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ANALYSIS OF PRODUCTION COSTS, SALES VOLUME, AND BREAK EVEN POINT (BEP) IN PROFIT PLANNING FOR A BAKERY BUSINESS (A CASE OF NAUCAKE21)

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ABSTRACT

This study examines how production costs, sales volume, and Break Even Point (BEP) support profit planning at Naucake21 using a qualitative case-study approach. Numerical calculations of financial indicators are used as analytical tools to support the interpretation of the case, rather than as the primary research method. Data were obtained through direct observation, interviews with the owner, operational documentation, and records of production costs and sales. April and May 2026 were selected because complete monthly sales records were available for both periods, allowing a comparable analysis of the bakery's financial performance. Costs were classified into fixed and variable categories, followed by calculations of Contribution Margin (CM), Contribution Margin Ratio (CM Ratio), BEP, Margin of Safety (MOS), and profit. Monthly fixed costs totaled IDR 1,625,519 and variable costs totaled IDR 9,252,000. Sales reached IDR 12,895,000 in April and IDR 11,972,000 in May 2026. The April and May CM Ratios were 28.25% and 22.72%, respectively, producing BEP values of IDR 5,753,793 and IDR 7,154,674. MOS Ratios were 55.38% in April and 40.24% in May, while estimated profits after fixed and variable costs were IDR 2,017,481 and IDR 1,094,481. These results indicate that both months exceeded the break-even threshold, although financial performance weakened in May. The findings provide practical information for monitoring costs, setting minimum sales targets, and supporting profit planning in MSMEs.
Keywords: Production Cost, Sales Volume, Break-Even Point, Profit Planning, MSMEs

ABSTRAK

Penelitian ini bertujuan untuk menganalisis bagaimana biaya produksi, volume penjualan, dan Break Even Point (BEP) mendukung perencanaan laba pada Naucake21 dengan menggunakan metode kualitatif melalui pendekatan studi kasus. Perhitungan numerik terhadap indikator keuangan digunakan sebagai alat bantu analisis untuk mendukung interpretasi terhadap kasus, bukan sebagai metode penelitian utama. Data diperoleh melalui observasi langsung, wawancara dengan pemilik usaha, dokumentasi kegiatan operasional, serta catatan biaya produksi dan penjualan. April dan Mei 2026 dipilih sebagai periode analisis karena tersedia catatan penjualan lengkap selama satu bulan pada kedua periode tersebut sehingga memungkinkan dilakukan perbandingan kinerja keuangan. Biaya diklasifikasikan ke dalam biaya tetap dan biaya variabel, kemudian dianalisis menggunakan Contribution Margin (CM), Contribution Margin Ratio (CM Ratio), Break Even Point (BEP), Margin of Safety (MOS), dan laba. Total biaya tetap per bulan sebesar Rp1.625.519, sedangkan biaya variabel sebesar Rp9.252.000. Penjualan April dan Mei 2026 masing-masing sebesar Rp12.895.000 dan Rp11.972.000. CM Ratio April sebesar 28,25% dan Mei sebesar 22,72%, dengan BEP masing-masing Rp5.753.793 dan Rp7.154.674. MOS Ratio sebesar 55,38% pada April dan 40,24% pada Mei,

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sedangkan estimasi laba setelah dikurangi biaya tetap dan biaya variabel masing-masing sebesar Rp2.017.481 dan Rp1.094.481. Hasil menunjukkan bahwa kedua bulan telah melampaui titik impas, meskipun kinerja keuangan pada Mei mengalami penurunan. Penelitian ini memberikan informasi praktis bagi UMKM untuk mengendalikan biaya, menetapkan target penjualan minimum, dan mendukung perencanaan laba.

Kata Kunci: Biaya Produksi, Volume Penjualan, Break-Even Point, Perencanaan Laba, UMKM

I. INTRODUCTION

Indonesia's economic development receives substantial support from Micro, Small, and Medium Enterprises (MSMEs). Employment opportunities, income earned by local communities, and commercial activity in different regions are among the contributions associated with these enterprises (Lubis et al., 2023). Their expansion also encourages productivity and opens opportunities across industries, including food processing and bakeries. For proprietors, however, such opportunities need to be accompanied by attention to the continuity of their enterprises. Sustaining operations therefore requires both the careful organization of day-to-day activities and sound choices concerning business finances (Janah & Tampubolon, 2024).

