

A CRITICAL REVIEW OF THE IT GOVERNANCE LITERATURE WITHIN THE COBIT CURRICULUM IN HIGHER EDUCATION INSTITUTIONS FROM A COMMUNICATION PERSPECTIVE



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Abstract: This study aims to provide a systematic critical review of the literature that addresses the topic of information technology governance in higher education institutions within the framework of COBIT, from a communication perspective that places the role of institutional communication as an intermediate variable influencing the effectiveness of governance. The research relied on the content analysis approach of relevant sources published between (2010 –2025) and tracked the development of the framework from COBIT 4.1 to COBIT 2019, while evaluating the extent to which the communication dimension was integrated into each study. The study included seven studies that varied between foreign and Arab, as the results showed that early research focused on the technical measurement of governance maturity. More recent studies have increased awareness of the communication dimension, but dealing with it remains descriptive or procedural without standard measurement models. Accordingly, the review identifies a methodological gap represented by the absence of an applied framework that integrates communication quality within the COBIT matrix and links communication indicators to institutional maturity levels and educational outcomes.

Keywords: IT governance; COBIT curriculum; corporate communication; critical review; higher education.

Introduction

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In light of the rapid developments in information and communication technology, higher education institutions have witnessed radical transformations at multiple levels, as the technologies produced by these developments have become a pivotal tool that cannot be overlooked for their role in improving academic performance and knowledge management, and ensuring the continuity of educational processes in environments characterized by continuous change. Within this approach, ICT governance has emerged as a regulatory and strategic framework aimed at ensuring the effective and responsible use of digital technologies, in order to achieve institutional goals and maintain the quality of educational services.

In this context, it is worth noting that ICT governance in the university environment is not just a technical mechanism, but goes beyond being an integrated system of policies, procedures, and practices that ensure alignment between technological resources on the one hand and academic vision on the other, enhance transparency in decisions, and support the quality of education. Among the global frameworks adopted in this field, the COBIT (Control Objectives for Information and Related Technologies) framework stands out as a comprehensive model for information systems management and governance. It serves as a roadmap that defines the methods used to implement and manage IT governance, providing precise criteria for evaluating digital performance and ensuring alignment between technical infrastructure and organizations' strategic objectives.

A review of the academic literature that addressed the issue of information technology governance in higher education institutions revealed a disparity in treatment, both theoretically and in terms of applying communicative methods in analyzing the phenomenon, especially in environments characterized by the diversity of actors and the interconnectedness between organizational levels. The focus was often on purely technical aspects, while neglecting the communicative aspect, which constitutes an important basis for ensuring the effective implementation of governance policies.

➤ **The problem of the study**

With the increasing global interest in the governance of information and communication technology in higher education, and the adoption of standard frameworks such as COBIT to ensure the optimal use of digital technologies, it is noticeable, and shows the future development visions of higher education institutions to improve the quality of their outputs.

There has been a variety of research and literature related to studying this topic and ways to apply it efficiently, but the majority of the literature focused on the technical and administrative dimension, while the communication dimension, with its impact on the flow of information and change management, remained Building consensus among academic actors, with limited presence in studies. This situation raises questions about the extent to which technical and communication approaches have been integrated into previous research, and the extent to which the COBIT curriculum can contain this dimension in the context of improving the quality of higher education. Accordingly, the following main problem arises:

What level of previous studies have addressed the topic of IT governance in the context of the COBIT approach in higher education institutions, from a communication perspective?

To answer the main question, several secondary questions emerge that contribute to this:

- Has the analysis of IT governance in the university environment, according to the COBIT approach, relied upon the communication dimension in previous studies?
- Where are the strengths and weaknesses of previous studies on this topic?
- Are there knowledge gaps that can be relied upon to develop future studies that link the technical approach and the communicative approach?

➤ **Importance of the study :**

The importance of this study stems from the impact of the digital revolution on the higher education sector and the profound transformations it is witnessing in light of the outcomes of this revolution, as information and communication technology governance has become a crucial element in ensuring the quality of education, efficient resource management, and achieving academic sustainability. Integrating global governance frameworks such as COBIT into the higher education environment not only provides precise standards for technical governance, but also enables these standards to be aligned with communication strategies, enhancing decision-making effectiveness and supporting academic and organizational communication within university institutions.

The importance of the study is also evident in the fact that it does not limit itself to reviewing frameworks and practices, but rather provides an in-depth critical review of the literature, to reveal the shortcomings in

integrating the communication dimension within the digital governance approach, which represents a qualitative addition to the fields of research in media and communication sciences. This contributes to developing new research insights that address existing gaps and support innovation in higher education management.

