strategy contributes to enhancing company’s medium- to long-term performance and market position, implementing HRM strategies correlates with increased productivity in businesses. Ngoma (2018) investigated the impact of strategic human resource management techniques on the productivity of global NGOs. Utilizing organization learning theory and the resource-based perspective, the study employed descriptive research method. It found that compensation, recruitment, and selection methods, training and development, and information technology significantly influence non-profit performance.

Gile et al., (2018) explored the relationship between hospital’s productivity and HRM practices sub-Saharan Africa. Their analysis of 111 studies from 19 countries, revealed a focus on HRM packages incorporating motivational, skillful, and empowering techniques. Motivational behaviours were most studied, followed by skill and agency-enhancing practices.
Research and Methodology

The research employed a descriptive research design, like that used by Muathe (2010), which proved suitable for acquiring intended information through a questionnaire. The study focused on 20 health facilities including county and sub-county referral hospitals, and health dispensaries with 243 full-time health workers as the unit of observation (County Government of Kajiado, Department of Health, 2023). Utilizing the Slovin’s formula, the sample size of 151 respondents was determined based on population size of 243 and a margin of error of 0.05.

Closed-ended questionnaires were chosen for their efficiency in gathering information from a widespread population and ensure standardized responses for consistent analysis. Moreover, the anonymity provided by questionnaires encouraged open and honest feedback, enhancing the accuracy of health workers’ perspectives on operational strategies and hospital performance. This method aligned well with the research objectives, being both cost-effective and logistically practical.

Authorization from the graduate school was obtained before conducting data collection activities, following the submission of an introductory letter. Data analysis involved reviewing, evaluating, and summarizing data to draw conclusions and find usable information (Bryman & Bell, 2012). Descriptive statistics such as percentages, frequencies, mean, and standard deviation were utilized, alongside inferential statistics like correlation and multiple regression analysis. The multiple regression model employed in the study was represented as Y = β0 + β1X1 + β2X2 + β3X3 + β4X4 + Ɛ.

Findings and Discussions

The section focuses on in-depth data analysis of gathered data, accompanied by exploration of and their implication and discussion of the findings.

Response Rate

Response rate equals the number of people with whom semi-structured questionnaires were properly completed divided by the total number of people in the entire sample (Fowler, 2014) as indicated in Table 1.

<table>
<thead>
<tr>
<th>Sampled No. of respondents</th>
<th>No. of Questionnaires Returned</th>
<th>Response Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>151</td>
<td>125</td>
<td>81</td>
</tr>
</tbody>
</table>

The study administered 151 questionnaires for data collection; however, 125 questionnaires were properly filled and returned, representing an overall successful response rate of 81%. Respondents were also assured of confidentiality of the information provided. Trex (2012) suggested that a response rate of 50% is adequate, 60% is good, and 70% and above are very good for analysis. This implies that 81% response rate was very appropriate for data analysis.

Demographic Information

The demographic information presented is on the gender, age, level of education and length of service in Public Hospitals within Kajiado County.

Gender of the Respondents

The researcher sought to find out the gender of the respondents working in Public Hospitals within Kajiado County. The findings are as indicated in table 2.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>71</td>
<td>57</td>
</tr>
<tr>
<td>Female</td>
<td>54</td>
<td>43</td>
</tr>
<tr>
<td>Total</td>
<td>125</td>
<td>100.0</td>
</tr>
</tbody>
</table>

From the analysis 57% of the respondents were male while 43% of the respondents were female. This implies that majority of the employees in community based Public Hospitals within Kajiado County were male. Gender diversity brings a range of skills, communication styles, and problem-solving approaches to the organization. Having a balanced representation of both genders ensures that the organization's activities and initiatives address the needs and concerns of the entire community.
Age of the Respondents

The researcher sought to find out the age of the respondents working in Public Hospitals within Kajiado County. The findings are as indicated in table 3.

