THE INFLUENCE OF DATA QUALITY ON INFORMATION SYSTEMS MANAGEMENT (MIS) WITH THE ACCURACY OF PHARMACY LOGISTICS PLANNING IN Prof. Dr. H. ALOEI SABOE REGIONAL HOSPITAL

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ABSTRACT

This study aims to analyze the influence of data quality within the Management Information System (MIS) on the accuracy of pharmaceutical logistics planning at Prof. Dr. H. Aloei Saboe Regional Hospital. In the current era of healthcare digitalization, the precision of logistics planning is heavily dependent on the integrity of data generated by integrated systems. The research employed a quantitative approach with an explanatory design, collecting data through questionnaires distributed to respondents across planning, medical support, information technology, and pharmacy departments. Data were analyzed using univariate frequency distribution and bivariate Chi-Square statistical tests. The results indicate that the quality of data within the Hospital Management Information System (SIMRS) is predominantly perceived as good, which directly corresponds to a high level of accuracy in pharmaceutical logistics planning. The statistical analysis revealed a highly significant relationship between MIS data quality and planning accuracy, identifying data precision and real-time updates as the primary determinants of success. Consequently, the study concludes that superior data integrity within the system is essential for minimizing operational risks, such as medication stockouts and budgetary inefficiencies, thereby ensuring the reliability of regional healthcare delivery.

Keywords: *Data Quality, Management Information System, Pharmaceutical Logistics, Planning Accuracy.*

INTRODUCTION

In the era of digitalization and Industrial Revolution 4.0, technology-based information management has become a fundamental pillar in increasing the efficiency and effectiveness of services within the healthcare sector. A primary support in achieving this is the Management Information System (MIS), designed to present responsive and accurate data as a vital reference for strategic decision-making. A critical component highly dependent on MIS is the planning of logistics needs, particularly pharmaceutical logistics such as medicines and medical devices. In its practical application, MIS within hospitals is specifically implemented as the Hospital Management Information System (SIMRS), which plays a crucial role in integrating various service and administrative processes [1].

The Hospital Management Information System (SIMRS) is an information and communication technology framework that integrates and

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manages the entire hospital service process through coordination, reporting, and administration within a single network. In line with its critical role in supporting strategic decisions, various efforts to strengthen this system are being undertaken to optimize healthcare delivery. Effective implementation of this system is heavily reliant on the human resources involved, where employee performance driven by expertise, coordination, and loyalty becomes a decisive factor in maintaining the operational integrity of the hospital [2][3].

In Indonesia, the Ministry of Health has established policies to strengthen SIMRS, positioning it as a key indicator for achieving national healthcare transformation. SIMRS aims to produce accurate, complete, relevant, timely, and consistent data, enabling hospitals to plan pharmaceutical logistics needs effectively. However, data quality challenges within the system remain a prevalent issue, particularly concerning the essential dimensions required for a reliable logistics planning process. These systemic challenges often lead to inconsistencies that hinder the overarching goal of seamless digital health integration [4].

This condition aligns with the theoretical framework of Wang and Strong, which suggests that data quality can be measured through several key dimensions: accuracy, completeness, consistency, relevance, and timeliness. Accuracy refers to the extent to which data reflects reality, while completeness relates to the availability of all necessary data points. Consistency encompasses the reliability of recorded data across the system, and timeliness refers to the extent to which data is updated to remain relevant to current operational conditions. When these dimensions are fulfilled, they provide a robust foundation for hospital administration to achieve high standards of service performance [5].

In this regard, data quality issues become paramount when linked to hospital logistics planning. Inappropriate logistics planning can lead to severe risks, such as drug shortages, significant budget wastage, and disruptions to patient care. Poor data quality characterized by inaccuracies, unit inconsistencies, or late updates results in flawed planning and suboptimal decision-making. Such failures in planning directly correlate with a decline in the quality of pharmacy installation services, as the availability of medical supplies is the primary determinant of patient satisfaction [6][7].

