



Influence of Information Sharing on Public Service Delivery in National Referral Hospitals in Kenya

Isaac Kiplelgo Rutto, Aloys Ojore and Zipporah Muiruri
Tangaza University, Kenya
Email: ikiplelgo3@gmail.com

Abstract: This study examined the influence of information sharing on public service delivery in Kenya's national referral hospitals, focusing on Kenyatta National Hospital, Moi Teaching and Referral Hospital, and Mathari National Teaching and Referral Hospital. The study adopted an explanatory sequential mixed-methods design. The target population comprised 480 participants, from whom 260 questionnaires were distributed. A total of 249 valid questionnaires were analysed, representing a 95.8% effective response rate, while 18 key informants participated in interviews. Quantitative data were analysed using descriptive statistics, Pearson correlation, and simple linear regression, while qualitative data were analysed thematically. The findings showed that information-sharing practices were generally positive, with a composite mean of 3.98 ($SD = 0.27$). Pearson correlation revealed a positive and statistically significant relationship between information sharing and public service delivery ($r = .356, p < .01$). Simple linear regression further showed that information sharing significantly predicted public service delivery ($B = .328, p < .001$) and explained 12.7% of its variance ($R^2 = .127$). Qualitative findings indicated that although information-sharing systems and procedures were available, delays in accessing and disseminating information affected decision-making, coordination, and timely service provision. The study concludes that effective and timely information sharing contributes to improved public service delivery. It recommends strengthening information-sharing systems, improving digital information-sharing mechanisms, establishing clear information-sharing protocols, and enhancing staff capacity in information management.

Keywords: Information sharing, public service delivery, national referral hospitals, Kenya, health information systems

How to cite this work (APA):

Rutto, I. K., Ojore, A. & Muiruri, Z. (2026). Influence of Information Sharing on Public Service Delivery in National Referral Hospitals in Kenya. *Journal of Research Innovation and Implications in Education*, 10(3), 2912 – 2920. <https://doi.org/10.59765/vjv753>

1. Introduction

Information sharing is an important organisational practice in the delivery of effective public health services because health facilities depend on the availability and exchange of relevant information for coordination, decision-making, resource management, and continuity of care (Khatri et al., 2023). Evidence from hospital settings indicates that health information exchange can improve organisational efficiency and productivity Janakiraman et al., (2023), while the breadth and depth of information exchanged are associated with hospital efficiency (Zhao et al., 2026). The

effectiveness of information sharing, however, depends not only on whether information is exchanged but also on its accessibility, accuracy, timeliness, and the mechanisms through which it is shared. Incomplete, inaccurate, or delayed information can constrain coordination and decision-making and subsequently affect service delivery (Apathy et al., 2021).

In Africa, information sharing has increasingly been linked to efforts to strengthen health-system performance through health information exchange and interoperability. Mamuye et al. (2022) found that African countries were developing

health information exchange policies and interoperability initiatives, but implementation continued to be constrained by fragmented information systems, inadequate infrastructure, governance weaknesses, and limited technical capacity. These challenges affect the accessibility and timely exchange of reliable information across organisational and service delivery levels. Consequently, the effectiveness of information-sharing mechanisms remains important for ensuring that health workers and managers receive accurate information when required to support service delivery.

In Kenya, the expansion of health information systems has increased opportunities for information sharing within and across health facilities. However, evidence indicates continuing challenges in interoperability, system integration, technical standards, infrastructure, and governance (Were et al., 2021). At the facility level, Kilimo et al., (2022) found that the availability of reliable, accurate, and timely health information was important for planning and decision-making at Iten County Referral Hospital. Omambia (2025) similarly identified weaknesses in information-system integration and information exchange between Kenyatta National Hospital and referring facilities, indicating potential constraints to effective referral coordination and continuity of care.

