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Thesaurus Gatediana, Dr. Nehemiah Kiplagat &
Dr. Richard Nyaoga

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Influence of Government Supported Infrastructure Measures on Operational Performance at Nakuru Level Six Hospital, Kenya

[1*]Thesaurus Gatediana, [2]Dr. Nehemiah Kiplagat & [3]Dr. Richard Nyaoga

[1,2,3]Institute of Postgraduate Studies, Kabarak, Kenya.

***gatedianathesaurus2018@gmail.com**

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Abstract

Public hospitals play a vital role in delivering essential healthcare services, yet many face operational challenges related to staffing shortages, limited funding and infrastructural inadequacies. This study aimed to examine the influence of government supported infrastructure measures on operational performance at Nakuru Level Six Hospital, Kenya. The study was guided by the Resource-Based View (RBV) theory and employed a cross-sectional survey research design. The target population comprised 634 hospital staff, from whom a sample of 245 respondents was obtained using Yamane's formula and selected through stratified random sampling. Data were collected using self-administered questionnaires. A pilot test involving 10% of the sample was conducted at KTRH. Content and construct validity were used to test validity, while Cronbach's alpha was used to test reliability. The study was purely quantitative, and data were analyzed using descriptive statistics and inferential analysis, namely Pearson correlation and simple linear regression, to examine the relationship between government supported infrastructure measures and operational performance. Government supported infrastructure measures recorded a mean of 3.86 (SD = 0.66), which indicates that respondents perceived the measures as being implemented efficiently. A strong positive correlation was established ($r = 0.899$, $p < 0.001$), and infrastructure measures explained 80.8% of the variation in operational performance ($R^2 = 0.808$). The regression coefficient ($B = 0.884$) indicates that a unit increase in infrastructure measures leads to a 0.884 increase in operational performance. The null hypothesis was rejected at $p < 0.001$, confirming that government supported infrastructure measures significantly affect operational performance in hospitals. The study concludes that government supported infrastructure measures significantly influence operational performance in public hospitals. The study therefore recommends that the government and health sector stakeholders sustain investment in hospital infrastructure to improve operational performance. The findings provide empirical evidence on how government supported infrastructure measures influence the operational performance of hospitals. The results may be used to inform health sector policy and planning, particularly in strengthening the performance of referral hospitals across Kenya.

Keywords: *Operational Performance, Government Supported Infrastructure Measures, Nakuru Level Six Hospital.*

1.0 Background of the Study

A Level Six Hospital represents the apex of medical care (Hoyt & Coimbra, 2007). These institutions are characterized as academic medical centers that provide the most advanced and specialized services (Elrod & Fortenberry, 2017). They also serve as national or regional referral hubs that are typically affiliated with medical universities and integrate core missions of clinical service, medical education, and advanced research (Lewkonia, 2001). In the United States, Canada and much of Europe, these hospitals receive substantial government support (Conway *et al*., 2024) and benefit from reliable public funding mechanisms (Jeurissen *et al*., 2021; Karcıoğlu, 2025). Consequently, they are generally well equipped, adequately staffed and capable of delivering high-quality care at scale (Winter *et al*., 2021).

In many African countries, governments encounter persistent obstacles in providing adequate support for Level Six hospitals (Azevedo, 2017; Oleribe *et al*., 2019). These hospitals typically lack the necessary infrastructure to meet growing patient demands (Olawade *et al*., 2025). According to Okolie (2023) and Fadumo *et al*. (2025), inefficiencies persist due to weak coordination, inadequate infrastructure and funding bottlenecks. According to Hammad *et al*. (2025), Egypt has been implementing the Universal Health Insurance Law reforms through regulatory measures and infrastructure investments (Egypt Human Development Report 2021, 2021). The Government of Senegal has focused on decentralizing health service delivery and introducing performance-based financing (PBF) in selected districts (Afriyie *et al*., 2025). PBF, together with government investment in facility upgrades, significantly improved operational performance and maternal health outcomes in regional hospitals. In South Africa, the public health system, underpinned by government support through the National Health Insurance (NHI) pilot, has sought to improve the performance of district and tertiary hospitals (The centre for Health Policy, 2019). Hospitals receiving targeted support in governance and resource allocation demonstrated improved service delivery metrics (Maake *et al*., 2025). Nonetheless, systemic challenges such as leadership gaps, infrastructure decay and bureaucratic procurement continue to hamper overall performance (Marawu & Utete, 2026).

