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Analysis of Activity-Based Costing Strategies in Mitigating Cost Distortions

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ABSTRACT

This study examines the strategic role of Activity Based Costing (ABC) in mitigating cost distortion at PT Biringkassi, a company characterized by complex production processes and high overhead cost intensity. A descriptive quantitative approach was applied, utilizing data obtained from interviews as well as supporting primary and secondary sources. The results indicate that the traditional costing system, which relies on a single allocation base, is unable to accurately reflect resource consumption, resulting in cost distortion in the form of undercosting for products with higher complexity levels. The application of the ABC method leads to an increase in the cost of goods manufactured (COGM) for all products, indicating that previous cost calculations were underestimated relative to actual conditions. These findings confirm that the ABC method not only improves cost accuracy but also supports more effective managerial decision-making, particularly in pricing strategies and product performance evaluation. Given the complexity and high overhead structure of the cement industry, the adoption of ABC is essential to enhance efficiency and competitiveness.

Keywords: *Activity Based Costing, Cost Distortion.*

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INTRODUCTION

The cement industry is one of the manufacturing sectors characterized by complex, continuous, and capital intensive production processes. The production process involves multiple stages, including raw material extraction, processing, burning, and distribution, which results in a high proportion of overhead costs within the production cost structure. This condition requires a cost accounting system capable of providing accurate and relevant information as a basis for managerial decision-making. However, traditional cost accounting systems, which are still widely used, have limitations in allocating overhead costs accurately. These systems generally rely on volume based approaches, such as direct labor hours or production units, which no longer reflect actual resource consumption. Consequently, cost distortion arises in the form of overcosting and undercosting for certain products. This finding is consistent with prior research

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indicating that traditional methods tend to produce inaccurate cost allocations due to their inability to capture production complexity (Al Rababah, 2012).

Cost distortion represents a strategic issue as it affects pricing decisions, product profitability evaluation, and other managerial decisions. In highly competitive industries such as cement manufacturing, inaccurate cost information can reduce a company's competitiveness. Empirical studies indicate that companies implementing ABC achieve better production cost efficiency compared to those that do not (Febuh, 2025).

PT Biringkassi is a manufacturing company operating in the cement industry. Intense competition and fluctuations in production costs pose significant challenges. These conditions require strategic approaches that provide reliable financial information to support decision-making, optimize production costs, and ensure high-quality products at competitive prices.

As a solution to these issues, Activity Based Costing (ABC) offers a more accurate approach to cost allocation. ABC focuses on activities as the drivers of costs, enabling a more realistic representation of resource consumption. Activity Based Costing (ABC) has been widely adopted by manufacturing firms due to its ability to provide more accurate cost information and support better managerial decisions. This approach enables organizations to determine product costs more precisely, which contributes to more informed pricing strategies. In addition, ABC facilitates cost control, enhances operational efficiency, optimizes the use of time and resources, and improves overall production quality. Consequently, the implementation of ABC is considered an effective method in managing production costs (Febuh, 2025).

Given the complexity of production processes and the importance of cost accuracy in the cement industry, further analysis of ABC implementation strategies is necessary. This study is expected to contribute both theoretically and practically to the development of more effective cost accounting systems, particularly for PT Biringkassi in addressing efficiency challenges and global competition.

LITERATURE REVIEW

Activity Based Costing (ABC) is a costing approach used to evaluate expenses, resource utilization, and the efficiency of cost objects in an organization. This method enables both

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manufacturing and service firms to obtain a more accurate representation of their actual costs, there by supporting more reliable cost determination (Teklay et al., 2021). Furthermore, the ABC framework provides management with valuable insights to improve the performance of various activities and processes. Such improvements are achieved by analyzing data related to unused or underutilized capacity, ultimately contributing to the development of sustainable long-term competitive advantage. In addition, ABC supports informed managerial decision-making and facilitates better monitoring of operational activities, allowing organizations to effectively implement strategic actions. It also enables a comprehensive evaluation of the efficiency and effectiveness of resource usage across departments (Dwivedi & Chakraborty, 2016).

There are two primary objectives of implementing ABC. First, it seeks to eliminate cost distortion commonly found in traditional costing systems, where overhead costs are aggregated into a single pool and allocated using broad measures such as direct labor hours. By contrast, ABC employs multiple cost pools and relevant cost drivers to ensure more accurate cost allocation. Second, ABC aims to identify and reduce non-value-added activities through detailed activity analysis, thereby enhancing overall operational efficiency (Pranoto, 2024).

