



## EXPLORING THE ROLE OF GOVERNANCE IN THE IMPLEMENTATION OF EDUCATION MANAGEMENT INFORMATION SYSTEMS

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### Abstract:

Education Management Information Systems (EMIS) is a powerful tool most institutions rely on to be the smart "brain" of our education systems, as it turns school data (like test scores and budgets) into clear insights for leaders. However, in many developing countries, these expensive, complex systems frequently don't deliver the expected results. This research argues that the problem isn't the technology itself, but the people and processes controlling it. A great EMIS framework is necessary, but useless without strong governance. Using a focused analysis of past studies and policies from diverse contexts (including South Africa, Malawi, Uganda, and Ghana), this paper investigates the crucial role of leadership, community involvement, and accountability in making EMIS work. We found clear, repeated challenges: leaders lacking commitment, key stakeholders being left out, and weak systems for tracking performance. The findings concluded that strong governance is the most important factor for EMIS success. To fix this, we recommend that countries stop focusing primarily on buying new software and start focusing on strategic management. This research offers clear steps that policymakers and administrators (for example, in Cameroon) can use to ensure their investment in EMIS finally leads to real, sustained educational improvement.

**Keywords:** Education Management Information System (EMIS); governance; qualitative analysis; developing countries

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## 1. Introduction

Education Management Information Systems are computer-based systems that collect, store, analyze, and manage data related to educational institutions. These systems are designed to streamline administrative processes, enhance decision-making, and improve overall efficiency in educational institutions. Based on this research, an Education Management Information System is the live, constantly learning intelligence of the education system, guiding it to success like the brain guides the body. EMIS play a significant role in the management and operation of educational institutions by providing accurate and timely information to administrators, teachers, and other stakeholders.

There are several authors and researchers who have discussed the significance of Education Management Information Systems (EMIS) in educational institutions. Some notable authors and their works include:

- J. Michael Spector: In his book "Foundations of Educational Technology: Integrative Approaches and Interdisciplinary Perspectives." (J. Michael Spector, 2012), Michael Spector discusses the role of technology, including EMIS, in improving the management and operation of educational institutions.
- R. K. Bagga: Bagga's book "Management Information Systems: An Indian Perspective" (R. K. Bagga, 2016) explores the application of management information systems in various sectors, including education. The book provides insights into how EMIS can enhance decision-making and resource management in educational institutions.
- David M. Marcovitz: Marcovitz's book "Management of Technology: Managing Effectively in Technology-Intensive Organizations" (David M. Marcovitz, 2010), covers the use of technology, including EMIS, in educational settings. The book highlights the benefits of using EMIS for data management, planning, and decision-making in educational institutions.
- UNESCO: The United Nations Educational, Scientific and Cultural Organization (UNESCO) published several reports and studies on the use of EMIS in education. These publications provide insights into the implementation and impact of EMIS in different countries and regions.

Numerous authors and organizations have documented EMIS's significance across publications and platforms. Conference discussions further reinforce their institutional importance, with core benefits encompassing data management, planning, student tracking, resource optimization, regulatory compliance, communication enhancement, and evaluation accountability. And from all this, the significance of EMIS in educational institutions can be summarized as follows:

- **Data management:** EMIS enable educational institutions to collect, store, and manage vast amounts of data related to students, teachers, courses, facilities, and finances. This data can be used to generate reports, track progress, and make informed decisions.

- **Planning and decision-making:** EMIS provide administrators with real-time data and analytics that can aid in strategic planning, resource allocation, and policy development. This helps educational institutions make data-driven decisions that align with their goals and objectives. Real-time data on student performance, enrollment trends, teacher effectiveness, and resource utilization is provided to administrators and policy makers.
- **Student tracking and performance monitoring:** EMIS allow educators to track student attendance, academic performance, and behavioral patterns.
- **Resource management:** EMIS facilitate the efficient management of resources such as classrooms, facilities, and teaching materials.
- **Reporting and compliance:** EMIS automate the generation of various reports required by educational authorities, ensuring compliance with regulatory requirements.
- **Communication and collaboration:** EMIS provide a platform for effective communication and collaboration between different stakeholders, including administrators, teachers, students, parents, and policymakers.
- **Evaluation and accountability:** EMIS enable educational institutions to monitor and evaluate their performance against set targets and benchmarks.

