

An Analytical Study of the Purchase Accounting System at the Material Management Complex

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ABSTRACT

This study examines the effectiveness of the purchase accounting system at the Material Management Complex (MMC) of NLC India Limited (NLCIL), a Navaratna public sector enterprise engaged in mining and power generation. Purchase accounting plays a vital role in ensuring proper recording, verification, and control of procurement-related financial transactions. The study is based on primary data collected from 110 respondents through a structured questionnaire. Statistical tools such as percentage analysis, mean score analysis, and correlation analysis were applied using IBM SPSS Statistics. The findings reveal that efficient purchase accounting practices, including timely invoice processing, accurate ledger maintenance, and effective use of SAP ERP (FICO module), significantly contribute to financial accuracy and operational efficiency. The correlation results indicate a positive relationship between purchase accounting practices and financial performance. The study suggests enhancing automation, strengthening internal controls, and improving coordination between departments to ensure better transparency, compliance, and overall effectiveness of the purchase accounting system.

Keywords: Purchase Accounting System, Material Management Complex, Procurement Process, Financial Management, SAP ERP (FICO Module), Invoice Processing, Internal Control, Audit System, NLC India Limited, Public Sector Enterprise, India

INTRODUCTION

NLC India Limited (NLCIL) is a pivotal public sector undertaking in India's energy and mining sector, responsible for lignite extraction, power generation, and strategic fuel supply. Within the organization, the Material Management Complex (MMC) plays a significant role in handling procurement and material-related activities. The purchase accounting system is an essential component of this function, as it ensures proper recording, verification, and control of all procurement-related financial transactions.

Purchase accounting involves activities such as purchase requisition, vendor selection, invoice verification, ledger posting, and payment processing. These functions are crucial for maintaining financial accuracy, ensuring compliance with statutory requirements like GST and TDS, and supporting effective financial decision-making. In large organizations like NLCIL, the use of ERP systems such as SAP, particularly the FICO module, helps in improving efficiency, reducing errors, and ensuring transparency in financial operations.

However, challenges such as delays in invoice processing, discrepancies in documentation, and lack of coordination between departments may affect the efficiency of the purchase accounting system. Therefore, this study focuses on analyzing the effectiveness of the purchase accounting system at the Material Management Complex and its impact on financial efficiency and organizational performance.

REVIEW OF LITERATURE:

Purchase accounting and procurement management are essential aspects of financial management in organizations. Several studies and institutional reports have highlighted the importance of efficient purchase accounting systems in ensuring financial control and operational effectiveness.

According to the Reserve Bank of India (2022), proper financial management practices, including procurement and accounting systems, are important for maintaining transparency and accountability in organizations. Accurate recording of purchase transactions supports effective financial planning and control.

Studies on procurement accounting practices indicate that activities such as invoice verification, vendor management, and timely payment processing have a significant impact on financial performance. Efficient systems help in reducing errors and improving the reliability of financial information.

Research on enterprise resource planning systems highlights that SAP ERP has improved the efficiency of purchase accounting by automating financial processes and ensuring accuracy in data handling. The FICO module plays a key role in integrating financial accounting with controlling functions.

Further, internal control mechanisms such as authorization procedures, audit checks, and proper documentation are important for preventing errors and fraud in purchase accounting. Strong internal controls ensure compliance with regulations and maintain financial discipline.

In addition, coordination between procurement, finance, and other departments is necessary for the smooth functioning of the purchase accounting system. Lack of coordination can lead to delays and inefficiencies in the procurement cycle.

Overall, the literature indicates that an effective purchase accounting system contributes to better financial accuracy, operational efficiency, and organizational performance. However, there is a need for more organization-specific studies, particularly in public sector enterprises, to understand the practical effectiveness of these systems.

Objective of the Study:

The main purpose of the study is to analyse the effectiveness of the purchase accounting system at the Material Management Complex of NLC India Limited. Specific objectives include: (i) examining purchase accounting practices; (ii) analysing the efficiency of invoice processing and ledger maintenance; (iii) studying the role of SAP ERP (FICO module) in purchase accounting; (iv) evaluating the effectiveness of internal control mechanisms; and (v) understanding the impact on financial accuracy and operational efficiency.

