CENTRAL ASIAN JOURNAL OF INNOVATIONS ON TOURISM MANAGEMENT AND FINANCE

https://cajitmf.centralasianstudies.org/index.php/CAJITMF

Volume: 06 Issue: 03 | July 2025 ISSN: 2660-454X

Article

Methodology for Analyzing The Provision of Material Resources

Abdujaborova Mamura Toshmuxamadovna[1]

1. Associate professor of Tashkent State University of Economics, PhD

*Correspondence: maamura@bk.ru

Abstract: This article discusses the analysis of material resource provision and its main directions. It also presents various approaches to analyzing the provision of material resources as described in scientific sources. As a result of the research, the author's methodology for analyzing the provision of material resources is proposed, along with ways to use it effectively and reduce resource consumption. The analysis of material resource provision highlights the aspects that should be given due attention. Additionally, factor analysis was used to calculate the impact of the volume of material resources and their return rate on the volume of production.

Keywords: : analysis of material resource provision, demand for material resources, supply of material resources, stock of material resources, consumption of material resources, efficient use of material resources, material output ratio, material intensity, profitability of material resources, turnover period of material resources

Citation: Toshmuxamadovna, A. M. Methodology for Analyzing The Provision of Material Resources. Central Asian Journal of Innovations on Tourism Management and Finance 2025, 6(3), 905-911

Received: 03th Mar 2025
Revised: 11th Apr 2025
Accepted: 24th May 2025
Published: 06th Jun 2025

1. Introduction

The continuity (smoothness) of an enterprise's production activities directly depends on the provision of material resources. Ensuring the supply of material resources in the required assortment and quality, as well as their rational use, plays a crucial role in fulfilling production and sales plans.

Material resources are considered the main components of the production process. Therefore, their supply and utilization must be properly analyzed. If material resources are provided on time and in sufficient quantities, the production process will proceed continuously and efficiently. If material resources are insufficient, the production process may be halted or slowed down.

The analysis of material resource provision enables economic entities to manage resources effectively, optimize production, and achieve long-term economic success.

Literature Review

An enterprise independently plans its operations based on contracts concluded with product buyers and suppliers of material and technical resources and determines its development prospects based on the demand for products, work, and services. In its activities, the enterprise must take into account the interests of the customer and the requirements for the quality of products, work, and services (Grishchenko, 2000).

The demand for material resources can be satisfied through either extensive or intensive methods (Kulbakov, 2011).

The extensive approach to meeting the demand for material resources involves procuring or producing large quantities of materials, which leads to increased material

costs. However, if there is a rise in production volume or a reduction in fixed costs, the unit cost of production may decrease. The intensive approach involves using materials more economically during the production process, which helps reduce material expenses and lower the cost price of the final product.

The lack of sufficient material and production reserves in an enterprise can disrupt the continuity of production, lead to delays in fulfilling contractual obligations and service deadlines, increase production costs, and reduce profitability (Chernik 2015, Omanov 2024).

Provision of a manufacturing enterprise with the necessary volume, composition, and quality of raw materials is an essential condition for increasing production volume, reducing production costs, and maximizing profit and profitability (Bazarnova, Polyanin, Zuravleva, 2015).

To effectively manage production, it is necessary to ensure the required volume of raw materials, timely shipment of finished products, and access to information for planning the continuity of the production process. The source of such information is a system of analysis conducted to comprehensively assess the processes of supply, production, and distribution of production reserves. This analysis system evaluates the formation of material reserves within the enterprise and the continuity of production under conditions of continuous demand and supply (Lytnyeva & Nevstrueva, 2017).

The production of any product (work or service) directly depends on the use of material resources. The availability of materials in the required assortment and quality is a fundamental and essential condition for fulfilling the production and sales program and for reducing production costs. Comprehensive use of resources, their rational consumption, and the application of affordable and efficient materials are key directions for increasing production volume and improving the financial condition of the enterprise (Lagoda & Tuyakova 2020, Burkhanov 2025).

