

An Analysis Of Organizations Leveraging Big Data Repository And Analytics For Strategic Decision Making On Performance Improvement - A Case Study Of Eastern Provincial Health Office

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Abstract:

Background: The growing adoption of Big Data Analytics has significantly transformed how organizations make strategic decisions and improve performance. In the healthcare sector, data-driven approaches are increasingly critical for enhancing service delivery, optimizing resource allocation, and improving overall efficiency. This study examines how the Eastern Provincial Health Office leverages big data repositories and analytics to support strategic decision-making and performance improvement.

Materials and Methods: This study adopted a mixed-methods approach within the field of Health Informatics, utilizing a sequential explanatory research design. Quantitative data were first collected through structured questionnaires administered to a stratified random sample of at least 30 employees at the Eastern Provincial Health Office, representing various organizational roles. The quantitative data were analyzed using statistical software (SPSS and R) to generate descriptive and inferential statistics, including chi-square tests and regression analysis.

Subsequently, qualitative data were collected through semi-structured interviews with a purposive subset of participants to provide deeper insights into the quantitative findings. Qualitative data were analyzed using thematic analysis to identify key patterns and themes related to the use of Big Data Analytics in decision-making. The integration of both data sets enhanced the validity and reliability of the findings through triangulation, while ethical standards such as informed consent, confidentiality, and institutional approval were strictly observed.

Results: The findings reveal that 80% of respondents reported the existence of a big data repository, with the remaining 20% indicating ongoing implementation, demonstrating substantial progress in data infrastructure development. The organization primarily utilizes operational (80%) and external data (60%), supported by tools such as Hadoop (70%) and Spark (60%). In terms of decision-making, 73% of respondents reported moderate to complete reliance on Big Data Analytics, with 60% indicating significant to full dependence, reflecting a growing data-driven culture. Additionally, 63% of respondents reported frequent use of data insights in decision-making processes. The application of analytics in real-time scenarios, such as outbreak response, resulted in measurable improvements, including up to 20–25% reduction in response time. Regarding performance, over 80% of respondents reported improvements in organizational outcomes, particularly in operational efficiency (80%), financial performance (50%), and strategic outcomes (47%). However, key challenges persist, including skills gaps (50%), infrastructure limitations (47%), and cultural resistance (40%). Organizational readiness was rated as average to good by the majority, while 67% of respondents identified big data analytics as critical for future success, with expected improvements within 1–2 years.

Conclusion: The study concludes that leveraging big data repositories and analytics significantly enhances strategic decision-making and organizational performance within the healthcare sector. Despite notable progress and positive perceptions, challenges related to infrastructure, skills, and organizational culture must be addressed. Strengthening capacity, investing in technology, and fostering a data-driven culture are essential for maximizing the benefits of big data analytics.

Keywords: Big Data Analytics; Strategic Decision-Making; Organizational Performance; Health Informatics; Data Management Systems; Healthcare Sector

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I. Introduction

The rapid evolution of Big Data Analytics (BDA) has fundamentally transformed how organizations generate insights, support strategic decision-making, and improve performance across sectors, particularly in healthcare systems where data-driven decision-making is increasingly essential [1], [2]. The exponential growth of healthcare data originating from electronic health records (EHRs), laboratory systems, mobile health platforms,

and health information management systems presents both significant opportunities and complex challenges for effective data utilization, integration, and governance [3].

Big data is commonly conceptualized using the “3Vs” framework—volume, velocity, and veracity—which describes the scale, speed, and quality of data generation and processing [4]. Volume refers to the massive quantity of data generated across healthcare systems, while velocity describes the rapid rate at which data is produced through digital technologies. Veracity emphasizes the reliability, consistency, and trustworthiness of data, which is often compromised by fragmentation, inconsistency, and system-level inefficiencies [4]. These characteristics highlight both the transformative potential and operational complexity of big data in healthcare environments, especially within resource-constrained settings.

From a theoretical perspective, the adoption and utilization of Big Data Repositories and Analytics (BDRA) is strongly explained through the Resource-Based View (RBV) theory and the Technology–Organization–Environment (TOE) framework. RBV posits that organizational performance improves when institutions develop valuable, rare, inimitable, and non-substitutable capabilities such as data infrastructure and analytical expertise [7]. Similarly, the TOE framework emphasizes that technological readiness, organizational capacity, and environmental conditions jointly influence the adoption of technological innovations such as BDRA systems [8]. These frameworks collectively highlight the importance of aligning technology, people, and organizational structures to achieve meaningful performance outcomes in healthcare organizations.

Empirical evidence indicates that organizations that adopt data-driven decision-making systems achieve higher efficiency, improved productivity, and better strategic outcomes compared to those relying on traditional decision approaches [1], [2]. However, healthcare institutions—particularly in developing countries—continue to face significant challenges including inadequate infrastructure, poor data quality, limited interoperability, and shortage of skilled analytics professionals [5], [6]. Moreover, most existing studies have focused on private sector organizations or healthcare systems in developed countries, leaving a critical gap in understanding BDRA implementation in public healthcare institutions in resource-limited environments [6].