In Kenya, the strategic role of Level Six hospitals in reducing congestion in national referral hospitals makes them vital to the public health objectives of the country (Okech & Lelegwe, 2015). The Government of Kenya has implemented the procurement of modern equipment and upgrades to health information systems aimed at strengthening operational performance (Zeng *et al*., 2022). While such efforts reflect a commitment to improving healthcare quality, the actual impact of these measures remains mixed. Some hospitals have demonstrated modest improvements in service quality and patient satisfaction, while others continue to struggle due to implementation gaps, poor accountability or lack of sustained funding (Abdi, 2024). Nakuru Level Six Hospital serves more than eight counties (Njuguna, 2024). Despite these government interventions, complaints regarding patient overcrowding persist (Gachathi *et al*., 2024). This study, therefore, sought to examine the influence of government supported infrastructure measures on the operational performance of Level Six hospitals, with specific focus on Nakuru Level Six Hospital.

1.1 Statement of the Problem

The problem that this study sought to address is the high neonatal mortality rate in Kenya, which stands at 21 deaths per 1,000 live births, while the infant mortality rate stands at 32 deaths per 1,000 live births (Irimu *et al*., 2021; Shikuku *et al*., 2017), amounting to 53 deaths per 1,000 live births among children under five. The Government of Kenya committed to reducing under-five mortality (U5M) to at most 25 deaths per 1,000 live births by 2030, in line with Sustainable Development Goal (SDG) 3.2 (Joseph *et al*., 2022). National strategic health

plans projected that, if intervention scale-up targets were met, the number of deaths would drop to about 21–22 per 1,000 live births by 2025. Waiswa *et al*. (2020) examined maternity register data from sampled facilities in Kenya and Uganda and established that 59.6% of deaths among children under five before discharge occurred in referral hospitals. The major issues reported at Nakuru Level Six Hospital include an under-equipped Intensive Care Unit (ICU) with only six beds (MoH, 2020) and an overstretched maternity wing, which often forces women to share beds or even sleep on the floor due to space limitations (Mwangi *et al*., 2023). This study therefore sought to investigate how government supported infrastructure measures influence the operational performance of Nakuru Level Six Hospital. The results provide an understanding of the relationship between policy, resource distribution and actual hospital conditions, and offer suggestions for enhancing medical services in comparable institutions.

1.2 Objective of the Study

To examine the influence of government supported infrastructure measures on operational performance at Nakuru Level Six Hospital, Kenya.

1.3 Research Hypothesis

H_0: Government supported infrastructure measures have no statistically significant effect on operational performance at Nakuru Level Six Hospital, Kenya.

1.4 Significance of the Study

The study contributes to scholarly understanding by systematically investigating the influence of government supported infrastructure measures on the operational performance of Nakuru Level Six Hospital. The findings are expected to benefit the management of Nakuru Level Six Hospital and the residents it serves by providing empirical evidence on how government supported infrastructure measures affect operational performance. In addition, the findings may guide the Ministry of Health and county governments in prioritizing infrastructure investments in referral hospitals.

2.0 Literature Review

The section presents a review of relevant literature. The subsections include the theoretical framework, empirical review, research gap, and conceptual framework.