The renewal of the product assortment and the expansion of production capabilities lead to an increase in the demand for material resources. Economic entities use a wide range of materials in various types, grades, categories, and quantities (Kulikova 2015, Khalikulova 2025).

Typically, the product structure changes due to factors such as shifts in product demand, increases in raw material prices, and shortages (Abdujaborova 2024, Usmonov 2025).

2. Materials and Methods

During the research, methods such as logical reasoning, a systematic approach, analysis, the coefficient method, horizontal analysis, and factor analysis were utilized.

3. Results

Material resources are types of raw materials and supplies purchased by an economic entity for the purpose of production (or service provision).

The main goal of material resource analysis is to increase production efficiency through the rational use of resources (Kulbakov, 2011).

The key tasks of analyzing the use of material resources include the following:

- Determining the level of provision of the enterprise with the required types, grades, brands, quality, and timely delivery of material resources;
- Analyzing the dynamics of the material intensity level of products;
- Studying the impact of specific factors on changes in material intensity;
- Identifying potential substitutions of materials when necessary, as well as losses caused by equipment and worker downtime due to material shortages;
- Assessing the impact of material and technical supply organization and the use of material resources on production volume and product cost;
- Identifying untapped opportunities (internal reserves) for reducing material costs and evaluating their impact on production volume.

In our opinion, it is advisable to organize the analysis of material resource provision in the following directions:

- Determining the demand for material resources of the economic entity;
- Conducting an analysis of the implementation of the economic entity's plan for the supply of material resources;
- Evaluating the efficiency of material resource usage;
- Organizing a factor analysis of material turnover and material intensity indicators;
- Assessing the impact of material resource usage efficiency on production volume.

The sources of information for analyzing the provision of material resources are as follows:

- Material supply plan;
- Requests/demands;
- Contracts for the purchase of raw materials and supplies;
- Cost calculation;
- Documents on material resource consumption standards;
- Reports on the volume of material resources and their usage.

In economic entities, several general and specific indicators are used to analyze the provision of material resources and the efficiency of their usage (Table 1):

Table 1. The System of Indicators for Analyzing the Provision and Efficient Use of Material Resources

Indicators	Determination	Interpretation
Material turnover	$Mt = \frac{PV}{MR}$	This indicator reflects the amount of production output generated per unit (sum) of material resources. There is no fixed standard level for this indicator; a higher value and an increase compared to previous periods are considered positive.
Material intensity	$Mi = \frac{MR}{PV}$	This indicator shows the amount of material resources (in monetary terms) used to achieve one unit (sum) of production output. A lower value and a decreasing trend compared to previous periods are considered positive characteristics.
The share of material costs in total production costs	$K = \frac{MC}{\text{TPC}}$	This indicator reflects the share of material costs within the total production costs. Typically, material costs constitute the main part of total production costs.
Profitability of material resources	$Pmr = \frac{NP}{MR} * 100$	This indicator represents the amount of net profit (in tiyin) earned per each sum of material resources used.
Material cost ratio	$R_{mc} = \frac{AMC}{PMC}$	An indicator equal to 1 indicates that materials were consumed according to the plan. An increase in the indicator's value signifies that material consumption exceeded the planned amount, while a decrease indicates that materials were used efficiently.
Material consumption ratio	$K_{mc} = \frac{MCN}{\text{AMC}}$	A value of the indicator below 1 is considered a positive outcome.
Waste and loss ratio	$R_{wl} = \frac{\text{AWL}}{\text{TMC}}$	A lower value of the indicator is considered appropriate.
Inventory turnover ratio	$R_{it} = \frac{PC}{I}$	The indicator reflects the turnover volume of inventories during the