In Zambia, healthcare data systems such as SmartCare, Health Management Information Systems (HMIS), and laboratory systems remain fragmented and operate in silos, limiting interoperability and real-time decision-making [3]. Despite ongoing digital health initiatives, challenges related to infrastructure limitations, human resource capacity, and organizational readiness continue to hinder the full realization of big data analytics in healthcare decision-making [5]. These constraints highlight the need for context-specific empirical studies that examine how public health institutions leverage BDRA for performance improvement.

This study therefore investigates how the Eastern Provincial Health Office (EPHO) utilizes Big Data Repositories and Analytics to enhance strategic decision-making and organizational performance. Guided by the RBV and TOE frameworks, the study explores the relationship between technological systems, organizational capabilities, and environmental factors in shaping BDRA effectiveness [7], [8]. It also examines key challenges such as data integration, skills gaps, governance structures, and cultural resistance that influence successful adoption of analytics in healthcare settings [5], [6].

The significance of this study lies in its contribution to both academic knowledge and practical application. Theoretically, it extends BDRA literature by providing empirical insights from a public healthcare institution in a developing country context. Practically, it offers evidence-based recommendations for policymakers and healthcare managers to strengthen data-driven decision-making, improve operational efficiency, and enhance service delivery. Ultimately, the study contributes to broader global health objectives, including improved healthcare outcomes and the achievement of Sustainable Development Goal 3 (Good Health and Well-being) [9], [10].

II. Material And Methods

Study Design:

This study adopted a mixed-methods research design using a sequential explanatory approach, integrating both quantitative and qualitative methods to examine how Big Data Analytics is utilized for strategic decision-making and performance improvement within healthcare settings.

Study Location:

The study was conducted at the Eastern Provincial Health Office (EPHO) in Zambia, a key public health institution responsible for coordinating healthcare delivery, data management, and policy implementation in the Eastern Province.

Study Duration:

The study was conducted over a defined academic research period covering data collection, analysis, and interpretation phases (specific months can be inserted based on your actual timeline).

Sample Size:

The study involved 30 respondents drawn from different organizational levels within EPHO, including management, IT personnel, data analysts, and operational staff.

Sample Size Calculation:

The sample size was determined based on the need to achieve sufficient representation for quantitative analysis and thematic saturation for qualitative inquiry. A minimum of 30 respondents was considered adequate for descriptive and inferential statistical analysis in a small institutional population.

Subjects & Selection Method:

Participants were employees of EPHO selected using a stratified random sampling technique. Strata were based on job roles, including top management, middle management, IT specialists, data analysts, and operational staff, ensuring proportional representation across departments.

Inclusion Criteria:

- Employees working at EPHO during the study period
- Staff involved in or exposed to data-driven decision-making processes
- Individuals willing to provide informed consent
- Employees across all organizational levels (management and non-management)

Exclusion Criteria:

- Temporary staff not involved in organizational decision-making
- Employees absent during the data collection period
- Respondents who declined to participate or withdrew consent

Procedure Methodology:

Quantitative data were collected using a structured questionnaire comprising Likert-scale, multiple-choice, and demographic questions. Qualitative data were collected through semi-structured interviews with a purposively selected subset of 10–15 respondents. The study followed a sequential design where quantitative results informed the qualitative phase. Ethical approval was obtained from UNZABREC, and informed consent, confidentiality, and voluntary participation were ensured throughout the study.

Statistical Analysis:

Quantitative data were analyzed using SPSS and R software, applying descriptive statistics (frequencies, percentages, means, standard deviation) and inferential statistics (chi-square tests and regression analysis) to determine relationships between variables. Qualitative data were analyzed using thematic analysis, involving coding, theme development, and interpretation. Integration of both datasets was conducted to enhance validity and provide comprehensive insights into BDRA utilization and organizational performance

III. Result

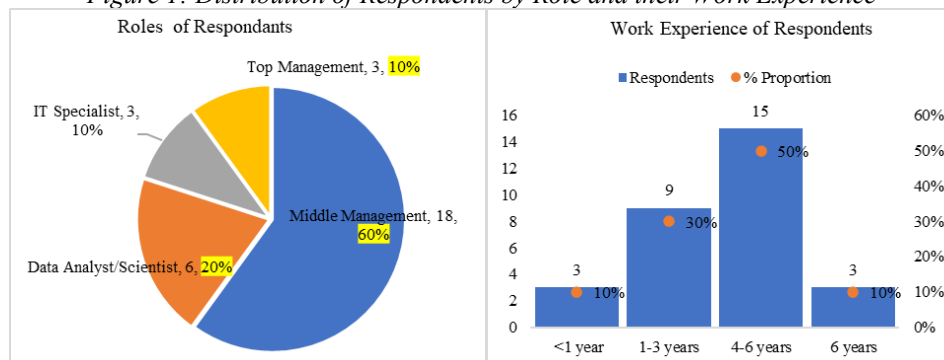
Introduction

This section presents findings from the analysis of data collected on the utilization of Big Data Analytics within the Eastern Provincial Health Office (EPHO). The results cover demographic characteristics, infrastructure status, decision-making practices, performance outcomes, challenges, and future outlook.

