

Strategic Partnerships and Healthcare Service Quality in Level Four Public Hospitals in Embu County, Kenya

Njue Lemuel Amasha Muriithi^{1*}, Chesigor Felix¹, Rintari Nancy¹

¹Kenya Methodist University, P.O. Box 267-60200 Meru, Kenya

*Corresponding author email: njuelemuel2009@gmail.com

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Abstract

Healthcare systems operating under devolved governance frequently encounter financial, infrastructural, and human resource constraints that compromise the quality of service delivery. Strategic partnerships have increasingly emerged as collaborative mechanisms for strengthening institutional capacity through resource mobilization, knowledge exchange, and inter-organizational coordination. However, empirical evidence on the influence of strategic partnerships on healthcare service quality in Kenya's county referral hospitals remains limited. This study examined the effect of strategic partnerships on the quality of healthcare services in Level Four public hospitals in Embu County, Kenya. Guided by the Relational Resource-Based View, the study employed a descriptive survey research design targeting hospital administrators, clinicians, nurses, pharmacists, laboratory technologists, finance officers, and clinical officers working in the county's Level Four public hospitals. A census approach was adopted, yielding 120 completed questionnaires from a target population of 148 respondents, representing an 81% response rate. Data were collected using structured questionnaires and analyzed using descriptive statistics, Pearson correlation analysis, and simple linear regression in SPSS Version 29. The findings indicated that respondents perceived strategic partnerships positively, while overall healthcare service quality remained comparatively low. The study concludes that effective strategic partnerships enhance the quality of healthcare services by facilitating resource sharing, strengthening referral coordination, and improving institutional resilience. The study recommends that county governments institutionalize structured partnership governance frameworks, strengthen referral networks, and align collaborative initiatives with county health priorities to improve healthcare outcomes.

Keywords: *Devolved healthcare, healthcare service quality, strategic partnerships, Level Four public hospitals, relational resource-based view, Embu County*

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1. Introduction

Healthcare systems worldwide are increasingly characterized by complex health needs, constrained financial resources, rapid technological advancement, demographic transitions, and rising public expectations for quality healthcare services. These challenges have made it increasingly difficult for individual healthcare institutions to deliver optimal care independently, necessitating collaborative approaches that leverage complementary resources, expertise, and institutional capabilities. Consequently, strategic partnerships have emerged as a fundamental governance mechanism through which healthcare organizations collaborate with

governments, private sector institutions, development partners, faith-based organizations, academic institutions, non-governmental organizations (NGOs), and community-based organizations to improve health system performance and population health outcomes. Strategic partnerships enable organizations to mobilize financial resources, share technical expertise, strengthen innovation, coordinate service delivery, and enhance institutional resilience, thereby improving the accessibility, efficiency, and quality of healthcare services. Successful healthcare partnerships are characterized by shared governance, institutional trust, transparent communication, stakeholder participation, and clearly aligned strategic objectives rather than merely the availability of financial resources (World Health Organization [WHO], 2023).

Globally, collaborative governance has become an integral component of health system strengthening and the pursuit of Universal Health Coverage (UHC). The World Health Organization recognizes multi-sectoral partnerships as a critical strategy for achieving Sustainable Development Goal 3 (SDG 3), which seeks to ensure healthy lives and promote well-being for all. Healthcare organizations increasingly operate within interconnected networks where governments, private organizations, civil society, research institutions, and international agencies jointly contribute to health financing, policy implementation, disease surveillance, emergency preparedness, and service delivery. Rather than operating in isolation, hospitals are expected to function within integrated healthcare systems that facilitate knowledge exchange, coordinated referral mechanisms, and collaborative resource mobilization. Studies on global health partnerships demonstrate that effective collaboration improves service integration, organizational learning, innovation, accountability, and long-term sustainability, while poorly governed partnerships often suffer from fragmented decision-making, weak accountability, and unequal power relations among participating institutions.

