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# Optimizing Education Management Information Systems (EMIS) Implementation in Religious Education Institutions: Nvivo 12 Plus Analysis

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**Keyword:**
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**Abstract:** This research aims to analyze the implementation of the Education Management Information System (EMIS) in Religious Education Institutions of Sidenreng Rappang Regency. The research method used is qualitative with a descriptive approach. Research data was obtained through observation, interviews, and documentation. Data analysis techniques, including data reduction, presentation, and conclusion drawing, were carried out interactively. Data triangulation was used to ensure the validity of the findings. The data management process was carried out using Nvivo 12 Plus software. The results showed that the implementation of EMIS in religious education institutions in the Office of the Ministry of Religious Affairs of Sidenreng Rappang Regency. The findings show that in the communication aspect, there are obstacles in the dimension of message clarity that need to be optimized, causing uncertainty in implementation. In terms of resources, there are shortcomings in equipment and budgets that still need to support the smooth running of EMIS fully. However, aspects of disposition and government structure bureaucracy were running well, showing positive commitment and involvement from relevant parties. This research highlights the challenges and potentials of EMIS implementation within religious education institutions. Although there were constraints in communication and resources, positive dispositions and support from government structures helped to offset these challenges. The implication of the findings is the need to improve communication and optimize resource allocation to improve the effectiveness of EMIS implementation in the future.

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## INTRODUCTION

Over the past few decades, significant research has been dedicated to exploring innovative methodologies for educating individuals about information technology (IT) (Stadelmann et al., 2021; Zhu et al., 2023). This surge in research activity is particularly noteworthy given the ongoing discourse surrounding the perceived shortcomings in crafting curricula that can quickly adapt to the rapidly evolving technological landscape.

Despite these challenges, academics and educators have been dedicated to researching and implementing new strategies in IT education (Ahmad et al., 2020), aiming to equip learners with the skills and knowledge needed to navigate the dynamic world of digital advancement (Ashari et al., 2014; Butt et al., 2020). This research demonstrates a collective commitment to bridging the gap between traditional educational approaches and the ever-changing IT landscape, reflecting a broader aspiration to prepare individuals for the demands of the modern technological age.

Information and communication technology (ICT) has ushered in an educational revolution that transforms "traditional" education into "modern" education, both in terms of learning experience and administration (Bhaskar et al., 2020; Torres-Ruiz & Moreno-Ibarra, 2019). The use of information technology-based management is very important in education management so that decisions can be taken when needed on the basis of more accurate and precise data. In fact, the alignment of demands with management decisions will help education contribute to the realization of the desired vision. Data collection based on technology and information strongly supports the formulation of educational goals.

The rapid development and advancement of technology has made significant changes to the condition of society (Ahmad et al., 2021), both in terms of policy, communication, biocracy, and in existing institutions, including educational institutions Education Management Information System (EMIS) that has been deployed by the Ministry of Religious Affairs is expected to be a solution for improving educational institutions within its scope (Asio et al., 2022). The EMIS is expected to receive, process, and produce appropriate and correct information at any time (Mubarok, 2022)

In the ever-evolving information age, education is one field that is in dire need of a solid information system to ensure the development of trustworthy and up-to-date education. One of the crucial components in ensuring the quality of education is the adoption of an EMIS (Dorasamy et al., 2017). This system plays an important role in integrating and processing data, improving accuracy, and providing better control over the information used by educational institutions, including madrasahs.

EMIS allows educational institutions, especially madrasahs, to manage data more efficiently and effectively. With the ability to process data quickly, EMIS reduces the potential for errors in information processing, resulting in more accurate data. This is particularly important in the context of planning and decision-making, which require a strong and reliable data base (Al-Samarrai., 2013).

The Directorate General of Islamic Education has adopted EMIS as part of a modern approach to collecting and managing Islamic education data. EMIS is not just a data collection system, but also a tool that supports the planning process, project development and overall management of education (Mollah et al., 2021). Thus, EMIS has a strategic role in directing the direction of better Islamic education development.