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 30 Years</td>
<td>33</td>
<td>26</td>
</tr>
<tr>
<td>31-40 Years</td>
<td>52</td>
<td>41</td>
</tr>
<tr>
<td>41-50 Years</td>
<td>34</td>
<td>27</td>
</tr>
<tr>
<td>Above 51 Years</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>125</td>
<td>100.0</td>
</tr>
</tbody>
</table>

From most of the respondents stated that 26% were below 30 years, 41% were in age bracket of 31-40 years, 27% were in age bracket of 41-50 years, while 5% were in age bracket of 51 years and above. This implies that majority of the employees in public hospitals within Kajiado County were in age bracket of below 30 years and 31-40 years and 41-50 years respectively. Different age groups bring varied perspectives, experiences, and ideas to the organization, fostering creativity and innovation. Younger members can learn from the wisdom and experience of older members, creating a supportive learning environment.

Education Level of the Respondents

The researcher sought to find out the education level of the respondents working in public hospitals in Kajiado County. The findings are as indicated in table 4.

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diploma</td>
<td>35</td>
<td>28</td>
</tr>
<tr>
<td>Bachelor's Degree</td>
<td>53</td>
<td>42</td>
</tr>
<tr>
<td>Master's Degree</td>
<td>26</td>
<td>21</td>
</tr>
<tr>
<td>Postgraduate Degree</td>
<td>11</td>
<td>09</td>
</tr>
<tr>
<td>Total</td>
<td>125</td>
<td>100.0</td>
</tr>
</tbody>
</table>

From the analysis the study revealed that 28% had diploma education, 42% had bachelor’s degree, and 21% had master’s degree education while 9% had postgraduate degree. This implies that majority of the respondents had bachelor’s degree, diploma education and master’s degree education respectively. Members with different education levels contribute diverse expertise, skills, and knowledge to the organization. Higher education levels may contribute to effective planning, strategic thinking, and organizational development.

Length of Service in Public Hospitals within Kajiado County

The researcher sought to find out the length of service of service in Public Hospitals within Kajiado County. The findings are as indicated in table 5.

<table>
<thead>
<tr>
<th>Length of Service</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 5 years</td>
<td>21</td>
<td>17</td>
</tr>
<tr>
<td>6-10 years</td>
<td>56</td>
<td>45</td>
</tr>
<tr>
<td>11-15 years</td>
<td>43</td>
<td>34</td>
</tr>
<tr>
<td>More than 20 years</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>125</td>
<td>100.0</td>
</tr>
</tbody>
</table>

From the findings 17% of the respondents stated that they have worked in Public Hospitals within Kajiado County for less than 5 years, 45% had worked in Public Hospitals within Kajiado County for 6-10 years, 34% had worked in Public Hospitals within Kajiado County for 11-15 years, while 10% stated more than 20 years. Long-serving members provide stability and continuity to the organization, ensuring that institutional knowledge is retained over time. Length of service can lead to the development of experienced leaders who can guide and mentor newer members.
**Correlation Analysis**

The study sought to establish the correlation between information management strategy, continuous quality improvement strategy, innovation strategy and resource management strategy on the performance of public hospitals in Kajiado County, Kenya. The findings of the study are as shown in Table 6.

<table>
<thead>
<tr>
<th></th>
<th>Information Management</th>
<th>Continuous Quality Improvement</th>
<th>Innovation</th>
<th>Resource Management</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Information Management</strong></td>
<td>Pearson Correlation</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>125</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Continuous Quality Improvement</strong></td>
<td>Pearson Correlation</td>
<td>.826**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>125</td>
<td></td>
<td>125</td>
<td></td>
</tr>
<tr>
<td><strong>Innovation</strong></td>
<td>Pearson Correlation</td>
<td>.564**</td>
<td>.516**</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td></td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>125</td>
<td></td>
<td>125</td>
<td></td>
</tr>
<tr>
<td><strong>Resource Management</strong></td>
<td>Pearson Correlation</td>
<td>.566**</td>
<td>.570**</td>
<td>.821**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td></td>
<td>.000</td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>125</td>
<td></td>
<td>125</td>
<td></td>
</tr>
<tr>
<td><strong>Performance of Public Hospitals</strong></td>
<td>Pearson Correlation</td>
<td>0.603**</td>
<td>0.753**</td>
<td>0.690**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>.000</td>
<td></td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>N</td>
<td>125</td>
<td></td>
<td>125</td>
<td></td>
</tr>
</tbody>
</table>