➤ Study Objectives

This study aims to provide a systematic critical review of the academic literature that has addressed the topic of ICT governance in higher education institutions according to the COBIT framework, by analyzing the extent of the presence of the communication dimension in previous studies related to university IT governance. It will attempt reveal the advantages and shortcomings of previous research treatments, and identify research gaps that can be directed toward more comprehensive research in the field of digital governance with a communication dimension.

➤ Defining Study Concepts:

- 1- **Information Technology:** It is defined as a group of data and information in various fields that are operated according to procedures, technologies, human resources and equipment with the aim of collecting, storing, processing, and enabling their retrieval, transmission and broadcasting¹. On the other hand, the information and communication technology in higher education is considered technology related to storage, retrieval, circulation and dissemination of information, with the production of oral, pictorial, textual and digital data by electronic means through integration between electronic computers and visual communications systems.²
- 2- **Governance:** According to Hirsch & Weber (2001), it means "the formal and informal exercise of power within the framework of laws, policies and rules that clarify the rights and responsibilities of the various actors in the institution. In other words, governance encompasses all elements of the framework within which an organization seeks to achieve its goals, objectives, and policies in a consistent manner."³
- 3- **Information Technology Governance:** includes the general management system (processes, procedures, and organization) used to manage information technology.⁴
According to the COBIT standard, ICT governance is the basis that guides information systems activities and ensures that IT performance meets the following requirements:

- ✓ Alignment with the organization's objectives;
 - ✓ The organization's ability to take advantage of opportunities and maximize advantages;
 - ✓ Responsible use of IT resources;
 - ✓ Appropriate management of ICT-related risks.⁵
- 4- **COBIT**: This is a framework that aims to link information technology to the organization's business goals and requirements by creating a general model for the organization's information technology activities, which leads to identifying and enhancing important information technology resources and linking all of this to the controls that govern these processes, activities and resources.⁶
- 5- **Higher Education**: Education is represented by the springs from which the individual derives the components of personality, his ways of thinking, and through which he builds a concept of the self. It is defined as: a stage of education that follows the secondary stage and is considered the top of the pyramid of educational stages, beginning after the completion of the secondary education stage.⁷
- Higher education in Algeria is an educational and training system run and owned by the state and characterized by free education. Therefore, the state must generalize universities throughout the country, and the university institutions are characterized by great centralization in management⁸. Higher education prepares and qualifies the individual by providing him with specialized information, knowledge and expertise in line with developments taking place in the world.
- 6- **University governance**: It is the application of quality standards, systems, and excellence that govern the performance of higher education institutions, in a way that achieves sound orientations, correct actions, and integrity of behavior, while ensuring transparency, accountability, and participation by all parties, and giving priority to the interest of the institution over individual interests, which leads to the development of institutional performance.⁹

I. Study methodology:

1- **Type and methodology of the study**: This study belongs to the category of critical literature reviews (Critical Literature Review), which is an advanced form of literature reviews that aims to analyze and evaluate previous studies systematically and critically, rather than simply presenting or summarizing them. This approach examines published research relevant to the topic of IT governance in higher education

institutions, with the aim of uncovering strengths and shortcomings, identifying research gaps that have not been addressed, and proposing future research directions that can fill these gaps.¹⁰

This study adopted the qualitative analytical approach (Qualitative Analytical Approach), by analyzing the content (Content Analysis) of the selected studies, according to specific critical criteria that include: the scope of the research, its theoretical frameworks, its methodological tools, its results, and its generalizability. This approach is based on a total reliance on secondary sources (Secondary Data) by reviewing available scientific production, which makes it classified as desk research (Desk Research) based on collecting and analyzing published information without conducting direct field data collection.¹¹

This type of study makes it possible to build a comprehensive vision about the evolutionary path of research in the field under study, which helps formulate practical recommendations based on documented knowledge accumulation, and enhances the accuracy of identifying research problems that still need in-depth study.

2- Criteria for selecting previous studies :

In determining the academic studies to be analyzed in this study and selecting the most appropriate ones, we relied on a set of methodological criteria that ensure scientific coherence and reliability of sources within diverse research contexts. These criteria will help us build a robust research database that forms the basis for critical analysis aimed at identifying research gaps and proposing future paths that can support the development of information technology governance models. It was represented in:

- **Direct relationship to the subject of the study:** Only relevant studies were selected that dealt with information technology governance in higher education institutions or educational sectors, and this is to ensure that the analysis is consistent with the theoretical framework of the research¹².
- **Diversity of the study environment:** This is to allow for inter-comparison; and therefore, studies were selected from different academic, cultural and geographical environments (such as Kenya, Indonesia, Algeria, yemen).
- **Adopting relatively modern sources:** Here, priority was given to studies completed and published between 2010 and 2025, based on

keeping pace with rapid developments in the field of information technology and governance frameworks.