Technological developments that continue to move forward are also a determining factor in the development of EMIS (Balaskas et al., 2021). The Ministry of Religious Affairs actively seeks to develop EMIS Applications with the latest technology, to ensure a reliable and up-to-date education data collection system. With a sophisticated EMIS, it is expected that educational institutions, including madrasahs, can move more adaptively and responsively to changes in the world of education.

EMIS implementation involves not only technical aspects, but also the expertise of administrators and operators of educational institutions (Ocak & Efe, 2020). Technical guidance (Bimtek) is an important tool in ensuring that stakeholders in each teaching site have a deep understanding of the use of EMIS. Thus, the information generated from EMIS can be optimally utilized for better planning and decision-making.

In the dynamic landscape of educational management, the effective implementation of EMIS stands as a pivotal factor. EMIS is strategically designed to provide valuable, comprehensive, timely, integrated, and accountable information. Its deployment holds the potential to significantly enhance the grasp of EMIS operators. It is evident that a thorough understanding of EMIS application, functions, and purposes is paramount. Equally crucial is the consistent execution of its core principles by EMIS operators within religious education institutions.

At the heart of the educational framework, EMIS serves as the sole official fundamental data-gathering instrument under the purview of the Directorate General of Islamic Education. In this context, the implementation of EMIS within religious educational institutions, such as the Madrasah Kabupaten Sidenreng Rappang, becomes a focal point of interest. This study aims to delve into the nuances of EMIS implementation in these institutions under the aegis of the Ministry of Religious Affairs, specifically within the jurisdiction of Kabupaten Sidenreng Rappang.

The nature of policy implementation has evolved into a cross-organizational endeavor encompassing individuals, groups, and entities (Muliani & Amir, 2020). For the Madrasahs under the purview of the Ministry of Religious Affairs in Kabupaten Sidenreng Rappang, the implementation of EMIS holds exceptional significance as a means of effectively managing crucial madrasah data. Edward III identified four variables that distinctly gauge the success of policy execution: communication, resources, disposition, and bureaucratic structure.

In light of this, the urgency and objectives of this research endeavor revolve around exploring the intricate landscape of EMIS implementation in religious education institutions. Through a comprehensive Nvivo 12 Plus analysis, the study seeks to uncover not only the challenges and opportunities within the process but also to identify strategies for optimizing EMIS utilization. By comprehending the dynamics and determinants of successful EMIS implementation, the research endeavors to contribute valuable insights to the enhancement of data management within religious education institutions, ultimately aligning with the broader objectives of educational advancement.

## RESEARCH METHOD

The appropriate research methodology for this category is descriptive-qualitative research. Descriptive research methods aim to provide a comprehensive picture of a phenomenon, while qualitative approaches explore the in-depth and contextual aspects of the phenomenon (Drisko, 2020; Jack & Phoenix, 2022). In the context of this research, the descriptive-qualitative method was adopted to address the existing problems in EMIS implementation in religious education institutions of Sidenreng Rappang Regency under the Ministry of Religious Affairs.

The main objective of this descriptive-qualitative research method is to examine in depth how the Ministry of Religious Affairs' EMIS has been implemented in religious education institutions of Sidenreng Rappang Regency. In this regard, the research focuses not only on data collection, but also on an in-depth understanding of how EMIS works, how stakeholders are involved, and how the implementation process takes place.

The data collection techniques used included interviews, observation, and documentation (Jack & Phoenix, 2022). Interviews allow researchers to obtain views and explanations directly from individuals involved in EMIS implementation. Observation allows direct observation of the processes and interactions that occur in the implementation context. Documentation involves collecting data from documents and written sources related to EMIS implementation.

The data analysis process in this methodology involves several steps (Sagena et al., 2023). Data reduction involves simplifying the data that has been collected so that it can be processed further. Data presentation involves organizing the data in a clear and comprehensive form. Verification and confirmation of conclusions are carried out to ensure the accuracy and validity of the research findings.