As indicated in Table 6, the study indicates that there was a moderate positive and statistically significant correlation between information management strategy on performance of public hospitals in Kajiado County, Kenya, (r = 0.6033; p < 0.05). This implies that better information management strategy enhances performance of public hospitals in Kajiado County, Kenya. The study findings concur with those of Ozden & Ongel, (2021) which revealed that a significant relationship was determined between information management practices and both a firm’s innovation performance and its financial and growth performance; innovation performance was found to have a direct and positive effect on a firm’s growth and financial performance. Moreover, Brouns (2019) also found that the adoption of virtual reality technology has a significant positive effect on customer satisfaction, with factors such as the level of immersion and interactivity having the most significant impact.

The study also indicates that there was a moderate positive and statistically significant correlation between continuous quality improvement strategy on performance of public hospitals in Kajiado County, Kenya (r = 0.753; p < 0.05). This implies that better continuous quality improvement strategy enhances performance of public hospitals in Kajiado County, Kenya. The study findings are in line with those of Otieno, (2018) who found that continuous improvement practices considered in this study namely customer focus; engagement of people, quality improvement programs, leadership and factual approach to decision making had a positive relationship with organizational efficiency. Moreover, Kuwabara (2019) study also found that that CQI has a significant positive effect on care quality, with factors such as staff training and quality improvement programs having the most significant impact.

The study further indicates that there was a moderate positive and statistically significant correlation between innovation strategy on performance of public hospitals in Kajiado County, Kenya, (r = 0.690; p < 0.05). This implies that better innovation strategy enhances performance of public hospitals in Kajiado County, Kenya.

The study findings are in line with those of Thompson et al., (2019) findings which highlighted the positive influence of innovation strategies on service delivery in public hospitals. The adoption of technology-driven solutions, process optimization, and patient-centric care models resulted in improved efficiency, better coordination among healthcare professionals, and enhanced patient experiences. The study findings are also in line with those of Omondi et al., (2021) who found that innovative strategies, such as the adoption of telemedicine, electronic health records, and mobile health technologies, had a positive impact on service delivery in Kenyan public hospitals. These innovations improved accessibility, efficiency, and quality of care, leading to increased patient satisfaction and better health outcomes.
The study also indicates that there was a moderate positive and statistically significant correlation between resource management strategy on performance of public hospitals in Kajiado County, Kenya, ($r = 0.729; p < 0.05$). This implies that better resource management strategy enhances performance of public hospitals in Kajiado County, Kenya. The study findings are in line with those of Ngoma (2018) findings which revealed that compensation, recruitment and selection methods, training and development, and information technology were found to have an impact on the performance of non-profits.

**Regression Analysis**

The study carried out a regression analysis to evaluate the combined effect of information management strategy, continuous quality improvement strategy, innovation strategy and resource management strategy was established.

**Table 7: Model Summary**

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>R Std. Error of Estimate</th>
<th>Sig. F Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.857*</td>
<td>.734</td>
<td>.725</td>
<td>.38742</td>
<td>.857* .734</td>
</tr>
</tbody>
</table>

The R-Squared is the proportion of variance in the dependent variable which can be explained by the independent variables. The R-squared in this study was 0.734, which shows that the four independent variables (information management strategy, continuous quality improvement strategy, innovation strategy and resource management strategy) can explain 77.0% of performance of public hospitals in Kajiado County, Kenya, while other factors explain 23.0%.

**Table 8: ANOVA**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>49.609</td>
<td>4</td>
<td>12.402</td>
<td>82.632</td>
<td>.000</td>
</tr>
<tr>
<td>Residual</td>
<td>18.011</td>
<td>120</td>
<td>.150</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>67.620</td>
<td>124</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Performance of Public Hospitals in Kajiado County, Kenya
b. Predictors: (Constant), information management strategy, continuous quality improvement strategy, innovation strategy and resource management strategy.