These challenges are particularly relevant to Kenya's national referral hospitals, which perform complex clinical, administrative, teaching, research, and referral functions. Kenyatta National Hospital, Moi Teaching and Referral Hospital, and Mathari National Teaching and Referral Hospital rely on information flows across departments, professional groups, management levels, and referral networks. Effective information sharing requires information to be accessible, accurate, timely, and supported by appropriate sharing mechanisms (Nguyen et al. 2025). Weaknesses in these areas may result in communication delays, information gaps, duplication, and difficulties in decision-making, thereby affecting the efficiency and responsiveness of public service delivery. Although existing studies have examined health information systems, interoperability, and referral information management, limited empirical evidence has established how information sharing relates to public service delivery across Kenya's national referral hospitals. This study therefore examined the influence of information sharing on public service delivery in Kenyatta National Hospital, Moi Teaching and Referral Hospital, and Mathari National Teaching and Referral Hospital.

1.2 Research Objective

Information sharing is essential for coordinating organisational activities, supporting timely decision-making, and improving the delivery of public services. In national referral hospitals, effective sharing of accessible,

accurate, and timely information through appropriate mechanisms is important for coordinating complex clinical and administrative functions. Given the critical role of national referral hospitals in Kenya's health system, examining information sharing is important for understanding its contribution to effective public service delivery. Therefore, the objective of the study was to examine the influence of information sharing on public service delivery in Kenyatta National Hospital, Moi Teaching and Referral Hospital, and Mathari National Teaching and Referral Hospital.

2. Literature Review

2.1 Theoretical Review

The study was guided by Collaborative Governance Theory and Network Governance Theory. Collaborative Governance Theory explains how collaboration, trust, and information sharing among stakeholders support coordinated decision-making and service delivery, while Network Governance Theory focuses on information flows and coordination within interconnected organisational networks.

2.1.1 Collaborative Governance Theory

Collaborative Governance Theory, developed by Ansell and Gash (2008), views governance as a process through which organisations and stakeholders work collectively to achieve shared objectives. The theory emphasises dialogue, trust, shared understanding, and commitment as important conditions for effective collaboration (Ansell & Gash, 2008). Emerson et al. (2012) further explains collaborative governance through principled engagement, shared motivation, and capacity for joint action.

The theory is relevant to information sharing because effective exchange of information depends on communication, trust, mutual understanding, and willingness among organisational actors to share and use information. Ellinor and Girard (2023) emphasise that dialogue and trust building strengthen collaborative relationships, while Emerson et al. (2012) associate shared motivation and joint capacity with effective collective action.

In this study, Collaborative Governance Theory guided the examination of information accessibility, information accuracy, information timeliness, and information-sharing mechanisms in relation to public service delivery in Kenyatta National Hospital, Moi Teaching and Referral Hospital, and Mathari National Teaching and Referral Hospital. The theory is relevant because these dimensions of information sharing require cooperation among

departments, professional groups, management levels, and other relevant actors.

A key strength of Collaborative Governance Theory is its emphasis on relational conditions such as trust, communication, and shared understanding in facilitating collective outcomes (Gash, 2022). However, the theory gives less attention to the structural networks through which information moves among interconnected organisations. This limitation is addressed by Network Governance Theory, which provides a complementary explanation of organisational relationships, coordination, and information flows within networks.

2.1.2 Network Governance Theory

Network Governance Theory was initially advanced by Provan and Milward (1995) and further developed by Provan and Kenis (2008), who explained how network structures and governance arrangements influence coordination and organisational outcomes. Network Governance Theory explains how organisations achieve shared outcomes through relationships, coordination, and exchange of resources and information within organisational networks. Provan and Milward (1995) argue that public service outcomes are influenced not only by individual organisations but also by the relationships among organisations within a wider network. Provan and Kenis (2008) further identify different network governance structures through which coordination and collective action can be organised.

The theory is relevant to information sharing because public service delivery in complex organisations depends on effective information flows among interconnected actors. Mutebi et al. (2022) emphasises that effective inter-organisational relationships and communication channels can strengthen coordination and service outcomes. Similarly, Provan and Kenis (2008) show that the structure and coordination of networks influence their effectiveness.

