



Relevant Cost Analysis in Decision-Making for Custom Orders: A Study of PT Wahana Interfood Nusantara Tbk

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Abstract

This study evaluates the use of relevant cost analysis in special-order decisions at PT Wahana Interfood Nusantara Tbk, an Indonesian cocoa and chocolate manufacturer. A descriptive quantitative single-case documentary design was applied using the company's 2025 annual report and consolidated financial statements. A hypothetical order with a normal value of Rp10 billion and a 10% discount was assessed through cost classification, differential profit calculations, sensitivity testing, and capacity and financing opportunity cost analysis. Estimated relevant costs represented 86.88% of normal sales, yielding incremental profit of Rp312,040,680 at the discounted price. A conventional full-costing comparison instead indicated a loss of Rp768,577,959 because it included manufacturing overhead assumed unaffected by order acceptance. When half of miscellaneous overhead was treated as variable, the 10% discount generated a loss and the break-even discount declined to 9.31%. Financing opportunity costs reduced baseline net benefits to Rp71,039,069–Rp240,275,756, while the conservative combined scenarios lowered break-even discounts to 6.79%–8.56%. Order acceptance is financially defensible only when adequate idle capacity exists, negotiated prices cover incremental and opportunity costs, and protective payment terms constrain financing and credit exposure. The findings demonstrate how scenario-based cost classification improves the evaluation of custom orders, although actual transaction-level costs and capacity conditions remain unverified.

Keywords: Cocoa Industry, Differential Cost Analysis, Opportunity Cost, Relevant Cost, Special Orders.



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INTRODUCTION

Food-processing manufacturers operate under cost structures in which material consumption, production volume, and selling-price decisions jointly influence operating margins and financial performance (Robiani et al., 2024). For cocoa-related businesses, fluctuations in commodity prices and procurement conditions introduce additional uncertainty that can affect production expenditure and operating stability (Fudjaja et al., 2024). These conditions become particularly consequential when customers request customized products at prices different from those established through regular sales channels. Such transactions require management to evaluate the additional resources consumed by each order rather than automatically applying historical average production costs. Research involving confectionery enterprises emphasizes the usefulness of variable cost information in evaluating short-term production alternatives and their financial consequences (Amalia et al., 2022). Special-order pricing studies similarly demonstrate the importance of comparing negotiated selling prices with expenditures directly attributable to additional customer demand (Ambarsari & Setiyono, 2023). For PT Wahana Interfood Nusantara Tbk, these considerations establish a managerial accounting problem concerning whether custom orders can generate positive incremental contributions while accommodating production requirements and fluctuations in manufacturing costs.

Recent managerial accounting research has increasingly examined relevant cost analysis as a decision-making instrument for evaluating additional production, negotiated prices, and the acceptance or rejection of special orders (Sengengeng et al., 2023). Applications of variable costing emphasize the identification of expenditures that change with production activity, allowing managers to distinguish incremental costs from fixed allocations that remain unaffected by short-term decisions (Ruslan et al.,

2023). This approach establishes a common analytical principle in which the financial attractiveness of an order depends on differences in revenue and expenditure between available alternatives. Empirical investigations of processed-food enterprises demonstrate how differential cost comparisons can support special-order acceptance when additional revenue exceeds the costs directly associated with order fulfillment (Dewianawati et al., 2024). More recent research extends this discussion toward special-order pricing by incorporating relevant cost information into the determination of economically acceptable selling prices (Kurniawati et al., 2025). These contributions provide a methodological foundation for incremental profitability analysis, although differences in business scale, production characteristics, and resource availability influence the applicability of individual decision models.

Despite the development of relevant cost analysis, the reviewed literature provides limited direct evidence concerning its application to publicly listed cocoa and chocolate manufacturers operating under more complex financial and production arrangements. Manufacturing-oriented research establishes the usefulness of distinguishing relevant from irrelevant expenditures but does not directly demonstrate the financial implications of customized orders at PT Wahana Interfood Nusantara Tbk (Sugijaya, 2023). Existing studies of additional production also demonstrate that idle capacity can affect order profitability, making resource availability an important consideration in short-term decisions (Nopriati & Mintalangi, 2026). However, the implications of constrained capacity, possible displacement of regular production, and changes in material expenditure require further examination within a unified decision framework. Research on cocoa-industry resilience identifies pricing fluctuations and procurement instability as significant operational concerns, although its analytical orientation differs from the evaluation of individual customer-order profitability (Fudjaja et al., 2024). These distinctions reveal an empirical and methodological gap concerning the combined treatment of differential production costs, negotiated selling prices, capacity-related opportunity costs, and material-cost sensitivity. The unresolved issue is how these factors should be integrated into a transparent financial assessment that distinguishes observable corporate information from assumptions required to evaluate hypothetical custom-order alternatives.