Recent empirical studies further demonstrate that public-private partnerships (PPPs) have become important instruments for improving healthcare delivery, particularly in low- and middle-income countries where public health systems frequently operate under severe resource constraints. A qualitative analysis by Strasser et al. (2021) found that successful PPPs enhanced laboratory capacity, strengthened logistics systems, improved workforce capabilities, and promoted sustainable health interventions during and after the COVID-19 pandemic. Similarly, Dugle (2021), in a study of healthcare partnerships in Ghana, found that effective policy implementation depended largely on collaborative governance, institutional capacity, and meaningful stakeholder participation across different levels of the health system. More recently, Dove et al. (2024) demonstrated that trust, communication, adaptive leadership, and shared decision-making were the principal determinants of successful primary healthcare partnerships in Papua New Guinea, highlighting collaborative governance as an effective framework for strengthening health systems in resource-constrained settings.

Across developing countries, particularly in Sub-Saharan Africa, strategic partnerships have assumed greater significance as governments continue to face fiscal constraints, shortages of healthcare personnel, inadequate infrastructure, weak health information systems, and rising demand for healthcare services. These constraints have compelled governments to collaborate with bilateral and multilateral development agencies, faith-based organizations, NGOs, private healthcare providers, and local communities to supplement public resources and strengthen health service delivery. Contemporary evidence suggests that successful partnerships contribute to health system strengthening through improved governance, enhanced accountability, workforce development, integrated referral systems, digital health innovations, and improved availability of essential healthcare commodities. However, recent systematic reviews also caution that partnership success depends on transparent governance structures,

clearly defined partner roles, accountability mechanisms, and sustained stakeholder engagement.

In Kenya, the enactment of the Constitution of Kenya (2010) fundamentally transformed healthcare governance by introducing devolution. The Fourth Schedule of the Constitution transferred responsibility for county health services to the 47 county governments while the national government retained responsibility for health policy formulation, regulation, standards, and management of national referral facilities. The objective of devolution was to improve equity, accessibility, efficiency, accountability, and responsiveness of healthcare services by bringing decision-making closer to local communities. Under this framework, county governments became responsible for managing public hospitals, recruiting healthcare workers, developing health infrastructure, procuring medical supplies, and coordinating healthcare service delivery. This governance model also created opportunities for counties to establish strategic partnerships with development partners, private organizations, academic institutions, and community organizations to complement public investments and accelerate progress toward Universal Health Coverage (Constitution of Kenya, 2010; Ministry of Health, 2020).

Within Kenya's devolved health system, Level Four public hospitals serve as strategic secondary referral facilities, linking primary healthcare centers to county and national referral hospitals. These hospitals provide outpatient and inpatient services, emergency care, maternity services, surgical procedures, laboratory diagnostics, pharmaceutical services, and referral coordination for lower-level facilities. Their effectiveness, therefore, directly influences healthcare accessibility, continuity of care, referral efficiency, patient satisfaction, and overall county health system performance. Nevertheless, several studies have reported that many county hospitals continue to face operational challenges, including delayed funding, shortages of skilled healthcare personnel, fragmented referral systems, inadequate medical supplies, and rising patient demand, despite sustained investments by county governments. A recent Kenyan study on devolved healthcare financing similarly concluded that although devolution has increased county-level investment in healthcare, financial allocation alone does not necessarily translate into improved healthcare service delivery without effective governance and institutional capacity.

Embu County represents an important context for examining the contribution of strategic partnerships to healthcare service quality within Kenya's devolved healthcare system. Healthcare remains one of the county government's highest investment priorities, with approximately KSh 2.31 billion allocated to the health sector in the 2024/2025 financial year, representing nearly one-third of the county budget. The county has continued to expand health infrastructure, strengthen diagnostic services, recruit healthcare personnel, and improve access to primary and secondary healthcare services through its County Integrated Development Plan and Annual Development Plans. However, official county reports continue to identify shortages of healthcare personnel, gaps in continuous professional development, intermittent availability of essential medicines, limitations in emergency referral services, and increasing demand for healthcare services. These persistent challenges have prompted greater collaboration between the county government and development partners, faith-based organizations, non-governmental organizations, private institutions, and community-based organizations in supporting maternal and child health, disease prevention, community outreach, health promotion, workforce development, and health systems strengthening (County Government of Embu, 2024; County Government of Embu, 2025).