In this study, Network Governance Theory guided the examination of information accessibility, information accuracy, information timeliness, and information-sharing mechanisms in relation to public service delivery in Kenyatta National Hospital, Moi Teaching and Referral Hospital, and Mathari National Teaching and Referral Hospital. The theory was relevant because these hospitals depend on information flows across departments, professional groups, management levels, and referral networks to support coordination and service delivery.

A key strength of Network Governance Theory is its emphasis on relationships, communication, and coordination among interconnected actors (Kapucu & Hu, 2020). However, the theory gives less attention to the

relational processes of trust, dialogue, and shared understanding that influence willingness to exchange information. Collaborative Governance Theory complements this limitation by explaining how trust, communication, and shared commitment facilitate collaborative information sharing (Ansell & Gash, 2008; Emerson et al., 2012).

2.2 Empirical Literature Review

This section reviews empirical evidence on information sharing and public service delivery, focusing on information accessibility, accuracy, timeliness, and information-sharing mechanisms, and identifies gaps addressed by the present study.

2.2.1 Information Sharing and Public Service Delivery

Information sharing is important for coordinating activities, supporting decision-making, and improving service delivery in healthcare organisations. Walker (2018) examined health information exchange and hospital efficiency using data from 1,017 hospitals in the United States. The study found that participation in health information exchange was associated with improved technical efficiency and total factor productivity. The findings suggest that shared information can strengthen coordination and operational performance. However, the study focused on U.S. hospitals, limiting its applicability to public referral hospitals in Kenya.

Similarly, Cho et al. (2018) examined the effect of electronic health information sharing on hospital efficiency in the United States. Using hospital and health information technology data, the study found that the breadth and depth of information sharing were associated with hospital efficiency. The findings demonstrate the importance of the extent and detail of information shared among organisational actors. However, the study focused on electronic information exchange and did not examine information accessibility, accuracy, and timeliness as distinct dimensions.

Kilimo et al. (2022) examined the impact of health management information systems on service delivery among healthcare workers at Iten County Referral Hospital in Kenya. The study established that reliable, accurate, and timely information was important for planning, decision-making, and service delivery. However, the study focused on a single county referral hospital and primarily examined health management information systems rather than information sharing as a broader organisational practice. In Africa, Mamuye et al. (2022) reviewed health information exchange policies and standards across the continent. The review found that fragmented systems, limited interoperability, inadequate infrastructure, and

weaknesses in governance constrained effective information exchange. The study emphasised the importance of interoperable systems and appropriate standards for enabling information to be accessed and exchanged across health organisations. However, as a systematic review, it did not directly examine how information sharing influences service delivery at individual hospitals.

Ngugi et al. (2021) examined the actual use of electronic health record systems in Kenyan health facilities using multivariate analysis. The study highlighted organisational and system-related factors affecting the effective use of electronic health records. The findings demonstrate that the availability of digital information systems does not automatically ensure effective utilisation of health information. However, the study focused on electronic health record use rather than the specific dimensions of information sharing and their influence on public service delivery.

Reviewed studies show that information sharing and health information systems can support hospital efficiency, decision-making, coordination, and service delivery. However, existing evidence largely focuses on electronic health information exchange, interoperability, or health information systems, with limited attention to information accessibility, accuracy, timeliness, and information-sharing mechanisms as distinct organisational dimensions. Moreover, limited empirical evidence compares these dimensions across Kenya's national referral hospitals. This gap provided a basis for examining the influence of information sharing on public service delivery in Kenyatta National Hospital, Moi Teaching and Referral Hospital, and Mathari National Teaching and Referral Hospital.