- **The research methodology and tools are clear:** this is to ensure that the results can be evaluated and credible¹³.
- **Full texts available for access:** Studies whose full texts could be obtained were approved, to avoid relying on abstracts that may lack the necessary analytical details.
- **Credibility of scientific documentation:** Research that lacks reliable academic documentation or is based on unreliable primary sources was excluded.
- **Providing access to full texts:** Studies whose full texts could have been obtained were approved, to avoid relying on abstracts that may lack the necessary analytical details.
- **Scientific documentation:** Research that lacks reliable academic documentation or relies on unreliable primary sources was excluded.

2- Procedures for analyzing previous studies:

The process of analyzing previous studies was carried out through a series of methodological steps aimed at ensuring scientific accuracy and analytical neutrality, consistent with the nature of critical reviews of the literature.¹⁴ These steps included the following:

2-1- Digital bibliographic research: The first step after determining the selection criteria, where approved academic databases such as Scopus, Web of Science, ASJP, Google Scholar were searched, in addition to the most reviewed journals specializing in information technology and higher education management. Choosing specialized databases reduces bias and helps in arriving at the most appropriate studies.¹⁵

2-2- Initial audit and review: This is a necessary step in any systematic review to ensure sample quality. Studies that did not meet the specified criteria were excluded, especially those that lacked complete texts.¹⁶

2-3- Scrutiny and in-depth reading: The literature recommends active reading to identify links between study components and research gaps. The full texts of each study were carefully read, focusing on the objectives, theoretical framework, methodology, data collection tools, findings, and recommendations.¹⁷

2-4- Systematic data extraction: Analytical tables were prepared summarizing the basic information for each study, including the year of publication, country, tool used (such as COBIT 4.1 or COBIT 2019),

level of governance maturity, communication dimension, and most prominent results). This method is considered an effective tool for facilitating cross-comparison between studies.¹⁸

2-5- Comparative critical analysis: The studies were analyzed chronologically and systematically, allowing the gap left by each study to be identified and the subsequent study to address this gap. Strengths and weaknesses in research design and implementation methods were also assessed, a key step in critical reviews to ensure coherent conclusions.¹⁹

2-6- Formulating the final analysis: Based on the inter-comparison, five main axes were identified that constitute the major research gaps: weak link between governance and academic outcomes, lack of time follow-up, limited geographical scope, lack of cross-cultural comparative studies, and lack of addressing the role of communication in achieving governance. Systematic studies confirm that identifying these axes contributes to building a clear research agenda²⁰. This approach has enabled the construction of a cumulative view of the course of development of studies, and the identification of points of discontinuity and repetition, which has made it possible to provide practical and academic

II. Analysis and discussion:

A. The analysis :

1- Mwangi (2011) IT governance maturity according to COBIT: a case study of Kenya Methodist University (KEMU)²¹

Mwangi's (2011) study is one of the first to address the topic of IT governance in African higher education from a normative perspective. The researcher chose Kenya Methodist University as a case study to measure the level of governance maturity according to the COBIT framework, which gave the study an important applied dimension in an academic environment that was still in its early stages of adopting digital governance. This study came in a context in which Kenyan universities were facing increasing challenges in managing their technical resources, most notably the absence of unified information systems management policies, weak data security procedures, and the absence of technical performance measurement indicators that are consistent with academic goals. Mwangi has sought to fill this gap by providing a benchmark that can serve as a reference for educational institutions in the region.

The study relied on a descriptive case study-based approach, collecting data through detailed questionnaires and semi-structured interviews with

IT officials and senior administrators. The researcher used the maturity model contained in COBIT, which classifies digital governance on a five-point scale, starting from the “initial” level (Initial), which reflects the absence of organized processes, all the way to the “enhanced” level (Optimized), which reflects the complete integration between technical processes and institutional goals. The results showed that the university is at a level of 1.8 out of 5, which indicates that most of its technical operations were in a “repeatable” phase but lacked systematic documentation and strict institutional policies. Critically, it can be said that the study made an important scientific contribution by providing an accurate quantitative measure of the level of governance maturity; it also reinforced the importance of adopting normative frameworks such as COBIT in universities that lack a mature technical architecture.