2.1 Theoretical Framework: Resource-Based View Theory

The Resource-Based View (RBV) theory was introduced by Wernerfelt (1984), and it posits that the sustained performance of an institution is primarily determined by the nature and quality of its internal resources. The theory was later expanded by Barney (1991), who argued that, for a resource to provide a competitive or operational advantage, it must be valuable, rare, inimitable and non-substitutable (VRIN). Such resources consist not only of financial and tangible assets but also of individual skills, institutional systems and the organizational environment. Accordingly, the theory provides the main conceptual basis for examining how internal assets, augmented by external support mechanisms such as government initiatives, affect organizational effectiveness, particularly operational results in public healthcare facilities. The RBV theory therefore provided a strategic lens for evaluating how government supported infrastructure measures could improve the operational performance of the hospital. The theory further supports the proposition that, without adequate internal resources, even well-intentioned policies or reforms cannot yield meaningful outcomes in healthcare institutions.

The RBV theory has, however, been criticized for its static orientation and for the difficulty of operationalizing its core concepts. Priem and Butler (2001) argued that the theory risks being

tautological, since valuable resources are defined in terms of the advantage that they generate, and that it offers limited guidance on how resources are developed and deployed in practice. Notwithstanding this limitation, the theory remains appropriate for the present study because government supported infrastructure, including specialized equipment, utilities, physical facilities and health information systems, constitutes a tangible resource base whose adequacy and deployment can be measured directly. The theory therefore guided the conceptualization of infrastructure measures as the independent variable and operational performance as the outcome of resource deployment at Nakuru Level Six Hospital.

2.2 Empirical Review

Infrastructure is widely recognized as a fundamental driver of productivity, efficiency, and development outcomes across both developed and developing economies. Empirical evidence consistently demonstrates that investment in physical and service infrastructure plays a critical role in enhancing economic performance and institutional efficiency. Han *et al*. (2021) examined the impact of infrastructure investment using a quantitative longitudinal approach based on two panel datasets drawn from developed and developing economies. Their findings revealed that infrastructure investment yields a significantly larger relative impact on output per worker in developing economies compared to developed ones. This suggests that infrastructure deficits in low- and middle-income countries constrain productivity and efficiency more severely. Khanna & Sharma (2021) conducted a cross-country comparison using manufacturing industry panel data from India, China, Japan and South Korea, employing census data from a sample of 50 manufacturing units. The study found positive and sizeable long-run productivity effects of infrastructure investment in India and China, although similar effects were not observed in Japan and South Korea. This disparity highlights the diminishing marginal returns of infrastructure in already well-developed contexts and reinforces the importance of targeted infrastructure expansion in developing economies where infrastructure gaps remain substantial.

Bancalari (2024), using quasi-random variation methods, uncovered the unintended consequences of infrastructure expansion, particularly in developing settings. The study found that infrastructure development was associated with increased infant and under-five mortality, which suggests that poorly planned or inadequately regulated infrastructure projects may introduce health and environmental risks. This finding underscores the need for careful governance and planning, as well as the integration of infrastructure investments with health and social protection systems. A broader historical perspective is offered by (Foster *et al*., 2023), who conducted a qualitative review of four decades of literature on infrastructure and development outcomes. Their synthesis confirmed that infrastructure improvements are critical in supporting the development process by enhancing access to services, reducing transaction costs, and facilitating economic integration. The review emphasized that infrastructure serves as an enabling platform for service delivery across sectors, including health, education and industry, which reinforces its relevance for institutional operational efficiency.

Similarly, Timilsina *et al*. (2020) provided an empirical literature review examining the relationship between infrastructure, economic growth and poverty reduction. Their findings consistently indicated a positive relationship between infrastructure development and economic growth, with spillover effects that contribute to poverty alleviation. However, the review also highlighted variations in outcomes depending on the type of infrastructure and the institutional context in which investments are implemented, pointing to the importance of aligning infrastructure development with governance and policy measures. Meka'a *et al*. (2024) investigated the effects of public infrastructure investment on economic growth in Cameroon using a quantitative empirical approach based on national economic data. The study

found that the elasticity of growth with respect to different types of infrastructure is positive, which confirms that investments in basic public infrastructure significantly contribute to economic expansion in developing countries.