The continued operation of an enterprise depends partly on how well its proprietor interprets and uses financial records. Digital developments now enable MSMEs to organize accounting information with applications such as accounting software and Microsoft Excel, alongside financial technology and artificial intelligence (Kamilah & Samri Juliati Nasution, 2024). With these resources, records of commercial activities can be arranged more systematically, including details of production expenditure and sales performance. Reliable records allow proprietors to examine operational outcomes rather than relying on information that has not been organized. They also supply the financial basis needed when preparing profit plans suited to the enterprise. Accordingly, both access to accounting information and its actual use are relevant to the management of MSME operations.

Establishing a profit plan requires attention to the expenditure associated with production. Resources consumed in making marketable goods are recorded as production costs; these normally include expenditure on material inputs, payments for direct labor, and factory overhead (Putri & Sumarni, 2026). When these items are identified accurately and controlled appropriately, proprietors can assess production requirements and judge how efficiently their operations use available resources. Expenditure alone, however, does not explain the profit position. Sales volume must also be examined, since the quantity or value of transactions shapes the revenue earned by an enterprise. For that reason, production expenditure and sales performance should be reviewed jointly when expected profits are established and actual business outcomes are evaluated.

The usefulness of production cost records for supporting business decisions has been documented in earlier work. (Susanto & Nurdiwansyah, 2024) demonstrated this purpose through an analysis of production costs at Jo Bakery using the full costing method, showing that a comprehensive calculation of production costs provides more accurate cost information and supports business management and continuity. Evidence reported by (Budiarti, 2020) likewise highlights the importance of accurate production cost calculations in bakery businesses through the application of the Activity Based Costing System at Home Industry Pesanan Roti Bapak Yanto Sidoarjo. The findings showed that considering raw material costs, direct labor costs, and factory overhead costs can produce more accurate production cost information than conventional calculations. Together, these accounts suggest that reviewing production costs provides useful information for managing bakery businesses and supporting business decisions. The settings examined in these studies, however, have primarily focused on the calculation and determination of production costs in bakery businesses. The present study therefore differs by integrating production costs, sales volume, and Break Even Point (BEP) analysis to assess whether an enterprise can recover its costs and support profit planning at Naucake21.

Bakery operations provide an appropriate setting for examining production costs, sales volume, and BEP as connected elements rather than separate measures. Naucake21 manufactures and

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markets assorted bakery products and was selected because the business had obtained regular earnings and reinvested part of those earnings in production equipment. Initial observations and discussions with the owner indicated that the business had sales and cost information but had not systematically integrated those records into a CVP-based analysis. In particular, the proprietor did not yet have systematically established figures for Contribution Margin, CM Ratio, BEP, Margin of Safety, and estimated monthly profit. The practical problem of this study is therefore how available production-cost and sales records can be organized and analyzed to determine the minimum sales level required to cover costs and to support more structured profit planning.

Within the Cost-Volume-Profit (CVP) framework, profit is determined through the interaction among selling prices, sales volume, fixed costs, and variable costs. Variable costs are deducted from sales to obtain Contribution Margin, which is then used to cover fixed costs and generate profit. The CM Ratio indicates the proportion of each rupiah of sales that remains after variable costs. BEP is reached when total contribution is sufficient to cover fixed costs, while Margin of Safety indicates how far actual sales can decline before the break-even level is reached (Simamora & Muliyani, 2022). Thus, a change in sales volume or variable costs can alter the CM Ratio, which subsequently affects the sales level required to reach BEP. Applying these measures together allows the financial relationship between costs, sales, and profit to be interpreted in an integrated manner.

The present investigation consequently examines how production costs, sales volume, and BEP inform the preparation of profit plans at Naucake21. It first distinguishes fixed expenditure from variable expenditure and reviews recorded sales. It then derives Contribution Margin and Contribution Margin Ratio, together with BEP and Margin of Safety. The resulting measures are intended to describe the bakery's financial position and show how expenditure and sales records can be used when deciding profit objectives. Beyond this particular enterprise, the findings are expected to offer practical information for other MSMEs operating bakeries. Their relevance concerns the control of production expenditure, the choice of sales objectives, and decisions directed toward maintaining business continuity.