Previous research highlights that many hospitals still face significant challenges in pharmaceutical logistics management. Case studies indicate that drug shortages often occur due to obstacles in the procurement process, such as factory out-of-stock situations and e-catalog complexities. Furthermore, the management of pharmaceutical logistics is frequently hindered by a lack of adequate facilities and supporting infrastructure, which are essential for maintaining the stability and safety of stored medical supplies [8].

These management challenges are often exacerbated by limited manpower and operational funds. A shortage of qualified pharmaceutical experts frequently slows down the procurement process, making it difficult to meet established service standards. Additionally, the fluctuation of drug prices listed in e-catalogs poses a continuous challenge to effective and efficient hospital budgeting, necessitating a highly adaptive and data-driven management approach to prevent financial inefficiencies [9].

Locally, Prof. Dr. H. Aloei Saboe Regional General Hospital, the largest referral hospital in Gorontalo City, has implemented a management information system to support its operational and

administrative services. The 2025 Business Plan and Budget (RBA) document indicates a focus on improving service quality for the community through the Regional Public Service Agency (BLUD). Despite receiving a substantial budget allocation for pharmaceutical services, there are still instances where patients must purchase prescriptions externally, indicating potential gaps in the internal supply chain and the need for more rigorous inventory control.

Based on initial observations at Prof. Dr. H. Aloei Saboe Regional Hospital, there is a discrepancy between the information recorded in the SIMRS and the actual conditions in the field. For instance, the system may show that a drug is in stock, yet it is unavailable when needed. This discrepancy indicates a problem in data quality that directly affects the accuracy of logistics planning. When the planning process does not run accurately, suboptimal data quality within the MIS is often identified as the primary cause, potentially compromising the overall reliability of the healthcare delivery system [10].

In accordance with the background presented, the purpose of this study is to analyze the impact of management information system data quality on the accuracy of logistics needs planning, specifically for pharmaceutical services at Prof. Dr. H. Aloei Saboe Regional Hospital. The results are expected to provide recommendations for improving data management and the logistics planning process, making them more effective, efficient, and responsive to the needs of health services.

RESEARCH METHODS

This study uses a quantitative approach method and the type of research is explanatory research. This study was conducted over a period of 2 months, from June to July 2025. Primary data was obtained through documents and reports generated through questionnaires distributed by Management Information System (MIS) employees at Prof. Dr. H. Aloei Saboe Regional General Hospital, while secondary data obtained from this study were taken from other people's research journals whose types and objectives of research are similar to previous research.

1. Population and Sample

a. Population

According to [11] stated that the population is all research objects analyzed and all recorded field data. The population in this study were employees at Prof. Dr. H. Aloei Saboe Regional General Hospital who were directly involved in data management in the MIS and pharmacy logistics planning, namely, data information personnel, pharmacy installation, medical support department, and planning. Based on data from the hospital, the number of population that met these criteria was 29 people.

b. Sample

In the Textbook of Research Methodology, a sample is a small part of the population that is deliberately selected by the researcher to be observed, where the sample size is smaller than the population and acts as a representation of the entire population [12]. In this sampling technique, the technique used is *Purposive Sampling. Purposive Sampling*, also known as *judgment Sampling*, is a sampling method that is carried out by deliberately selecting samples from the population according to the wishes or objectives of the research. Based on the number of populations with an error rate of 5%, the formula used to determine the sample is the Slovin formula , so that samples used is 27 respondents .