Findings

Organizational and Demographic Profile of Respondents

Figure 1: Distribution of Respondents by Role and their Work Experience



According to the results, the respondents from the Eastern Provincial Health Office came from various levels and departments, included senior (10%) and middle management (60%), healthcare professionals, IT staff (10%), and data analysts (20%). They had been with the organization for 3 to 10 years, providing valuable insights into the organization’s data practices and readiness for big data initiatives.

Table 1: Departmental Primary Functions

Function	Respondents	Proportion
Data Analytics & IT	3	10%
Strategic Planning	9	30%
Operations	21	70%
	30	100%

According to the results, most respondents (70%) are involved in Operations, with a smaller group (30%) working in Strategic Planning, and only 10% in Data Analytics and IT. This indicates that the organization’s primary focus is on daily healthcare services, while strategic and technical roles support overall performance improvements.

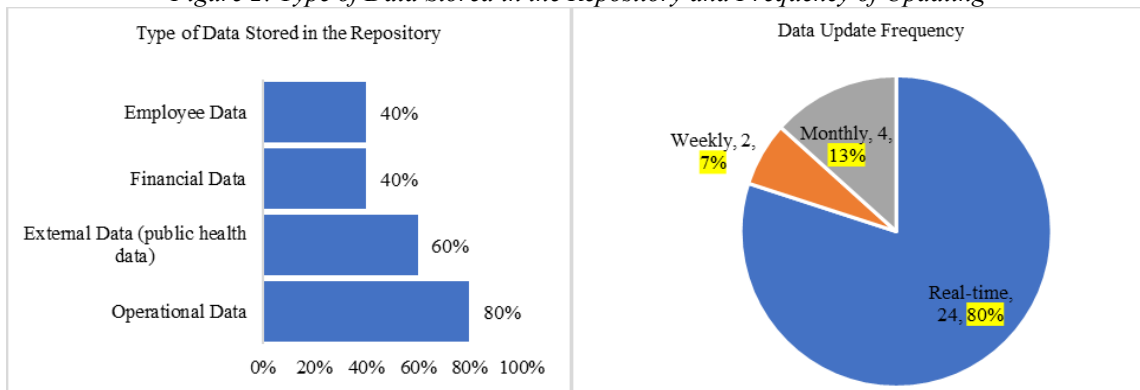
Big Data Infrastructure and Usage (Quantitative and Qualitative)

Table 2: Availability and status of big Data Repository

Repository Status	Number of Respondents	Percentage (%)
Yes	24	80%
In Progress	6	20%
Total	30	100

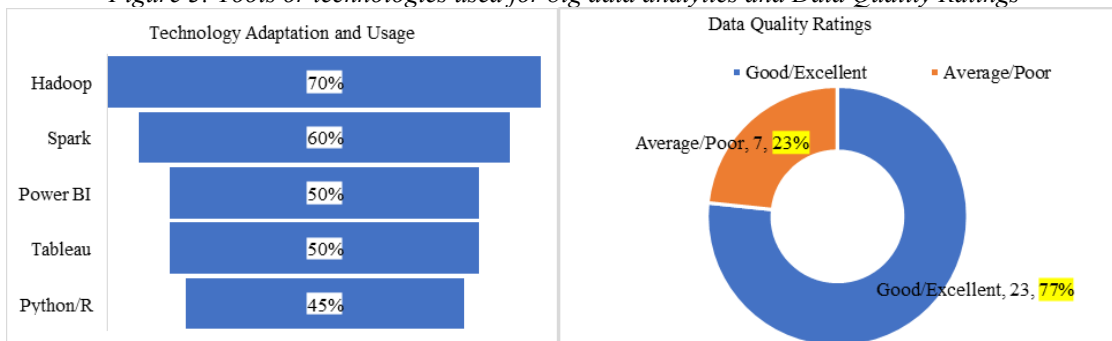
According to the results, 80% of respondents reported having an existing big data repository, while 20% indicated that their repository is still in progress. This shows that most of the organization has developed their data storage systems, with some still working on complete implementation.

Figure 2: Type of Data Stored in the Repository and Frequency of Updating



The repository primarily stores Operational Data (80%) and External Data (60%). Employee and Financial Data are also included, each making up 40%. This highlights a focus on operational and public health data, with other data types being less prominent.