		analyzed period. An increase in the indicator compared to the previous period is considered a positive development.
Inventory turnover period	$P_{it} = \frac{I}{RP}$	A decrease in the indicator compared to the previous period is considered a positive outcome.
Conventional symbols: Mt – material turnover; PV – production volume; MR – material resources; Mi -material intensity; MC- material costs; TPC - total production costs; Pmr - profitability of material resources; NP – net profit; Rmc – material cost ratio; AMC – actual material consumption; PMC – planned material consumption; Kms – material consumption ratio; MCN – material consumption norm; AMC – actual material consumption; Rwl – waste and loss ratio; AWL – amount of waste and loss; TMC – total material consumption; Rit – inventory turnover ratio; PC – production cost; I– inventories; Pit – inventory turnover period; RP – reporting period (days).		

In addition, specific indicators such as raw material turnover, fuel turnover, energy turnover, and the turnover of other materials are also calculated.

The use of general indicators in the analysis process provides an overall understanding of material resources and the efficiency of their utilization. Analyzing through specific indicators allows for detailed information on the consumption and efficiency of each type of material resource, helping to identify ways to reduce their usage.

Using the example of the enterprise under analysis, we will conduct the material turnover and its factor analysis based on the chain-link method (Table 2).

Table 2. Material Turnover and Its Factor Analysis

Indicators	**Previous period**	**Reporting period**	**Difference**
Production volume, billion soms	1 773	1 048	- 725
Total amount of material resources, billion soms	5 056	7 881	2 825
Material turnover	0,3507	0,1330	-0,2177
Conditional indicator	1 048 / 5 056 = 0,2073		
Change in material turnover:			
Due to changes in the value of production volume	0,2073 – 0,3507		-0,1434
Due to changes in the value of material resources	0,1330 – 0,2073		-0,0743

As can be seen from the table data, the material turnover during the reporting period amounted to 0.1330 billion soms, which is 0.2177 billion soms less compared to the previous period. The factors influencing this change are as follows:

The production volume during the reporting period amounted to 1,048 billion soms, which is 725 billion soms less compared to the previous period. This led to a decrease in material turnover by 0.1434 billion soms;

The value of material resources during the reporting period amounted to 7.881 billion soms, which is 2.825 billion soms higher compared to the previous period, resulting in a decrease in material turnover by 0.0743 billion soms.

The decrease in the enterprise's material turnover indicator was primarily influenced directly by the reduction in production volume.

The following factors influence the change in material turnover: Changes in production volume; Changes in material prices; Availability of reserves; Application of advanced technologies; Quality of materials; Skill level of workers; Losses; Location of the material base; Types of transportation, etc.

The supply of material resources is covered by internal and external sources.

Internal sources include reducing raw material waste, utilizing secondary raw materials, producing materials within the enterprise itself, and saving materials through new technologies.

The arrival of material resources based on contracts concluded with suppliers is considered an external source.

Several aspects should also be taken into account when analyzing the supply of material resources:

- Market changes. This involves analyzing the relationship between changes in market prices and resource supply. In particular, the impact of raw material price increases or changes in market demand on production costs is assessed.
- Cooperation with suppliers. The efficiency of the supply chain affecting the stability and quality of material resource supply is analyzed. Proper selection of suppliers, contract agreements, and ensuring timely delivery are considered important.
- Production technologies. Opportunities for efficient use of material resources are studied as a result of modernization of production processes.
- Environmental factors. The environmental impact of material resources is analyzed, and opportunities for resource saving and waste reduction are identified.

The analysis also focuses primarily on the timely delivery of materials, which directly affects the continuity of production. Delays in the timely arrival of materials can lead to the failure to fulfill the planned product assortment.

In enterprises, material resources are maintained as reserves on a daily basis and in terms of value. In doing so, industry and production characteristics must be taken into account.

Different value measures are used when organizing material resource reserves:

- Natural unit of measurement: This unit is used to allocate space for reserves in the warehouse.
- Value unit of measurement: This measure is used to align the value of reserves with the company's financial plans.
- Labor unit of measurement: This unit is applied to monitor the timing (in days) of reserve arrivals.