However, the study fell short in analytical aspects, stopping at presenting the level of maturity without an in-depth explanation of the structural reasons that led to this low level, and without proposing a development plan or roadmap for improvement. It also did not link the outcomes of governance maturity to the outcomes of the educational process, making the academic impact of these outcomes unclear. Furthermore, the study did not systematically address the role of corporate communication in promoting or curbing maturity, contenting itself with a general reference to the need to improve communication between teams, as it failed to integrate the communication dimension as a pivotal element in the success of governance. This limitation prevented its recommendations from extending beyond procedural improvements without a comprehensive vision of how to build a communication environment that supports the adoption and development of governance practices. These gaps allowed this study to be directly linked to the subsequent study by Hadid and Messous (2014), where the two Algerian researchers tried to overcome Mwangi's shortcomings by introducing the conceptual and organizational dimension, especially those related to communication, but addressing this dimension was, in turn, descriptive and not supported by applied measurements

2- Hadid and Messous 2014 :IT Governance in Algerian Universities: Conceptual Framework and Application Requirements²²

The Hadid and Messous study (2014) came in the context of the growing interest within Algerian universities in adopting information technology governance practices in response to global technical

developments, and the need to align these practices with local organizational and cultural specificities. The study was distinguished by being one of the first research that attempted to provide an integrated conceptual framework for IT governance in higher education, using global reference models, especially COBIT and ITIL, but it focused on the theoretical level and did not include a field application to measure maturity levels or test the effectiveness of the proposed framework.

The study aimed to draw a comprehensive map of the components of governance within the university environment, and link them to the strategic objectives of the institution, while emphasizing that the success of governance does not depend only on the technical aspect, but also on the integration of organizational and communication dimensions. The researchers explicitly noted that establishing transparency requires effective communication channels between all levels of the university, not simply disseminating policies on internal platforms, which reflects an awareness of the importance of the communication dimension as an enabling factor for successful governance.

In terms of results, the researchers stressed the importance of developing clear IT governance policies and disseminating them to various actors within the university through multiple communication channels, while calling for the adoption of international frameworks such as COBIT to ensure that practices are aligned with global references. However, these recommendations remained at the level of general guidance and were not translated into an implementation plan or a pilot model that could be field tested.

Critically, the study of Hadid and Messous (2014) represents an important step in introducing the communication dimension into the debate on IT governance in higher education in Algeria, after this dimension was absent in previous studies such as Mwangi (2011), which were limited to the technical measurement of maturity levels. However, the framework proposed in this study remained closer to theoretical characterization than to executive design, as the effectiveness of communication channels or their contribution to raising governance maturity was not tested, and communication elements were not directly linked to COBIT indicators such as Align, Plan and Organize (APO) or Monitor, Evaluate and Assess (MEA).

Compared to subsequent studies, it can be said that this study paves the way for us to analyze the study of Harwikarya et al. (2015) which moved interest in communication from the descriptive level to the establishment

of coordination structures, but did not succeed in fully bridging the application gap. Hence, the added value of Hadid and Messous's study lies in drawing early attention to the importance of the communication dimension in IT governance, while the research gap it left remains represented by the absence of an applied measurement model that integrates institutional communication into the governance matrix as an influential factor in achieving its goals.

3- Harwikarya et al., 2015 : IS Strategic Plan for Higher Education Based on COBIT Assessment: A Case Study²³

The study starts from the premise that the repeated failures of information systems projects in universities are largely due to poor strategic planning, so it presents a strategic information plan for a university (case study) based on the Ward & Peppard framework with COBIT 4.1 guidelines. This positioning shifts the research path from measurement to planning; that is, it practically seeks to fill a gap left by previous maturity measurement studies (such as Mwangi, 2011) that stopped at setting the level without drawing a roadmap for development.

In terms of methodology, the team built on the results of a previous governance assessment using the COBIT 4.1 self-assessment tool and then moved on to formulate the plan via analytical tools such as Critical Success Factors (CSF) and Activity Chain Analysis (Activity Chain Analysis), using the Mc Farlan matrix to build the application portfolio, define the information systems architecture, and then propose an IS/IT action map.

At the planning outcomes level, the study presented three concrete outputs: the first is an application portfolio ranked by impact priority (Mc Farlan Matrix), then a systems architecture that demonstrates the integration of existing, undeveloped, and proposed systems, restructuring IT governance through the creation of a new executive directorate, linking tasks to the RACI Matrix, and distributing responsibilities across the four COBIT domains (PO/AI/DS/ME).

