



Analysis of Human Resource Development in Optimizing the Use of the Goods in and Out Information System at the Office of the Regional Research and Innovation Agency of Central Sulawesi Province

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ABSTRACT

This research aims to analyse human resource development (HRD) in optimising the use of the Goods In and Out Information System (SIKMB) at the Office of the Regional Research and Innovation Agency of Central Sulawesi Province. This study employed a qualitative approach, utilizing interview methods with five informants who are employees at the institution. The results indicate that human resource development at the Regional Research and Innovation Agency of Central Sulawesi continues to face several key challenges, including a lack of in-depth understanding of standard operating procedures (SOPs) and limited technical training on the use of the information system. Although the SIKMB system has been implemented, many employees have not been able to maximise the use of the system's features. Additionally, issues related to outdated technological infrastructure and a lack of coordination between units pose obstacles to efficient goods management. Therefore, this study recommends the need for ongoing training, updating technological infrastructure, improved inter-departmental coordination, and the implementation of motivation and incentive policies to enhance staff performance in using the system. The results of this study are expected to contribute to human resource development and increased operational efficiency at the Office of the Regional Research and Innovation Agency of Central Sulawesi.

INTRODUCTION

In the rapidly evolving digital era, the use of information systems has become a must for organizations to improve their operational efficiency and effectiveness. One of the important aspects in organizational management, especially in the office environment, is the management of the flow in and out of goods. Success in goods management greatly affects the smooth operation of an organization.

The Goods Entry and Exit Information System (SIKMB) is here as a solution to optimize this process. SIKMB is designed to manage, track, and analyze the movement of goods within the organization more efficiently and accurately. This system not only speeds up the recording and reporting process, but also provides better visibility into inventory, as well as aids in better strategic decision-making. However, the success of the use of SIKMB is highly dependent on the competence of the Human Resources (HR) who operate it. Without competent human resources, no matter how sophisticated an information system will not be able to be utilized optimally. Therefore, the development of human resource competencies is a key factor in ensuring that the SIKMB system can function optimally.

Human resources play a very crucial role in the management of SIKMB. They serve as system operators, data analysts, system maintainers, and change agents in organizations. In this case, HR serves as a bridge that connects the technology used with the needs and goals of the organization. In addition, human resources must also be involved in decision-making. With the right competencies, they can provide valuable insights for strategic

decision-making in organizations. Decisions that are based on accurate and well-analyzed data will help organizations in planning and managing resources more efficiently. As agents of change, HR plays a crucial role in helping organizations adapt to changing technologies and market needs. They not only operate the system, but also contribute to creating innovation and improving existing processes in the organization. In addition to technical skills, soft skills are also very important in the development of human resource competencies. Communication skills, teamwork, and leadership are some examples of soft skills that can help HR in optimizing the use of SIKMB in organizations.

The development of human resource competencies is also inseparable from challenges. Some of the challenges that are often faced in HR competency development are the lack of resources to provide training, unclarity in determining training objectives, and low motivation levels from some employees to participate in training. In closing, the development of human resource competencies in managing SIKMB is very important in achieving the successful implementation and optimization of the use of the system. With competent human resources, SIKMB can function well, provide significant benefits to the organization, and support more effective decision-making.

The formulation of the problem in this study is based on the background, namely

1. How to develop effective human resources to improve the ability to use the Goods Entry and Exit Information System at the Central Sulawesi Provincial Regional Research and Innovation Agency office?
2. What is the current level of readiness and development of human resources in optimizing the use of the Goods Entry and Exit Information System at the Central Sulawesi Provincial Regional Research and Innovation Agency office?
3. What are the challenges and obstacles in developing human resources to optimize the use of the Goods Entry and Exit Information System at the Central Sulawesi Provincial Regional Research and Innovation Agency office?