Figure 3: Tools or technologies used for big data analytics and Data Quality Ratings



The chart indicates technology usage in the organization, with Hadoop being the most widely adopted at 70%. Spark follows at 60%, while both Power BI and Tableau are used by 50% of respondents. Python/R is utilized by 45%. This shows a strong preference for Hadoop and Spark, with significant use of business intelligence tools and programming languages as well.

Strategic Decision-Making (Quantitative and Qualitative)

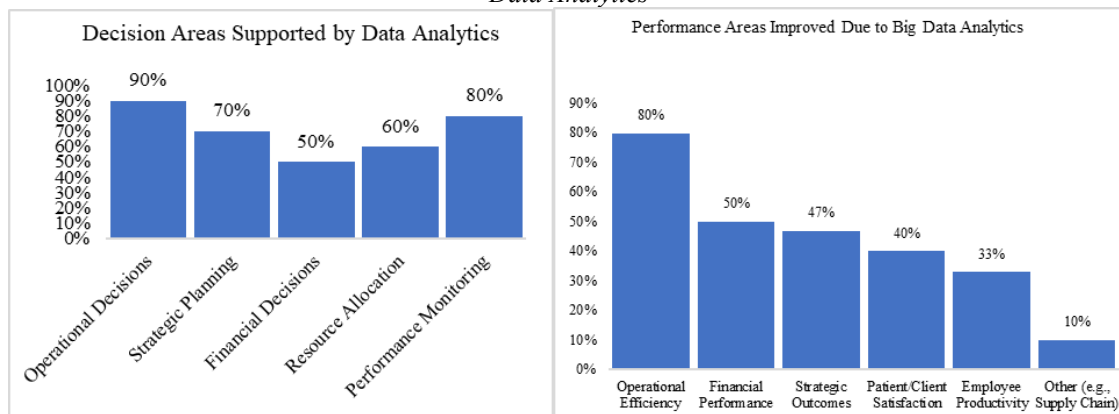
Table 3: Extent Reliance on Big Data Analytics for Decision-Making

Reliance Level	Number of Respondents	Percentage (%)
Not at all	2	7%
Slightly	3	10%
Moderately	7	23%
Significantly	12	40%
Completely	6	20%

Majority (73%) of organization depend moderately to completely on big data for decision-making, indicating a transition toward data-driven culture. The “Significantly” and “Completely” categories combined account for 60%, signifying a high reliance on big data analytics to guide decision-making.

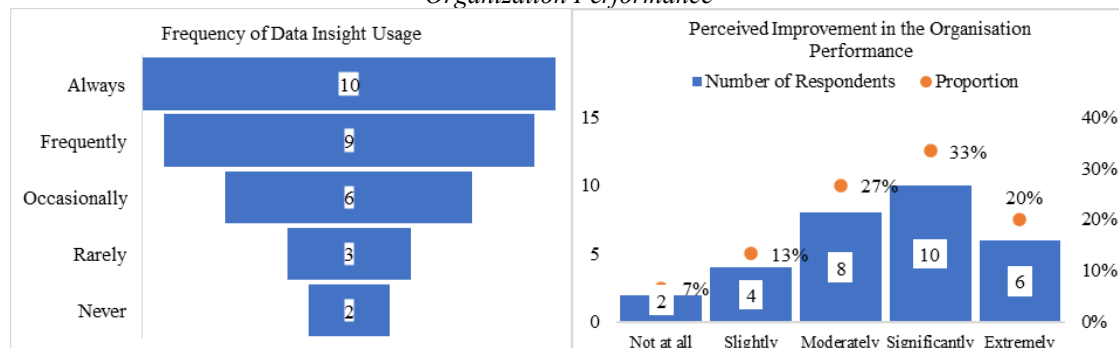
Impact on Organizational Performance & Specific Areas

Figure 4: Types of Decisions Supported by Big Data Analytics and Performance Areas Improved due to Big Data Analytics



Data shows Operational and Performance Monitoring dominate, but Strategic Planning also strongly relies on analytics, reflecting their integration into core decision areas.

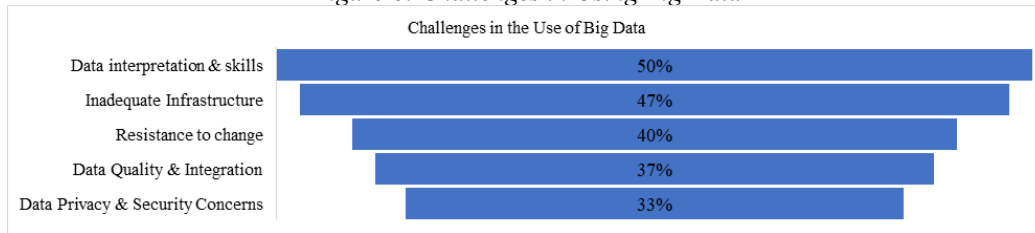
Figure 5: Frequency of Data Insights Usage in Decision-making Processes and Perceived Improvement in Organization Performance



Approximately 63% of respondents use insights always or frequently, reflecting their embeddedness in decision cycles.