## RESULTS AND DISCUSSION

The EMIS program at religious education institutions is one of the missions of the Educational Institution of the Ministry of Religious Affairs of Sidenreng Rappang Regency. The following is the data from the Ministry of Religious Affairs of Sidenreng Rappang Regency for 2021/2022.

**Table 1.** Ministry of Religious Affairs of Sidenreng Rappang Regency.

| Levels of Religious Education Institutions | Total |
|---|---|
| Madrasah Ibtidaiyah | 14 |
| Madrasah Tsanawiyah | 26 |
| Madrasah Aliyah | 18 |

**Source:** EMIS Statistical Data 2021/2022

The EMIS has been initiated with the primary objective of providing practical and up-to-date support to the Directorate of Islamic Education and various related interest groups in delivering information and data related to Islamic education. In an era where decision-making is increasingly complex, especially in planning Islamic education programs, the Director General of the Ministry of Religious Affairs needs a tool to assist in the process. Through this system, the implementation of Islamic education policies becomes more structured and targeted, involving various contributing parties, including relevant individuals, groups, and organizations (Samiri et al., 2022).

In this context, Madrasahs of the Ministry of Religious Affairs of Sidenreng Rappang Regency play a significant role. Implementing an EMIS is crucial in managing various data related to madrasah operations. Understanding Edward III's view (Nurdin, 2017), four key variables precisely determine the level of success of policy implementation:

1. Effective communication is essential in coordinating various steps and goals in the Islamic education system.
2. Allocating appropriate resources supports the smooth implementation of policies and related programs.
3. The disposition or willingness of all parties involved to participate is a determining factor in achieving common goals.
4. An efficient government structure and bureaucratic system make all steps well-coordinated (Bureaucracy).

By combining these principles, EMIS implementation is not just a technological tool but also a foundation that strengthens the Islamic education system. Through better cooperation and communication between all stakeholders, madrasahs can carry out their duties more effectively and efficiently, with the support of adequate resources and alignment of expected goals. In a broader context, the system helps create an environment where decision-making is based on accurate and up-to-date data, thereby improving the overall quality of Islamic education.

***Communication***

Communication is conveying ideas, news, skills, rules, and other information through specific means to those entitled to receive it. In successful communication, three primary dimensions can play a crucial role (Trevena et al., 2013).

The transmission dimension is an essential step in ensuring that information of a public nature can be conveyed appropriately to the actual implementers of the data. In the context of EMIS implementation, this process occurs through the online EMIS application. The various menus presented in the application aim to provide convenience for operators in carrying out their duties related to EMIS. The research revealed that EMIS operators refer to the guidelines and instructions provided by the center, such as the guidelines/instructions for using EMIS, and also various tutorials that can be accessed through platforms such as YouTube and Google.

The dimension of clarity is an essential factor in reducing errors and ambiguities in EMIS data management. Training and education for EMIS operators in religious education institutions are essential to ensure they correctly understand EMIS usage and avoid mistakes. However, it was noted that in some cases, religious education institutions still need to implement training and education for EMIS operators effectively. The availability of education and training is considered a fundamental need in improving operators' understanding of EMIS.

The consistency dimension is also an essential aspect of the EMIS implementation process. Consistency is needed so that the policies formulated do not experience differences of opinion or conflicting interpretations. EMIS implementation is carried out through a series of well-organized stages. These stages involve various parties, including target groups and related organizations. The main objective is that policy implementation runs in line and does not branch out.

Success in communication and implementation of an education information system such as EMIS relies heavily on effective transmission, information delivery and training clarity, and consistency in managing the policy and its performance. By maintaining focus on these dimensions, the Directorate of Islamic Education and related institutions can ensure that Islamic education in the region runs more efficiently and effectively.