2. Technique Data collection

Data collection methods in

This study will combine observation, questionnaires, and documentation studies to obtain comprehensive data related to the quality of management information system (MIS) data and the accuracy of logistics needs planning at Prof. Dr. H. Aloei Saboe Regional General Hospital.

a. Observation

Observations were conducted to obtain a direct overview of the use of the Management Information System (MIS) at Prof. Dr. H. Aloei Saboe Regional Hospital in the Pharmaceutical Logistics Planning process . Researchers will observe the flow and practices implemented in the data management system and the medical goods procurement process, including the process of inputting, updating, and utilizing MIS data.

b. Questionnaire

A questionnaire will be used to collect primary data from staff directly involved in the management of SIM and pharmaceutical logistics at Prof. Dr. H. Aloei Saboe Regional General Hospital. Respondents are asked to rate the statements based on their level of agreement.

c. Documentation Study

process will be used to collect secondary data related to the use of SIM in planning logistics needs at Prof. Dr. Aloei Saboe Regional Hospital.

3. Technique Data Analysis Data processing and analysis were carried out using univariate and bivariate data analysis techniques.

a. Univariate analysis is a technique for analyzing data on a single variable independently, with each variable analyzed without any correlation to the other variables. Univariate analysis is the most basic method of analyzing data. It can be presented as data or processed into percentages, ratios, or prevalences. The frequency distribution formula is:

P = F/N x 100%

Information:

P : Percentage

F=Frequency/number respondent's answer N = Number of respondents

b. Bivariate analysis was conducted to determine the influence between independent variables and dependent variables using the SPSS program with the *Chi-Square statistical test.*

1. If the p-value <0.05 then $H_{0\ rejected}$ and H1 accepted. This is This means that there is an influence between the quality of SIM data on pharmaceutical logistics planning.
2. If the p-value>0.05 then H_0 is accepted and H_1 rejected. This means that there is no influence between the quality of SIM data on pharmaceutical logistics planning.

RESEARCH RESULT

Based on the research that has been conducted, the researcher targeted Prof. Dr. H. Aloei Saboe Regional General Hospital as the study location to evaluate the effect of Information Technology implementation on the efficiency performance of Hospital employees. The current research sample is employees in the data information, planning, pharmaceutical warehouse and supporting units, totaling 27 people.

1. Univariate Analysis

a. Description of Frequency of Management Information System (MIS) Data Quality Variables

The primary variable in this study, the quality of Management Information System (MIS) data, was measured through five dimensions: accuracy, completeness, consistency, relevance, and timeliness. The frequency distribution of the respondents' assessments regarding the overall data

quality at RSUD Prof. Dr. H. Aloei Saboe is presented in the table below:

Table 1. Frequency Distribution of Management Information System (MIS) Data Quality at RSUD Prof. Dr. H. Aloei Saboe.

Management Information System (MIS) Data Quality				
		Frequency	Presentation	Total
Valid	Good	20	74.1	74.1
	Enough	6	22.2	22.2
	Not enough	1	3.7	3.7
	Total	27	100	100

Based on the data analysis results presented in Table 1, it is evident that the majority of respondents evaluate the data quality within the Management Information System (MIS) at RSUD Prof. Dr. H. Aloei Saboe as "Good," representing 20 individuals (74.1%). This indicates that the system is generally perceived as reliable in providing the necessary information for hospital operations. Meanwhile, 6 respondents (22.2%) assessed the data quality as "Enough," and only 1 respondent (3.7%) considered it "Not enough." These findings suggest that while the system is performing well, there is still a small margin for improvement to ensure total data reliability across all administrative and service units.

b. Description of Research Variable Frequency

To provide a more detailed overview, the Management Information System (MIS) data quality was broken down into five essential dimensions: accuracy, completeness, relevance, consistency, and timeliness (punctuality). Additionally, the frequency of the dependent variable, Pharmaceutical Logistics Planning Accuracy, was also assessed. The comprehensive distribution of these variables is detailed in the table below:

Table 2. Frequency Distribution of Research Variables based on Data Quality Dimensions.