II. LITERATURE REVIEW

Production Cost

Expenditure associated with converting material inputs into marketable goods constitutes production cost. According to (Putri and Sumarni 2026), its usual elements are spending on raw materials, remuneration for direct labor, and manufacturing overhead. Managing these elements properly matters because the resulting expenditure shapes product costs as well as operational efficiency. In a small enterprise, each production-related outlay therefore needs to be identified accurately. Once organized, these records allow the proprietor to monitor spending, establish selling prices, and prepare profit plans using information about the resources consumed in production.

Sales Volume

The quantity of merchandise sold within a defined period, or the monetary value of those transactions, expresses sales volume. (Dalmayani et al. 2023) use this measure to describe the extent to which products reach customers, expressed either as physical units or as transaction value. The account given by (Dandi Palaguna et al. 2023) similarly connects the measure to completed product sales during a specified interval. Such information is relevant when profit objectives are set. Variations in sales change the revenue available for meeting business expenditure and retaining earnings, making sales volume an essential consideration rather than a separate operational figure (Sasono & Rahayu, 2022).

Break Even Point (BEP)

At the Break Even Point (BEP), revenue exactly offsets expenditure, leaving a zero profit balance rather than a surplus or deficit. Estimating this threshold establishes the sales requirement for full expenditure recovery within an enterprise (Husna et al., 2024). MSME proprietors can therefore use the estimate to judge the transaction value needed to keep operations running without incurring a

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loss. Its usefulness is not confined to identifying that threshold alone. (Rusmayanti 2021) also presents BEP as a means of preparing profit plans and assessing the performance achieved by a business.

Cost-Volume-Profit (CVP)

Cost-Volume-Profit (CVP) analysis is a managerial accounting approach used to examine the relationship between costs, sales volume, and profit in supporting business planning and decision-making. Within this framework, costs are generally classified into fixed costs, which remain relatively constant within a certain range of activity, and variable costs, which change according to the level of production or sales. CVP analysis uses the Contribution Margin (CM) and Contribution Margin Ratio (CM Ratio) to determine the amount and proportion of sales revenue available to cover fixed costs and generate profit. It also provides the basis for calculating the Break Even Point (BEP), which represents the level of sales at which total revenue is sufficient to cover total costs, resulting in neither profit nor loss. In addition, the Margin of Safety (MOS) indicates how far actual sales can decline before reaching the break-even level. Therefore, by integrating information on costs, sales volume, contribution margin, BEP, and MOS, CVP analysis provides a useful framework for monitoring financial performance, determining sales targets, and supporting profit planning.

Profit Planning

Profit planning begins with the selection of an earnings objective for a specified interval, followed by the identification of measures needed to realize it. Actual selling performance is central to this process: receipts must first meet business expenditure before earnings can be retained. (Putri et al. 2025) describe sales planning as a tool for organizing activities and monitoring their execution. It also helps establish the associated requirements for production, expenditure, and inventory. A workable profit plan therefore depends on more than an earnings target alone. It requires sales and expenditure records that allow their combined financial implications to be considered.

Relationship Among The Instrument

In preparing profit plans, production costs, sales volume, and BEP need to be considered jointly. Production expenditure establishes the outlay awaiting recovery, whereas sales performance determines the receipts available to meet that outlay and retain earnings. (Fauzi et al. 2024) explain that cost-volume-profit analysis enables these financial connections to be examined. For Naucake21, bringing production expenditure records and sales figures together with the BEP estimate consequently gives a fuller basis for managerial decisions. This combined information can guide the selection of sales objectives, the monitoring of spending, and the assessment of whether planned profit outcomes have been achieved.

III. RESEARCH METHOD

Research Data

The case setting was Naucake21, a micro-scale enterprise that produces and sells assorted bread products. The data consisted of primary and supporting documentary evidence. Primary information was obtained through direct observation of operating activities and interviews with the proprietor regarding production activities, cost components, sales conditions, and the use of business records. Documentary evidence included monthly sales records for the analyzed periods, records and information on raw-material and LPG expenditure, business rent, electricity, cashier salary, and fixed assets used in production. April and May 2026 were selected for the main comparison because complete monthly sales records were available for both months. The financial information was cross-checked through interviews and observations to confirm the nature and use of the reported cost components. The resulting data were then organized into fixed and variable costs and used as inputs for CM, CM Ratio, BEP, MOS, and profit calculations