The organization used big data analytics during outbreak response. By analyzing external data and internal health records in real-time, they identified emerging hotspots, enabling targeted resource deployment. Outcomes included a 20% reduction in response time and improved resource efficiency. The challenge was interpreting unstructured data, which they overcame through training. This demonstrates that real-time data usage improves agility and that skilled data interpretation is critical.

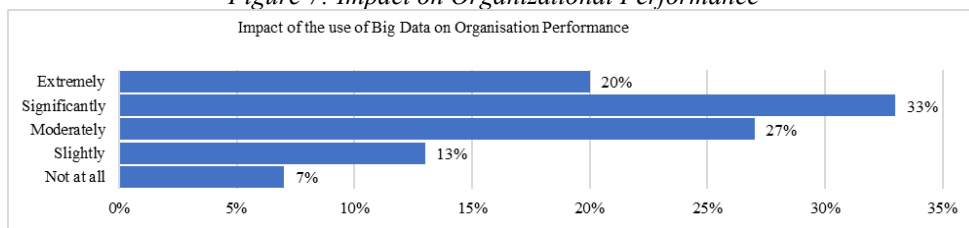
Figure 6: Challenges in Using Big Data



The results show that the primary challenges in using big data are related to data interpretation and skills, with 50% of respondents identifying this as a major issue. Inadequate infrastructure is also a significant challenge, reported by 47% of respondents. Resistance to change affects 40% of the organization, while concerns over data quality, integration, privacy, and security are noted by 37% and 33%, respectively. These findings highlight that technical, organizational, and cultural factors collectively hinder effective big data utilization.

Performance Improvement

Figure 7: Impact on Organizational Performance



Over 80% of organizations report significant improvements from their analytics efforts, highlighting the effectiveness of data-driven tools in enhancing performance, decision-making, and competitiveness.

Figure 8: Measuring the impact of big data analytics on performance improvement

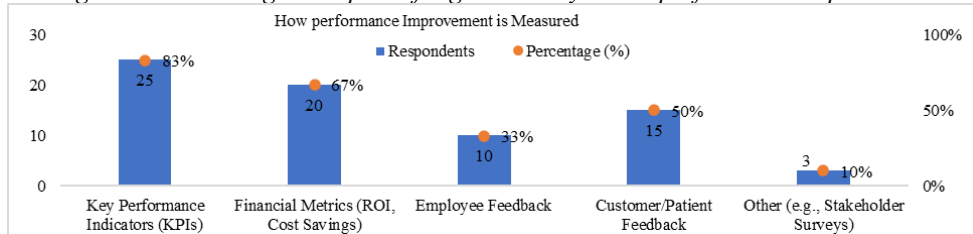


Table 4: Areas of Performance Improvement due to Big Data Analytics

Area	Number of Respondents	Percentage (%)
Operational Efficiency	24	80%
Financial Performance	15	50%
Strategic Outcomes	14	47%
Patient/Client Satisfaction	12	40%
Employee Productivity	10	33%
Other (e.g., Supply Chain)	3	10%

The results indicate that the most common area benefiting from analytics is operational efficiency, reported by 80% of respondents. Financial performance follows at 50%, and nearly half (47%) noted improvements in strategic outcomes. Patient and client satisfaction were cited by 40%, while employee productivity improvements were reported by 33%. A smaller group (10%) identified benefits in other areas, such as supply chain management. This highlights that analytics are primarily driving improvements in operations, with significant impacts across financial, strategic, and patient-related areas.

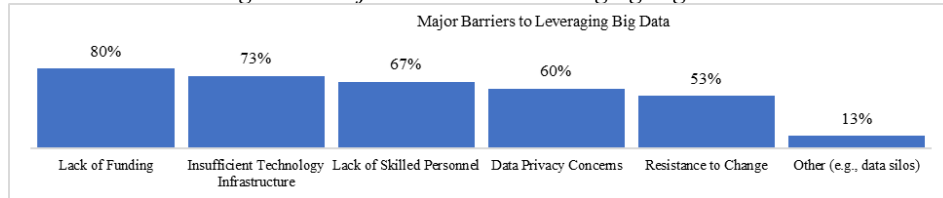
Table 5: Areas Not Improving as Expected

Area	Respondents	Common Challenges / Reasons	Common Challenges / Reasons
Workforce Training Gaps	11	37%	Lack of proper training, resistance to change
Cultural Resistance	8	27%	Organizational reluctance to rely heavily on data
Data Quality Issues	6	20%	Incomplete or inconsistent data
Infrastructure Limitations	5	17%	Insufficient computing resources
	30	100%	

The data shows that the primary challenge faced by 37% of respondents is workforce training gaps, mainly due to lack of proper training and resistance to change. Cultural resistance, affecting 27%, stems from organizational reluctance to depend heavily on data. Data quality issues, reported by 20%, result from incomplete or inconsistent data, while infrastructure limitations, cited by 17%, are due to insufficient computing resources. These challenges collectively highlight key areas needing attention to enhance analytics effectiveness within the organization.