RESEARCH METHODS

This study uses a qualitative method with case studies. The object of this research is the managers of the Goods Entry and Exit Information System at the Central Sulawesi Provincial Regional Research and Innovation Agency office. The case study in the research was carried out intensively and in detail on the activities of employees in the management of the Goods Entry and Exit Information System at the office of the Regional Research and Innovation Agency of Central Sulawesi Province. Qualitative research can be classified as inductive research and exploratory in nature, meaning that this research cannot use the norms of a quantitative research based on statistical tools as a handle. Qualitative data has a certain pattern that is spread. Therefore, the format of a qualitative research is not the same as quantitative, so qualitative has a level of difficulty in making a research design.

RESULTS AND DISCUSSION

Development of effective human resources to improve the ability to use the Information System for the Entry and Exit of Goods at the office of the Regional Research and Innovation Agency of Central Sulawesi Province

The development of effective human resources (HR) at the Central Sulawesi Provincial Regional Research and Innovation Agency office plays an important role in improving the ability to use the Goods Entry and Exit Information System (SIKMB). The efficient management of goods through the right information system is highly dependent on the technical competence and procedural understanding of the staff involved in their management. For example, the SIKMB system requires precision in recording data on incoming and outgoing goods, as well as matching between shipping documents and received goods (Informant Hetty, 2025). Therefore, increasing the capacity of human resources in terms of system understanding and technical skills is a top priority in an effort to improve operational efficiency in the office.

One of the key steps in human resource development is the provision of ongoing training. Based on research, well-trained staff tend to better understand how to use information systems optimally and are able to complete their tasks efficiently (Informant Lina Agustin, 2025). Training should not only include the technical use of the system, but also knowledge related to standard operating procedures (SOPs) in goods management. For example, it is important for staff to understand how to record the receipt of goods, conduct physical inspections of the goods received, and update the inventory system accurately and on time (Informan Rahmy, 2025).

The importance of continuous competency-based training is also supported by the need to keep up with the development of technology and software used in the management of goods. In the context of SIKMB, labeling technology such as barcodes or RFID plays an important role in accelerating the process of recording and monitoring goods (Informan Reza, 2025). Therefore, training should include an introduction to these technological tools as well as how to use them in the SIKMB system, which not only improves efficiency but also reduces the risk of human error.

In addition to technical training, it is also important to increase staff understanding of the importance of information systems in supporting smooth operations and decision-making. In-depth knowledge of how SIKMB affects logistics management, inventory management, and goods supervision, is urgently needed. In interviews with related staff, it was revealed that even though the system has been implemented, a lack of in-depth understanding of the benefits of the system leads to a lack of motivation to follow the procedure strictly (Risma Rahmi Interview Guidelines, 2025). Therefore, training should not only be limited to the technical aspect, but also include education on the positive impact of the system on efficiency and resource management.

Human resource development in this context must also involve the implementation of an effective evaluation and monitoring system. Periodic assessments of staff skills, as well as the effectiveness of the training provided, can help to identify areas that need further attention. In addition, this evaluation is also useful to see the extent to which the training that has been provided can be applied in daily work, as well as to ensure that staff follow procedures correctly and consistently.

Another challenge in human resource development is the need to foster a learning culture in the workplace. Staff who are accustomed to self-learning, knowledge sharing, and finding solutions to problems that arise in the use of systems, tend to be more adaptive and creative in utilizing technology. In this case, the Regional Research and Innovation Agency office can consider holding regular discussion sessions, knowledge sharing forums, or project-based training to encourage staff to continue learning and improve their skills. Furthermore, it is important to pay attention to the communication aspect in human resource development. Often, errors in the use of information systems arise due to mismatches in communication between departments involved in the management of goods. For example, if the goods receipt department is unable to clearly communicate the quantity and condition of goods received, this can lead to inconsistencies in the recording system (Hetty's Interview Guidelines, 2025). Therefore, improved communication between teams is essential to ensure that the data entered in the system is accurate and timely.

One method that can be applied to improve this communication is to implement an integrated and technology-based reporting system. This system allows each department involved in the management of goods to share information in real-time, which will make it easier to monitor the status of goods and improve coordination between units. In this case, HR training should also include how to use reporting and collaboration systems effectively. In addition, the implementation of motivation and incentive policies for staff who have successfully demonstrated improved ability in the use of SIKMB can also be an effective strategy. These incentives can be rewards or recognition for their performance, which not only increases individual motivation but also encourages overall performance improvement in the organization. In interviews, it was found that appreciation for individual success can increase a sense of responsibility and a desire to perform better in their work (Informant Risma Rahmi, 2025).