The limited integration of cost behavior, production capacity, and pricing uncertainty creates practical difficulties when managers must determine whether nonroutine orders contribute to operating profitability. Research on special-order pricing indicates that financial decisions should consider incremental economic consequences rather than relying exclusively on conventional production costs or regular selling prices (Ambarsari & Setiyono, 2023). Capacity utilization introduces an additional consideration because the profitability of supplementary production may differ substantially between situations involving unused resources and those requiring the displacement of existing operations (Nopriati & Mintalangi, 2026). Evidence concerning Indonesia's food-manufacturing cost structure further reinforces the relevance of examining production expenditure when assessing the economic consequences of manufacturing decisions (Robiani et al., 2024). For a publicly listed processing company, inaccurate cost classification or insufficient sensitivity assessment may distort the estimated contribution of customized orders and weaken the financial justification for management decisions. A structured evaluation of differential costs, acceptable price reductions, and alternative capacity conditions is consequently necessary to establish a defensible basis for short-term resource allocation and pricing decisions.

This study positions relevant cost analysis as an integrated financial decision framework for evaluating custom-order feasibility at PT Wahana Interfood Nusantara Tbk, with particular attention to its manufacturing characteristics and publicly disclosed financial information. The proposed approach builds on manufacturing-related research concerning the classification of decision-relevant expenditures while extending the analysis toward company-specific production and pricing alternatives (Sugijaya, 2023). Existing research on special-order pricing provides a foundation for evaluating minimum acceptable selling prices and incremental profitability, which are incorporated into the proposed analytical structure (Kurniawati et al., 2025). Rather than limiting the assessment to a single comparison of additional revenue and production expenditure, the study examines alternative assumptions concerning material costs, selling-price discounts, and available production capacity. Previous investigations demonstrate the usefulness of relevant cost comparisons in accepting or rejecting special orders, although their individual applications do not directly establish the integrated decision structure proposed for the company examined here (Dewianawati et al., 2024). The analysis also differentiates avoidable production expenditures from potential opportunity costs associated with

reallocating manufacturing resources, enabling the financial consequences of alternative capacity conditions to be evaluated separately. The intended novelty consists of integrating differential cost classification, incremental profitability, minimum acceptable pricing, and sensitivity-based capacity assessment within a unified company-level framework that can be evaluated using disclosed financial information and explicitly stated transaction assumptions.

This study aims to evaluate the financial feasibility of accepting or rejecting custom orders at PT Wahana Interfood Nusantara Tbk through the application of relevant cost analysis. The research specifically identifies production expenditures that are relevant to short-term decisions and distinguishes them from costs that remain unchanged across available alternatives. It subsequently estimates differential revenue, incremental production costs, and the additional operating contribution associated with a proposed custom-order scenario. The analysis also determines the minimum acceptable selling price and the maximum economically permissible discount based on the relationship between additional revenue and decision-relevant expenditures. Sensitivity assessments examine the implications of changes in material costs, negotiated selling prices, and production cost behavior for the financial attractiveness of alternative order decisions. Production capacity conditions and associated opportunity costs are evaluated separately to distinguish the utilization of available manufacturing resources from situations involving potential displacement of regular production. The research seeks to contribute a systematic framework for short-term managerial decision-making that supports transparent cost evaluation, economically defensible pricing decisions, and more effective allocation of manufacturing resources within the food-processing industry.

RESEARCH METHODS

This study employed a descriptive quantitative approach with a single-case documentary design, applying differential cost analysis to a hypothetical special-order decision at PT Wahana Interfood Nusantara Tbk, consistent with the application of cost information in short-term manufacturing decisions (Amalia et al., 2022). The company was purposively selected because it operates in cocoa and chocolate manufacturing, provides publicly accessible financial disclosures, and offers a relevant business setting for examining custom-order pricing decisions. Secondary data were drawn from the company's 2025 Annual Report and accompanying notes to the consolidated financial statements, with the unit of analysis comprising production and operating expense components and an assumed special order with a normal selling value of Rp10,000,000,000 and a proposed discount of 10%. Because product-level selling prices, order quantities, and detailed cost behavior were not disclosed, the analysis employed explicitly defined scenario assumptions rather than treating estimated transaction characteristics as observed company data. Production expenditures were classified into relevant and irrelevant components according to whether they would change between the acceptance and rejection alternatives, following the decision-oriented treatment of manufacturing costs (Sugijaya, 2023). The analytical framework distinguished incremental revenue, avoidable production expenditure, and unaffected fixed costs to establish a consistent basis for evaluating the financial consequences of special-order decisions (Sengengeng et al., 2023).