Research Method

This study used a qualitative method with a case-study approach to examine Naucake21 in depth. Numerical calculations were used as analytical tools to support the interpretation of the findings and were not treated as the primary research method. The qualitative approach was used to understand the bakery's operating context, the characteristics of its cost components, and the practical use of

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financial information for profit planning. Data were collected through observation, interviews with the proprietor, and documentation of available sales and cost records. April and May 2026 were analyzed because both provided complete monthly sales data. During the analytical stage, costs were classified according to their behavior into fixed and variable categories. Sales revenue was then used to calculate Contribution Margin (Sales − Variable Costs), CM Ratio (CM ÷ Sales), BEP in sales value (Fixed Costs ÷ CM Ratio), MOS (Actual Sales − BEP), MOS Ratio (MOS ÷ Actual Sales × 100%), and estimated profit (Sales − Variable Costs − Fixed Costs). These calculations supported, rather than replaced, the qualitative interpretation of how the bakery could use its financial information in planning profit.

IV. RESULTS AND DISCUSSION

Production Cost Analysis

Two expenditure categories were distinguished in Naucake21's production records: fixed costs and variable costs. The former do not respond directly to variations in output, whereas the latter vary with production activity. Separating the records in this way establishes the analytical starting point for the bakery. Both contribution margin and the break-even threshold are subsequently determined using this cost classification.

Table 1. Monthly Fixed Costs of Naucake21

No	Fixed Cost Component	Amount (IDR)
1	Business Rent	450,000
2	Electricity	100,000
3	Cashier Salary	1,000,000
4	Depreciation of electric oven	10,416
5	Depreciation of tangkring oven	4,687
6	Depreciation of large gas oven	60,416
Total		**1,625,519**

Source: Processed by the author, 2026

The entries in Table 1 place Naucake21's monthly fixed expenditure at IDR 1,625,519. Business rent, electricity, and cashier salary were treated as fixed because the amounts used in the monthly analysis did not directly change with the sales volume during the observed period. The electricity amount was classified as fixed for analytical purposes because the available record represented a relatively stable monthly operating commitment; this classification may differ if detailed usage data show substantial variation with production activity. Depreciation was calculated using the straight-line method with a zero residual value and an estimated useful life of eight years. The acquisition costs were IDR 1,000,000 for the electric oven, IDR 450,000 for the tangkring oven, and IDR 5,800,000 for the large gas oven, producing monthly depreciation of approximately IDR 10,416, IDR 4,687, and IDR 60,416, respectively. These fixed commitments must be covered by the contribution generated from product sales before profit can be earned.

Table 2. Monthly Variable Costs of Naucake21

No	Variable Cost Component	Amount (IDR)
1	Raw materials	9,000,000
2	LPG	252,000
Total		**9,252,000**

Source: Processed by the author, 2026

The monthly variable expenditure reported in Table 2 totals IDR 9,252,000. Of this amount, material inputs account for IDR 9,000,000, while LPG accounts for IDR 252,000. Materials dominate the category because bread production directly consumes these inputs. Attention to both purchasing and usage is therefore necessary. Controlling those activities helps the bakery use production expenditure efficiently and provides support for the preparation of its profit plans.

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The variable cost figure of IDR 9,252,000 was based on the owner's information regarding the bakery's estimated average monthly production expenditure, consisting of IDR 9,000,000 for raw materials and IDR 252,000 for LPG. Detailed variable-cost records were not available separately for April and May 2026. Therefore, the same estimated monthly variable cost was applied to both periods as the analytical basis for comparing sales performance, Contribution Margin, BEP, and Margin of Safety. Consequently, differences between the April and May results primarily reflect differences in recorded sales revenue. This limitation should be considered when interpreting the findings.

Sales Volume Analysis

Naucake21's recorded revenue was used to assess sales volume for April and May 2026. Each selected period contained a complete month of sales observations. This availability of full-month records made the two periods more suitable for comparison when the bakery's break even position was examined.

Table 3. Sales Revenue of Naucake21

Month	Sales Revenue (IDR)
April 2026	12,895,000
May 2026	11,972,000

Source: Processed by the author, 2026

Table 3 records receipts of IDR 12,895,000 for April 2026 and IDR 11,972,000 for May. The later month therefore registered a decline of IDR 923,000. This change also influences the contribution margin obtained from sales and the amount left for meeting fixed expenditure before earnings are retained. Preserving sales performance, while seeking opportunities to raise it, consequently remains relevant to the way Naucake21 sets and pursues its profit objectives.