Effective human resource development must also be accompanied by good change management. When there are updates in a system or procedure, staff need to be trained on those changes in order to adapt quickly. Rapid technological changes often cause staff to be anxious or confused in adjusting, but with the right approach, these changes can be managed more effectively. Therefore, change management in HR development must be an integral part of the HR development strategy itself.

Here is a Word Cloud image showing analysis of the development of effective human resources to improve the ability to use the Information System in and out of goods at the office of the Regional Research and Innovation Agency of Central Sulawesi Province. The words that appear most often reflect key issues such as training, understanding of systems,



Figure 1
Word Cloud Development Analytics

The extent of the current level of readiness and development of human resources in optimizing the use of the Information System for the Entry and Exit of Goods at the Central Sulawesi Provincial Regional Research and Innovation Agency office.

The level of readiness and development of human resources (HR) in optimizing the use of the Goods Entry and Exit Information System (SIKMB) at the Central Sulawesi Provincial Regional Research and Innovation Agency office shows a number of challenges that need to be overcome immediately. Although the

SIKMB system has been implemented, many staff have not fully utilized the system's features optimally. This can be seen from the staff's low understanding of standard operating procedures (SOPs) in the management of goods, such as recording incoming and outgoing goods and matching data between delivery and receipt documents (Informant Hetty, 2025). The training provided is not intensive enough, so the technical ability of staff in using the system is still limited. A study by Alalwan and Abed (2020) shows that continuous training is a key factor for improving the skills of information system users, which in turn will improve operational efficiency.

Ongoing training is essential because it can ensure that staff not only master the use of the system technically, but also understand the benefits of the system in supporting the smooth operation of the office. Nair and Ramu (2019) revealed that the application of labeling technology such as barcodes or RFID can greatly improve efficiency in inventory management and reduce recording errors, which is highly relevant to the development of human resources in such offices. However, the use of this technology is still limited in the office, which indicates the need for further training in the use of assistive technology tools, such as barcodes or RFID, to speed up the recording and tracking of goods. This is in line with the findings in this study, where the optimal use of technology has not been utilized to the fullest by staff.

In addition to the technical aspect, staff's understanding of the importance of information systems in supporting the management of goods also needs to be improved. Lack of motivation and understanding of the positive impact of using the system on operational efficiency is the main obstacle in optimizing SIKMB. Zulkifli et al. (2020) explain that the public sector often faces obstacles in adopting new information systems, such as a lack of technical skills and procedural understanding, which impacts the overall performance of organizations. Therefore, training should not only focus on technical skills but also on the importance of such systems in simplifying and improving the process of managing goods.

Prasetyo and Wijaya (2019) stated that a better user experience with information technology will be directly proportional to higher system performance. By improving the user experience through training and an in-depth understanding of the benefits of SIKMB, it is hoped that staff can make better use of the system. More effective human resource development requires a holistic approach that includes increased knowledge of technologies and procedures, as well as better data management.

Setiawan and Suryadi (2020) also emphasized the importance of periodic evaluations of the use of the system to ensure that each staff follows procedures correctly and consistently, as well as that the system functions as expected. In addition, effective change management is also needed to minimize resistance to the adoption of new technologies. Aryanto and Hidayati (2020) revealed that good change management can help increase the readiness of human resources in facing new systems and minimize obstacles in its use. Therefore, human resource development at the Central Sulawesi Regional Research and Innovation Agency needs to include training on change management so that staff can easily adapt to the changes that occur in the system.

Leadership also has an important role in increasing the readiness of human resources to use information systems optimally. Jaya and Saputra (2021) show that support from organizational leaders is very important to encourage staff to be more enthusiastic and motivated in using technology. With the full support of the leadership, staff will feel more encouraged to take part in the training and implement the system in the right way. In addition, regular evaluation and measurement of system performance will help identify obstacles faced by staff in optimizing SIKMB, as well as provide appropriate solutions to improve the use of the system.