3. Methodology

3.1 Research Design

The study adopted an explanatory sequential mixed-methods design, whereby quantitative data were collected and analysed first, followed by qualitative interviews to explain and contextualise the quantitative findings. The design was appropriate for examining the influence of information sharing on public service delivery in Kenya's national referral hospitals. The study was conducted at Kenyatta National Hospital, Moi Teaching and Referral Hospital, and Mathari National Teaching and Referral Hospital.

3.2 Sampling and Sample Size

The target population comprised 480 participants drawn from hospital management, the Directorate of Criminal

Investigations (DCI), Ministry of Health, Social Health Authority (SHA), county health officials, and senior clinical and departmental officers. Using Yamane's formula, a minimum sample of 218 respondents was determined. A total of 260 questionnaires were distributed, of which 249 were validly completed and analysed, representing a 95.8% effective response rate. In addition, 18 key informants were purposively selected based on their roles and experience in hospital administration, information management, and public service delivery.

3.3 Data Collection Tools

Data were collected using structured questionnaires and semi-structured interview guides. The questionnaires assessed information accessibility, information accuracy, information timeliness, information-sharing mechanisms, and public service delivery. The interview guide provided qualitative insights into the availability and effectiveness of information-sharing practices and their implications for decision-making, coordination, and timely service provision. Instrument validity was established through expert review and principal component analysis, while reliability was assessed using Cronbach's alpha, with 0.70 adopted as the minimum acceptable threshold.

3.4 Data Collection Procedure

Before data collection, the researcher obtained the required ethical approval and institutional authorisation. Participants were informed about the purpose of the study, and informed consent was obtained before participation. Questionnaires were administered to consenting respondents, while key informant interviews were conducted at mutually convenient times using the semi-structured interview guide. Completed questionnaires were checked for completeness and prepared for analysis, while interview responses were organised for thematic analysis.

3.5 Data Analysis

Quantitative data were coded, cleaned, and analysed using SPSS Version 29. Descriptive statistics were used to summarise the study variables, while Pearson correlation was used to establish the relationship between information sharing and public service delivery. Multiple linear regression was used to determine the predictive influence of information sharing on public service delivery. Qualitative data were analysed thematically following Braun and Clarke's (2006) approach, involving familiarisation with the data, coding, development and review of themes, and interpretation. The quantitative and qualitative findings were integrated during interpretation to provide explanations and context for the statistical findings.

3.6 Ethical Considerations

Ethical principles were observed throughout the study. Ethical approval and institutional authorisation were obtained before commencement of data collection. Participation was voluntary, and informed consent was obtained from all participants. Confidentiality and anonymity were maintained by protecting participants' identities and securely handling the collected information. Participants were informed of their right to decline participation or withdraw from the study at any stage without penalty. The data were securely stored and used solely for academic purposes.

4. Results and Discussion

A total of 249 of the 260 questionnaires distributed across the three study sites were valid for analysis, representing

an effective response rate of 95.8%. One returned questionnaire was excluded because the respondent withheld consent. The high response rate provided adequate data for quantitative analysis and strengthened the credibility of the findings. Saunders et al. (2023) consider response rates above 70% adequate for social science research.

A pilot study was conducted to assess the internal consistency of the research instrument using Cronbach's alpha coefficient, with 0.70 adopted as the minimum acceptable threshold (Nunnally, 1978). The overall instrument recorded an acceptable reliability coefficient of $\alpha = 0.738$, supporting its use in the main study. Respondents were asked to rate various statements relating to information sharing among collaborating agencies in National Referral Hospitals. The descriptive results are presented in Table 1.