Challenges and Barriers

Figure 9: Major Barriers to Leveraging Big Data



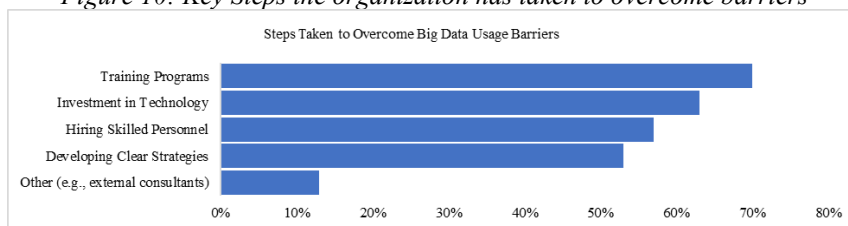
Funding and infrastructure are major barriers to big data success, as organizations often lack the resources needed for advanced technology and proper data systems. Outdated hardware and poor data integration can hinder analysis. Additionally, cultural resistance and skills gaps pose challenges, with many staff lacking the expertise or mindset to leverage data effectively. Overcoming these barriers requires strategic investment, infrastructure upgrades, and fostering a data-driven culture.

Table 6: The organization's readiness to adopt big data analytics

Category	Count	Percentage (%)
Very Poor	2	7%
Poor	4	13%
Average	10	33%
Good	8	27%
Excellent	6	20%
	30	100%

Most organizations rate their readiness to adopt big data repositories and analytics as average to good, but there is still room for improvement. They often have basic infrastructure and capabilities but need targeted training, better processes, and stronger strategic alignment. Ongoing capacity-building and a focus on continuous improvement are essential to fully leverage big data's potential and remain competitive.

Figure 10: Key Steps the organization has taken to overcome barriers



The organization is focusing on investing in training and infrastructure to improve its use of big data repositories and analytics. Building staff skills and upgrading technical systems will support more effective data analysis and decision-making. These efforts reflect a strategic move to strengthen data capabilities, foster innovation, and stay competitive in a data-driven environment. Most respondents emphasize building internal capacity through training and investing in technology, indicating recognition that skills gaps and infrastructure are primary barriers.

How the organizational culture has influenced the adoption of big data analytics.

Positive cultural attitudes: "Leadership strongly supports data-driven decision-making, fostering innovation and encouraging staff to adopt new analytics tools."

Challenges: "Some departments resist change due to fear of transparency or loss of control, slowing adoption."

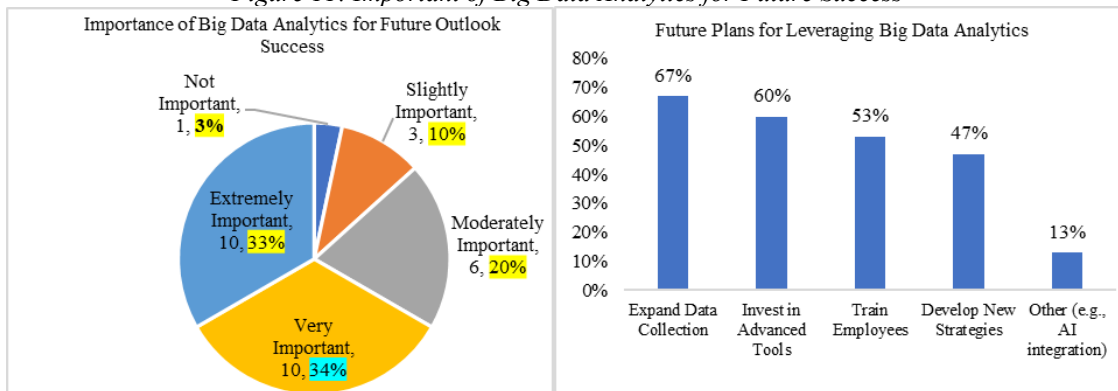
Opportunities: "A culture of continuous learning and openness to new ideas accelerates analytics initiatives."

Culture therefore, acts as a facilitator or barrier to the adoption and effective use of big data analytics to support decision making for performance improvement.

Proactive and innovation-oriented culture correlates with faster adoption and better organization performance.

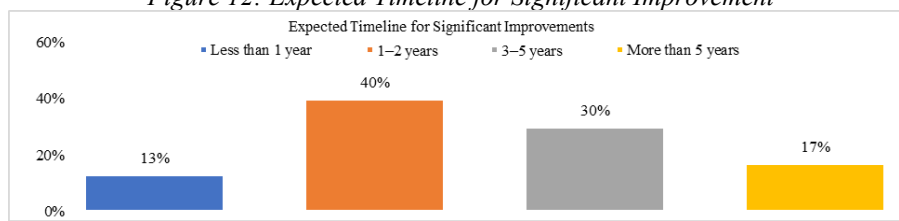
Future Outlook of the Organization on Big Data Analytics and Use

Figure 11: Important of Big Data Analytics for Future Success



Overall, 67% of respondents see big data analytics as crucial for the organization’s future success. The organization recognizes its importance for gaining competitive advantage, improving operations, enhancing customer experience, and driving innovation. To support this, they are expanding data collection and upgrading tools, demonstrating a committed move toward integrating big data into their strategic plans for ongoing growth and adaptability in a digital landscape.