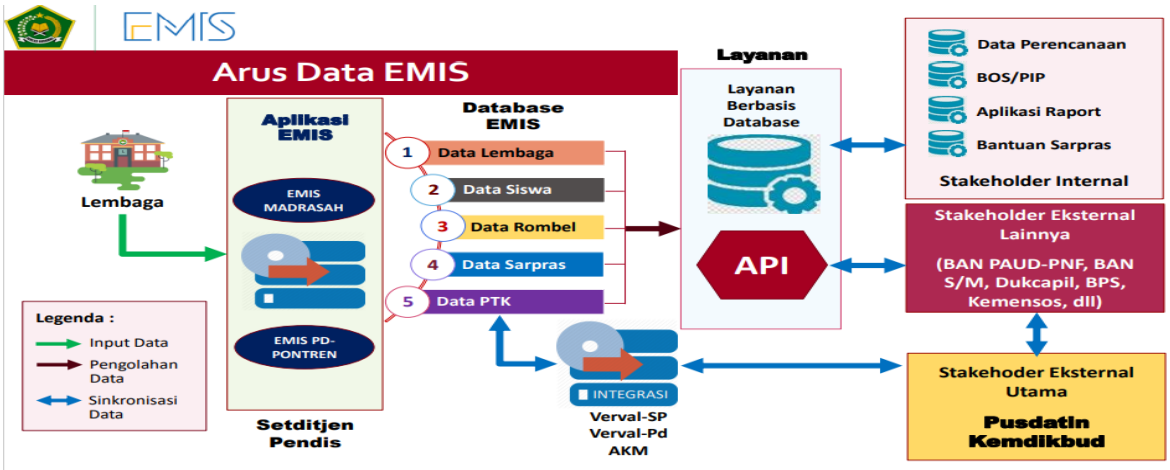


**Figure 1.** Stages of EMIS Implementation

EMIS implementation has several aspects that facilitate access and dissemination of critical information to implementers. The center has established EMIS flow stages that guide the work process and steps to be followed. This helps EMIS operators understand the steps required to manage data and information related to Islamic education.

In addition, information dissemination has also become more efficient through various communication channels. Circular letters from the center became a formal means of conveying the latest information and policies to all parties involved in EMIS implementation. Furthermore, WhatsApp and Telegram groups became faster and more flexible tools for disseminating the latest news to operators. These platforms allow operators to always get the newest information in near real-time.

However, in practice, some challenges are still faced in the communication aspect. Although communication tools and channels have been provided, not all communications can be implemented properly and clearly. Some factors may hinder the effectiveness of communication. There may be deficiencies in the delivery of information that could result in incomplete understanding or even misinterpretation. In addition, there can also be obstacles in accessing or understanding the information conveyed.

To address this, it may be necessary to evaluate how communication is implemented and whether there are better ways to ensure information is conveyed clearly and effectively (Ratna, 2019). Identifying factors that hinder communication and finding solutions to overcome these barriers are essential steps in improving the efficiency and effectiveness of EMIS-related communication.

***Resources***

The implementation of EMIS in madrasah depends on technology and is strongly related to the quality of human resources involved. Several benchmarks can be used to measure the quality of human resources in this context as well as research by Mubarok et al. (2020). This concept which identifies that human resources have two main dimensions: physical and non-physical capabilities.

Physical capability refers to a person's physical potential or readiness to perform EMIS-related tasks. This includes technical and practical skills in using the system and software used in data management. On the other hand, non-physical capabilities involve the potential from educational background, experience, and knowledge (Santoso, 2021). The combination of these two dimensions forms the quality of qualified human resources.

Human Resource Management (HRM) also plays an essential role in measuring and improving the quality of human resources. Planning, controlling, organizing, and implementing a comprehensive framework for managing human resources effectively (Buller & McEvoy, 2012). In the context of the Sidenreng Rappang Regency Office of the Ministry of Religious Affairs, where there is only one EMIS implementer per madrasah, the quality of the individuals involved determines the success of EMIS implementation.

In this case, increasing one's education level and degree positively impacts the knowledge and skills acquired. The decision to recruit EMIS operators with at least a bachelor's degree is an essential step in ensuring adequate expertise for the task. Furthermore, the knowledge and readiness of the operators in carrying out their duties, reflected in the readiness to carry out the mandate and work on EMIS data with responsibility, is an indicator of personal quality and professionalism that supports the successful implementation of EMIS.