METHOD

This study utilizes a descriptive quantitative research approach with data collected through interviews. The research was carried out at PT Biringkassi. To ensure the credibility, dependability, and confirmability of data obtained through interviews, this study employs a robust triangulation strategy. This process is essential in Activity Based Costing (ABC) research to ensure that the identified cost drivers and activity pools accurately reflect the operational reality at PT Biringkassi. The researcher gathered and cross verified information from multiple organizational levels to eliminate individual bias:

- Strategic Level (finance): Utilized to retrieve historical overhead data and evaluate the rationale behind traditional costing. It answers: "How much total cost needs to be allocated ?"

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- Tactical Level (production): Utilized to verify cement production processes and gather data on setup frequencies and material complexity. It answers: "What specific activities are driving the costs ?"

To ensure that the words of the informants aligned with actual practice, the following techniques were used documentary review. Data derived from interviews (such as machine hours or production units) were cross-referenced with official company documents, including monthly production reports. Any discrepancies between verbal testimonies and written records were reconfirmed through followup inquiries.

The research steps include:

1. Calculation of Cost of Goods Manufactured using ABC, including:
    - Cost driver is a factor that causes costs to be incurred within a company (Marlina, 2017). It represents a characteristic of an activity or event that gives rise to costs (Pranoto, 2024). According to Cooper and Kaplan (1998), the use of a greater number of cost drivers leads to more accurate production cost reporting.
    - A cost pool refers to the grouping of overhead costs associated with identified activities. This grouping is based on similarities in the characteristics of related activities that share the same cost behavior across all products (Mulyadi, 2018).
    - A cost pool rate is the overhead cost per unit of cost driver, calculated for each activity group (Mulyadi, 2018).
2. Cost Calculation Process, including allocation of overhead costs to products, calculation of cost of goods manufactured, and comparison with the company's traditional costing system.

RESULT AND DISCUSSION

In this study, Activity Based Costing (ABC) method was employed to estimate the cost of goods manufactured, specifically focused on the calculation of production costs. The criteria or parameters used in this approach include the number of units produced per product type, direct labor hours per unit, machine hours per unit, material requirements per unit, product cost, and

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sales. Additionally, the analysis considers direct material cost per unit and direct labor cost per unit. Furthermore, overhead costs are categorized into activity groups, including labor-related activities, maintenance activities driven by machine hours, material-handling activities based on the quantity of materials used, and inspection activities based on production units. The results obtained represent the calculation of production costs for each product type.

Table 1. Raw Material Costs

Product Type	Raw Materials (IDR)	Units Produced
Type I Cement	55. 556.000,-	18.500
Type II Cement	111.110.000,-	14.000
Type III Cement	83.332.000,-	9.500

Source: Company Data 2024

Table 2. Direct Labor Costs

	Number of Workers	Direct Labor Cost (IDR)
Type I Cement	160	640.000.000,-
Type II Cement	160	640.000.000,-
Type III Cement	160	640.000.000,-

Source: Company Data 2024

Table 3. Manufacturing Overhead Costs

Cost Type	Amount (IDR)
Indirect Materials	220.000.000,-
Electricity	22.000.000,-
Depreciation	80.000.000,-
Indirect Costs	1.201.000.000,-

Source: Company Data 2024

After determining the production costs, the next step involves identifying the cost drivers, cost pools, and pool rates, as outlined below :

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Table 4. Determination of Cost Drivers, Cost Pools, and Pool Rates

Manufacturing Overhead	Cost Driver (units)	Cost Pool (IDR)	Pool Rate (IDR)
Indirect Materials	42.000	220.000.000,-	5.238,-
Electricity	42.000	22.000.000,-	524,-
Depreciation	42.000	80.000.000,-	1.905,-
Indirect Costs	42.000	1.201.000.000,-	28.595,-
Total			36.262,-