Within the health sector, Leslie *et al*. (2017) examined the association between infrastructure and observed quality of care in a cross-sectional study of more than 4,300 health facilities across eight low- and middle-income countries. The study reported that facilities had moderate infrastructure scores, while adherence to evidence-based clinical guidelines remained low, ranging from about 37% in sick-child care to 61% in antenatal care. The correlation between infrastructure and evidence-based care was weak, and no minimum infrastructure threshold was reliably associated with higher quality care. This evidence indicates that the presence of facilities and equipment alone may not guarantee improved service outcomes, which justifies an examination of how government supported infrastructure measures translate into operational performance within specific hospitals.

In the African context, Oleribe *et al*. (2019) employed a modified nominal group technique involving health experts from 11 African countries to identify the key challenges facing healthcare systems on the continent. The study ranked inadequate human resources (34.29%) and inadequate budgetary allocation to health (30%) as the leading challenges, followed by poor leadership and management (8.45%). These findings imply that hospital infrastructure in many African countries develops within constrained financial and human resource environments, which limits the capacity of public hospitals to acquire, operate and maintain essential facilities. The study therefore underscores the importance of sustained government financing in strengthening the resource base upon which the operational performance of referral hospitals depends.

In Kenya, Zeng *et al*. (2022) employed a mixed-method analysis that combined a quantitative assessment of inefficiency with focus group discussions and key informant interviews in five counties with differing levels of health service delivery performance. The study established that funding shortages, delays in the disbursement of funds to health facilities, rigid and lengthy procurement processes, and the lack of laboratory tests and equipment constrained county health service delivery. Similarly, Njagi *et al*. (2025) reviewed the implementation of the Managed Equipment Services programme, under which specialized medical equipment was placed in 98 hospitals across the 47 counties of Kenya. The review reported that the programme established previously unavailable services, including dialysis in 49 hospitals and critical care units in 11 hospitals, although prolonged procurement processes and implementation delays were experienced.

2.3 Research Gap

Most of the studies reviewed examined infrastructure at a broad level by comparing either countries or industries, and they did not explore the differences that exist within developing economies. Foster *et al*. (2023) acknowledged that there is insufficient robust evidence on how infrastructure affects low-income countries, which implies that findings from developed nations cannot be generalized to developing countries. There is also a sectoral gap. Meka'a *et al*. (2024) did not consider public healthcare investment, Bancalari (2024) examined unintended health consequences rather than the performance of health facilities, while (Timilsina *et al*., 2020) acknowledged that it remains unclear whether infrastructure yields greater returns in areas where access is limited than in areas where it is already adequate. Furthermore, Leslie *et al*. (2017) and Zeng *et al*. (2022) assessed infrastructure and service delivery across multiple facilities or counties rather than within a single referral hospital, while Njagi *et al*. (2025) described programme implementation without statistically testing its effect

on hospital operational performance. Consequently, none of the studies reviewed directly linked government supported infrastructure measures to the operational performance of a public health facility in Kenya. The present study on Nakuru Level Six Hospital therefore sought to fill this gap by providing Kenyan evidence from the public health sector, thereby contributing to knowledge on infrastructure in low-income countries and on the operational returns of infrastructure investment in resource-constrained public health settings.

2.4 Conceptual Framework

The conceptual framework presented in Figure 1 links government supported infrastructure measures (independent variable) to the operational performance of Nakuru Level Six Hospital (dependent variable).