Figure 12: Expected Timeline for Significant Improvement



The organization expects to see significant improvements within 1–2 years and plans to pursue long-term efforts to deepen analytics integration, fostering ongoing growth, innovation, and competitive advantage.

"Organizations view big data as fundamental to future healthcare innovation, recognizing its potential to enable predictive analytics for personalized medicine, facilitate AI-driven diagnostics, and support ongoing operational improvements. These capabilities are shaping the future of the healthcare sector by improving patient outcomes, enhancing diagnostic accuracy, and streamlining workflows, ultimately driving a more advanced and efficient healthcare delivery system".

Reflection and Additional Insights

Most Significant Success Stories

"By integrating real-time service delivery and operational data, we reduced emergency response times by 25%, saving lives and improving community health outcomes." This confirmed data integration and staff training are critical to real-time analytics increases responsiveness

Organizational Culture; "One important lesson we've learned is that technology alone doesn't deliver results; organizational culture and leadership support are crucial. Despite having advanced tools, without a data-driven mindset and proper training, the full potential of big data remains untapped. Additionally, data privacy concerns require ongoing attention to ensure compliance and build stakeholder trust. Moving forward, our focus is on embedding analytics into daily decision-making processes and fostering an environment of continuous learning, innovation and improvements."

Integration Challenges: "Integrating data from multiple sources remains a challenge, especially when dealing with legacy systems. Standardizing data formats and establishing data governance policies have been priorities but require ongoing effort."

Value Realization: "While initial investments were significant, we've observed that incremental steps such as small pilot quality improvement projects and building internal expertise help us realize tangible benefits faster and justify further investments."

Change Management: "Changing organizational mindset is difficult but vital. Leaders must champion data-driven culture by demonstrating value through quick wins and by encouraging staff to trust and interpret data effectively."

Skills Development: "Upskilling staff has been crucial. We've found that hands-on training combined with mentorship accelerates adoption and helps our team understand both the technical and strategic value of analytics."

Future Outlook: "Looking ahead, the goal is to incorporate AI and machine learning into routine workflows, which will enable the prediction of trends and proactively address emerging challenges."

Chapter Summary

The study's findings revealed that the Eastern Provincial Health Office perceives big data analytics as a vital tool for future healthcare improvement, with 67% of respondents rating its importance as very or extremely high. The organization begun laying the groundwork by establishing basic data systems and recognizing the potential benefits of predictive analytics, AI-driven diagnostics, and operational efficiencies. While most staff consider the organization moderately prepared to fully leverage big data, significant challenges remain, including infrastructural limitations, skills shortages, funding constraints, and cultural resistance. Despite these hurdles, there is a strong organizational commitment and optimism about achieving measurable performance improvements within 1-2 years, with longer-term efforts expected to deepen data integration and innovative application. Overall, the findings highlight both the organizational readiness and the critical barriers that need addressing to fully realize the benefits of big data in healthcare decision-making.

IV. Discussion

Introduction

This presents an interpretation of the findings from the case study of the Eastern Provincial Health Office (EPHO) regarding the utilization of Big Data repositories and analytics for strategic decision-making and organizational performance improvement. The discussion situates the findings within the broader body of existing literature on health informatics, big data analytics, and public sector digital transformation. It further highlights the implications of the results for policy, practice, and future research, particularly in resource-constrained healthcare environments.

Perception of Big Data's Strategic Importance

The findings indicate a strong institutional recognition of the importance of Big Data analytics, with over 67% of respondents reporting that Big Data is very or extremely important for future organizational success. This reflects a growing global shift toward data-driven healthcare systems where analytics is increasingly viewed as a strategic asset for improving efficiency, decision-making, and service delivery.

This perception aligns with prior studies which emphasize that organizations that adopt advanced analytics tend to achieve improved operational coordination and enhanced healthcare outcomes. The emphasis on predictive analytics, artificial intelligence, and real-time decision support systems demonstrates that EPHO is gradually aligning itself with modern digital health transformation trends. However, despite this positive outlook, the realization of these benefits remains dependent on the organization's ability to overcome existing structural and technical constraints.

Current Readiness and Implementation Challenges

The study reveals that the organization's readiness to fully implement Big Data analytics is moderate, with most respondents categorizing it as average to good. This suggests that while foundational systems such as data repositories have been established, full integration of analytics into decision-making processes is still evolving.