From the perspective of the communication dimension in governance—which is our central axis—the paper does not measure corporate communication as a stand-alone variable, but rather implicitly includes it in governance design through two tools: the assignment of roles and responsibilities (R, A, C, I), which regulates information flows and separates decision-making, advisory, and notification authority, and the establishment of an executive committee (Executive Committee) that provides a clear vertical communication channel between senior

leadership and IT units; all of this aims to reduce “communication confusion” that hinders the alignment of IT with academic priorities. This communication integration is clearly shown in the restructuring and linking section to COBIT. However, the approach remains more structural than communicative-behavioral because it does not test the quality of channels, nor does it measure users' knowledge or communicative behavior during change. The authors themselves acknowledge that “there is no assessment to users' side” and that this is a shortcoming that must be addressed in the future.

This paper closes the gap “from measurement to planning”, but leaves a gap “from planning to implementation and impact measurement” in addition to the behavioral communication gap. That is why works such as Ishlahuddin et al. (2020) came about, to use COBIT 2019 in a small learning environment and bring us closer to implementation

4- Ishlahuddin, Handayani, Hammi & Azzahro (2020) : Analyzing IT Governance Maturity Level using COBIT 2019 Framework: A Case Study of Small Size Higher Education Institute (XYZ-edu)²⁴

After the planning effort, academic research moved to an important stage that complements what previous studies had begun: Mwangi (2011), which measured governance maturity; Hadid and Messous (2014), which drew early attention to the importance of the communication dimension in IT governance; and Harwikarya et al. (2015) which formulated a strategic plan. Ishlahuddin et al.'s (2020) study filled the practical gap by focusing on the small educational institution environment, where challenges increase but resources decrease.

The study by Ishlahuddin et al. (2020) represents an important shift in the research path, as it is the first time that the COBIT 2019 framework has been used to assess IT governance maturity within a small educational institution. In doing so, it seeks to fill the gap left by the study of Harwikarya et al. (2015), where the latter stopped at strategic planning without going through field application or testing the effectiveness of modern governance frameworks. Here in particular, researchers highlight the importance of moving from simply formulating plans for a realistic assessment of maturity level using an updated and more flexible version of COBIT.

In terms of methodology, the researchers relied on a case study of a small higher education institution in Depok, Indonesia. Data were

collected via a combination of questionnaires based on COBIT 2019 processes, interviews with IT and management officials, and analysis of official documents. This multi-tool approach allowed for the generation of an accurate picture of the actual level of maturity, which distinguishes the study from its predecessors that relied more on theoretical analysis or paper planning.

The results showed that the governance maturity level was at level 0 (Incomplete), while the organization aspires to reach level 2 (Managed), meaning that the gap between reality and hope is clear and large. What makes these findings particularly significant is that they reveal the fragility of the governance structure in small educational institutions, where limited resources make it difficult to institutionalize processes, while technological pressures and global standards impose the need to rapidly raise maturity.

From a communication perspective, although the study did not design independent communication indicators, it implied that poor communication between departments was a cause of poor maturity. The absence of formal channels between IT management and academic leadership led to some technical decisions being implemented without institutional consensus, contributing to processes remaining at an «incomplete» level. In this sense, the study highlights that the success of COBIT 2019 is not limited to evaluation tools, but also requires the integration of corporate communication as a prerequisite for achieving incremental improvement.

More importantly, this study identifies several strengths that showed that the use of COBIT 2019, which was the most recent at the time, allowed for a more precise and flexible approach than COBIT 4.1. The study also focused on a small institution of study, a sector that remained marginalized in most studies that focused on large universities. In addition, it combines quantitative and qualitative methods to obtain a balanced evaluation.

5- Hani & Supendi (2023), Evaluating E-Learning Governance Using COBIT 2019 Framework in Higher Education Institutions ²⁵

After focusing on the study of Ishlahuddin et al. (2020) to raise the level of governance maturity in a small educational institution, without directly linking it to academic impact or e-learning, Hani & Supendi's study (2023) expanded this field by introducing a new dimension in

digital governance assessment, represented by the integration of e-learning systems (E-Learning) with corporate governance frameworks, based on the COBIT 2019 framework. The importance of this approach has emerged in light of the major transformations imposed by the Covid-19 pandemic on education patterns, as distance education has become an essential part of universities' strategies, which necessitated the need to ensure that these digital platforms enjoy the same standards of governance and oversight to which the rest of the institutional information systems are subject. From the perspective of media and communication sciences, this transformation has made e-learning platforms a central communication space in which technical, organizational, and pedagogical dimensions intersect.