Variables	Criteria	Sample (n)	Percentage (%)
Accuracy	Good	23	85
	Enough	3	11
	Not enough	1	3.7
	Total	27	100
Completeness	Good	22	81
	Enough	4	14.8
	Not enough	1	3.7
	Total	27	100
Relevance	Good	23	85
	Enough	3	11
	Not enough	1	3.7
	Total	27	100
Consistency	Good	23	85
	Enough	3	11
	Not enough	1	3.7
	Total	27	100
Punctuality	Good	23	85
	Enough	3	11
	Not enough	1	3.7
	Total	27	100
Pharmaceutical Logistics Planning Accuracy	Good	22	81.5
	Enough	4	14.8
	Not enough	1	3.7
	Total	27	100

Based on the results presented in Table 2, the dimension of Accuracy shows that the vast majority of respondents (85%) perceive the data in the system as a precise reflection of actual conditions. Similarly, the dimensions of Relevance, Consistency, and Punctuality received identical positive ratings, with 23 respondents (85%) categorizing them as "Good." This indicates that the information provided by the SIMRS is generally considered timely, consistent across units, and highly applicable to the needs of the hospital.

Furthermore, the Completeness dimension was rated as good by 22 respondents (81%), with only a small fraction noting deficiencies. Regarding the dependent variable, Pharmaceutical

Logistics Planning Accuracy, the data shows that 22 respondents (81.5%) believe the planning process has been executed effectively. These findings suggest a strong alignment between high-quality system data and the precision of pharmaceutical supply management, although the existence of "enough" and "not enough" ratings in every dimension points toward specific areas that require ongoing evaluation to prevent operational discrepancies.

c. Description of Variable Frequency Data Analysis Accuracy of Pharmaceutical Logistics Planning

The accuracy of pharmaceutical logistics planning is the dependent variable that reflects how well the hospital manages its supply of medicines and medical devices. This variable measures the alignment between planning documents and the actual needs of health services. The frequency distribution of the respondents' assessments regarding logistics planning at RSUD Prof. Dr. H. Aloei Saboe is as follows:

Table 3. Frequency Distribution of Pharmaceutical Logistics Planning Accuracy.

Pharmaceutical Logistics Planning Accuracy				
		Frequency	Presentation	Total
Valid	Good	22	81.5	81.5
	Enough	4	14.8	14.8
	Not enough	1	3.7	3.7
	Total	27	100	100

Data Source: Primary Data 2025

Based on the research results presented in Table 3, it is known that out of 27 respondents, 22 individuals (81.5%) assessed that the pharmaceutical logistics planning has been carried out effectively and is in the "Good" category. This suggests that the current planning mechanisms are largely successful in meeting hospital demands. On the other hand, 4 respondents (14.8%) rated the planning as "Enough," and only 1 respondent (3.7%) rated it as "Not enough." These results indicate that while the majority of the planning process is accurate, there remains a critical need to address the small percentage of discrepancies to ensure that medical stockouts or surpluses do not disrupt patient care.

2. Bivariate Analysis

The bivariate analysis was conducted to determine the correlation between the independent variable (MIS Data Quality) and the dependent variable (Pharmaceutical Logistics Planning Accuracy). By employing the Chi-Square test, this study aims to prove whether high-quality data integration within the system significantly influences the precision of pharmaceutical supply management. The cross-tabulation results and the significance value are presented in the following table:

Table 4. Chi-Square Analysis of the Relationship between MIS Data Quality and Pharmaceutical Logistics Planning Accuracy.