Contribution Margin and Contribution Margin Ratio

Table 4. Contribution Margin and CM Ratio of Naucake21

Month	Sales (IDR)	Variable Costs	CM (IDR)	CM Ratio
April 2026	12,895,000	9,252,000	3,643,000	28.25%
May 2026	11,972,000	9,252,000	2,720,000	22.72%

Source: Processed by the author, 2026

April's figures in Table 4 yield a contribution margin of IDR 3,643,000 and a CM Ratio of 28.25%. For May, the respective figures are IDR 2,720,000 and 22.72%. The lower sales revenue in May reduced the contribution available to cover fixed costs and generate profit. Within the CVP framework, this pattern shows that weaker sales performance, when variable costs remain high, can reduce the proportion of sales available for fixed-cost recovery. The decline is consistent with the relationship described in CVP analysis, in which changes in sales and cost behavior influence contribution and, consequently, the break-even threshold.

Break-Even Point (BEP) Analysis

For Naucake21, the BEP estimate identifies the revenue threshold at which both categories of expenditure are fully recovered. Once receipts exactly offset fixed and variable expenditure together, the resulting profit balance is zero. The threshold can be expressed in monetary sales terms rather than units of bread. In this analysis, that sales-value estimate is obtained from the following relationship:

BEP (Sales) = Fixed Costs / CM Ratio

Because Naucake21 sells several bakery products with different selling prices and detailed product-level sales data were not available, the BEP was calculated in terms of total sales revenue rather than the number of units of individual products. The calculation uses the overall CM Ratio derived from the aggregate sales and variable-cost information available for each observation period. Therefore, the resulting BEP should be interpreted as the minimum total sales revenue required to cover the costs represented in the analysis. Changes in product mix, selling prices, or cost structure may affect the estimated break-even level.

Table 5 summarizes the monetary thresholds obtained from these BEP calculations.

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Table 5. Break-Even Point Analysis of Naucake21

Month	Fixed Cost (IDR)	CM Ratio	BEP (IDR)	Actual Sales (IDR)
April 2026	1,625,519	28.25%	5,753,793	12,895,000
May 2026	1,625,519	22.72%	7,154,674	11,972,000

Source: Processed by the author, 2026

Using the verified monthly fixed cost of IDR 1,625,519 and the CM Ratios shown in Table 4, April's BEP is IDR 5,753,793 and May's BEP is IDR 7,154,674. Actual sales were IDR 12,895,000 in April and IDR 11,972,000 in May, so both months remained above their respective break-even requirements. The higher BEP in May is explained by the lower CM Ratio: with fixed costs relatively unchanged, a smaller proportion of each rupiah of sales is available to recover those fixed costs. This result is consistent with previous CVP and BEP studies showing that changes in contribution affect the sales level required for full cost recovery (Sitanggang, 2023; Rahmawati et al., 2023).

Naucake21 can treat the estimated BEP as a minimum sales benchmark when preparing monthly profit plans. However, a sales target should normally be set above BEP because sales at the break-even level only recover costs and do not generate profit. The gap between actual sales and BEP, measured through MOS, therefore provides an additional basis for evaluating the level of sales risk faced by the business.

Margin of Safety (MOS) Analysis

Margin of Safety (MOS) expresses the reduction in recorded revenue that could occur before break even is reached. A larger MOS therefore represents a wider cushion: sales would have to fall further before receipts ceased to exceed the expenditure-recovery threshold.

Table 6. Margin of Safety Analysis of Naucake21

Month	Actual Sales (IDR)	BEP (IDR)	MOS	MOS Ratio
April 2026	12,895,000	5,753,793	7,141,207	55.38%
May 2026	11,972,000	7,154,674	4,817,326	40.24%

Source: Processed by the author, 2026

Table 6 places April's Margin of Safety at IDR 7,141,207, equivalent to 55.38% of recorded sales. For May, this cushion falls to IDR 4,817,326, or 40.24%. The lower May figure indicates that the distance between actual sales and the break-even requirement became narrower. This finding is consistent with the CVP principle that a decline in sales performance and contribution can reduce the financial cushion available before the business reaches the break-even threshold.