Although strategic partnerships have become increasingly prominent within county health systems, empirical evidence regarding their contribution to healthcare service quality remains limited. Existing studies have predominantly examined healthcare financing, decentralization, strategic leadership, or overall hospital performance, while relatively few have isolated strategic partnerships as an independent organizational capability influencing service quality in devolved public hospitals. Furthermore, much of the available evidence originates from developed countries or national-level health systems, with limited empirical attention devoted to county-managed Level Four public hospitals in Kenya. Consequently, there remains insufficient understanding of how strategic goal alignment, institutional trust, communication, stakeholder engagement, resource sharing, and collaborative governance influence the quality of healthcare services within devolved healthcare systems. Guided by the Relational Resource-Based View, this study addresses this knowledge gap by examining the effect of strategic partnerships on healthcare service quality in Level Four public hospitals in Embu County, Kenya. The findings are expected to contribute to strategic management scholarship while providing evidence to support county governments, hospital managers, policymakers, and development partners in designing collaborative governance mechanisms that enhance healthcare service quality and strengthen the realization of Universal Health Coverage.

1.1 Problem Statement

Despite sustained investments in the health sector following the implementation of devolution, healthcare service delivery in Embu County continues to face significant operational challenges that undermine service quality. The County Government of Embu allocated approximately KSh 2.31 billion to the health sector in the 2024/2025 Financial Year, making it one of the largest sectoral allocations in the county budget. The allocation comprised KSh 1.35 billion for curative health services, KSh 531.1 million for preventive and promotive health services, and KSh 427.8 million for health administration and support services (County Government of Embu, 2024). In addition, the county has continued to invest in healthcare infrastructure by increasing the number of functional health facilities from 91 in the 2024/2025 financial year to 94 in 2025/2026 and 97 by 2026/2027 (County Government of Embu, 2025).

However, these substantial financial and infrastructural investments have not translated into commensurate improvements in the quality of healthcare services. According to the Embu County Approved Programme-Based Budget (2024/2025), the county had not met the Ministry of Health's recommended staffing targets of one doctor per 10,000 people and one nurse per 600 people, reflecting persistent shortages of skilled healthcare personnel (County Government of Embu, 2024). Furthermore, the county projected availability of essential medicines and medical commodities for only 80% of required service days, indicating ongoing supply chain inefficiencies and intermittent stock-outs of critical pharmaceuticals (County Government of Embu, 2024). The same report further projected that only 70% of healthcare workers would receive in-service training during the financial year, highlighting existing gaps in continuous professional development that may affect the quality and responsiveness of healthcare services (County Government of Embu, 2024).

The Annual Development Plan (2025/2026) further demonstrates the magnitude of operational challenges affecting the county health system. Although the county planned to recruit 300 additional healthcare workers to address staffing shortages, only 104 were recruited due to budgetary constraints. Similarly, while 932 healthcare workers were targeted for promotion, only 56 officers were promoted during the reporting period, limiting staff motivation, retention, and career progression (County Government of Embu, 2025). These workforce shortages

continue to place significant pressure on existing healthcare personnel, contributing to increased workloads, prolonged patient waiting times, staff burnout, and reduced efficiency in healthcare service delivery.

The report further identified shortages of healthcare personnel in peripheral facilities, non-operational maternity units, inadequate medical equipment, and delayed deployment of newly recruited staff, forcing patients in some areas to travel considerable distances to access essential healthcare services (County Assembly of Embu, 2024). This study therefore sought to bridge this empirical and contextual gap by examining the effect of strategic partnerships on healthcare service quality in Level Four public hospitals in Embu County, Kenya, with the aim of informing county health policy, strategic management practices, and collaborative governance towards the realization of Universal Health Coverage.

1.2 Research Objective

To determine the effect of strategic partnerships on healthcare service quality in Level Four Public Hospitals in Embu County.

1.3 Hypothesis

H₀: Strategic partnerships have no statistically significant effect on healthcare service quality in Level Four Public Hospitals in Embu County.

2. Literature Review

2.1 Theoretical Review

This study is anchored on the Relational Resource-Based View (RRBV), an extension of the traditional Resource-Based View (RBV) developed by Dyer and Singh (1998). While the RBV argues that organizational performance is largely determined by valuable, rare, inimitable, and non-substitutable resources possessed by an individual organization (Barney, 1991), the RRBV extends this perspective by emphasizing that sustainable competitive advantage can also arise from inter-organizational relationships and collaborative networks. According to Dyer and Singh (1998), organizations generate relational rents when they establish strategic partnerships that facilitate the sharing of complementary resources, knowledge, capabilities, and innovations that cannot be achieved independently.