The analysis of variance in this study was used to determine whether the model is a good fit for the data. From the findings, the p-value was 0.000 which is less than 0.05 and hence the model is good in predicting how the four independent variables (information management strategy, continuous quality improvement strategy, innovation strategy and resource management strategy) influence performance of public hospitals in Kajiado County, Kenya. Further, the F-value was (82.632) which shows that the model was fit in predicting the influence of the independent variables on the dependent variable.

**Table 9: Regression Coefficients**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>.445</td>
<td>.344</td>
<td>1.293</td>
<td>.198</td>
</tr>
<tr>
<td>Information management strategy</td>
<td>.297</td>
<td>.101</td>
<td>0.256</td>
<td>2.941</td>
</tr>
<tr>
<td>Continuous quality improvement</td>
<td>.744</td>
<td>.095</td>
<td>.672</td>
<td>7.824</td>
</tr>
<tr>
<td>Innovation strategy</td>
<td>.405</td>
<td>.132</td>
<td>.260</td>
<td>3.067</td>
</tr>
<tr>
<td>Resource management strategy</td>
<td>.262</td>
<td>.082</td>
<td>.277</td>
<td>3.206</td>
</tr>
</tbody>
</table>

Table 9 shows the overall multiple regression model. The interpretations of the findings indicated follow the following regression model. $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4$. Therefore, $Y = 0.445 + 0.297X_1 + 0.744X_2 + 0.405X_3 + 0.262X_4$. According to the intercept ($\beta_0$), when the four independent variables are held constant, the value of performance of public hospitals in Kajiado County, Kenya was 0.445. In addition, holding all the other independent variables constant, a unit increase in information management strategy...
would lead to a 0.297 improvement in performance of public hospitals in Kajiado County, Kenya. The study agreed with those of Ozden & Ongel, (2021) who argued that effective information management strategies are foundational to optimizing organizational performance in public hospitals by enhancing data accessibility, quality of care, resource optimization, workflow efficiency, and performance monitoring. By investing in robust information management frameworks and technologies, public hospitals can drive significant improvements in patient outcomes, operational efficiency, and overall healthcare delivery effectiveness.

Further, holding on the other independent variables constant, a unit increase in continuous quality improvement strategy would lead to a 0.233 improvement in performance of public hospitals in Kajiado County, Kenya. The study agreed with those of Kuwabara (2019) study also found that that CQI has a significant positive effect on care quality, with factors such as staff training and quality improvement programs having the most significant impact.

In addition, holding all the other variables constant, a unit increase in innovation strategy would lead to a 0.405 improvement in performance of public hospitals in Kajiado County, Kenya. The finding agrees with those of Omondi et al., (2021) who found that innovative strategies, such as the adoption of telemedicine, electronic health records, and mobile health technologies, had a positive impact on service delivery in Kenyan public hospitals. These innovations improved accessibility, efficiency, and quality of care, leading to increased patient satisfaction and better health outcomes.

Finally holding all the other variables constant, a unit increase in resource management strategy would lead to a 0.262 improvement in performance of public hospitals in Kajiado County, Kenya. From these findings we can infer that information management strategy is influencing performance of public hospitals in Kajiado County, Kenya, most, followed by innovation strategy, resource management strategy and continuous quality improvement strategy. The findings agree with those of Ngoma (2018) findings which revealed that effective resource management ensures that resources such as personnel, equipment, supplies, and finances are allocated strategically to meet the healthcare needs of patients efficiently. By identifying and prioritizing areas of need, public hospitals can allocate resources where they are most needed, maximizing their impact on patient care and organizational performance.

**Conclusions**

From the analysis the study concluded that there is a significant relationship between information management strategy and organizational performance in public hospitals. Information management strategies streamline administrative and clinical workflows within public hospitals, leading to improved efficiency and productivity. Automation of routine tasks, such as appointment scheduling, billing, and inventory management, reduces manual errors and frees up staff time for more value-added activities. Streamlined workflows also enhance communication and collaboration among healthcare teams, fostering a cohesive and coordinated approach to patient care delivery.

Concerning continuous quality improvement strategy, the study concluded that continuous quality improvement strategy has a significant effect on the performance of public hospitals. Continuous quality improvement strategies help streamline hospital processes and workflows, leading to increased efficiency and reduced waste. By identifying and eliminating unnecessary steps, bottlenecks, and redundancies, hospitals can optimize resource utilization, reduce wait times, and improve throughput, ultimately enhancing operational performance.