Source: Processed Data, 2026

Table 5. Allocation of Manufacturing Overhead Costs to Each Product

Cost Component	Type I Cement (IDR)	Type II Cement (IDR)	Type III Cement (IDR)
Indirect Materials			
18.500 x IDR 5.238,-	96.903.000,-		
14.000 x IDR 5.238,-		73.332.000,-	
9.500 x IDR 5.238,-			49.761.000,-
Electricity			
18.500 x IDR 524,-	9.694.000,-		
14.000 x IDR 524,-		7.336.000,-	
9.500 x IDR 524,-			4.978.000,-
Depreciation			
18.500 x IDR 1.905,-	35.242.500,-		
14.000 x IDR 1.905,-		26.670.000,-	
9.500 x IDR 1.905,-			18.097.500,-
Indirect Costs			
18.500 x IDR 28.595,-	529.007.500,-		
14.000 x IDR 28.595,-		400.330.000,-	
9.500 x IDR 28.595,-			271.652.500,-
Total	**670.847.000,-**	**507.668.000,-**	**344.489.000,-**

Source: Processed Data, 2026

Table 6. Calculation of Cost of Goods Manufactured Using Activity Based Costing

Cost Component	Type I Cement (IDR)	Type II Cement (IDR)	Type III Cement (IDR)
Raw Material Costs	55.556.000,-	111.110.000,-	83.332.000,-
Direct Labor Costs	640.000.000,-	640.000.000,-	640.000.000,-
Manufacturing Overhead	670.874.000,-	507.668.000,-	344.489.000,-
Total Cost of Production	1.365.556.000,-	1.258.778.000,-	1.067.821.000,-
Units Produced	18.500	14.000	9.500
Cost per Unit	73.814,-	89.913,-	112.402,-

Source: Processed Data, 2026

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Table 7. Comparison of Cost of Goods Manufactured

Description	Type I Cement (IDR)	Type II Cement (IDR)	Type III Cement (IDR)
ABC Cost per Unit	73.814,-	89.913,-	112.402,-
Traditional Cost per Unit	68.000,-	77.000,-	94.000,-
Difference	5.814,-	12.913,-	18.402,-
Selling Price	75.000,-	90.000,-	120.000,-
Profit Margin	1,58%	0,10%	6,33%

Source: Processed Data, 2026

Based on the comparison between Activity-Based Costing (ABC) method and the traditional costing method, significant differences in Cost of Goods Manufactured (COGM) were identified across each product. For Type I Cement, the COGM calculated using the ABC method is IDR 73,814 per ton, which is higher than the traditional method at IDR 68,000, resulting in a difference of IDR 5,814. Similarly, Type II Cement shows a COGM of IDR 89,913 under the ABC method, compared to IDR 77,000 under the traditional method, indicating a difference of IDR 12,913. Meanwhile, Type III Cement records a COGM of IDR 112,402 using the ABC method, which exceeds the traditional costing result of IDR 94,000, with a difference of IDR 18,402.

Based on the above calculations, there are significant differences between cost of goods manufactured (COGM) generated by traditional costing method and Activity Based Costing (ABC) method. This study reveals the presence of a systemic cost distortion phenomenon. Cost distortion occurs because the accounting system at PT Biringkassi is unable to accurately represent the actual consumption of resources by each product, resulting in biased cost information. This finding supports previous empirical evidence with Horngren *et al*. (2018) and Drury (2015), who argue that such distortions are generally caused by the use of a single volume-based allocation base, such as production units or machine hours, which fails to capture the complexity of modern production activities.

Empirically, the results demonstrate that all products experienced an increase in COGM after the implementation of the ABC method. This suggests that the traditional costing system previously applied by PT Biringkassi resulted in undercosting, a condition in which the costs allocated to products are lower than the actual resource consumption. This phenomenon aligns

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with the findings of Zha (2024), which state that traditional methods tend to underestimate costs in complex and multi-activity manufacturing environments. Therefore, the observed differences in COGM are not merely due to methodological variation but reflect structural inaccuracies in the traditional costing system.

The cost distortion identified in this study is closely related to the phenomenon of cross-subsidization among products. Under the traditional system, high-volume products are often overcosted, while products with higher complexity tend to be undercosted. This condition leads to disproportionate cost distribution and may mislead product profitability evaluations. Rofiq and Dewi (2023) emphasize that the implementation of ABC can identify and correct such distortions by tracing costs to the actual activities consumed by each product.

From a broader perspective, cost distortion is not merely a technical issue in cost accounting but also has significant strategic implications. Inaccurate cost information can influence various managerial decisions, including pricing, production planning, and product performance evaluation. When companies rely on distorted cost information, the resulting decisions may be suboptimal and potentially detrimental in the long term, as highlighted by Kaplan and Cooper (1998) and Blocher et al. (2019). Therefore, the accuracy of the costing system is a critical factor in supporting a company's competitive advantage.