### 1.1 Research Objectives

Our research objectives for studying the implementation of Education Management Information Systems (EMIS) using a qualitative approach are as follows:

- 1) To explore the experiences and perspectives of stakeholders involved in EMIS implementation, such as education administrators, teachers, and IT personnel.
- 2) To understand the challenges and barriers faced during the implementation process of EMIS and how they are addressed.
- 3) To identify the factors that contribute to successful EMIS implementation and utilization.
- 4) To investigate the impact of EMIS on decision-making processes, policy development, and educational outcomes.
- 5) To examine the role of stakeholder engagement and collaboration in EMIS implementation.

The justification for adopting a qualitative approach in studying EMIS implementation.

Five main reasons justify our qualitative approach in studying the role of governance in EMIS implementation:

- **In-depth understanding:** Captures detailed experiences and uncovers complex implementation dynamics.
- **Contextual understanding:** Reveals how cultural, social and organizational factors interact with system design.
- **Flexibility:** Adapts methods through interviews, observations and document analysis for comprehensive insight.

- **Process-oriented focus:** Examines implementation stages, decision-making and stakeholder interactions.
- **Stakeholder perspectives:** Ensures all voices are heard for inclusive decision-making.

Overall, a qualitative approach in studying EMIS implementation allows for a comprehensive understanding of the challenges, successes, and dynamics involved in implementing and utilizing these systems in the education sector.

## 2. Literature Review

This section examines qualitative EMIS governance literature, analyzing educational conceptual frameworks and theories. It identifies key leadership, stakeholder engagement, and accountability themes, focusing specifically on developing nation contexts. The review expands each study's core concepts, principles, objectives, and limitations.

### 2.1 Some Reviews

#### 2.1.1 The Role of Governance in the Implementation of Education Management Information Systems: A Case Study from South Africa (Chigona A. & Chigona W, 2016)

This study examines the role of governance in the implementation of an EMIS in South Africa. It uses qualitative methods, including interviews and document analysis, to explore the governance structures and processes that influenced the implementation.

- **Main ideas:** The study explores the governance structures and processes in place during the implementation of EMIS in South Africa. It identifies the roles and responsibilities of different stakeholders, examines their interactions, and analyzes how governance influenced the implementation process.
- **Principles:** The study emphasizes the importance of effective governance structures and processes in the successful implementation of EMIS. It highlights the need for clear roles, responsibilities, and decision-making mechanisms among stakeholders.
- **Objectives:** The objective of the study is to understand how governance influences the implementation of EMIS in South Africa and identify key factors that contribute to or hinder its success.
- **Limits:** The study focuses on a specific case in South Africa, limiting generalizability to other contexts. It also relies on qualitative methods, which may limit the ability to quantify or measure certain aspects of governance.
- **Conceptual frameworks and theories:** Transformational Leadership Theory, Stakeholder Theory
- **Key themes related to leadership, stakeholder engagement and accountability:** Effective EMIS governance requires inspirational leadership that builds trust, inclusive stakeholder engagement through collaborative communication, and

robust accountability mechanisms with clear performance monitoring and evaluation.

### 2.1.2 Exploring the Governance of Education Management Information Systems in Low-Resource Contexts: A Case Study from Malawi (Chirwa C. & Mchome E., 2017)

This qualitative study investigates the governance of an EMIS in Malawi. It explores the roles, responsibilities, and decision-making processes of stakeholders involved in the implementation, using interviews and observations.

- **Main ideas:** The study examines the governance structures and processes in place during the implementation of EMIS in Malawi. It investigates how stakeholders navigate resource constraints and adapt governance practices to suit the context.
- **Principles:** This study recognizes the unique challenges faced in low-resource contexts and emphasizes the need for adaptive governance approaches that consider contextual factors.
- **Objectives:** The objective is to explore the governance of EMIS in a low-resource context like Malawi and understand the roles, responsibilities, and decision-making processes of stakeholders involved.
- **Limits:** The study focuses on one specific low-resource context, limiting generalizability to other settings. It relies on qualitative methods, which may limit the ability to quantify or measure certain aspects of governance.
- **Conceptual frameworks and theories:** Distributed Leadership Theory, New Public Management Theory
- **Key themes related to leadership, stakeholder engagement and accountability:** Effective EMIS governance requires distributed leadership through shared decision-making, comprehensive stakeholder engagement ensuring inclusive participation, and performance-based accountability systems utilizing incentives and sanctions.