Research Methodology:

The study adopts a descriptive research design. Primary data were collected using a structured questionnaire distributed through Google Forms to 110 respondents, comprising employees from accounts, finance, and material management departments of NLC India Limited. Secondary data were gathered from books, journals, research articles, and company reports. Convenience sampling was employed as the sampling technique. The study was conducted during January 2026 to April 2026. Statistical tools employed include Percentage Analysis to describe the distribution of responses, Mean Analysis to identify the average level of responses, and Correlation Analysis to examine the relationship between purchase accounting practices and financial efficiency.

Data Analysis and Interpretation

Demographic Profile of Respondents

Table 2.1 summarizes the demographic profile of the 111 respondents from NLC India Limited. The majority of respondents are male (68.20%), while female respondents constitute 31.80%. Most respondents fall within the 5 to 10 years of experience category (56.40%), followed by those with less than 5 years of experience (32.70%),

indicating a workforce with moderate professional experience in financial and procurement activities. In terms of departmental distribution, the majority belong to the Purchase department (53.60%), followed by Accounting (24.50%) and Finance (20.00%), with a minimal representation from other departments (1.90%).

Table 2.1: Demographic Profile of Respondents

Variable	Category	No. of Respondents	Percentage (%)
Gender	Male	75	68.20%
	Female	35	31.80%
Age Group	Less than 5 years	36	32.70%
	5 to 10 years	62	56.40%
	11 to 20 years	11	10.00%
	More than 20 years	1	0.90%
Department	Purchase	59	53.60%
	Accounting	27	24.50%
	Finance	22	20.00%
	Others	2	1.90%

The demographic profile reveals that the respondents are largely experienced professionals with significant involvement in purchase and accounting functions. This composition is appropriate for the study, as it reflects employees who are directly engaged in procurement and purchase accounting processes, thereby providing reliable insights into the effectiveness of the purchase accounting system at the Material Management Complex.

Purchase Accounting System and Process

Table 2.2 presents the responses regarding the purchase accounting system and related processes among respondents in NLC India Limited.

Particulars	No. of Respondents	Percentage
ERP-based System Used	84	84
Department Interaction with Purchase Process (Yes)	86	86
Transactions Recorded Accurately and On Time (Yes)	90	90
Internal Controls Followed (Yes)	88	88

The majority of respondents reported the use of an ERP-based purchase accounting system, indicating the adoption of advanced technology in financial operations. A significant proportion of respondents confirmed active departmental interaction with the purchase process, along with accurate and timely recording of transactions and adherence to internal controls. Purchase accounting processes at MMC are well-structured and efficiently implemented, ensuring accuracy, transparency, and effective financial management.

Effectiveness of Purchase Accounting Practices

Table 2.3 presents respondents' perceptions of purchase accounting practices across key dimensions.

Statement	SA (%)	A (%)	N (%)	D (%)	SD (%)
The purchase accounting system at MMC is efficient	29.1%	40.9%	23.6%	4.5%	1.8%
The system ensures accurate recording of purchase transactions	30.9%	38.2%	24.5%	4.5%	1.8%
There is proper coordination between purchase and accounting departments	25.5%	41.8%	26.4%	4.5%	1.8%
The documentation process is well maintained	28.2%	40.0%	25.5%	4.5%	1.8%
Internal controls in the purchase accounting system are effective	27.3%	41.8%	24.5%	4.5%	1.8%

A majority of respondents agree or strongly agree with all statements related to purchase accounting practices. Key areas such as system efficiency, accuracy in transaction recording, internal controls, documentation, and ERP usage show higher levels of agreement, indicating effective implementation of purchase accounting practices within the organization. These practices contribute to improved financial control and operational efficiency.

Impact on Financial Performance

Table 2.4 showing respondents' perceptions of the impact of purchase accounting practices on financial performance.

Statement	SA (%)	A (%)	N (%)	D (%)	SD (%)
Effective purchase accounting improves financial accuracy and efficiency	30.0%	43.6%	21.8%	3.6%	1.0%

A significant proportion of respondents agree or strongly agree that purchase accounting practices positively influence financial performance. Improved accuracy, better coordination, and effective use of ERP systems are highlighted as key outcomes. Purchase accounting practices play a crucial role in enhancing financial efficiency and supporting effective decision-making.

Overall Effectiveness of Purchase Accounting Practices

Table 2.5 presents the consolidated Likert scale response distribution regarding purchase accounting practices.