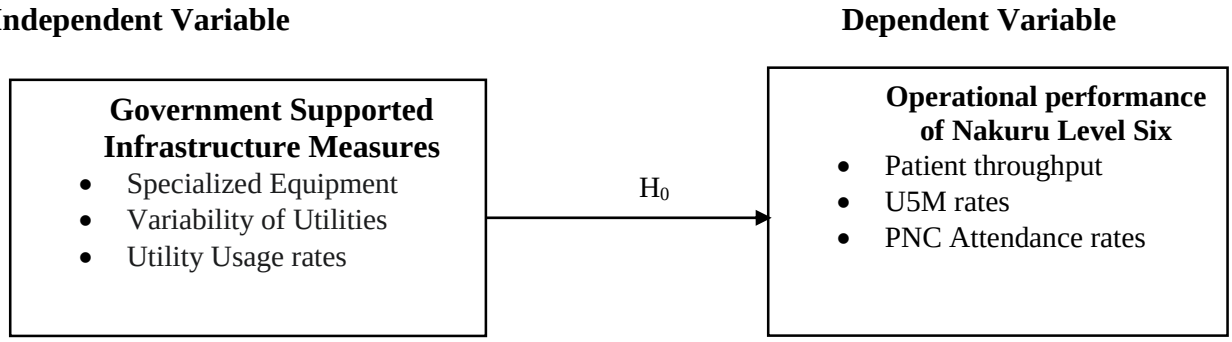


Figure 1: Conceptual Framework

Source: Researcher (2026)

3.0 Research Methodology

A cross-sectional survey research design was adopted to determine the relationship between government supported infrastructure measures and operational performance, as it allowed for the collection of data at a single point in time. Since government support measures and operational performance already exist and cannot be manipulated experimentally, a cross-sectional survey provided a practical and cost-effective approach for collecting data from hospital staff across different departments simultaneously (Wang & Cheng, 2020). The target population comprised 634 hospital staff, including nurses, hospital administrators and licensed medical practitioners who operate as specialists. Participants were selected using stratified random sampling, which ensured that the diverse professional groups and roles were proportionately represented. The sample size of 245 respondents was determined using Yamane's formula, $n = N/ (1 + Ne^2)$, at a 5% margin of error (Yamane, 1967). Data were collected using self-administered questionnaires. A pilot test involving 10% of the sample was conducted at KTRH, while content and construct validity and Cronbach's alpha were used to assess validity and reliability, respectively. Data were analyzed in STATA using descriptive statistics, Pearson correlation and simple linear regression. The hypothesis of the study (H_0) was tested using the following model:

$$Y = \beta_0 + \beta X + \varepsilon$$

Where:

Y = Operational Performance of Nakuru Level Six Hospital

X = Government Supported Infrastructure measures

β_0 = Constant (intercept), representing operational performance when Government Supported Infrastructure measures are zero

β= Regression coefficient, indicating the magnitude and direction of the effect of Government Supported Infrastructure measures on operational performance.

ε = Error term capturing unexplained variation

Ethical approval was obtained from the Kabarak University Scientific and Ethics Review Committee (KUREC) and a research permit from the National Commission for Science, Technology, and Innovation (NACOSTI). Respondent identities were anonymized, participation was voluntary, and informed consent was obtained in writing prior to data collection.

4.0 Results and Discussion

This section presents the analysis, findings, interpretations and discussion in line with the objective and hypothesis of the study. It covers the response rate, descriptive statistics, correlation analysis, regression analysis and hypothesis testing.

4.1 Response Rate

Out of the 245 questionnaires that were administered to the sampled respondents, 216 were correctly filled and returned, yielding a response rate of 88.2%. The remaining 29 questionnaires, representing 11.8%, were either not returned or were poorly filled and were therefore excluded from the analysis. This response rate exceeds the 70% threshold that Mugenda and Mugenda (2019) consider excellent for social science research.

4.2 Descriptive Statistics

Descriptive Statistics for Government Supported Infrastructure Measures

The following set of six statements concerned government supported infrastructure measures, and respondents were asked to rate the statements based on their level of agreement: Strongly Disagree (SD), Disagree (D), Neutral (N), Agree (A) & Strongly Agree (SA). The frequencies, percentages, means and standard deviations are presented in Table 1.