Table 1: Descriptive Statistics for Information Sharing

Item	N	Mean	SD
The institution has clear procedures for sharing information with partner agencies.	249	4.86	0.44
Information exchanged between agencies is timely and reliable.	249	4.64	0.52
Digital systems facilitate the exchange of information between relevant agencies.	249	4.23	0.55
Delays in information sharing affect service delivery at this hospital. (R)	249	4.33	0.66
Inter-agency information sharing supports transparency in hospital operations.	249	4.27	0.66
Existing information-sharing arrangements are adequate for effective collaboration.	249	4.20	0.64
Composite Mean (reverse-scored item recoded)	249	3.98	0.27

Source: Field Data (2026)

The composite mean of 3.98 (SD = 0.27) falls within the "Agree" band, indicating that respondents generally perceive information-sharing arrangements as functional. The item registering the strongest agreement was the existence of clear procedures for sharing information (M = 4.86), while agreement was comparatively more moderate for the adequacy of digital systems (M = 4.23). Notably, respondents also strongly agreed that delays in information

sharing affect service delivery (M = 4.33), suggesting that while formal procedures exist, their practical, timely execution remains an area of concern that partly undercuts the benefits of information-sharing frameworks.

Public service delivery was assessed using respondents' ratings on key service delivery indicators. The descriptive statistics are presented in Table 2.

Table 2: Descriptive Statistics for Public Service Delivery

Item	N	Mean	SD
Services at this hospital are delivered efficiently.	249	4.92	0.33
Administrative procedures do not delay service delivery.	249	4.41	0.52
Public resources are used responsibly and accountably.	249	3.97	0.55
Governance mechanisms support accountability.	249	4.07	0.66
Procurement processes are transparent and well monitored.	249	4.16	0.61
Availability of medicines and supplies is adequate.	249	4.25	0.62
Patient safety and quality of care are maintained.	249	4.19	0.64
Hospital services are accessible to the public.	249	4.14	0.60
Public trust in service delivery has improved.	249	4.04	0.65
Composite Mean	249	4.24	0.25

Source: Field Data (2026)

With SD=0.25, the mean score for public service delivery was 4.24, which put it near the boundary for the "Strongly Agree" category and the second highest of all constructs. The highest-rated item was for hospital services to be generally efficient, and the lowest was to be responsible and accountable over the use of public resources by the health services (M = 3.97). The gap between how efficient operations are perceived to be and how accountable the finance is perceived to be resonates with the irregularities in procurement and the concerns of fraud in the procurement system that the study sought to uncover, as captured in the background of the study (1.2) and in Auditor-General reports (Office of the Auditor-General, 2025).

4.1 Inferential Statistics Findings

Inferential analysis was conducted to examine the relationship between information sharing and public service delivery in Kenya's national referral hospitals. Pearson correlation and simple linear regression were used to determine the strength, direction, and statistical significance of the relationship.

Correlation Analysis

Pearson product-moment correlation was used to examine the relationship between information sharing and public service delivery. The results are presented in Table 3.

Table 3: Pearson Correlation between Information Sharing and Public Service Delivery

Variable	Information Sharing	Public Service Delivery
Information Sharing	1.000	.356**
Public Service Delivery	.356**	1.000

Note: Correlation is significant at the 0.01 level (2-tailed), n = 249.

The results indicate a positive and statistically significant relationship between information sharing and public service delivery ($r = .356$, $p < .01$). This suggests that higher levels of information sharing were associated with better public service delivery across the three national referral hospitals.

Regression Analysis

Simple linear regression analysis was conducted to determine the effect of information sharing on public service delivery. The regression model was specified as:

$$PSD = \beta_0 + \beta_1 IS + \varepsilon$$

Where:

PSD = Public Service Delivery

IS = Information Sharing

β_0 = Constant

β_1 = Regression coefficient

ε = Error term

The analysis showed that information sharing significantly predicted public service delivery. The findings indicate that improvements in information sharing were associated with corresponding improvements in public service delivery. The regression results are presented in Table 4.

Table 4: Simple Linear Regression of Information Sharing on Public Service Delivery

Predictor	B	SE	t	p	R ²
Constant	—	—	—	—	—
Information Sharing	0.328	0.055	5.989	<.001	0.127

The results show that information sharing had a positive and statistically significant effect on public service delivery ($B = 0.328$, $p < .001$). Information sharing explained 12.7% of the variance in public service delivery ($R^2 = .127$). The findings therefore indicate that effective information sharing contributes to improved public service delivery in the three national referral hospitals.