The theory assumes that organizations operating in complex and resource-constrained environments benefit from collaboration, as partnerships provide access to external expertise, financial resources, technologies, and organizational capabilities. Through mechanisms such as trust, shared governance, communication, and strategic alignment, organizations can improve efficiency, innovation, and service outcomes. In healthcare systems, strategic partnerships enable hospitals to access specialized medical equipment, technical assistance, workforce development programmes, health information systems, referral networks, and financial support that would otherwise be difficult to obtain independently (Bryson et al., 2015).

The application of the RRBV has gained prominence within healthcare management research because modern healthcare delivery increasingly depends on collaboration among governments, private organizations, development partners, academic institutions, and community organizations. Studies have demonstrated that healthcare organizations with strong collaborative networks are better positioned to respond to public health emergencies, improve patient outcomes, strengthen referral coordination, and enhance healthcare accessibility (Dove

et al., 2024). Furthermore, strategic partnerships facilitate organizational learning and innovation, thereby strengthening health system resilience and service quality.

The primary strength of the RRBV lies in its ability to explain how organizations create value through collaboration rather than competition. The theory recognizes that organizational success increasingly depends on external relationships, particularly in public-sector environments characterized by resource limitations and complex stakeholder interactions. However, the theory has limitations. It assumes that collaborative relationships naturally generate mutual benefits, yet partnerships may also experience conflicts, unequal power relations, opportunistic behaviour, and governance challenges that reduce their effectiveness (Ansell & Gash, 2008). Despite these limitations, the RRBV remains highly relevant to this study because it provides a useful framework for understanding how strategic partnerships affect the quality of healthcare services in Level Four public hospitals in Embu County.

2.2 Empirical Review

Strategic Goal Alignment

Strategic goal alignment refers to the extent to which partner organizations share common objectives, priorities, and expectations regarding healthcare outcomes. Effective partnerships require a shared vision that guides decision-making and resource allocation. A study by Dugle (2021) found that strategic alignment among healthcare stakeholders significantly enhanced programme implementation and organizational performance by reducing duplication of efforts and improving coordination. Similarly, Dove et al. (2024) reported that healthcare partnerships characterized by shared objectives demonstrated greater sustainability and effectiveness than partnerships lacking clearly defined common goals. These findings suggest that strategic goal alignment enhances organizational coherence and improves healthcare service delivery.

Institutional Trust

Trust is widely recognized as a critical determinant of successful inter-organizational collaboration. Institutional trust promotes transparency, accountability, information sharing, and commitment among partners. According to Bryson et al. (2015), trust strengthens collaborative governance by reducing transaction costs and facilitating cooperative behaviour among stakeholders. Recent evidence by Dove et al. (2024) established that trust significantly improved collaboration among healthcare providers and community organizations by encouraging joint problem-solving and resource sharing. In healthcare settings, trusted partnerships contribute to stronger referral systems, coordinated service delivery, and improved patient outcomes.

Communication

Effective communication facilitates information exchange, coordination, and collective decision-making among partner organizations. Healthcare partnerships often involve multiple stakeholders operating within different organizational structures and mandates, making communication essential for successful implementation. A systematic review by Haldane et al. (2021) found that communication mechanisms significantly influenced partnership effectiveness, particularly in health system strengthening initiatives implemented in low- and middle-income countries. Effective communication promotes accountability, reduces misunderstandings, and enhances stakeholder participation, ultimately improving the quality of healthcare services.

Stakeholder Engagement

Stakeholder engagement refers to the involvement of relevant actors in planning, implementation, monitoring, and evaluation processes. Inclusive participation enhances ownership, accountability, and sustainability of healthcare interventions. According to WHO (2023), meaningful stakeholder engagement strengthens health system governance by incorporating diverse perspectives into healthcare decision-making. Similarly, Strasser et al. (2021) reported that stakeholder participation improved programme acceptance, resource mobilization, and service delivery outcomes within public-private healthcare partnerships. Healthcare organizations that actively engage stakeholders are more likely to identify community needs and develop responsive healthcare interventions.