The MOS results can also be used as a practical warning indicator for the owner. The decline from 55.38% in April to 40.24% in May shows that Naucake21 had a smaller buffer against a potential reduction in sales. Therefore, when the MOS decreases, the owner should monitor sales performance more closely and evaluate the factors affecting production costs. Maintaining sales above the BEP level and controlling the major components of variable costs, particularly raw materials, can help preserve a sufficient financial safety margin.

Discussion

The findings show that profit planning at Naucake21 is closely related to the interaction among production costs, sales volume, contribution, and the break-even threshold. The integrated CVP analysis indicates that production costs establish the amount that must be recovered, while sales performance determines the revenue available for that recovery. This is consistent with Sitanggang (2023) and Fauzi et al. (2024), who explain that CVP measures help connect cost behavior, sales activity, and profit planning. The bakery case also supports the findings of Rahmawati et al. (2023) and Santya et al. (2025) that BEP analysis can provide a practical basis for evaluating sales requirements in bakery businesses. The present study extends this comparison by presenting production-cost classification, sales volume, CM, CM Ratio, BEP, MOS, and estimated profit within one connected analysis.

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Between April and May 2026, Naucake21 experienced a decline in sales from IDR 12,895,000 to IDR 11,972,000. Contribution Margin declined from IDR 3,643,000 to IDR 2,720,000 and the CM Ratio decreased from 28.25% to 22.72%. Consequently, BEP increased from IDR 5,753,793 to IDR 7,154,674, while the MOS Ratio declined from 55.38% to 40.24%. Estimated profit also decreased from IDR 2,017,481 in April to IDR 1,094,481 in May. These results demonstrate numerically that weaker sales performance reduced the contribution available for fixed-cost recovery and narrowed the business's safety margin, even though both months still generated positive profits.

To support profit planning more directly, the BEP analysis can be extended to estimate the sales required to achieve a specific profit target. As an illustrative scenario, if Naucake21 aims to obtain a monthly profit of IDR 1,000,000, the required sales can be estimated using the following formula:

Required Sales = (Fixed Costs + Target Profit) / CM Ratio

Using fixed costs of IDR 1,625,519 and a target profit of IDR 1,000,000, the required sales for April, based on a CM Ratio of 28.25%, would be approximately IDR 9,293,458. Meanwhile, using the May CM Ratio of 22.72%, the required sales would increase to approximately IDR 11,556,145. This difference indicates that a lower CM Ratio requires a higher level of sales to achieve the same profit target. The calculation is presented as an illustrative profit-planning scenario and does not represent an actual profit target previously established by the owner.

For the proprietor, these measures provide complementary information for setting sales objectives and monitoring costs. BEP can serve as the minimum sales benchmark, MOS can indicate the distance from a potential loss position, and estimated profit shows the financial result after fixed and variable costs are considered. The findings therefore suggest that profit planning should not rely on sales totals alone but should also consider cost behavior and the contribution generated by sales. At the same time, the results are limited to one micro-scale bakery and a two-month period with complete comparable sales records. Future studies may use longer observation periods, compare several MSMEs, and conduct product-level analyses so that differences in selling prices, variable costs, and contribution among bakery products can be examined more precisely.

V. CONCLUSION

Based on the findings, production costs, sales volume, and Break Even Point (BEP) are important components of profit planning at Naucake21. The analysis showed that the CM Ratio declined from 28.25% in April to 22.72% in May, which was followed by an increase in BEP from IDR 5,753,793 to IDR 7,154,674. At the same time, the MOS Ratio declined from 55.38% to 40.24%, indicating a narrower financial safety margin in May. Nevertheless, actual sales in both months remained above BEP and generated estimated profits of IDR 2,017,481 in April and IDR 1,094,481 in May. These findings show that CVP-based analysis can help the business set minimum sales targets, monitor production costs, and evaluate the relationship between sales and profit. For Naucake21, the findings suggest that monthly sales targets should be set above the BEP rather than using the break-even level as the final target. The owner should also monitor the CM Ratio and Margin of Safety regularly, particularly when sales decline. Because raw materials represent the largest component of the variable costs used in the analysis, controlling purchasing and material usage should be prioritized to help maintain contribution and support the planned level of profit. The study is limited to one research object and a two-month comparable observation period. Future research is recommended to use a longer observation period and product-level data to provide a more detailed analysis of cost behavior, sales contribution, and profit planning.

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