Qualitative Findings

Thematic analysis of the key informant interviews identified themes that contextualised and complemented the quantitative findings on information sharing and public service delivery.

Key informants reported that although information-sharing systems and procedures existed across the hospitals, delays in accessing and disseminating information affected coordination and service delivery. A senior hospital administrator observed: “The systems for sharing information are available, but sometimes information does not reach the relevant department on time. This affects how quickly decisions and services can be provided” (KNH-Admin-01).

This finding complements the quantitative results, which indicated challenges in timely and accessible information sharing. The qualitative evidence suggests that such delays may affect coordination, decision-making, and the efficiency of public service delivery.

5. Conclusion and Recommendations

5.1 Conclusion

The findings established that information sharing had a significant and positive relationship with public service delivery in Kenya’s national referral hospitals. The descriptive results showed a generally positive perception of information-sharing practices, with a composite mean of 3.98 ($SD = 0.27$). The findings particularly indicated that clear information-sharing procedures, timely and reliable information exchange, digital information systems, transparency, and existing information-sharing arrangements supported effective information flow. However, delays in information sharing remained a concern, suggesting that timely dissemination of information requires continued attention.

The qualitative findings reinforced the quantitative results by demonstrating that information-sharing systems and

procedures were available across the hospitals, but delays in accessing and disseminating information affected decision-making, coordination, and service delivery. Key informants indicated that information did not always reach relevant departments in a timely manner, limiting the ability of hospital actors to respond promptly to service-delivery needs.

The inferential findings provided further evidence of the relationship between information sharing and public service delivery. Pearson correlation analysis revealed a positive and statistically significant relationship between information sharing and public service delivery ($r = .356$, $p < .01$). Simple linear regression further established that information sharing significantly predicted public service delivery, explaining 12.7% of the variation in public service delivery ($R^2 = .127$). The regression coefficient was positive and statistically significant ($B = .328$, $p < .001$). Accordingly, the null hypothesis that information sharing had no statistically significant influence on public service delivery was rejected.

5.2 Recommendations

Based on the findings of the study, the following recommendations are made:

1. Strengthen information-sharing systems.

Hospital management should strengthen information-sharing systems to ensure that relevant information is accurate, accessible, and timely across departments and collaborating agencies. This would improve coordination, decision-making, and public service delivery.

2. Improve digital information-sharing mechanisms.

The three national referral hospitals should enhance the use and integration of digital information systems to facilitate timely dissemination and retrieval of information. Regular system maintenance and staff training should be provided to minimise information delays and system-related barriers.

3. Establish clear information-sharing protocols.

Hospital management should establish and enforce clear information-sharing procedures, communication channels, and responsibilities to ensure that information reaches the relevant personnel promptly. Regular monitoring should be

undertaken to identify and address gaps in information flow.

4. Strengthen staff capacity in information management.

Hospitals should provide regular training for staff on information management, data accuracy, confidentiality, and effective information sharing. This would strengthen the quality and utilisation of information for decision-making and service delivery.