Resource Sharing

Resource sharing enables organizations to leverage complementary capabilities and address resource limitations. Through partnerships, healthcare institutions gain access to financial resources, technical expertise, medical equipment, information systems, and workforce development opportunities. Dyer and Singh (1998) argue that resource-sharing arrangements create relational advantages that enhance organizational performance. Within healthcare systems, collaborative resource mobilization has been associated with improved service accessibility, strengthened referral networks, and enhanced healthcare quality (WHO, 2023). Resource sharing is particularly important in devolved healthcare systems where public hospitals frequently face budgetary and operational constraints.

Public–Private Partnerships

Public–private partnerships (PPPs) are among the most widely adopted forms of strategic collaboration in healthcare. PPPs facilitate infrastructure development, technology transfer, capacity building, and healthcare financing. A review by Roehrich et al. (2021) found that PPPs contributed significantly to health system strengthening by expanding healthcare access and improving service efficiency. Similarly, recent studies indicate that PPPs improve healthcare delivery by combining public-sector oversight with private-sector innovation and efficiency (WHO, 2023). However, their effectiveness depends on governance structures, accountability mechanisms, and alignment of partner interests.

Research Gap

Existing literature demonstrates that strategic partnerships contribute significantly to organizational performance and health system strengthening. However, several gaps remain evident. Theoretically, most studies have focused on collaborative governance and public-private partnerships without adequately applying the Relational Resource-Based View to explain how partnership dimensions influence healthcare service quality. Methodologically, many studies have employed qualitative approaches, limiting the availability of quantitative evidence on the relationship between strategic partnerships and healthcare outcomes. Contextually, much of the existing literature originates from developed countries or national-level health systems, with limited attention devoted to county-managed hospitals within devolved healthcare systems. Empirically, previous studies have largely examined healthcare financing, decentralization, leadership, and organizational performance, while few have isolated strategic partnerships as an independent predictor of healthcare service quality. This study addresses these gaps by examining the effect of strategic partnerships on the quality of healthcare services in Level Four public hospitals in Embu County, Kenya.

3. Materials and Methods

This study adopted a descriptive survey research design to investigate the relationship between strategic partnerships and the quality of healthcare service delivery. A descriptive survey design is highly effective for this study because it allows for the structured collection of quantitative data from a specific target population (Saunders et al., 2019). This design enables the researcher to systematically measure, analyze, and describe the strength, direction, and significance of relational governance dimensions, such as communication efficacy, trust, and goal alignment, without manipulating the operational environment of the health facilities.

Target Population

The target population for this study comprised hospital administrators, department heads, nurses, clinicians, medical laboratory technologists, and pharmacists across the Level 4 public hospitals in Embu County, Kenya. These individuals were chosen because they possess strategic insight and are directly involved in managing external alliances and monitoring service quality metrics.

Because the target population was relatively small and highly specialized, the study adopted a census approach rather than a sampling technique. A census approach involves studying every member of the target population (Creswell & Creswell, 2018). This approach eliminates sampling errors, ensures maximum statistical power, and provides a complete representation of institutional practices across all secondary care facilities in the county. The total population consisted of 148 respondents; however, only 120 responded, yielding a census of 120 individuals who participated in the study (N = 120) and an 81% response rate.

Table 1: Target Population

Respondents	Target Population	Percentage (%)
Hospital Administrators	3	2%
Doctors	11	8%
Clinical Officers	17	11%
Nurses	88	59%
Laboratory technologists	16	11%
pharmacists	10	7%
Finance officers	3	2%
Total	148	100

Data Collection Instrument and Reliability

Primary quantitative data were collected using a structured, self-administered questionnaire. The instrument was divided into two main sections: demographic profiles and the strategic partnerships metric. The strategic partnership items and service quality dimensions were evaluated using a 5-point Likert scale (ranging from 1 = Strongly Disagree to 5 = Strongly Agree).

The operational indicators for the strategic partnership variable were drawn from collaborative governance literature (Arabi et al., 2025) and adapted to the local context. To ensure data quality, a pre-test was conducted at Narumoro Level Four Hospital, a comparable public healthcare facility in Laikipia County. The reliability of the Likert items was evaluated using

Cronbach's alpha (α). The coefficient for the strategic partnerships construct reached $\alpha = 0.82$, and the service quality metric reached $\alpha = 0.79$. Both values exceeded the standard academic threshold of 0.70 (Hair et al., 2019), confirming that the instrument was internally consistent and reliable for field deployment.