The issue of cost distortion at PT Biringkassi becomes even more critical considering the characteristics of the cement industry, which involves high overhead costs, particularly related to energy consumption, kiln usage, and distribution activities. In addition, product diversification, such as Type I, Type II, and Type III cement, leads to variations in production processes and activity consumption. This finding is consistent with the Ministry of Industry (2023), which states that traditional costing systems that fail to capture these differences are likely to produce inaccurate cost information.

For instance, Type II and Type III cement products exhibit more complex production characteristics compared to Type I cement, as they involve additional materials such as pozzolan and fly ash, as well as more varied mixing processes. This study supports the findings of Rofiq and Dewi (2023) and Drury (2015), which indicate that increased complexity leads to higher

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activity consumption, yet this is often not reflected in traditional costing systems. Consequently, these products tend to be undercosted, potentially resulting in pricing that is too low and reducing profit potential. Conversely, high-volume products such as Type I cement may experience overcosting under the traditional system due to disproportionate overhead allocation, making them appear less profitable than they actually are. This misrepresentation can influence managerial decisions regarding product continuation or development.

The implementation of the ABC method in this study demonstrates that activity based cost allocation produces more accurate and relevant cost information. By identifying appropriate cost drivers, ABC enables companies to trace costs to the actual sources of activity, thereby reducing cost distortion. This finding is supported by recent studies indicating that ABC not only improves cost accuracy but also enhances operational efficiency and strategic decision-making (Blocher et al., 2019; Zha, 2024).

Given the challenges faced by PT Biringkassi, including overcapacity, energy price fluctuations, and increasing competition, the need for accurate cost information systems becomes increasingly critical. Errors in determining production costs can directly affect pricing strategies and the company's competitive standing in the market. Therefore, adoption of ABC is no longer merely an alternative accounting method but a strategic necessity for enhancing competitiveness. In conclusion, this study confirms that cost distortion in traditional costing systems is a critical issue that cannot be overlooked in modern manufacturing environments. The implementation of ABC has proven effective in reducing such distortions and providing more accurate cost information, thereby supporting more precise managerial decision making and contributing to sustainable improvements in company performance.

CONCLUSSION

Based on the results and discussion, it can be concluded that the strategy of Activity Based Costing (ABC) method generates more reliable and accurate cost information compared to traditional costing methods. The traditional system, which relies on a single allocation base, has been proven unable to reflect actual resource consumption, thereby resulting in cost distortion in the form of undercosting for products with higher complexity. The findings indicate that all

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products experienced an increase in Cost of Goods Manufactured (COGM) after applying the ABC method. This suggests that the previous traditional method underestimated production costs and had the potential to mislead managerial decision-making. Such cost distortion also leads to cross-subsidization among products, resulting in inaccurate profitability information.

The ABC method, validated by field data, successfully traces costs to their actual sources, correcting the systematic undercosting found in high-complexity products. By cross-verifying cost drivers, this study eliminated the bias often found in traditional accounting. The resulting data provides a more transparent view of product profitability. The correction of Type II Cement's margin to a razor-thin 0.10% highlights how ABC mitigates the risk of "hidden losses" that traditional systems fail to detect. From a margin perspective, profitability levels vary significantly across products. Type II Cement shows a very low margin, approaching the break-even point, while Type III Cement demonstrates the highest level of profitability.

These findings imply that without the implementation of ABC, the company faces a high risk of mispricing and inaccurate product performance evaluation. In the context of the Indonesian cement industry, which is characterized by high overhead costs and complex production processes, the application of ABC becomes increasingly relevant. ABC not only enhances cost accuracy but also functions as a strategic tool to support operational efficiency, appropriate pricing decisions, and improved competitiveness. Therefore, this study emphasizes that the transformation from traditional costing systems to Activity-Based Costing represents an important and strategic step in addressing the challenges of increasingly complex modern manufacturing environments.

The mitigation of cost distortion through ABC does not merely change the numbers; it transforms managerial decision making. By identifying the true consumption of overhead verified through multiple data sources PT Biringkassi can shift from a "guesswork" pricing strategy to an Evidence Based Pricing strategy, ensuring long-term competitiveness in the Indonesian cement industry.