Regarding innovation strategy the study concluded that innovation strategy has a significant effect on the performance of public hospitals. Innovative solutions can streamline hospital operations, reduce administrative burdens, and optimize resource utilization. Automation of routine tasks, implementation of electronic health records (EHRs), and adoption of telemedicine platforms can lead to cost savings and increased operational efficiency, allowing public hospitals to provide high-quality care at lower costs. Innovation allows public hospitals to adapt to evolving healthcare challenges and patient needs. By continuously exploring new technologies, treatments, and care models, hospitals can stay ahead of emerging trends and effectively address complex healthcare issues, such as population aging, chronic disease management, and infectious disease outbreaks.

Finally, regarding resource management strategy, the study concluded that resource management strategy has a significant effect on the performance of public hospitals. Resource management strategies help streamline hospital operations and workflows, reducing inefficiencies and waste. By optimizing staffing levels, scheduling procedures, and managing inventory effectively, public hospitals can improve throughput, minimize wait times, and enhance overall operational efficiency, leading to better performance outcomes. Proper resource management directly impacts the quality of patient care delivered in public hospitals. By ensuring adequate staffing levels, providing necessary medical equipment and supplies, and maintaining facilities in good condition, hospitals can deliver timely, safe, and effective care to patients, resulting in improved outcomes and patient satisfaction.

The County Health Department in Kajiado County should facilitate comprehensive training program for healthcare professionals within public hospitals within the County. This program aims to equip staff with the necessary skills to effectively utilize advanced information management systems, ensuring timely access to crucial healthcare data. Additionally, the County Government should allocate funds to support the development and maintenance of robust information management infrastructure, fostering improved decision-making and overall organizational performance.
Public hospitals in Kajiado County, under the guidance of the County Health Management Team, should establish a continuous training and assessment program for healthcare professionals. This initiative aims to reinforce and sustain continuity care practices and adhere to quality-of-care measures. Periodic updates to clinical guidelines should be overseen by the County Health Department to ensure alignment with the latest evidence-based practices, promoting consistency in care delivery and ultimately enhancing organizational performance.

The County Health Department should collaborate with hospital management to facilitate the adoption of innovative technologies within public hospitals in Kajiado County. Additionally, the County Government should invest in creating a conducive work environment that fosters staff engagement and creativity. Hospital administrators should lead initiatives to streamline workflows through process efficiency measures, creating an organizational culture that values innovation, continuous improvement, and ultimately contributing to enhanced organizational performance.

The County Government, in collaboration with hospital administrators, should implement a comprehensive talent management strategy. This involves identifying and addressing skill gaps, providing professional development opportunities, and creating a positive work environment within public hospitals. Additionally, the County Health Department should oversee the strategic allocation of resources and ensure efficient resource utilization, focusing on enhancing financial stability, patient safety, and overall quality of care in public hospitals in Kajiado County.

**Limitations and Future Research Direction**

From the findings the researcher suggested that further studies on patient-centered care strategies and their impact on organizational performance. Investigate how personalized and patient-focused approaches contribute to improved continuity of care, reduced waiting times, and enhanced overall patient satisfaction.

Explore emerging healthcare technologies beyond telemedicine, such as wearable devices, remote monitoring, and digital health platforms. Assess their effectiveness in improving diagnosis, treatment, and patient management.

Conduct in-depth studies on human resource management practices in public hospitals, focusing on talent acquisition, retention strategies, and workforce stability. Investigate the impact of training programs, professional development, and employee engagement initiatives on reducing turnover costs and improving the overall competency of healthcare professionals.

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All authors have read and agreed to the published version of the manuscript.

**Author Contributions:** Conceptualization, J.M.N. and S.M.M.; methodology, J.M.N.; validation, J.M.N.; formal analysis, J.M.N. and S.M.M.; investigation, J.M.N.; resources, J.M.N.; writing—original draft preparation, J.M.N.; writing—review and editing, J.M.N. and S.M.M.

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**References**


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