Data Analysis and Statistical Modeling

The collected questionnaires were coded and entered into the Statistical Package for the Social Sciences (SPSS) Version 29 for analysis. Both descriptive and inferential statistical methods were used to analyze the data. Descriptive statistics, including mean scores (μ) and standard deviations (σ), summarized the responses.

The simple linear regression model is expressed as follows:

$$Y = \beta_0 + \beta_1 X + \varepsilon$$

Where:

- Y = Healthcare Service Quality (Dependent Variable)
- β_0 = Y-intercept (Constant)
- β_1 = Unstandardized Regression Coefficient (Slope)
- X = Strategic Partnerships (Independent Variable)
- ε = Stochastic Error Term

Statistical significance was determined at a 95% confidence interval ($\alpha = 0.05$). Probability values (p-values) below 0.001 ($p < .001$) were considered highly significant.

4. Results and Discussion

4.1 Response Rates

The study targeted 148 respondents, all employees of level-four public hospitals in Embu County. However, after the questionnaire was administered, only 120 were duly completed and returned. This contributed to an 81% response rate. This response rate was adequate for data analysis and aligns with Holtom et al. (2022), who state that a response rate of more than 50% is sufficient for data analysis and reporting. An 81% response rate was considered justifiable in this study.

Table 2: Response rate

Item	Frequency	Percentage
Questionnaires Distributed	148	100%
Questionnaires Returned	120	81%
Questionnaires Not Returned	16	19%

4.2 Respondent Demographic Characteristics

The study respondents were asked to report their level of education, and the findings are shown in Table 3.

Table 3: Respondents' level of Education

Level of Education	Frequency	Percentage
Postgraduate	00	0
Bachelors	21	18%
Diploma	96	80%
Certificate	3	2%
Others	00	0.0
Total	120	100

The findings indicate that the majority of respondents (80%) possessed diploma qualifications, while 18% held bachelor's degrees. Respondents with certificate qualifications constituted 2% of the study population. This implies that most respondents possessed sufficient professional and academic knowledge necessary to provide reliable information concerning strategic leadership and quality of service in public hospitals.

The respondents were asked to indicate their gender.

Table 4: Gender Distribution of Respondents

Gender	Frequency	Percentage (%)
Male	48	40
Female	72	60
Total	120	100

The findings indicate that female respondents comprised 60% of respondents, while male respondents constituted 40%. This reflects staffing trends in public healthcare facilities, where administrative and medical roles are predominantly held by women.

The respondents were requested to indicate their years of service in the hospital.

Table 5: Respondents' Work Experience

Years of Service	Frequency	Percentage (%)
Below 1 year	6	5
1–5 years	38	32
6–10 years	52	43
Above 10 years	24	20
Total	120	100

The findings indicate that most respondents (43%) had worked for 6–10 years, while 32% had worked for between 1–5 years; some respondents (20years) had worked in the same facility for over 10 years. A few respondents (5%) had worked for a few weeks to a few months. This suggests that respondents had adequate experience and understanding of strategic partnerships and the need for quality services within the hospitals.

4.3 Descriptive and Inferential Statistics for Strategic Partnerships

The study evaluated the operational parameters of inter-organizational alliances to assess how strategic partnerships influence healthcare quality. Outlines the descriptive metrics, t-values, and corresponding significance levels for the primary partnership indicators.

Table 6: Descriptive and Inferential Statistics for Strategic Partnerships

Empirical Indicators	N	Mean (μ)	Std. Dev (σ)	t-value	Sig. (p-value)
Active engagement with strategic partners	120	3.79	0.788	10.941	< .001
Contribution to strategic goal achievement	120	3.88	0.742	12.218	< .001
Institutional trust between network partners	120	3.71	0.861	9.643	< .001
Contribution to service market share growth	120	3.59	0.914	8.201	< .001
Inter-organizational communication efficacy	120	3.82	0.773	11.562	< .001
Composite Metric	120	3.76	0.816	10.513	< .001

The results demonstrate a positive statistical baseline for collaboration across Level 4 public hospitals, indicated by a composite mean score of 3.76 ($\sigma = 0.816$). Inferential testing confirms that the overall construct of strategic partnerships has a highly significant influence on the quality of healthcare service delivery ($t = 10.513$, $p < .001$).