SIM Data Quality*Pharmaceutical Logistics Planning Accuracy							
			Accuracy of Pharmaceutical Logistics Planning			Total	*P Value*
			Good	Enough	Not enough		
SIM Data Quality	Good	N	20	0	0	20	0,000
		%	100.0%	0.0%	0.0%	100.0%	
	Enough	N	2	4	0	6	0,000
		%	33.3%	66.7%	0.0%	100.0%	
	Not enough	N	0	0	1	1	0,000
		%	0.0%	0.0%	100.0%	100.0%	
Total		N	22	4	1	27	

	81.5 %	14.8 %	3.7%	100.0 %

Data Source: Primary Data 2025

Based on the research results in Table 4, it can be observed that there is a distinct linear relationship between the quality of information system data and the accuracy of pharmaceutical logistics planning. Specifically, among the 20 respondents who categorized the MIS data quality as "Good," all 20 (100%) also rated the accuracy of logistics planning as "Good." In contrast, for the 6 respondents who assessed the data quality as "Enough," the majority (66.7%) felt the planning was also only "Enough." Most notably, the respondent who perceived the data quality as "Not enough" (100%) consistently rated the planning accuracy as "Not enough." Overall, out of 27 respondents, 81.5% reported good planning accuracy, 14.8% reported sufficient accuracy, and 3.7% reported inadequate accuracy.

The Chi-Square test yielded a significance value (p-value) of 0.000. Since this value is considerably lower than the standard alpha level of 0.05, the null hypothesis is rejected, confirming a highly significant relationship between the variables. These findings indicate that superior data quality within the Management Information System (MIS) characterized by accuracy, completeness, and timeliness serves as a critical determinant in ensuring precise pharmaceutical logistics planning. Conversely, poor data quality tends to be followed by suboptimal planning, which can lead to operational inefficiencies such as stockouts or budget wastage.

DISCUSSION

This study was conducted at Prof. Dr. H. Aloei Saboe Regional General Hospital, Gorontalo City, to analyze the relationship between the Quality of Management Information System (MIS) Data and the Accuracy of Pharmaceutical Logistics Planning. The research involved 27 respondents from key strategic units, including Planning, Support, Data and Information Staff, and the Pharmacy Installation.

Before data collection, all respondents provided informed consent, ensuring ethical standards were maintained. The instrument's validity and reliability were verified using SPSS for Windows to ensure that the questionnaire accurately captured the research variables. Data were then analyzed using univariate analysis to determine frequency distributions and bivariate analysis with the Chi-Square test to examine the influence between variables.

1. **Management Information System (MIS) Data Quality**

   The univariate analysis results at Prof. Dr. H. Aloei Saboe Regional Hospital show that 20 respondents (74.1%) perceive the MIS data quality as "Good." This high rating indicates that the Hospital Management Information System (SIMRS) effectively maintains information integrity. This finding aligns with the framework by Wang and Strong, which posits that data quality is a multi-dimensional construct comprising accuracy, completeness, consistency,

relevance, and timeliness. In a high-stakes healthcare environment, these dimensions serve as the essential bedrock for both clinical and administrative decision making.

The implementation of Wang and Strong's framework at RSUD Prof. Dr. H. Aloei Saboe ensures that the information flow within the hospital's digital architecture is well-integrated. Accuracy in the system ensures that recorded data reflects actual field conditions, while timeliness guarantees that data is updated responsively to meet operational demands.

Furthermore, the "Good" rating in this study is consistent with research by [13][14], who reported satisfaction levels of 77.8% and 72.5% in other Indonesian regional hospitals. This trend reflects a national push toward healthcare transformation, where digital systems like DHIS2 or SIMRS are leveraged to proactive healthcare interventions through improved reporting timeliness [15]. The synergy between human resource competence and system reliability as highlighted by [3] is crucial. When staff possess the expertise to maintain data completeness, it reduces the cognitive load on pharmacy personnel during procurement, preventing errors that often stem from fragmented or obsolete records.

However, the 25.9% of respondents who rated the data as "Enough" or "Not enough" highlights critical areas for improvement. Data inconsistencies, such as mismatched records or delayed updates, can disrupt the continuity of care and lead to operational inefficiencies [16]. Even minor discrepancies in the Patient Master Index (PMI) or pharmacy inventory can result in significant risks, including drug shortages or budget wastage [4]. Therefore, maintaining high standards requires not only a robust technical system but also continuous data governance and periodic training for data entry officers. By ensuring data integrity, regional hospitals can minimize operational errors and move toward a more agile, evidence-based management model.