Table 1: Descriptive Statistics for Government Supported Infrastructure Measures

Statement	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean	Std. Dev
The hospital has adequate specialized medical equipment to meet patient care demands.	3 (1.4)	0 (0)	51 (23.6)	121 (56.0)	41 (19.0)	3.95	0.65
Equipment shortages or breakdowns rarely interrupt clinical operations.	0 (0)	5 (2.3)	47 (21.8)	123 (56.9)	41 (19.0)	3.93	0.71
The hospital has a reliable electricity/ water supply and sanitation facility that supports uninterrupted operations.	0 (0)	6 (2.8)	89 (41.2)	121 (56.0)	0 (0)	3.53	0.55
Physical infrastructure such as wards, laboratories, and theatres is adequate for patient volumes.	1 (0.5)	1 (0.5)	46 (21.3)	132 (61.1)	36 (16.6)	3.95	0.63
The hospital uses an effective electronic health information system for patient records.	0 (0)	4 (1.9)	49 (22.7)	126 (58.3)	37 (17.1)	3.91	0.68
Health information systems reduce paperwork and administrative delays.	0 (0)	9 (4.2)	43 (20.0)	126 (58.3)	38 (17.6)	3.89	0.73
Average Mean and S. D						3.86	0.66

The findings show that respondents generally agreed that infrastructure measures were adequately implemented at the hospital. IN1 recorded a mean of 3.95 (SD = 0.65), while IN2 had a mean of 3.93 (SD = 0.71), indicating generally positive responses with relatively little variation. IN3 recorded a mean of 3.53 (SD = 0.55), the lowest among the six statements. Although respondents generally agreed with the statement, the low standard deviation shows that their responses were fairly similar. IN4 recorded a mean of 3.95 (SD = 0.63), indicating a high level of agreement and consistent responses. IN5 had a mean of 3.91 (SD = 0.68), while IN6 recorded a mean of 3.89 (SD = 0.73), both showing general agreement. The overall mean score was 3.86, which suggests that respondents generally perceived infrastructure support positively, while the standard deviation of 0.66 indicates that responses were fairly consistent across the study participants.

Descriptive Statistics for Operational Performance

The dependent variable of the study was operational performance at Nakuru Level Six Hospital, and the following set of six statements concerned operational performance, and respondents were asked to rate the statements based on their level of agreement: Strongly Disagree (SD), Disagree (D), Neutral (N), Agree (A) & Strongly Agree (SA). The results are presented in Table 2.

Table 2: Descriptive Statistics for Operational performance

Statement	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean	Std. Dev
The hospital attends to a high number of pregnant women	0 (0)	1 (0.5)	45 (20.8)	128 (59.3)	42 (19.4)	3.98	0.65
The hospital serves a large number of children under five	0 (0)	2 (0.9)	46 (21.3)	126 (58.3)	42 (19.4)	3.96	0.67
The hospital has recorded a reduction in under-five mortality cases over recent years.	0 (0)	0 (0)	87 (40.3)	129 (59.7)	0 (0)	3.60	0.49
Child health services provided by the hospital contribute to improved survival of children under five years.	3 (1.4)	0 (0)	44 (20.4)	126 (58.3)	43 (20.0)	4.00	0.64
Mothers return to the hospital for postnatal care services after delivery	0 (0)	0 (0)	45 (20.8)	128 (59.3)	43 (20.0)	3.99	0.64
Attendance for postnatal care services has increased over time at the hospital.	2 (0.9)	0 (0)	46 (21.3)	125 (57.9)	43 (20.0)	3.99	0.64
Average Mean and Std. Dev						3.92	0.63

The findings indicate that operational performance at the hospital was generally perceived positively by the respondents. The six operational performance items recorded mean scores ranging from 3.60 to 4.00 on a five-point Likert scale, suggesting that respondents generally agreed that the hospital was performing well operationally. OP4 recorded the highest mean score of 4.00, followed closely by OP5 at 3.99, OP6 at 3.99, OP1 at 3.98 and OP2 at 3.96, indicating consistently high ratings across these aspects of operational performance. OP3 had the lowest mean score of 3.60, although it remained above the scale midpoint of 3.0, suggesting a moderately positive perception of this aspect. The standard deviations ranged from 0.49 to 0.67 and averaged 0.63, showing relatively little variation in the responses and suggesting that most respondents had similar views regarding the hospital's operational performance. Overall, the results suggest that the operational performance of the hospital was generally high, with a mean of 3.92.