The data highlight that the most impactful dimension of these alliances is their direct contribution to strategic goals ($\mu = 3.88$, $t = 12.218$, $p < .001$). Conversely, market share expansion yielded the lowest relative agreement ($\mu = 3.59$, $\sigma = 0.914$), indicating greater variance in how administrators perceive competitive growth versus collaborative public health outcomes.

4.4 Descriptive and Inferential Statistics for Healthcare Service Quality

The study evaluated the operational metrics of the dependent variable, Healthcare Service Quality, across Level 4 public facilities in Embu County. Table 3 outlines the empirical indicators, standard deviations, and parametric significance metrics.

Table 7: Descriptive and Inferential Statistics for Healthcare Service Quality

Service Quality Indicators	N	Mean (μ)	Std. Dev (σ)	t-value	Sig. (p-value)
Efficient and well-coordinated referral systems	120	2.84	1.284	3.912	< .001
Admission rates reflecting service demand	120	2.76	1.337	3.106	= .002
Patient volume expansion via care quality	120	2.93	1.248	4.287	< .001
Balanced patient-physician ratios	120	2.51	1.421	2.114	= .036
Minimized and reasonable patient waiting times	120	2.33	1.508	1.786	= .047
Composite Metric	120	2.67	1.360	3.041	< .001

The quantitative baseline reveals that overall healthcare service quality remains low, as demonstrated by a composite mean score of 2.67 ($\sigma = 1.360$). Although inferential testing confirms that these service dimensions remain statistically significant factors in hospital operations ($t = 3.041$, $p < .001$), the low mean scores indicate that respondents are generally dissatisfied with current performance margins. The most acute operational bottlenecks are

evident in patient waiting times ($\mu = 2.33$, $\sigma = 1.508$) and institutional patient-physician ratios ($\mu = 2.51$, $\sigma = 1.421$), indicating significant operational stress within the county's secondary care infrastructure.

4.5 Regression Coefficients

Table 8: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta (β)		
1 (Constant)	1.114	.172		6.477	< .001
Strategic Partnerships	.414	.045	.642	9.100	< .001

*a. Dependent Variable:
Healthcare Service Quality*

The predictive relationship is expressed using the following linear regression equation:
 $(Y=1.114+0.414X)$

The regression coefficient ($B = .414$, $t = 9.100$, $p < .001$) indicates that a 1-unit increase in strategic partnerships is associated with a 0.414-unit improvement in healthcare service quality. Based on these results, the null hypothesis (H_0) is rejected. The study establishes that strategic partnerships exert a highly significant predictive effect on the quality of healthcare service delivery within Level 4 public hospitals in Embu County.

According to the Relational Resource-Based View (RBV), this model demonstrates that building strategic alliances accounts for nearly half (41.2%) of the solution to the hospital service deficit. While traditional management paradigms prioritize internal capital injections, these findings imply that sub-county referral facilities can strategically overcome localized resource scarcities by developing dynamic capabilities centered on inter-firm resource pooling and trusted collaborative networks.

4.6 Discussion

The empirical data reveals a critical paradox: while strategic partnerships perform exceptionally well across Level 4 health institutions ($\mu = 3.76$), overall service quality metrics lag behind in a state of deficiency ($\mu = 2.67$). This performance gap reveals a failure to translate institutional alliances into operational improvements in healthcare.

The data indicates that referral systems are inefficient and poorly coordinated ($\mu = 2.84$, $\sigma = 1.284$). This systemic weakness stems from unreliable transport infrastructure, regular ambulance breakdowns, and frequent fuel shortages. When these results are cross-referenced with your strategic partnership data, they reveal an important structural insight: while hospitals successfully use partnerships to align goals ($\mu = 3.88$), they have not yet translated these alliances into shared logistics or emergency transport networks. This missing link directly causes operational bottlenecks, lowering public confidence and reducing hospital admission metrics ($\mu = 2.76$). As a result, patients often bypass local facilities entirely to seek care in private clinics or tertiary hospitals elsewhere.