2. Pharmaceutical Logistics Planning Accuracy

The univariate analysis conducted at Prof. Dr. H. Aloei Saboe Regional General Hospital regarding the accuracy of pharmaceutical logistics planning reveals a highly positive perception among the workforce. Out of 27 respondents directly involved in the supply chain cycle, a significant majority of 22 individuals (81.5%) categorized the planning process as "Good." This predominant rating

signifies that the hospital's strategic approach to pharmaceutical management is perceived to be highly precise and well-targeted. Specifically, this accuracy manifests in four critical operational areas: the determination of stock quantities, the synchronization of ordering timelines, the clinical suitability of the products procured, and the overall optimization of cost efficiency. When these elements are managed effectively, the hospital can minimize the discrepancy between planned procurement and actual clinical consumption.

This empirical finding aligns closely with the foundational supply chain framework established by Chopra and Meind. Their theory posits that the "right quantity" and the "right timing" are not merely administrative goals but are critical determinants of the overall availability of healthcare logistics. In a high-stakes environment like a regional hospital, any deviation in planning accuracy can lead to life-threatening stockouts or, conversely, wasteful overstocking. The results of this study are further bolstered by the contemporary research of [17], who demonstrated that advanced logistics management such as the adoption of modified Kanban systems can drive stockout rates down to near-zero levels. Such precision significantly elevates service reliability, ensuring that essential medications are available at the point of care exactly when needed.

The high level of accuracy identified in this research is not an isolated achievement but is deeply reinforced by the integration of the Hospital Management Information System (SIMRS). The system acts as a digital backbone that streamlines the flow of data from the pharmacy installation to the planning unit. As emphasized by [18], the integration of technological innovations and sophisticated decision support systems (DSS) within large-scale hospitals is vital for enhancing procurement cycles. By reducing human error and providing real-time inventory visibility, these systems mitigate operational inefficiencies that traditionally plague manual planning processes.

Consequently, the "Good" rating achieved in this study suggests a high level of maturity in the hospital’s digital transition. It implies that the planning phase is no longer based on mere intuition or historical guesswork, but is instead supported by an information system that effectively captures and processes logistics data. This synergy

between human expertise and system capabilities allows the hospital to maintain a lean yet responsive supply chain, ensuring that the pharmaceutical needs of the Gorontalo community are met with a high degree of professional and operational precision.

3. Relationship between Data Quality Dimension Indicators of Management Information Systems (MIS) and Accuracy of Pharmaceutical Logistics Planning

The statistical analysis in this study reveals a profound and multifaceted relationship between the various dimensions of data quality and the precision of pharmaceutical logistics planning. The research results indicate that all five measured indicators accuracy, timeliness, completeness, relevance, and consistency are significantly correlated with the hospital's ability to plan its logistics effectively. However, beyond mere correlation, the analysis uncovers a critical hierarchy of influence. This hierarchy suggests that while all dimensions are necessary, they do not contribute equally to the success of the planning process. In this study, accuracy (p=0.000) and timeliness (p=0.000) emerged as the dominant primary determinants, followed by completeness (p=0.001), relevance (p=0.002), and consistency (p=0.004).

Accuracy, which ranked as the most influential factor, serves as the ultimate empirical foundation for decision-making. In the context of pharmaceutical management, accuracy refers to the degree to which the data within the SIMRS reflects the actual physical stock and real-world consumption patterns. Without precise data, even the most sophisticated planning models will fail a concept often referred to as "garbage in, garbage out." This finding is strongly supported by [19], who argued that addressing forecasting inaccuracies is the single most effective strategy for improving supply chain reliability. When data is accurate, the hospital can avoid the costly trap of emergency orders, which are often expensive and logistically disruptive, thereby ensuring a stable flow of medications to various clinical units.