4.3 Correlation Analysis

Pearson correlation analysis was conducted to establish the strength and direction of the relationship between government supported infrastructure measures and operational performance, and the results are presented in Table 3.

Table 3: Correlation Analysis

Variable	Operational Performance	**Infrastructure Measures**
Operational Performance	1.000	
Infrastructure Measures	.899**	1.000
Sig. (2-tailed)		.000
N	216	216

The correlation analysis results showed that the relationship between infrastructure measures and operational performance was strong, positive and statistically significant at the 0.01 level ($r = 0.899$, $p < 0.001$). This result indicates that infrastructure related measures are closely associated with the operational performance of the hospital, which implies that the infrastructure factors examined in the study are relevant to hospital operations.

4.4 Regression Analysis

The model summary for infrastructure support measures as they relate to operational performance is shown in Table 4.

Table 4: Model Summary – Government Supported Infrastructure Measures

Model	R	R^2	Adjusted R^2	Std. Error
1	.899[a]	.808	.807	1.285

a. Predictors: (Constant), Infrastructure Measures

The correlation coefficient of 0.899 indicates a strong positive association between infrastructure measures and operational performance. The coefficient of determination, $R^2 = .808$, reveals that infrastructure measures account for 80.8% of the variation in performance, leaving approximately 19.2% to be explained by other factors not captured in this model. This represents high explanatory power, which suggests that infrastructure related variables play a substantial role in determining how well the hospital operates. The adjusted R^2 of 0.807 is very close to the unadjusted value, which indicates that the model is not overfitted and that the predictor generalizes well to the broader population. The standard error of 1.285 represents the typical deviation of observed performance values from the regression line. Analysis of Variance (ANOVA) was used to establish whether the infrastructure measures model as a whole adequately predicted the outcome variable, and the results are presented in Table 5.

Table 5: ANOVA – Infrastructure Measures

Source	Sum of Squares	df	Mean Square	F	Prob > F
Regression	1488.693	1	1488.693	901.76	.000[b]
Residual	353.289	214	1.651		
Total	1841.981	215			

The ANOVA results yielded an F-statistic of 901.76, derived from a regression sum of squares of 1488.693 and a residual sum of squares of 353.289 across 214 degrees of freedom. With a p-value of .000, the model as a whole was statistically significant, confirming that infrastructure measures reliably predict operational performance. The magnitude of the F-value is large and far exceeds typical critical thresholds, which reinforces the strength and consistency of the relationship.

4.5 Hypothesis Testing

The null hypothesis was tested using the t-statistic and p-value of the regression coefficient at the 0.05 level of significance, and the results are presented in Table 6.

Table 6: Hypothesis Testing Result – H_{01}

Hypothesis	**Predictor**	**t-value**	**p-value**	**Decision**
H_{01}	Government supported infrastructure measures	30.03	.000	Reject H_{01}

For the null hypothesis (H0) on infrastructure measures, the p-value was 0.000, which is less than the 0.05 threshold. The null hypothesis was therefore rejected, and the study concluded that infrastructure measures have a statistically significant effect on operational performance at Nakuru Level Six Hospital, Kenya. This finding is consistent with Han, who found that infrastructure investment had a larger relative impact on output per worker in developing economies (Han *et al*., 2021). The findings also align with Khanna and Sharma (2021), who reported positive and sizeable long-run effects of infrastructure on productivity in India and China (Khanna & Sharma, 2021). Similarly, the results are consistent with Foster *et al*. (2023), whose review of more than 300 studies found that improvements in infrastructure generally contribute to development outcomes, including productivity (Foster *et al*., 2023). The findings further agree with Timilsina *et al*. (2020), whose review found that studies examining physical infrastructure and economic growth generally report a positive relationship (Timilsina *et al*., 2020). The results are also supported by Meka'a *et al*. (2024). Their study in Cameroon found that infrastructure investments were generally positively related to economic growth, with energy infrastructure showing a significant contribution and road and telecommunications investments also having positive effects (Meka'a *et al*., 2024). The findings are further consistent with Njagi *et al*. (2025), who reported that the Managed Equipment Services programme in Kenya established previously unavailable services, such as dialysis and critical care, and expanded theatre, sterilization and imaging services in public hospitals.