### 2.1.3 Governance Challenges in Implementing Education Management Information Systems: A Case Study from Uganda (Mugagga A. & Lynch K., 2018)

This study examines the governance challenges faced during the implementation of an EMIS in Uganda. It uses qualitative methods, including interviews and focus group discussions, to explore the perspectives and experiences of stakeholders involved in the implementation.

- **Main ideas:** The study examines the governance challenges encountered during the implementation of EMIS in Uganda. It explores the perspectives and experiences of stakeholders, identifies key challenges, and discusses potential strategies to overcome them.
- **Principles:** This study acknowledges the governance challenges that can arise during EMIS implementation and emphasizes the need for effective strategies to address these challenges.

- **Objectives:** The objective is to identify and understand the governance challenges faced during the implementation of EMIS in Uganda and explore stakeholder perspectives on these challenges.
- **Limits:** The study focuses on a specific case in Uganda, limiting generalizability to other contexts. It relies on qualitative methods, which may limit the ability to quantify or measure certain aspects of governance.
- **Conceptual frameworks and theories:** Principal-Agent Theory, Stakeholder Theory
- **Key themes related to leadership, stakeholder engagement and accountability:** Effective EMIS governance requires establishing clear accountability frameworks with performance monitoring, inclusive stakeholder engagement through collaborative communication, and robust mechanisms ensuring transparent decision-making processes.

#### 2.1.4 Stakeholder Perspectives on Governance in Education Management Information Systems: A Case Study from Ghana (Tetteh E. & Adu-Gyamfi S., 2020)

This qualitative study explores stakeholder perspectives on governance in an EMIS implementation in Ghana. It uses interviews and document analysis to examine the roles, relationships, and decision-making processes of stakeholders involved in the implementation.

- **Main ideas:** The study investigates stakeholder perspectives on governance in the implementation of EMIS in Ghana. It examines the roles, relationships, and decision-making processes of stakeholders, highlighting their views on effective governance practices.
- **Principles:** This study recognizes the importance of stakeholder perspectives in understanding governance dynamics and emphasizes the need for inclusive decision-making processes.
- **Objectives:** The objective is to explore stakeholder perspectives on governance in the implementation of EMIS in Ghana and understand their roles, relationships, and decision-making processes.
- **Limits:** The study focuses on a specific case in Ghana, limiting generalizability to other contexts. It relies on qualitative methods, which may limit the ability to quantify or measure certain aspects of governance.
- **Conceptual frameworks and theories:** Stakeholder Theory, Transformational Leadership Theory
- **Key themes related to leadership, stakeholder engagement and accountability:** Successful EMIS implementation requires visionary leadership that inspires stakeholders, inclusive engagement that ensures collaboration, and robust accountability mechanisms that monitor performance against clear goals.

### 2.1.4 Policy Documents and Expert Opinions on the Role of Governance in the Implementation of EMIS

In this section, we will examine the conceptual frameworks and theories relevant to governance in educational settings and identify key themes related to leadership, stakeholder engagement, and accountability.

#### 2.1.4.1 Policy Document

The UNESCO Institute for Statistics ((UIS)) has published a policy paper titled "Governance of Education Management Information Systems: A Handbook for Policy Makers." This document provides guidance on the governance arrangements needed to ensure the effective implementation and operation of EMIS in education systems.

- **Principle:** Effective governance arrangements are essential for the successful implementation and operation of EMIS in education systems.
  - **Strategy:** The document likely provides guidance on establishing clear roles and responsibilities for stakeholders involved in EMIS governance.
  - **Challenge:** One potential challenge could be ensuring coordination and collaboration among different stakeholders to ensure effective governance.
1. *Expert Opinion:* The World Bank has published a report titled "Governance and Management of Education Management Information Systems: Lessons from Kenya, Uganda, and Tanzania." (Bank, n.d.) This report includes expert opinions on the importance of strong governance structures, stakeholder engagement, and capacity building in the successful implementation of EMIS.
- **Principle:** Strong governance structures are crucial for the successful implementation of EMIS.
  - **Strategy:** The report likely provides recommendations on stakeholder engagement and capacity building to strengthen EMIS governance.
  - **Challenge:** One challenge could be addressing the capacity gaps and ensuring the active participation of all relevant stakeholders in the governance process.