REFERENCES

E-ISSN : 2807-7318, P-ISSN: 2808-3482

Al Rababah, A. H. (2012). The Implementation Stage of Activity Based Costing Systems in Jordanian Manufacturing Shareholding Companies (Doctoral dissertation, University Utara Malaysia). https://etd.uum.edu.my/3488/1/s92287.pdf

Al-Silawi, A. O. F., & Al-Ghabban, F. I. M. (2024). The effect of applying time-driven activity-based costing (TD-ABC) on achieving competitive priorities. Journal of Accounting and Financial Studies, 19(66), 161–175. https://doi.org/10.34093/hf25nx35

Blocher, E. J., Stout, D. E., Juras, P. E., & Smith, S. D. (2019). *Cost Management: A Strategic Emphasis* (8th ed.). McGraw-Hill Education.

Drury, C. (2015). *Management and Cost Accounting* (9th ed.). Cengage Learning.

Dwivedi, R., & Chakraborty, S. (2016). Adoption of an activity based costing model in an Indian steel plant. Business: Theory and Practice, 17(4), 289–298. https://doi.org/10.3846/btp.17.10864

Febuh, A., Usman, A., Yanti, O. M., & Evrilyan, D. (2025). Comparative analysis of production cost efficiency in basic and chemical industry sector companies implementing and not implementing activity-based costing on the Indonesia Stock Exchange in 2023. *Jurnal Bisnis Mahasiswa*, 5(5), 2320–2326. https://doi.org/10.60036/jbm.772

Horngren, C. T., Datar, S. M., & Rajan, M. (2018). *Cost Accounting: A Managerial Emphasis* (16th ed.). Pearson.

Kaplan, R. S., & Cooper, R. (1998). *Cost & Effect: Using Integrated Cost Systems to Drive Profitability and Performance*. Harvard Business School Press.

Ministry of Industry of the Republic of Indonesia. (2023). *National cement industry performance report*. Ministry of Industry.

Rofiq, A., & Dewi, N. (2023). The implementation of activity-based costing in improving production cost accuracy. *Jurnal Akuntansi dan Manajemen*, 15(2), 45–58.

Marlina, E. (2017). Analysis of the effect of activity-based costing on the competitive advantage of higher education institutions. In *Proceedings of the 2nd Celscitech-UMRI* (Vol. 2). Universitas Muhammadiyah Riau.

Muoneke, J. C., & Dandago, K. I. (2024). Activity-based costing for better production management in the Nigerian pharmaceutical industry. International Journal of Research and Innovation in Social Science. https://dx.doi.org/10.47772/IJRISS.2024.814MG0014

Pranoto, F., & Amiluddin. (2024). Activity-based costing system (ABC system) for accurate determination of cost of goods manufactured in SME products. *Jurnal Ilmiah Akuntansi dan Keuangan*, 3(1), 22–28. https://doi.org/10.69679/jian.v3i1.5819

Saeed, A. M. M., Widyaningsih, A., & Khaled, A. S. D. (2023). Activity-based costing (ABC) in the manufacturing industry: A literature review. *Journal of Developing Economies*, 8(2), 261–270. https://doi.org/10.20473/jde.v8i2.40426

E-ISSN : 2807-7318, P-ISSN: 2808-3482

Situngkir, T. L., Ramadan, A. S., Saputra, A. R., Sulistyawati, A., Zhafira, A. N., & Putri, A. (2024). Analysis of the implementation of the activity-based costing method in determining the cost of goods manufactured at Aneka Foam Company. *Jurnal Pendidikan Tambusai*, 8(3), 45965–45975.

Teklay, G., Kitaw, D., & Jilcha, K. (2021). Activity-Based Costing Applied To Automotive Manufacturing a Case of Mesfin Industrial Engineering. *International Research Journal of Modernization in Engineering Technology and Science*, 03(08), 340-354. www.irjmets.com

Yahya, L. M., Ala, H. M., Judijanto, L., Hakim, I., & Asdi, A. (2024). The implementation of the activity-based costing (ABC) method in measuring production costs and improving operational efficiency. *COSTING: Journal of Economic, Business and Accounting*, 7(2). https://doi.org/10.31539/costing.v7i2.8246

Zha, J. (2024). Activity-based costing method: A study on controlling manufacturing costs in enterprises. *Journal of The Institution of Engineers* (India): Series C, 105, 981–986. https://doi.org/10.1007/s40032-024-01088-2