This study was distinguished by being the first systematic attempt to integrate digital governance assessment with e-learning in a university environment, which adds qualitative value compared to previous studies that focused on the general technical structure. Its use of COBIT 2019 also allowed it to benefit from more flexible and accurate evaluation metrics, as well as provide practical recommendations to improve integration between e-learning and the corporate governance system.

The researchers adopted an evaluation approach that combines quantitative and qualitative tools. Data collection tools included questionnaires based on COBIT 2019 processes, as well as interviews with IT departments and faculty. The measurement process revolved around dimensions such as information security, service continuity, user support, and ensuring the quality of digital content. The results revealed varying levels of maturity across operations, with some areas such as user support and network security recording good levels closer to "managed" while other areas, particularly personal data protection and the quality of digital academic content, remained at the "beginner" level, reflecting the presence of unintegrated initial practices.

From a communication perspective, the importance of the study is demonstrated by the fact that it not only provides a technical assessment, but also shows that communication between IT units, faculty, and students is one of the key factors for successful governance. The researchers noted that the absence of formal and effective communication channels leads to poor adherence to security standards and frequent errors in digital content design. This places institutional communication at the heart of the governance system, but it remains not directly

measurable, as the study did not provide quantitative indicators of the effectiveness of these channels.

Compared to the study by Ishlahuddin et al. (2020), which merely assessed governance maturity in a small organization without linking it to e-learning, Hani & Supendi's study (2023) closed this gap by introducing e-learning within the governance framework. However, it opened a new gap related to the lack of monitoring of the impact of reforms and linking them to clear academic indicators. Here a logical sequence appears in the development of studies: while previous studies focused on maturity and structure, this study began to approach the academic and communication dimensions, but did not complete it quantitatively and systematically.

6- Al-Abdi and Al-Suddi study (2024): Information Technology Governance and its Role in Enhancing Yemeni Universities' Response to Contemporary Digital Transformations ²⁶

In the context of the increasing need for Arab universities, especially Yemeni ones, the study by Al-Soudi and Al-Abdi (2024) adopted information technology governance models capable of meeting the complex challenges of digital transformation in environments suffering from resource constraints and weak infrastructure. This study is considered one of the recent Arab studies that paid clear attention to the communication dimension as a factor influencing the success of governance, while linking it directly to maturity levels according to the COBIT 2019 framework, which makes it advanced compared to some previous studies that were satisfied with the technical dimension.

The researchers relied on a descriptive analytical approach that combined content analysis of official documents and university websites, and conducted qualitative interviews with officials of information technology centers in 23 universities (17 public and 6 private). This represents a significant percentage (33.3%) of the study population of 69 higher education institutions in Yemen. This combination of document analysis and field data allows for the formation of a synthetic picture of the reality of governance, highlighting the disparity between public universities that suffer from weak funding, and private universities that have shown greater ability to adapt digitally.

The results showed that Yemeni universities are still in their early stages of implementing digital governance. It has been demonstrated that there is the lack of clear written policies, a continuing weakness in information security training programs, and a deficiency in the periodic evaluation of information systems' performance. The results also revealed a

discrepancy in the speed of response to digital transformation between public and private universities, as the latter appeared more capable of adopting alternative technological solutions. But in both cases, the lack of institutional cooperation with government agencies and the private sector remained an obstacle to building integrated governance.

In terms of recommendations, the study stressed the need to establish a national center for information technology governance in higher education, develop a national strategy in line with international standards, and provide continuous training programs to raise the efficiency of academic and administrative staff. However, these recommendations, despite their importance, were general and did not serve as a standard model capable of testing or implementation, which leaves an existing application gap.

At the critical level, the study remains closer to describing reality than to providing implementation solutions. For example, the communication dimension, which began to appear clearly in Hani and Subandi's study (2023) as a factor influencing the success of digital governance for e-learning, did not receive the same depth in this study, but was limited to general references to the need for coordination and cooperation.

7- Siagian, J., Samosir, M., & Purba, R. (2025). *An Integrated Model for IT Governance Measurement, Strategic Planning, and Implementation in Higher Education Using COBIT 2019*²⁷

The study by Siagian, Samosir, & Purba (2025) is the culmination of a long line of research that has addressed IT governance in higher education institutions. After starting the first literature with the Mwangi study (2011) that focused on measuring governance maturity in African universities, then moving to the stage of strategic planning (Harwikarya et al., 2015), application in small, resource-limited environments (Ishlahuddin et al., 2020), and integrating governance with e-learning (Hani & Supendi, 2023), all the way to addressing challenges in the Arab and Yemeni context (Al-Abdi and Al-Suddi, 2024). This study aims to adopt an integrated model that combines all these stages within a single integrated framework based on COBIT 2019.