Furthermore, the low score for patient-physician ratios ($\mu = 2.51$) confirms that severe workforce shortages directly compromise healthcare delivery. With an average daily outpatient load of 150 to 200 patients per facility against an inpatient capacity of 50 to 70 beds, the available workforce is heavily overextended. This severe imbalance leads to provider burnout and reduces face-to-face consultation time, causing extended patient waiting times ($\mu = 2.33$), with delays of two to four hours. These findings align with broader healthcare research in developing regions. Oleribe et al. (2021) observed that ambulance shortages and thin staffing lines consistently undermine clinical efficiency across Sub-Saharan Africa. Similarly, Bhatia et al. (2022) found that long facility delays and resource constraints quickly erode public trust in South Asia's public healthcare systems.

5. Conclusion

This study investigated the empirical relationship between strategic partnerships and the quality of healthcare service delivery within Level 4 public hospitals in Embu County, Kenya. Based on quantitative evidence, the study concludes that strategic partnerships are a critical determinant of service quality, operational resilience, and efficiency in decentralized public health systems.

The study further concludes that the primary strength of these alliances lies in their ability to accelerate the achievement of strategic goals and facilitate institutional communication channels. By aligning organizational goals with external partners like *Jamii Tekelezi*, public hospitals can effectively bridge structural resource gaps and improve critical service areas, such as maternal and child health outreach. Furthermore, the strong positive impact of relational trust underscores that successful healthcare delivery relies heavily on transparent governance, which lowers transaction costs and enables rapid resource mobilization.

Conversely, the lower agreement and higher variance regarding service market share expansion indicate a clear operational distinction within public sector management. While hospital administrators strongly value partnerships for resource pooling and clinical co-production, they do not primarily view external collaborations as mechanisms for competitive or commercial growth. Ultimately, when built on solid communication lines and mutual trust, strategic alliances serve as an indispensable capability that enhances the quality of patient care and supports the broader achievement of Universal Health Coverage (UHC) goals.

6. Recommendations

Based on the empirical findings, the study offers the following recommendations for policy and practice:

6.1 Institutionalize Structured Relational Governance Frameworks

Given the highly significant impact of communication ($t = 11.562$) and trust ($t = 9.643$) on service quality, the Embu County Department of Health and hospital management teams should transition away from informal, ad-hoc collaborations. Instead, they should institutionalize structured relational governance frameworks. Public hospitals should establish formal joint coordination committees, create shared digital information platforms, and establish routine reporting schedules with non-state actors. These measures will secure data integrity, minimize bureaucratic friction, and maintain operational transparency across all partnering entities.

6.2 Align Partner Interventions with Devolved Health Priorities

Because goal alignment emerged as the strongest driver of service quality ($\mu = 3.88$), hospital superintendents must carefully vet prospective partners to ensure their objectives align with local health needs. External donor funding, NGO interventions, and corporate social responsibility initiatives should be explicitly mapped against the gaps identified in the County Integrated Development Plan (CIDP). This targeted approach prevents the duplication of health projects, avoids wasting scarce resources, and ensures external assets directly strengthen weak referral networks and reduce outpatient waiting times.

6.3 Establish Clear Frameworks for Patient Referral Systems

To address the lower relative performance of partnerships in driving service coverage and market efficiency, county policy managers should establish clear, collaborative frameworks for patient referral systems. Hospital administrations should leverage their networks with community health volunteers (CHVs) and primary health centers to set up proactive, collaborative tracking systems. Improving communication lines with primary clinics will enable Level 4 hospitals to better coordinate ambulance movements, handle incoming patient surges, and distribute clinical workloads more efficiently across sub-county facilities.

6.4 Contribution to Knowledge and Future Research

This study contributes to the literature by extending the Relational Resource-Based View (RBV) to the secondary healthcare sector within a devolved African governance structure. It provides empirical proof that external relational assets can function as valuable, rare, and inimitable resource bundles that stabilize public facilities against domestic budget deficits. Future studies should use longitudinal research designs to evaluate the long-term sustainability of these public-private health alliances, or conduct comparative analyses across multiple counties in Kenya to determine how different political and regulatory environments influence the success of healthcare partnerships.

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