The value of material resources and their turnover affect the volume of production.

$$PV = MR * MT$$

Here:

- PV – production volume;
- MR – material resources;
- MT – material turnover.

The influence of these factors on the change in production volume will be calculated using the method of absolute differences (Table 3):

Table 3. Factor analysis of the change in production volume

Indicators	Previous period	Reporting period	Difference
Production volume, billion soms	1 773	1 048	- 725
Total amount of material resources, billion soms	5 056	7 881	2 825
Material turnover	0,3507	0,1330	-0,2177
Factor analysis			
Impact of changes in the value of material resources on the variation in production volume	2825*0,3507		990,7275
Impact of changes in material return on the variation in production volume	7881*(-0,2177)		-1715,6937

As can be seen from the table data, the product volume during the reporting period amounted to 1,048 billion UZS, which is 725 billion UZS less compared to the previous period. The impact of the factors on this change is as follows:

1. The amount of material resources in the reporting period amounted to 7,881 billion UZS, which is 2,825 billion UZS more than in the previous period. This led to an increase in product volume by 990.7275 billion UZS.
2. The material yield in the reporting period was 0.1330 UZS, which is 0.2177 UZS less than in the previous period. As a result, the product volume decreased by 1,715.6937 billion UZS.

The quality of material resources used has a significant impact on production volume. A decline in the quality of material resources may lead to equipment breakdowns, deviations from standard material consumption norms, increased production costs, and reduced quality of finished products. Therefore, in the process of analyzing material resource provision, it is necessary to check the quality of materials received during the reporting period, identify the reasons for the delivery of low-quality materials, and examine the actions taken by the supply department in this regard. Depending on the industry and production characteristics, the quality of received materials is checked either fully or selectively.

4. Discussion

The analysis presented in this study clearly demonstrates that the effective provision and use of material resources is a crucial factor in the stability and productivity of enterprise operations. The research emphasizes that both qualitative and quantitative indicators such as material turnover, material intensity, and the profitability of material usage are essential tools for diagnosing inefficiencies and optimizing production processes. Through factor analysis and chain-link evaluation, the study highlights the dual influence of production volume and resource input on material turnover, revealing that an imbalance between these variables can lead to suboptimal performance. Specifically, the decline in material turnover in the reporting period is shown to result primarily from reduced production, despite an increase in resource acquisition.

Moreover, the findings illustrate that internal and external supply sources, supplier coordination, and technological modernization all have direct implications for material efficiency. The inclusion of both general and specific indicators enables a more granular understanding of how different types of materials (e.g., raw materials, fuel, energy) contribute to overall production costs and efficiency. Furthermore, environmental considerations and the quality of materials received are recognized as additional variables that can affect output, cost, and final product quality. Delays in the supply chain or substandard materials can disrupt production continuity, increase operational costs, and reduce competitiveness.

The methodology proposed by the author proves to be comprehensive and adaptable to different industries, offering a structured way to assess material consumption, identify internal reserves, and plan for future resource needs. It provides enterprises with a strategic tool not only to reduce costs and improve profitability but also to respond to market fluctuations and environmental challenges. In summary, the study reinforces the importance of systematic, data-driven analysis in material resource management to ensure sustainable industrial growth.

5. Conclusion

Since material resources constitute the main expenses in the cost of manufactured products, the analysis of their provision and efficient use is of great importance. A reduction in production cost contributes to increased product competitiveness and higher enterprise profits.

To reduce material consumption, it is advisable to implement the following measures:

- modify the production technology;
- introduce new, modern, low-waste equipment;
- reuse waste materials;
- change product design;
- reduce the amount of defective products;

- adjust the product structure;
- improve product quality;
- enhance workers' qualifications;
- maintain proper technical condition of fixed assets (timely maintenance and repairs).