4.6 Summary of Major Findings

The study examined the influence of infrastructure measures on the operational performance of Nakuru Level Six Hospital. The overall mean score was 3.86 (SD = 0.66), which suggests that respondents generally perceived infrastructure support positively and that their responses were fairly consistent. The findings revealed a strong positive relationship between the two variables ($r = 0.899$). The regression analysis yielded an R^2 of 0.808, which means that infrastructure measures alone explained 80.8% of the variation in operational performance. The model was statistically significant ($F = 901.76$, $p = 0.000$), and the regression coefficient ($B = 0.884$, $t = 30.03$, $p = 0.000$) confirmed that each unit increase in infrastructure measures led to a 0.884-unit improvement in operational performance. Consequently, the null hypothesis H_{01} was rejected. The study concludes that sound infrastructure measures are a critical driver of operational performance in healthcare.

5.0 Conclusion

The study concludes that government supported infrastructure measures significantly influence the operational performance of Nakuru Level Six Hospital. Adequate physical infrastructure, medical equipment, utilities and other essential facilities provide an enabling environment for healthcare workers to perform their duties effectively and for patients to receive services in a timely manner(Shetty *et al*., 2024). The availability and functionality of these facilities therefore contribute to the smooth coordination and delivery of hospital services. The study further concludes that the condition, adequacy, and maintenance of hospital infrastructure are important in determining how efficiently the hospital utilizes its available resources. Inadequate or poorly maintained infrastructure may constrain service delivery, increase operational challenges, and limit the hospital's capacity to respond effectively to patient needs(Malematja *et al*., 2025; Mohammed *et al*., 2023). Strengthening infrastructure provision and ensuring regular maintenance and replacement of essential facilities and equipment are therefore important for improving and sustaining the operational performance of Nakuru Level Six Hospital.

These findings align with the Resource-Based View (RBV) theory, which holds that superior performance stems from the possession and effective deployment of valuable, rare, inimitable and non-substitutable resources(Barney, 1991; Wernerfelt, 1984). Physical infrastructure qualifies as such a resource. It is valuable in that it enables the delivery of health services, rare in the sense that not all health facilities have access to adequate facilities and equipment, difficult to imitate because infrastructure represents significant capital investment built over time, and non-substitutable since no health facility can function effectively without the physical means to operate(Rajan *et al*., 2024). The finding that infrastructure measures explained 80.8 percent of the variation in operational performance reinforces the RBV position that tangible resources internal to the hospital environment drive performance outcomes. The significant coefficient ($B = .884$) demonstrates that investment in infrastructure yields measurable performance dividends, affirming that infrastructure is not merely a supporting input but a strategic asset upon which hospital performance depends.

6.0 Recommendations

The findings of the study established that infrastructure measures have a positive and statistically significant influence on the operational performance of Nakuru Level Six Hospital. Based on this finding, the study recommends that the county government and hospital management strengthen investment in adequate, functional, and well-maintained hospital infrastructure and medical equipment. This recommendation is consistent with the Ministry of Health's policy direction on optimizing health infrastructure for Universal Health Coverage.

The Ministry identifies effective and efficient health infrastructure development and utilization as important for improving access to quality healthcare services(Adjagba *et al*., 2024; MoH, 2014). The county government should therefore prioritize the rehabilitation of existing facilities, maintenance of medical equipment, provision of essential utilities, and replacement of obsolete or non-functional equipment. The study further recommends that the hospital undertake regular infrastructure and equipment needs assessments and develop maintenance schedules based on identified gaps. This would enable infrastructure problems to be identified and addressed before they negatively affect service delivery. This recommendation is also consistent with the devolved health function, under which county governments are responsible for county health facilities and the rehabilitation and maintenance of county health facilities and medical equipment (Zeng *et al*., 2022).

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