Wibowo and Mahardika (2019) also added that good technology integration in organizations can improve operational efficiency and decision-making. In this case, integrating SIKMB with other systems in the office will be very helpful in speeding up the goods management process and improving data accuracy. Therefore, human resource development must also include training in integrating various technologies and information systems to maximize the use of SIKMB in goods management. Overall, the level of readiness and human resource development at the Central Sulawesi Provincial Regional Research and Innovation Agency office in optimizing the use of SIKMB still requires greater attention. Development that focuses on more structured technical training, understanding the benefits of the system, and the use of technology that supports the management of goods will be very helpful in improving the operational performance of the office. In addition, periodic evaluations, effective change management, and strong leadership support are also required to ensure that SIKMB can be used optimally in improving the efficiency and accuracy of goods management in the office.

The following is a Word Cloud image that shows the analysis of interviews related to the extent of the current level of readiness and development of human resources in optimizing the use of the Goods Entry and Exit Information System at the Central Sulawesi Provincial Regional Research and Innovation Agency office. The words that come up most often reflect key issues such as training, system understanding, inventory management, and hardware and software-related challenges.



Figure 2
Word Cloud Analysis of Readiness Level and
Human Resource Development

Challenges and obstacles in developing human resources to optimize the use of the Goods Entry and Exit Information System at the Central Sulawesi Provincial Regional Research and Innovation Agency office.

Based on the results of the analysis of the implementation of the Goods Entry and Exit Information System at the Central Sulawesi Provincial Regional Research and Innovation Agency office, there are a number of challenges and obstacles in developing human resources to optimize the use of the system. One of the main obstacles is the lack of in-depth understanding and adequate technical training regarding the use of newly implemented information systems. Most of the employees involved in the goods management process only have a basic understanding of the system and are not equipped with the technical skills needed to operate the system efficiently. This causes errors in data input, difficulties in the process of verifying data suitability, and delays in the process of issuing or receiving goods (Informant Hetty, 2025). In addition, there are obstacles related to the integration of information systems with pre-existing work procedures. Some employees feel that the use of the new system disrupts the workflows that are already known and implemented, especially when it comes to document organization and labeling of goods. The system implemented is not fully in accordance with manual habits that have been running for a long time, thus hindering the process of optimizing the use of the system (Informant Lina Agustin, 2025).

Another issue is related to the consistency and accuracy of data in information systems. Human resources often have difficulty in ensuring that the data entered into the system corresponds to the actual physical condition of the goods. This inaccuracy has the potential to reduce the quality of stock management and harm overall office operations (Informant Rahmy, 2025). This obstacle is further exacerbated by the limitations of technology infrastructure in the office which leads to slow data processing processes and dependence on outdated hardware and software (Informan Reza, 2025).

In addition, an equally important challenge is the lack of effective coordination between the parts involved in the process of entering and exiting goods. Standard procedures that have been established in the management of goods are often not followed consistently by all employees involved, due to the lack of a uniform understanding of the responsibilities of each part of the process (Informant Risma Rahmi, 2025).

To overcome these challenges, efforts are needed to increase the capacity of human resources through more systematic continuous training and improved access to information systems. More structured training can ensure that all employees have adequate skills to operate the system correctly. In addition, the update of the hardware and software used is also a strategic step to reduce technical obstacles that hinder smooth operations (Informant Hetty, 2025).

As a further step, the development of a comprehensive training program and the implementation of technology that better supports operational efficiency is key in optimizing the use of information systems in and out of goods. Success in optimizing this system is highly dependent on the readiness and commitment of human resources in facing existing challenges (Informan Reza, 2025).

The following is a Word Cloud image that shows an interview analysis related to the challenges and obstacles in developing human resources to optimize the use of the Goods Entry and Exit Information System at the Central Sulawesi Provincial Regional Research and Innovation Agency office. The words that come up most often reflect key issues such as training, system understanding, inventory management, and hardware and software-related challenges.

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