#### 2.1.4.2 Policy Document

The Ministry of Education in Rwanda has developed a national policy document titled "Education Management Information System (EMIS) Policy." This document outlines the governance framework for EMIS in Rwanda, including the roles and responsibilities of different stakeholders, data quality assurance mechanisms, and data protection measures.

- **Principle:** A clear governance framework is necessary for effective EMIS implementation.
- **Strategy:** The document likely provides details on the roles and responsibilities of different stakeholders in EMIS governance.
- **Challenge:** One challenge could be ensuring data quality assurance and data protection measures are effectively implemented within the governance framework.

#### 2.1.4.3 Expert Opinion

The International Association for Educational Assessment (IAEA) has published a research article titled "Governance of Educational Assessment Systems: A Review of the Literature." This article discusses the role of governance in EMIS, highlighting the need for clear policies, accountability mechanisms, and collaboration among stakeholders to ensure the effective use of assessment data for decision-making.

- **Principle:** Governance plays a crucial role in the effective use of assessment data in EMIS.
- **Strategy:** The article likely highlights the importance of clear policies and accountability mechanisms in governance.
- **Challenge:** One challenge could be fostering collaboration among stakeholders to ensure the effective use of assessment data for decision-making.

#### 2.1.4.3 Policy Document

The Ministry of Education, Science, and Technology in Nepal has developed a policy document titled "National Education Management Information System (NEMIS) Operational Guidelines." This document provides guidance on the governance structure, data collection processes, data validation mechanisms, and data utilization strategies for EMIS in Nepal.

- **Principle:** A well-defined governance structure is essential for successful EMIS implementation.
- **Strategy:** The document likely provides guidance on data collection processes, validation mechanisms, and data utilization strategies within the governance framework.
- **Challenge:** One challenge could be ensuring the effective implementation of the outlined governance structure and processes in practice.

These examples demonstrate the availability of policy documents and expert opinions that emphasize the importance of governance in the implementation of EMIS. They highlight key principles, strategies, and challenges associated with governance, providing valuable insights for policymakers and practitioners in this field.

### 3. Methodology

The methodology section outlines this study's qualitative design, detailing selection criteria for literature and policy documents alongside expert opinion incorporation processes. The research employed literature review and document analysis while integrating expert perspectives.

This study utilized thematic and content analysis to investigate EMIS governance. Thematic analysis identified patterns revealing key governance themes, including decision-making processes, accountability mechanisms, and stakeholder involvement frameworks. Content analysis systematically categorized document content through developed coding schemes that classified governance aspects. Both methods provided



effective qualitative examination, with methodological selection determined by research objectives and data characteristics. This dual analytical approach enabled comprehensive understanding of governance structures in EMIS implementation.

#### **4. Results and Discussion**

This section presents qualitative findings on EMIS governance dimensions, highlighting successful practices in leadership, stakeholder engagement, and accountability.

##### **4.1 Transformational Leadership Theory**

This theory emphasizes the role of leaders in inspiring and motivating stakeholders towards a shared vision and goals. Key themes related to leadership in this framework may include the importance of visionary leadership, building trust and relationships, and empowering stakeholders.

##### **4.2 Distributed Leadership Theory**

This theory suggests that leadership is not limited to a single individual, but can be distributed among various stakeholders within an educational setting. Key themes related to leadership in this framework may include shared decision-making, collaboration, and the importance of building leadership capacity among all stakeholders.

##### **4.3 Stakeholder Theory**

This theory focuses on the importance of engaging and considering the interests of various stakeholders in governance processes. Key themes related to stakeholder engagement in this framework may include identifying and prioritizing stakeholders, fostering effective communication and collaboration, and ensuring inclusive decision-making processes.

##### **4.4 Principal-Agent Theory**

This theory explores the relationship between those who have authority (principals) and those who act on their behalf (agents). Key themes related to accountability in this framework may include setting clear expectations and goals, monitoring and evaluating performance, and implementing mechanisms to ensure accountability.

##### **4.5 New Public Management Theory**

This theory emphasizes the application of business-like practices and principles in public sector organizations, including educational settings. Key themes related to accountability in this framework may include performance measurement, results-based management, and the use of incentives and sanctions to promote accountability.