References

- Ansell, C., & Gash, A. (2008). Collaborative governance in theory and practice. *Journal of Public Administration Research and Theory*, 18(4), 543–571.
- Apathy, N. C., Vest, J. R., Adler-Milstein, J., Blackburn, J., Dixon, B. E., & Harle, C. A. (2021). Practice and market factors associated with provider volume of health information exchange. *Journal of the American Medical Informatics Association*, 28(7), 1451–1460. <https://doi.org/10.1093/jamia/ocab024>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Cho, N.-E., Ke, W., Atems, B., & Chang, J. (2018). How does electronic health information exchange affect hospital performance efficiency? The effects of breadth and depth of information sharing. *Journal of Healthcare Management*, 63(3), 212–228.
- Ellinor, L., & Girard, G. (2023). *Dialogue: Rediscover the transforming power of conversation*. Crossroad Press.
- Emerson, K., Nabatchi, T., & Balogh, S. (2012). An integrative framework for collaborative governance. *Journal of Public Administration Research and Theory*, 22(1), 1–29.
- Gash, A. (2022). Collaborative governance. In *Handbook on theories of governance* (pp. 497-509). Edward Elgar Publishing. [2](#)
- Janakiraman, R., Park, E., M. Demirezen, E., & Kumar, S. (2023). The effects of health information exchange access on healthcare quality and efficiency: An empirical investigation. *Management Science*, 69(2), 791–811.
- Kapucu, N., & Hu, Q. (2020). *Network governance: Concepts, theories, and applications*. Routledge.
- Khatri, R., Endalamaw, A., Erku, D., Wolka, E., Nigatu, F., Zewdie, A., & Assefa, Y. (2023). Continuity and care coordination of primary health care: a scoping review. *BMC health services research*, 23(1), 750.
- Kilimo, S. K., Walekhwa, M. N., & Otieno, F. O. (2022). Impact of health management information systems on service delivery among healthcare workers at Iten County Referral Hospital. *International Journal of Research in Medical Sciences*, 10(9), 1889–1895.
- Mamuye, A. L., Yilma, T. M., Abdulwahab, A., Broomhead, S., Zondo, P., Kyeng, M., Maeda, J., Abdulaziz, M., Wuhib, T., & Tilahun, B. C. (2022). Health information exchange policy and standards for digital health systems in Africa: A systematic review. *PLOS Digital Health*, 1(10), e0000118.
- Mutebi, H., Muhwezi, M., Ntayi, J. M., & Munene, J. C. (2022). Inter-organisational communication: organisational future orientation, inter-organisational interaction quality and inter-organisational group mechanism. *Journal of International Humanitarian Action*, 7(1), 2.
- Ngugi, P., Babic, A., & Were, M. C. (2021). A multivariate statistical evaluation of actual use of electronic health record systems implementations in Kenya. *PLOS ONE*, 16(9), e0256799.
- Nguyen, T. L., Nguyen, L., Hoang, T., Bandara, D., Wang, Q., Lu, Q., ... & Chen, S. (2025). Blockchain-empowered trustworthy data sharing: Fundamentals, applications, and challenges. *ACM Computing Surveys*, 57(8), 1-36.
- Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). McGraw-Hill.
- Office of the Auditor-General. (2025). *Auditor-General's report on national government 2024/2025*. Office of the Auditor-General, Kenya.

- Omambia, S. M. (2025). Individual Factors Associated With the Implementation of A Health Management Information System At Kenyatta National Hospital.
- Provan, K. G., & Kenis, P. (2008). Modes of network governance: Structure, management, and effectiveness. *Journal of Public Administration Research and Theory*, 18(2), 229–252.
- Provan, K. G., & Milward, H. B. (1995). A preliminary theory of interorganizational network effectiveness: A comparative study of four community mental health systems. *Administrative Science Quarterly*, 40(1), 1–33.
- Saunders, M. N. K., Lewis, P., & Thornhill, A. (2023). *Research methods for business students* (9th ed.). Pearson.
- Walker, D. M. (2018). Does participation in health information exchange improve hospital efficiency? *Health Care Management Science*, 21(3), 426–438.
- Were, M. C., Savai, S., Mokaya, B., Mbugua, S., Ribeka, N., Cholli, P., & Yeung, A. (2021). mUzima mobile electronic health record (EHR) system: Development and implementation at scale. *Journal of Medical Internet Research*, 23(12), e26381.
- Zhao, Y., Lee, D., & Bala, H. (2026). Bridging the Divide? The Differential Impact of Health Information Exchange (HIE) on Healthcare Professionals' Productivity in Urban and Rural Settings. *Production and Operations Management*, 10591478261433367.