The researchers focused on developing a comprehensive model to measure maturity, strategic planning, and practical implementation, testing this model in three Indonesian universities that differ in size, institutional structure, and resources. The methodology was based on mixed methods; quantitative data were collected through questionnaires designed according to COBIT 2019 metrics to measure levels of

governance maturity in the areas of Align, Plan and Organize (APO), Deliver, Service and Support (DSS), and Monitor, Evaluate and Assess (MEA), while qualitative interviews with IT administrators, faculty, and students were used to understand organizational and communication challenges.

The results showed that the three universities experienced a significant improvement in levels of governance maturity during the follow-up period (18 months). Some areas have moved from the "Managed" level to "Optimized," especially concerning information security management and user support. However, improvement has remained slower in other areas, such as educational innovation and academic systems integration. The results also highlighted that the presence of supportive institutional leadership and close cooperation between IT units and academic colleges was a crucial factor in the success of implementation, emphasizing the essential role of the communication dimension in achieving effective governance.

At the critical level, this study can be considered a qualitative shift in the field of IT governance in higher education. It is the first research to practically integrate the stages of evaluation, planning, implementation, and continuous follow-up into an integrated framework, thus closing research gaps that remained in previous studies. It also directly linked governance outcomes to tangible academic indicators.

Thus, the study by Siagian et al. (2025) represents a pivotal shift in the literature, as it seeks to unify what was scattered from previous efforts within an integrated applied framework, while at the same time it opens the way for new research that adopts cross-cultural comparative approaches, to test the suitability of the model in diverse university environments with clear organizational and communication differences.

From a communication perspective, what distinguishes the study by Siagian et al. (2025) is that it not only integrated the three technical stages (measurement, planning, implementation) within the COBIT 2019 framework, but also paid special attention to the role that corporate communication plays in the success of the digital governance cycle. Through qualitative interviews, the researchers noted that effective communication between IT units and academic colleges was a crucial factor in overcoming obstacles, especially in the implementation phase where technical priorities often clash with educational.

The results showed that universities that adopted clear horizontal and vertical communication channels —such as regular meetings between IT

administrators and faculty, along internal platforms for monitoring performance— were better able to achieve a transition from “Managed” to “Optimized” in areas such as user support and information security. In contrast universities where connectivity remained limited or unstructured faced difficulties in integrating educational innovation or integrating digital systems. This shows that communication was not just an auxiliary element, but an organizational condition for raising governance maturity.

B. Discussion

Tracing the time course of the literature on IT governance in higher education shows that interest began from a purely technical angle, before gradually developing into an organizational and strategic dimension, leading to an initial integration of the communication dimension. Mwangi's study (2011) represented the starting point, as it focused on measuring governance maturity at Kenya Methodist University through the COBIT framework, but its findings remained limited to describing the level of maturity without linking it to educational or research outcomes. This deficiency makes it a foundational study from a technical standpoint, but it is limited from the perspective of media and communication sciences because it has not studied how communication channels between actors can influence improved maturity or explain poor results.

Hadid and Messous's study (2014) expanded the horizon by moving from measurement to an attempt to establish a conceptual framework linking governance to the strategic objectives of Algerian universities. Although this study was not applied in the field, it added qualitative value by highlighting the importance of transparency and effective communication channels between different administrative levels as a basic condition for the success of governance. However, its treatment of communication remained general and did not turn into measurement indicators, which meant it provided theoretical awareness without practical tools to measure the impact of communication.

Harwikarya et al.'s (2015) study sought to address this gap by moving to strategic planning, adopting COBIT 4.1 to formulate integrated information plans that link technology investments with educational objectives. The study highlighted that the lack of coordination and communication between IT management and academic departments was a major obstacle. This explicit recognition of the role of communication represents a step forward compared to the above, but it remained

descriptive and did not turn into a measurement or time follow-up framework.

With the study by Ishlahuddin et al. (2020), the research moved to a small university setting, allowing challenges to be examined in resource-limited contexts. The results showed that the maturity level was very low, and suggested recommendations for improving it using COBIT 2019. However, this study did not examine how institutional communication can be employed to support the adoption of these recommendations, reflecting the continued absence of a communication dimension as a factor influencing the advancement of governance maturity.