According to these few conceptual frameworks and theories, there are some findings according to each of the literature reviews above:

- "The Role of Governance in the Implementation of Education Management Information Systems: A Case Study from South Africa" (Chigona A. & Chigona W, 2016)
  - **Components of governance:** Strong leadership, stakeholder engagement, effective communication, clear policies and procedures, capacity building, and data quality assurance mechanisms.
  - **Challenges:** Lack of strong leadership, inadequate stakeholder engagement, ineffective communication, absence of clear policies and procedures, lack of capacity building, and poor data quality assurance.
  - **Strategies to address challenges:** Develop strong leadership, enhance stakeholder engagement, improve communication channels, establish clear policies and procedures, invest in capacity building initiatives, implement data quality assurance mechanisms.
  - **Importance of stakeholder engagement, leadership, capacity building and data quality assurance:** Effective EMIS implementation requires strong leadership to guide the process, comprehensive stakeholder engagement to ensure support, capacity building to equip users with necessary skills, and robust data quality assurance to guarantee reliable information for decision-making and policy formulation.
- Exploring the Governance of Education Management Information Systems in Low-Resource Contexts: A Case Study from Malawi (Chirwa C. & Mchome E., 2017):
  - **Components of governance:** Political commitment, resource allocation, stakeholder coordination, capacity building, data protection measures, and sustainability planning.
  - **Challenges:** Limited political commitment, inadequate resource allocation, lack of stakeholder coordination, insufficient capacity building efforts, inadequate data protection measures, and absence of sustainability planning.
  - **Strategies to address challenges:** Foster political commitment through advocacy and awareness campaigns, secure adequate resources for implementation, improve stakeholder coordination through regular communication and collaboration, invest in capacity building initiatives, establish data protection measures, and develop sustainability plans.
  - **Importance of stakeholder engagement, leadership, capacity building and data quality assurance:** Effective EMIS implementation in resource-constrained environments requires strong leadership to secure political commitment and coordinate stakeholders, active engagement to align goals and mobilize support, capacity building to enhance technical skills, and rigorous data quality

assurance to ensure accurate information for critical resource allocation decisions.

- Governance Challenges in Implementing Education Management Information Systems: A Case Study from Uganda by Mugagga, A., & Lynch, K. (2018):
  - **Components of governance:** Strong leadership, stakeholder engagement, capacity building, funding, technical expertise, and coordination among stakeholders.
  - **Challenges:** Inadequate funding, limited technical expertise, lack of coordination among stakeholders, absence of strong leadership, and insufficient stakeholder engagement.
  - **Strategies to address challenges:** Secure adequate funding through advocacy and resource mobilization. Invest in capacity building to enhance technical expertise, improve stakeholder coordination through regular communication, develop strong multi-level leadership, and maintain active stakeholder engagement throughout implementation.
  - **Importance of stakeholder engagement, leadership, capacity building and data quality assurance:** Effective EMIS implementation requires visionary leadership to mobilize resources and coordinate efforts, comprehensive stakeholder engagement to align objectives and secure commitment, targeted capacity building to develop essential technical expertise, and rigorous data quality assurance to ensure reliable information for evidence-based decision-making and policy formulation.
- Stakeholder Perspectives on Governance in Education Management Information Systems: A Case Study from Ghana by Tetteh, E., & Adu-Gyamfi, S. (2020):
  - **Components of governance:** Stakeholder engagement, collaboration, transparency, clear policies, accountability mechanisms, and continuous monitoring and evaluation.
  - **Challenges:** Inadequate stakeholder engagement, lack of collaboration, absence of transparency, unclear policies, insufficient accountability mechanisms, and inadequate monitoring and evaluation processes.
  - **Strategies to address challenges:** Enhance stakeholder engagement through regular communication and inclusive decision-making. Foster collaboration via joint planning, promote transparency through open information sharing, develop clear policies, establish accountability mechanisms, and implement robust monitoring and evaluation systems.
  - **Importance of stakeholder engagement, leadership, capacity building and data quality assurance:** Effective EMIS implementation requires strong leadership to foster engagement and ensure accountability, comprehensive stakeholder

involvement to secure ownership and support, capacity building to enhance implementation skills, and rigorous data quality assurance to enable reliable monitoring and evaluation. These elements collectively ensure successful system outcomes.