Material resource consumption also depends on the production volume, its structure, and the price of materials.

REFERENCES

1. **Abdujaborova, M.T.** (2024). *Methodology for analyzing the volume of production (goods, works, services)*. Green Economy and Development, No. 12, pp. 190–195.
2. **Bazarnova, O.A., Polyanin, A.V., & Zuravleva, A.A.** (2015). *Three main models in the field of crisis management*. Vestnik of Orel State University. Series: New Humanitarian Research, 5(46), pp. 184–187.
3. **Chernik, A.A.** (2015). *Development of methods for inventory analysis*. Kuban Institute of Socioeconomics and Law (Branch), Educational Trade Union Institution of Higher Education – Academy of Labor and Social Relations, 1–5, p. 168.
4. **Grishchenko, O.V.** (2000). *Analysis and diagnostics of the financial and economic activity of an enterprise: A textbook*. Taganrog: Publishing House of TRTU, 112 pages.
5. **Kulbakov, A.V.** (2011) *Analysis of the use of material resources*. Retrieved from: https://www.cfin.ru
6. **Kulikova, L.I.** (2015). *The impact of inventory valuation on the financial position of an organization* [Electronic resource]: Problems and prospects for the development of the accounting-analytical and control system in the context of globalization of economic processes. – 2015. – Orenburg, pp. 72–76. URL: https://www.elibrary.ru/item.asp?id=23003022 (accessed: 12.12.2020).
7. **Lytnyeva, N.A., & Nevstrueva, N.O.** (2017). *Analysis of the composition and structure of production inventories in enterprise management*. Scientific Result. Economic Research, Vol. 3, No. 3.
8. **Lagoda, M.Yu., & Tuyakova, Z.S.** (2020). *Analysis of the efficiency of the use of material resources*. Economy and Society, No. 12(79), pp. 696–701.
9. Usmonov, B. (2024). Evaluation of Capital Assets in Companies of Uzbekistan. *Miasto Przyszłości*, *52*, 21-24.
10. Usmonov, B. (2025). KAPITAL AKTIVLARINI BAHOLASHDA MODILYANI-MILLER MODELINING AHAMIYATI. *Raqamli iqtisodiyot va axborot texnologiyalari*, *5*(1), 178-183.
11. Omanov, S., Usmonov, B., & Tashbaev, B. (2024). Improving the Analysis of Profitability Indicators of Joint-Stock Company. In *Development of International Entrepreneurship Based on Corporate Accounting and Reporting According to IFRS* (Vol. 33, pp. 213-219). Emerald Publishing Limited.
12. Khalikulova, Y. (2025). ANALYSIS OF THE ROLE OF LEASING AND RENTAL TRANSACTIONS IN THE ACTIVITIES OF ENTERPRISES AND ORGANIZATIONS AND ACROSS REGIONS. *Raqamli iqtisodiyot va axborot texnologiyalari*, *5*(1), 240-245.
13. Burkhanov, A. U., Tursunov, B. O., Usmonov, B., Mamadjanova, T. A., & Akhmedova, M. S. (2025). Econometric Analysis of Factors Affecting the Competitiveness of Industrial Enterprises. In *Green Accounting and Digitalization of E-Business for Sustainable Development* (pp. 161-184). IGI Global Scientific Publishing.
14. Burkhanov, A. U., Gafurov, U. G., Tursunov, B. O., Mamadjanova, T. A., & Usmonov, B. (2025). Green Accounting and Digitalization of E-Business for Sustainable Development: A Methodological Toolkit for Forecasting Enterprise Competitiveness. In Green Accounting and Digitalization of E-Business for Sustainable Development (pp. 113-138). IGI Global Scientific Publishing.
15. Qurbonazar o'g'li, O. S. (2025). Improving the Analysis of Joint-Stock Company Profitability Indicators. *International Journal Of Management And Economics Fundamental*, *5*(04), 45-50.