Table 2.5: Consolidated Likert Response Distribution

Response Category	Average Percentage (%)	Interpretation
Strongly Agree	28.8%	High positive response
Agree	40.7%	Strong agreement
Neutral	24.4%	Moderate / undecided responses
Disagree	4.4%	Low level of disagreement
Strongly Disagree	1.7%	Negligible negative response
Total	100%	110 Respondents

The overall responses indicate that a majority of respondents have a positive perception of the purchase accounting system at MMC. High levels of agreement reflect that the system is efficient, reliable, and supported by effective internal controls and technology. Minimal disagreement suggests that only a small proportion of respondents perceive issues, indicating overall effectiveness of the purchase accounting system.

Correlation between Purchase Accounting Practices and Financial Efficiency

The correlation analysis shows a positive relationship between purchase accounting practices and financial efficiency. The correlation coefficient indicates that as the effectiveness of purchase accounting practices such as accurate transaction recording, proper documentation, internal control systems, and use of ERP increases, the level of financial efficiency also improves.

The significance values obtained from the analysis are lower than the standard significance level of 0.05, indicating that the relationship between purchase accounting practices and financial efficiency is statistically significant. Hence, the null hypothesis that there is no significant relationship between purchase accounting practices and financial efficiency is rejected, and the alternative hypothesis is accepted.

The findings indicate that effective purchase accounting practices significantly influence the financial performance and operational efficiency of NLC India Limited.

Table 3.1: Correlation between Purchase Accounting Practices and Financial Efficiency

H₀: There is no significant relationship between purchase accounting practices and financial efficiency.

H₁: There is a significant relationship between purchase accounting practices and financial efficiency.

Variables	Purchase Accounting Practices	Financial Efficiency
Purchase Accounting Practices	1	0.501
Financial Efficiency	0.501	1

Significance Level (p-value) = 0.000

Sample Size (N) = 110

(Correlation is significant at the 0.01 level)

The table above presents the Pearson correlation analysis examining the relationship between purchase accounting practices and financial efficiency. The correlation coefficient ($r = 0.512$) indicates a moderate positive relationship between the two variables. This means that as the effectiveness of purchase accounting practices, particularly accurate recording of transactions, proper documentation, and internal controls, increases, the level of financial efficiency also improves. Since the p-value (0.000) is lower than the significance level of 0.05, the relationship between the variables is considered statistically significant. Therefore, the null hypothesis (H₀) is rejected, and the alternative hypothesis (H₁) is accepted.

This finding confirms that effective purchase accounting practices significantly contribute to improving financial efficiency and operational performance in NLC India Limited.

DISCUSSION

The findings of this study highlight the importance of efficient purchase accounting practices in enhancing financial efficiency within the organization. Purchase accounting functions such as invoice verification, transaction recording, documentation, and internal control procedures play a crucial role in ensuring financial accuracy and operational effectiveness.

The study confirms that proper recording of purchase transactions, along with effective documentation and internal controls, supports better financial decision-making within the organization. Additionally, the use of ERP systems improves efficiency by reducing errors and enhancing transparency. However, variations in responses indicate that certain areas such as coordination between departments and documentation processes may require further improvement.

Overall, the study emphasizes that strengthening purchase accounting practices can lead to improved financial performance, operational efficiency, and sustainable growth of NLC India Limited.

CONCLUSION

Purchase accounting practices play a crucial role in ensuring financial accuracy and operational efficiency within an organization. In NLC India Limited, the purchase accounting system at the Material Management Complex (MMC) demonstrates effective recording of transactions, proper documentation, and strong internal control mechanisms. The adoption of ERP systems, particularly SAP, has significantly enhanced the efficiency, transparency, and reliability of purchase-related financial processes. These practices ensure timely processing of transactions, compliance with statutory requirements, and optimal utilization of financial resources, thereby supporting overall organizational performance.

The study also highlights certain challenges that need to be addressed to further improve the effectiveness of the purchase accounting system. Issues such as delays in documentation, coordination gaps between departments, and occasional discrepancies in transaction recording may impact efficiency if not managed properly. Strengthening internal control systems, improving coordination between purchase and accounting departments, and enhancing the use of technology are essential to overcome these challenges and maintain financial discipline within the organization.

The statistical analysis indicates a positive relationship between purchase accounting practices and financial efficiency. This shows that an effective purchase accounting system contributes to improved accuracy, better decision-making, and enhanced operational performance. Therefore, by adopting advanced accounting systems and continuously improving purchase accounting practices, NLC India Limited can achieve greater efficiency, transparency, and long-term organizational success.

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