Thus, through the fulfillment of education standards, knowledge, skills, as well as an attitude of responsibility, the Sidenreng Rappang Regency Office of the Ministry of Religious Affairs can ensure the quality of human resources that can support the successful and efficient implementation of the EMIS system in madrasah.

In addition, finance is a resource to help manage religious education effectively and efficiently. This needs to be prioritized because, with equipment such as Hardware (Computer/Laptop, Print, Network), Software that must be adequate, EMIS management can be carried out. Some informant information that the budget for Emis is outside of

Madrasahs, but Madrasahs try to provide these tools in various ways, such as borrowing or using the Operator's devices.

Equipment Resources in Analyzing the Implementation of the EMIS, several essential components of information systems apart from human resources are equipment resources, namely Hardware. The physical devices that run computer systems are known as Hardware. The use of computers is one of the supporting devices for EMIS implementation. The study used computer devices to process all forms of EMIS. This shows that until now, several madrasas in religious education institutions still need devices such as computers/laptops, even though the procurement of this Hardware is significant in managing EMIS data online; if only using a cellphone, then some menus cannot be displayed. Therefore, it is essential to pay attention to the policy factors in each madrasa to support the implementation of EMIS.

The management information system known as EMIS software is used to manage all educational data, including students, teachers, classrooms, institutional information, facilities, and infrastructure. In the field of Software, it can be explained that the use of the EMIS application is quite good; the author concludes that in accessing the EMIS application using a username and password so that only EMIS operators can open and work on the data, this can anticipate crimes that might occur in madrasas. Likewise, the software application is quite adequate in madrasas. Another factor is data.

The study revealed that the data of religious education institutions processed through EMIS is quite successful, with each organizer of educational institutions (education units/data collection objects) integrating all the acquisition of madrasah data, educator data, and student data/student data in the EMIS Online database application, the last is the supporting network, in terms of EMIS implementation, EMIS operators need to use the internet network to access the EMIS web, process, send and deposit data collection results, these three processes require good internet connection support. From the research findings, several madrasas have not provided internet connections such as Wi-Fi as the primary support for EMIS data management; if religious education institutions cannot use/have Wi-Fi, the institution must provide a modem/smartphone internet quota that can be used to connect the laptop network (hotspot) to the EMIS web.

The discipline required to implement EMIS primarily reflects the extent to which EMIS operators are committed to the work they are entrusted with. *Work discipline* is defined as doing all one's work correctly and consistently, following instructions from the madrasah head, and obeying all institutional regulations (Haenilah et al., 2022). The authority/responsibility of each EMIS operator for the tasks assigned to them is primarily reflected in the implementation of EMIS, mentioning power to ensure obedience and authority as the truth to issue orders. The authority is given by the Head of the Madrasah to the Operator to carry out their obligations in managing EMIS data. Some madrasahs are still found negligent of the responsibilities given; this is found during the final stage of EMIS data confirmation on the central web; some madrasahs still need to confirm the final stage of EMIS.

***Disposition***

Disposition refers to the attitudes, desires, needs, and tendencies of individuals or groups in responding to and implementing specific policies or tasks. In the context of public policy or policy implementation, disposition refers to the level of commitment and intention of policy actors to seriously address and achieve the policy objectives. George C. Edwards III (1980) identifies disposition as an essential indicator of how policies are implemented (Aminu et al., 2012).

In the context of EMIS management, disposition is essential. The attitude of EMIS operators plays a vital role in the success of EMIS management. High enthusiasm and commitment from EMIS operators contribute to the quality and accuracy of the data produced. This attitude encourages them to try harder to overcome obstacles or errors that may arise during the EMIS management process.

About 85% of the factors influencing achievement can be attributed to individual attitudes. Therefore, a positive attitude and strong commitment from EMIS operators will affect the final results of EMIS implementation.