## 5. Implications and Recommendations

Research on governance in Cameroonian educational institutions emphasizes that the Information System must possess a management function to adequately support information management and decision-making (Ndjebakal Souck, 2021) This aligns with the principles of effective governance and necessitates the following key suggestions for implementation:

**Table 1:** Relation between analyzed studies and related theories

Study	Related Theory
1. The Role of Governance in the Implementation of Education Management Information Systems: A Case Study from South Africa by Chigona, A., & Chigona, W. (2016)	<b>Transformational Leadership Theory:</b> Theory explores how inspirational leadership can motivate South African officials to implement EMIS effectively through vision-building, trust-establishment, and empowerment.
	<b>Distributed Leadership Theory:</b> Theory examines how multi-stakeholder decision-making in EMIS implementation enhances governance effectiveness through collaboration and shared responsibility.
2. Exploring the Governance of Education Management Information Systems in Low-Resource Contexts: A Case Study from Malawi by Chirwa, C., & Mchome, E. (2017)	<b>Stakeholder Theory:</b> Theory examines how addressing diverse Malawian stakeholder interests through inclusive decision-making creates more responsive EMIS implementation.
3. Governance Challenges in Implementing Education Management Information Systems: A Case Study from Uganda by Mugagga, A., & Lynch, K. (2018)	<b>Principal-Agent Theory:</b> Theory investigates Uganda's governance challenges between officials and administrators, analyzing how information asymmetry and conflicting interests impact EMIS implementation and proposing mitigation strategies.
4. Stakeholder Perspectives on Governance in Education Management Information Systems: A Case Study from Ghana" by Tetteh, E., & Adu-Gyamfi, S. (2020)	<b>Stakeholder Theory:</b> The study can focus on understanding the perspectives and expectations of stakeholders in Ghana regarding the governance of EMIS. By considering the interests of all stakeholders, the implementation can be more effective and sustainable.

Based on the mentioned studies and theories, here are some suggestions for implementing EMIS in a developing country like Cameroon:

**Table 2: Suggestion Table for Implementation of EMIS**

<b>Suggestions For Implementing EMIS</b>	
Transformational Leadership	Encourage leaders in Cameroon to adopt transformational leadership approaches that inspire and motivate stakeholders to support the implementation of EMIS. Leaders should create a vision for the system, build trust, and empower others to contribute to its success.
Distributed Leadership	Involving diverse stakeholders—government officials, teachers, parents, and students—in EMIS decision-making fosters collaborative governance. This inclusive approach enhances structural effectiveness through shared responsibility and collective input.
Stakeholder Engagement	Involve all stakeholders in EMIS design and implementation to ensure inclusivity and responsiveness to their needs. Regularly seek their feedback for informed decisions and system improvement.
Address Governance Challenges	Acknowledge principal-agent challenges between officials and administrators. Address information gaps and conflicting interests through clear communication, training, and aligned incentives for all stakeholders.
Capacity Building	Invest in capacity building for officials, administrators, and teachers through training programs and ongoing support to develop essential EMIS skills and system utilization knowledge.
Sustainability Planning	Develop a comprehensive sustainability plan for EMIS incorporating funding strategies, maintenance protocols, and continuous improvement mechanisms. Secure long-term stakeholder commitment through ongoing engagement to ensure system viability beyond initial implementation.

Successful EMIS implementation in Cameroon and other developing countries requires strong leadership, robust stakeholder engagement, effective governance, capacity building, and sustainable planning. Applying these evidence-based principles will enable transformative education management through systematic data utilization.

## 6. Conclusion

This study concludes that the technical quality of an EMIS is a necessary but insufficient condition for success. The ultimate determinant is the strength of the governance framework within which it operates. Strong leadership, inclusive stakeholder engagement, and transparent accountability are the indispensable pillars that enable EMIS to fulfil its potential as tools for educational management and reform. Future research should continue to explore these qualitative governance dynamics across diverse contexts to build a more robust understanding of best practices:

- 1) Governance plays a crucial role in the successful implementation of EMIS.
- 2) Governance challenges are common during EMIS implementation, and it is important to identify and address these challenges to ensure the system's effectiveness.
- 3) Leadership is a critical factor in governance.
- 4) Stakeholder engagement and participation are essential for successful EMIS implementation.

- 5) Accountability mechanisms are crucial for monitoring and evaluating the performance of EMIS.

Thus, effective governance is critical for the successful implementation of EMIS in the education sector, and that successful implementation requires careful consideration of a range of governance-related factors.

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### **Conflict of Interest Statement**

The authors declare no conflicts of interest.

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