The most notable shift emerged with the Hani & Supendi (2023) study linking digital governance to e-learning. This study showed that the success or failure of e-learning platforms depends not only on technical criteria such as information security and service continuity, but is also related to the extent to which users interact with the platforms. Here the communication dimension emerges in the form of supporting and training users and disseminating digital policies in clear ways.

Al-Abdi and Al-Suddi's study (2024) filled an important geographical gap by transferring the discussion to the Arab context, as it focused on Yemeni universities. This study highlighted that the absence of clear communication channels between universities and government agencies or between internal departments constitutes an obstacle to universities' response to digital transformation. Although its recommendations emphasized the need to strengthen institutional communication, they remained at the level of general guidance and did not turn into an implementation plan or measurement model, which kept the gap in place.

The most recent study by Siagian et al. (2025) provided a paradigm shift by building an integrative model that incorporates measurement, planning, implementation, and follow-up using COBIT 2019. Most importantly, it clearly demonstrated that the success of this model was only achieved through effective communication channels between IT units and academic colleges. The results demonstrated that universities that adopted clear and regular communication channels were better able to move to progress levels of governance maturity, and even linked these levels to tangible academic indicators such as student satisfaction and the quality of digital content. Here, communication transforms from a

mere supportive organizational element into a critical condition that determines the success of governance.

Through this sequence, it can be said that the literature has shown a clear development in dealing with the communicative dimension: from its almost complete absence in the initial studies, to the theoretical recognition of its importance (hadid and messous, Harwikarya), to its emergence in the form of support for users (Hani & Supendi), and then its arrival at the level of partial measurement as an influential factor in raising maturity (Siagian).

C. Recommendations

Based on the analysis and discussion of previous studies, a set of practical recommendations can be drawn that reflects the importance of integrating corporate communication into COBIT IT governance within higher education institutions. First, governance must not be reduced to its technical or organizational dimensions alone, but must be built on a comprehensive communication strategy that ensures transparency and coordination among all actors. A study by Siagian et al. (2025) showed that universities' success in moving from intermediate to advanced maturity levels was clearly associated with effective communication channels, underscoring the need to integrate communication as a normative component in assessment tools such as COBIT.

Second, quantitative and qualitative indicators should be developed to measure the effectiveness of corporate communication within governance processes. These indicators include the speed of response to technical problems, clarity of policy transfer, and stakeholder participation in workshops and training programs. This approach would transform communication from a descriptive element into a measurable and traceable tool, allowing universities to compare their performance internally and across other institutions.

Third, this study recommends the importance of integrating communication into all stages of the governance cycle —evaluation, planning, implementation, follow-up— and not just at a specific stage. The absence of communication in the evaluation phase, as shown in the Mwangi study (2011), makes the results isolated from the actors, while poor communication in the planning phase, as shown by Harwikarya et al. (2015), leads to a gap between technical vision and educational needs. Systematically integrating communication ensures consistency of the entire process.

Finally, it is recommended that media and communication experts be involved in formulating IT governance policies, so that this area does not remain the preserve of technology and management experts. Integrating a multidisciplinary communication approach will ensure that governance is a tool for improving education and research outcomes, rather than simply a technical mechanism for managing digital resources.

Conclusion

This critical literature review concluded that the research trajectory in IT governance within higher education institutions has gradually evolved over fifteen years, moving from a focus on maturity measurement (Mwangi, 2011) to the development of conceptual frameworks (hadid and messous, 2014), then to strategic planning (Harwikarya et al., 2015), and its application in resource-limited settings (Ishlahuddin et al., 2020), integrating it with e-learning (Hani & Supendi, 2023), leading to testing it in the Arab context (Al-Suddi and Al-Abdi, 2024), and ending with the integrative model presented by Siagian et al. (2025). This path shows that the development of the literature was not only technical, but gradually moved towards recognizing the role of corporate communication as a prerequisite for the success of digital governance.

The results demonstrated that lack or weakness of communication leads to gaps in planning, implementation, and evaluation, as shown in most early studies. While recent literature has shown that effective communication —through formal and transparent channels— is a determining factor in raising governance maturity and linking it to tangible academic outcomes such as content quality, student satisfaction, and efficient institutional performance. However, research gaps remain, particularly the absence of longitudinal studies that monitor the impact of communication over time, and the scarcity of cross-cultural comparisons that test the generalizability of these findings in different academic settings.

Thus, this study confirms that communication is not just a supportive organizational element, but rather an invisible infrastructure for successful governance according to COBIT. This conclusion opens the way for more integrated future research between the disciplines of media, communication, and information systems management, enabling the development of governance frameworks capable of responding effectively to the rapid digital transformations facing universities globally.

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