Key limitations include inadequate technological infrastructure, limited computational capacity, and insufficient integration between existing health information systems. These constraints reduce the ability of the organization to fully exploit real-time analytics and advanced predictive modeling.

In addition, workforce capability remains a significant challenge. Many staff members lack advanced data analytics skills, including proficiency in tools such as machine learning frameworks and statistical modeling software. This skills gap limits the effective interpretation and utilization of available data, thereby reducing the overall impact of Big Data initiatives.

Organizational culture also plays a critical role in shaping adoption. Resistance to change, particularly among staff accustomed to traditional decision-making approaches, slows down the transition toward a data-driven culture. These findings are consistent with established literature which emphasizes that successful Big

Data implementation requires not only technological readiness but also human capacity development and cultural transformation.

Barriers to Effective Big Data Utilization

The study identifies multiple barriers affecting the effective use of Big Data analytics within EPHO. Financial constraints represent a major limitation, restricting investments in advanced infrastructure, software systems, and skilled personnel recruitment. This challenge is particularly pronounced in public sector healthcare systems operating under limited budgets.

Infrastructure-related issues such as poor system integration, unreliable connectivity, and fragmented data sources further hinder effective analytics implementation. These challenges reduce interoperability between systems such as electronic health records and management information systems, limiting the ability to generate comprehensive insights.

Human resource limitations also remain a critical barrier. The shortage of adequately trained personnel in data science and health informatics reduces the organization's analytical capacity. Furthermore, issues related to data governance, including concerns about data quality, privacy, and security, affect confidence in analytics outputs and slow down adoption.

Future Outlook and Organizational Prospects

Despite the challenges identified, the study reveals a positive outlook toward the future of Big Data analytics within the organization. Approximately 67% of respondents believe that Big Data will play a crucial role in the organization's future success. Respondents anticipate significant improvements within a period of 1–2 years, particularly as ongoing investments in training and infrastructure begin to yield results.

The organization is expected to benefit from improved operational efficiency, enhanced decision-making speed, and better resource allocation. Additionally, the integration of emerging technologies such as artificial intelligence and machine learning is expected to further strengthen predictive capabilities in healthcare service delivery.

These findings suggest that while EPHO is still in the early to intermediate stages of Big Data maturity, there is strong institutional commitment toward digital transformation and analytics-driven healthcare improvement.

Summary of Discussion

Overall, the discussion highlights that although Big Data analytics is widely recognized as a critical enabler of healthcare performance improvement at EPHO, its full potential has not yet been realized. Key constraints include infrastructural limitations, skills shortages, financial constraints, and organizational resistance to change. However, the presence of strong leadership support and a positive outlook toward future adoption provides a foundation for gradual transformation toward a fully data-driven healthcare system.

V. Conclusion

The discussion reveals that, despite recognizing the importance of big data analytics and seeing tangible benefits, the organization faces significant barriers such as skills gaps, cultural resistance, infrastructure issues, and data quality concerns. Addressing these challenges through targeted efforts will be crucial for further enhancing analytics capabilities and achieving sustained performance improvements.

References

- [1]. W. McAfee And E. Brynjolfsson, "Big Data: The Management Revolution," *Harvard Business Review*, Vol. 90, No. 10, Pp. 60–68, 2012.
- [2]. T. H. Davenport And J. G. Harris, *Competing On Analytics: The New Science Of Winning*. Boston, Ma, Usa: Harvard Business School Press, 2007.
- [3]. Ministry Of Health Zambia, *National Health Strategic Plan 2017–2021*, Lusaka, Zambia, 2019.
- [4]. R. Demchenko, P. Grosso, C. De Laat, And P. Membrey, "Addressing Big Data Issues In Scientific Data Infrastructure," In *Proc. Int. Conf. On Collaboration Technologies And Systems*, 2013, Pp. 48–55.
- [5]. P. Gandomi And M. Haider, "Beyond The Hype: Big Data Concepts, Methods, And Analytics," *International Journal Of Information Management*, Vol. 35, No. 2, Pp. 137–144, 2015.
- [6]. A. Kankanhalli, J. Hahn, G. W. Tan, And Y. Gao, "Big Data Analytics And Firm Performance: Effects Of Dynamic Capabilities," *Journal Of Management Information Systems*, Vol. 33, No. 2, Pp. 534–564, 2016.
- [7]. J. B. Barney, "Firm Resources And Sustained Competitive Advantage," *Journal Of Management*, Vol. 17, No. 1, Pp. 99–120, 1991.
- [8]. L. G. Tornatzky And M. Fleischer, *The Processes Of Technological Innovation*. Lexington, Ma, Usa: Lexington Books, 1990.
- [9]. World Health Organization (Who), *Global Strategy On Digital Health 2020–2025*, Geneva, Switzerland, 2020.
- [10]. United Nations Development Programme (Undp), *Sustainable Development Goal 3: Good Health And Well-Being Report*, New York, Usa, 2015.