

Evaluation of Inventory Management Efficiency in an Organization: A Case Study of the Language Institute, Suan Sunandha Rajabhat University

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Abstract

This study aimed to (1) evaluate the performance of inventory management, (2) analyze factors affecting its efficiency, and (3) identify problems and obstacles in the process at the Language Institute, Suan Sunandha Rajabhat University.

A mixed-methods approach was used. Quantitative data were collected through questionnaires from 60 staff members, and qualitative data were obtained from 10 interviews. Descriptive and inferential statistics were applied alongside content analysis.

Findings revealed that procurement and quality control were rated moderate to high in efficiency. The average procurement lead time was 25 days (target ≤ 20 days), inventory accuracy was 91% (target 95%), and inventory loss was 2% per year. About 18% of procurements were urgent, and the information system was insufficiently linked across procurement, usage, and verification.

Recommendations include developing an integrated information system, strengthening quality control, establishing manuals, and defining measurable KPIs (lead time, accuracy, loss rate, satisfaction) to improve transparency and accountability in public organizations.

Keywords: Performance Evaluation, Inventory Management, Quality Control

1. Introduction

Effective inventory management plays a critical role in ensuring operational efficiency, transparency, and accountability in public sector organizations. In government agencies and higher education institutions, materials and equipment serve as essential resources that support core missions such as teaching, research, and academic services. Inefficient inventory management can lead to various issues, including delays in procurement, ineffective budget utilization, loss or misuse of resources, and decreased public confidence in government administration.

The Language Institute of Suan Sunandha Rajabhat University (SSRU), whose mission is to provide language education, academic services, and research development, relies heavily on a wide range of materials – from office supplies and teaching media to electrical appliances and

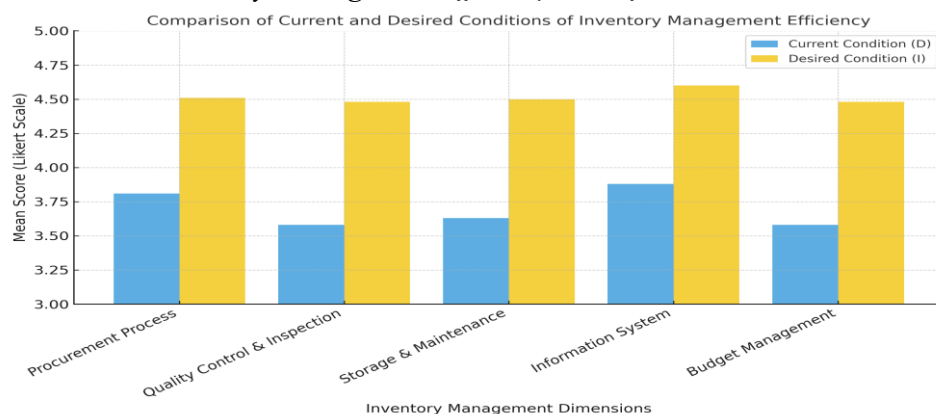
electronic devices. Ineffective inventory management within the Institute may negatively affect the quality of teaching, learning, and service delivery, as well as reduce the cost-effectiveness of budget utilization.

1. Effective inventory management ensures efficiency and transparency in public organizations. For universities, it supports teaching, research, and academic services. Inefficient management leads to delays, waste, and budget misuse.
2. The Language Institute of Suan Sunandha Rajabhat University (SSRU) relies on various resources—from office supplies to electronic equipment—essential for teaching and administrative operations. Ineffective management affects productivity and financial efficiency.

1.1 Research Objectives

1. To evaluate the efficiency of inventory management practices at the Language Institute, SSRU.
2. To identify key challenges and propose guidelines to improve transparency, accountability, and performance.
3. **Figure 1** illustrates efficiency levels across five dimensions. Information Systems ($\bar{X}=3.88 \rightarrow 4.60$) ranked highest, while Quality Control and Budget Management ($\bar{X}=3.58 \rightarrow 4.48$) required most improvement.

Figure 1: illustrates the comparison between the current and desired conditions of inventory management efficiency across five dimensions.



The results indicate that Information System ($\bar{X}=3.88 \rightarrow 4.60$) achieved the highest performance level, while Quality Control & Budget Management ($\bar{X}=3.58 \rightarrow 4.48$) require the most improvement.

2. Literature Review

2.1 Theoretical Background (Wanna, 2021)

Inventory management ensures resource efficiency and cost control in public institutions. Key models include:

- **ABC Analysis:** categorizes inventory by value and frequency (Kittichai, 2019).

- **EOQ Model:** minimizes ordering and holding costs.
- **JIT & PDCA:** emphasize timely procurement and continuous improvement.

These theories form the foundation for evaluating efficiency at SSRU's Language Institute.

2.2 Related Studies (Wanna, 2021)

Previous research identified common inefficiencies—delayed procurement and weak information systems. Key influencing factors include procurement planning, supplier reliability, quality inspection, and integrated systems.

2.3 Conceptual Framework

Input Factors: procurement, quality control, storage, information system, and budget.
Expected Outcomes: timeliness, accuracy, transparency, cost-effectiveness, and staff satisfaction.

3. Research Methodology

3.1 Research Design

A **mixed-methods** design was adopted. Quantitative data were collected via a five-point Likert-scale questionnaire; qualitative insights were from semi-structured interviews. The study covered five dimensions—procurement, quality control, storage, information systems, and budget management.

3.2 Population and Data Analysis

Sixty staff members participated in the survey and ten in interviews. Data were analyzed using mean, SD, t-test, ANOVA, and content analysis.

4. Discussion and Conclusion

4.1 Discussion

Inventory management efficiency was moderate to high ($\bar{X}_{\text{current}}=3.80$; $\bar{X}_{\text{desired}}=4.52$).
Key findings:

1. **Quality Control:** highest priority for improvement (PNI=0.25); lack of regular inspections and supplier evaluation aligns with Srichai (2019).
2. **Budget Management:** also top priority (PNI=0.25); planning inconsistencies lead to emergency procurements (Jiraporn, 2020).
3. **Storage & Maintenance:** moderate efficiency (PNI=0.24); preventive maintenance lacking.
4. **Information System:** functional but not integrated (PNI=0.19); data linkage required (Preeyaporn, 2017).

5. **Procurement Process:** lowest gap (PNI=0.18); faster approval needed (Kittichai, 2019).

4.2 Conclusion

Overall, SSRU's Language Institute achieved satisfactory inventory efficiency but needs improvement in quality control, budgeting, and information systems. Key measures include standardized audits, digital tracking, and workflow simplification.

4.3 Recommendations

Practical:

- Develop an integrated e-inventory system linking procurement, storage, and audit data.
- Train staff on digital procurement and transparency practices.
- Establish KPIs (lead time, accuracy, loss, utilization).
- Conduct annual supplier audits.

Future Research:

- Examine the relationship between inventory efficiency and organizational performance.
- Compare results across universities.
- Apply data analytics or AI for predictive inventory control.

4.4 Summary

Continuous improvement is required, particularly in quality control and transparency. Strengthening systems will enhance efficiency and trust in public sector management.

5. Results

1. Improvement in Efficiency:

The Language Institute showed moderate to high performance. Integration among procurement, storage, and budgeting improved operations.

2. Staff Satisfaction:

Respondents reported higher satisfaction and clearer responsibilities due to improved transparency and monitoring.

3. Practical Application:

The proposed framework covering policy, process, technology, and personnel can guide sustainable inventory management and serve as a model for other public institutions.

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