The success of EMIS implementation depends on the extent to which EMIS operators have a supportive disposition. If they have an enthusiastic attitude, are responsive to change, and are committed to achieving EMIS management goals, the likelihood of successful and effective implementation will increase. Therefore, it is essential for religious education institutions and related parties to ensure that the disposition of EMIS operators is considered, supported, and managed appropriately to support the optimal achievement of EMIS management objectives.

Thus, EMIS implementation is highly dependent on adequate network infrastructure and the availability of sufficient internet quota. Easy internet access is essential to access and use the EMIS application online. In this case, the information provided by informants shows that the leaders and related parties have understood the importance of an adequate network and internet quota for EMIS.

The alignment and synergy between EMIS operators and madrasah principals is the key to success in EMIS implementation. When there is a strong understanding and support from madrasah leaders for the role of EMIS operators, EMIS implementation is smoother and more effective. Good cooperation between the operator and the madrasah head allows for a better understanding of the goals of EMIS and how their roles can support each other in achieving these goals.

Regarding disposition or attitude, if the disposition indicators are well met, this indicates that operators and related parties already have a positive attitude, commitment, and enthusiasm in carrying out EMIS-related tasks. A positive attitude and the availability of support from all parties help maintain the enthusiasm and motivation of EMIS operators in managing data and carrying out EMIS-related tasks properly.

The information provided illustrates a positive picture of EMIS preparation and implementation in religious education institutions. Support for network infrastructure, understanding the role of operators, synergy with leaders, and a positive attitude are essential factors that will contribute to the success of EMIS management. By maintaining these factors, EMIS implementation in religious education institutions can run smoothly and produce optimal benefits.

***Bureaucratic Structure***

Bureaucratic structure in the context of EMIS implementation has two essential aspects: Standard Operating Procedures (SOPs) and fragmentation or dispersal of responsibilities, and the importance of these two aspects in policy management (Ocak & Efe, 2020).

In addition, the definition of organizational structure, is the process of determining the formal division, arrangement, and coordination of labor. In EMIS implementation, the organizational structure and SOPs become the basis that regulates how EMIS implementation is carried out in religious education institutions in Sidenreng Rappang Regency.

The SOP has a crucial function as a guide in implementing EMIS. This SOP is a reference for all parties involved in managing data and carrying out tasks related to EMIS.

With the existence of SOPs, EMIS implementation can be more structured and coordinated, reducing the potential for confusion or errors in the process. Information from informants shows that madrasahs already have SOPs that guide the implementation of EMIS, which means that the steps to be followed have been clearly defined.

Some of the regulations that support the SOPs in EMIS management in religious education institutions in Sidenreng Rappang Regency are Minister of Religious Affairs Regulation No. 42/2016 on the Organization and Work Procedures of the Ministry of Religious Affairs, Minister of Religious Affairs Decree No. 440/2018 on Data and Information Management at the Ministry of Religious Affairs, and Decree of the Director General of Islamic Education No. 5974/2019 on Data Management and Information Systems for Islamic Education. These documents form the formal basis for EMIS management and guide responsibilities and coordination in EMIS implementation.

The responsibility given to all Madrasahs within the Ministry of Religious Affairs shows the importance of coordination in EMIS management. This policy requires cooperation between different levels and institutions to ensure that EMIS implementation is effective and efficient. In conclusion, EMIS management is not only about data collection but also involves various stages of evaluation and cooperation from various levels within the established organizational structure and SOPs.

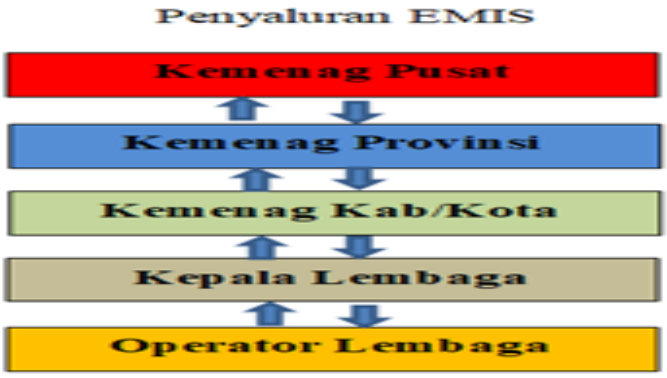


**Figure 2.** Emis Gateway Web

In policy implementation, primarily related to the Education Management Information System (EMIS), the research results obtained from observations and analysis using Nvivo12 provide a valuable picture. In the presentation of the results of this research, the four indicators of successful policy implementation, according to Edwards III, are the main focus: communication, resources, disposition, and bureaucratic structure.