Timeliness followed closely as the second most critical dimension. In a dynamic healthcare environment like RSUD Prof. Dr. H. Aloei Saboe, data that is accurate but delayed loses its strategic value. Real-time or near-real-time data updates allow the pharmacy installation to respond with agility to sudden patient surges, seasonal disease outbreaks, or medical emergencies. As highlighted by [20], the synchronization of procurement cycles with actual consumption data is essential for maintaining high turnover ratios (TOR). High timeliness ensures that the "velocity" of information matches the "velocity" of drug consumption, preventing the bottlenecks that occur when planning is based on obsolete figures.Furthermore, the roles of completeness and relevance highlight the importance of the scope and utility of the information. Completeness ensures that no critical variables such as dosage, dosage form, or vendor history are omitted from the planning

documents. Meanwhile, relevance ensures that the system filters out "noise," providing planners only with the specific data points needed for procurement decisions. However, as noted by [21], these dimensions are often the most vulnerable to technical barriers. In regional hospitals, geographical distances and potential network disruptions can compromise the consistency of data across different service units, leading to fragmented information silos.

Finally, consistency ensures that data maintains the same format and meaning across all hospital departments, from the emergency room to the central warehouse. Although it ranked fifth in the hierarchy, its role in maintaining a "single version of the truth" cannot be underestimated. Discrepancies in how stock is recorded can lead to confusion and planning errors. Consequently, the findings of this study reinforce a vital strategic lesson for hospital management: while all aspects of the SIMRS must be maintained, the precision of content (accuracy) and the speed of updates (timeliness) must be prioritized as the two primary pillars of pharmaceutical logistics excellence. By focusing on these high-impact variables, RSUD Prof. Dr. H. Aloei Saboe can significantly reduce operational risks and enhance the quality of patient care through guaranteed medicine availability.

4. The Relationship Between Management Information System (MIS) Data Quality and Pharmaceutical Logistics Planning Accuracy

The Chi-Square test results yielded a significance value of 0.000, indicating a highly significant relationship between overall MIS Data Quality and the Accuracy of Pharmaceutical Logistics Planning. Since the p-value is < 0.05, the researcher's hypothesis is strongly supported, proving that the quality of information generated by the system is a decisive factor in procurement success.

These results are consistent with the findings of [22], who evaluated centralized procurement performance and concluded that transparency and data-driven management are essential to reduce workloads and prevent overstocking. Additionally, the study aligns with the broader evidence synthesized from [18], which suggests that when a hospital's information system provides high-quality inventory forecasting, it significantly reduces lead-time variability and procurement errors.In conclusion, the high quality data provided by the SIMRS at Prof. Dr. H. Aloei Saboe Hospital allows the planning unit to move away from manual estimations toward a more lean and responsive logistics model. By maintaining high data integrity, the hospital can ensure uninterrupted clinical operations, minimize expired stock, and optimize cost savings, which are critical for the sustainability of a regional referral hospital.

CONCLUSION

The research demonstrates that Prof. Dr. H. Aloei Saboe Regional Hospital has established a robust digital foundation

where a significant majority of the workforce perceives both the information system data quality and the resulting pharmaceutical logistics planning as highly effective. By aligning with established global frameworks, the hospital has successfully integrated multi-dimensional data attributes to support clinical and administrative decision-making, ensuring that procurement processes are well-targeted and cost-efficient. The statistical evidence confirms a profound relationship between system integrity and planning precision, uncovering a specific hierarchy where the accuracy of content and the speed of updates serve as the most critical pillars for operational excellence. This synergy allows the institution to transition from traditional manual estimations toward a lean, responsive, and data-driven supply chain model. Ultimately, maintaining high standards of data governance and continuous system monitoring is paramount for the hospital to sustain its operational reliability, prevent fragmented information silos, and guarantee the uninterrupted availability of essential medical supplies for the community.

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