Communication is an essential foundation for successful policy implementation. The presentation of the research results illustrates the extent to which communication has been effectively established among various related parties in the context of EMIS. The graph shows that the flow of information, instructions, and guidance has taken place, ensuring that each entity involved understands its purpose and duties. The effectiveness of this communication is essential in avoiding miscommunication and misunderstanding that could hinder implementation.

Resources, which include hardware, software, and financial support, form the basis of EMIS operations. From the graph presented, it will be seen how resources have been allocated and utilized to support EMIS implementation. The presentation of the research

results will explain whether the resources have been adequate or whether there are deficiencies that affect system performance.

Disposition, which refers to individual attitudes and commitment to policy implementation, is also an important focal point. The presentation of the research results will illustrate the extent to which the individuals involved, such as EMIS operators and madrasah heads, have shown enthusiasm and commitment in carrying out EMIS-related tasks.

The bureaucratic structure, which includes the organization and coordination of the workforce, will also be a vital part of the presentation of the research results. The graph will provide an overview of how responsibilities and coordination have been arranged in the organizational structure of religious education institutions, thus illustrating the extent to which policy implementation has been coordinated and integrated.

The following is a presentation of the research results on four indicators of successful policy implementation according to Edward III related to the Implementation of the Education Management Information System (EMIS). The four indicators are communication, resources, disposition, and bureaucratic structure. For more details, see the following graph:

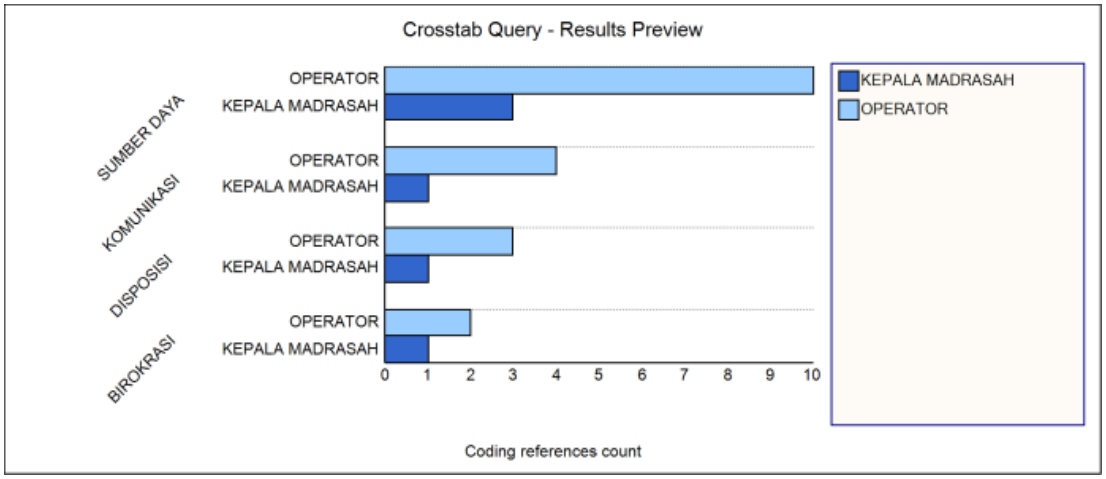


**Figure 3.** Data Management using Nvivo 12 Plus

Figure 3 provides a fascinating view of comparing the indicators of successful EMIS implementation in Madrasahs of Sidenreng Rappang Regency. This comparison shows that each indicator has a different role and contribution to the overall EMIS implementation process.

First of all, the Resources indicator significantly compares operators and madrasah heads. This illustrates that operators have more substantial access to and mastery of resources in EMIS management, which may include technical understanding and access to necessary hardware and software.

The Communication indicator also shows a clear difference between operators and madrasah heads. This may indicate that operators are more active and effective in communicating the communication required for EMIS implementation, such as coordinating information and ensuring that all parties understand the latest changes and instructions.

Disposition or attitude, as the third indicator, also compares the difference in commitment and enthusiasm between operators and madrasah heads. Operators achieved 3 points, while madrasah heads only achieved 1 point. This can be interpreted that operators are more eager and engaged in EMIS-related tasks, while madrasah heads may need more encouragement to be more actively involved.

Finally, the Bureaucracy indicator shows a slightly different comparison. Although operators still get higher points (point 2) than madrasah principals, who get point 1, the difference is more complex than in the previous indicators. This may indicate that in terms of bureaucratic structure, both parties are still involved in coordinating and organizing tasks with a more balanced level of involvement.

An in-depth observation of the discussions found in the research shows clearly that EMIS operators have a very central role in the implementation of the EMIS. The active involvement of these operators triggered a more in-depth examination of the Resource, Communication, Disposition, and Bureaucracy indicators, all of which play an essential role in the smooth implementation of EMIS. The emphasis on these indicators reflects the reality that operators are the main actors in carrying out operational and technical tasks related to EMIS, from collecting and entering data to ensuring the system runs smoothly.

In this context, the comparison reflecting the dominance of the Resources indicator highlights the urgency of attention to the factors supporting the implementation of EMIS. Human resources, hardware, software, support networks, data, budget, and authority are all vital elements that must be managed properly. For example, attention to the quality of human resources in managing and analyzing data and the readiness of technological infrastructure, such as hardware and software, are crucial factors that will affect the success rate of EMIS.

In addition, studies vary in indicators, frameworks, and grand theories used, indicating the complexity and number of factors that can influence EMIS implementation. However, despite the differences, a strong point of convergence remains, focusing on EMIS as the center of most issues. This underscores how vital education management information systems are in addressing challenges and managing the diverse aspects of education.

## CONCLUSION

Through the analysis conducted using Nvivo 12 Plus, this research can provide in-depth conclusions regarding the implementation of EMIS in Madrasahs of Sidenreng Rappang Regency. The results of this study show that the goal of collecting specific and measurable institutional data through EMIS is the main focus, with efforts to optimize four essential variables: communication, resources, disposition, and government structure bureaucracy.

In the context of communication, the clarity dimension is the main focus. However, the results indicate that the clarity dimension in communication still needs to be improved. This suggests that EMIS-related messages may have been conveyed to only

some relevant parties, which may cause uncertainty and ambiguity in policy implementation.

Resource indicators, particularly equipment and budget, also illustrate the challenges in optimizing EMIS implementation. The results show that the existing equipment still needs to be optimal in supporting EMIS-related tasks, and this could be related to hardware and software factors that may need to be updated or upgraded. In addition, the available budget may need to be more adequate to meet all the needs of running EMIS.

However, there are positive notes in disposition and government structure bureaucracy. The dispositions or attitudes of the parties involved and the supporting bureaucratic structures are working well. This indicates that the actors, including operators and madrasah heads, are committed and enthusiastic in carrying out EMIS-related tasks. In addition, coordination and cooperation within the bureaucratic structure have supported smooth implementation.

The conclusion of this study reflects the complexity of EMIS implementation in Madrasahs in the Sidenreng Rappang Regency. Despite challenges in communication and resources, exemplary enthusiasm and commitment in disposition and adequate support from government structures have brought the implementation towards achieving specific and measurable institutional data collection objectives. The results of this study underscore efforts to maximize the effectiveness and efficiency of EMIS implementation in madrasahs as part of broader efforts to develop religious education in Sidenreng Rappang Regency.

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