The analytical procedure began with the identification and classification of production and operating expense components, followed by reconciliation of reconstructed cost of goods sold with the corresponding amount reported in the company's financial statements. Differential profit was calculated by subtracting incremental costs from discounted special-order revenue, while a parallel full-costing calculation was used to distinguish the effects of allocated production expenditure from decision-relevant costs in assessing order profitability (Kurniawati et al., 2025). Sensitivity analysis subsequently examined alternative selling-price discounts, the treatment of direct labor expenses, and the classification of miscellaneous factory overhead to evaluate how changes in cost assumptions affected incremental profit and the minimum acceptable selling price. Capacity-related opportunity costs were incorporated into alternative scenarios to distinguish the financial implications of utilizing idle production resources from those of reallocating capacity otherwise available for regular production (Nopriati & Mintalangi, 2026). Financing opportunity costs associated with committed funds were also evaluated to determine whether the estimated incremental contribution remained economically favorable after accounting for alternative resource uses, consistent with the distinction between decision-relevant economic consequences and historical expenditures (Biala, 2022). The final stage organized differential cost calculations, break-even prices, maximum viable discounts, and sensitivity

comparisons into analytical tables, with methodological consistency assessed through financial-statement reconciliation, explicit identification of scenario assumptions, and the application of identical cost-classification criteria across acceptance and rejection alternatives.

RESULTS AND DISCUSSION

Manufacturing Cost Structure and Financial Basis for Special-Order Analysis

PT Wahana Interfood Nusantara Tbk reported manufacturing expenditure for the year ended December 31, 2025, in Note 27 of its consolidated financial statements, identified as Cost of Goods Sold. The disclosure separates production expenditure into raw materials, direct labor, and factory overhead, permitting a component-based reconstruction of manufacturing costs. This structure provides an accounting basis for examining how manufacturing expenditure is distributed before assumptions about the costs of an additional order are introduced. Evidence from Indonesia's food industry identifies cost structure as a relevant factor in manufacturing value creation and financial performance (Robiani et al., 2024). For the present case, the disclosed amounts are treated as historical company figures rather than observed costs of an individual custom order. The distinction is necessary because financial-statement categories do not independently establish whether an expenditure will change when management accepts a particular order (Sugijaya, 2023).

Raw material expenditure constitutes the starting point of the cost reconstruction because it represents the principal input category in the company's reported manufacturing accounts. The opening raw material inventory was Rp69,402,854,669, while purchases recorded during 2025 amounted to Rp120,978,833,045. Closing raw material inventory of Rp69,329,316,787 was deducted from the combined opening inventory and purchases to determine annual consumption. The resulting raw material consumption was Rp121,052,370,927, as reproduced in Table 1. This calculation identifies materials used during the reporting year but does not disclose the quantities or ingredient requirements of a prospective custom order. Variations in cocoa procurement conditions may further affect the cost of materials required at the time of production (Fudjaja et al., 2024). Research on cocoa marketing similarly emphasizes the economic significance of costs across actors in the supply chain, reinforcing the need to separate reported annual expenditure from transaction-specific estimates (Asir & Asir, 2023).

Table 1. Raw Material Breakdown

Description	Amount (Rp)
Raw material inventory, beginning of year	69,402,854,669
Raw material purchases	120,978,833,045
Raw material inventory, end of year	-69.329.316.787
Total raw materials consumed	121,052,370,927

Table 1 establishes that raw materials represented approximately 75.05% of the reported Rp161,298,780,008 in production costs before inventory adjustments. This share indicates that assumptions concerning material usage and procurement prices can strongly influence the modeled contribution of an additional order. It does not establish a product-specific material requirement, because the disclosed figure aggregates consumption across the company's manufacturing activities. The same separation between historical expenditure and decision-relevant cost must be maintained when examining employee compensation. Variable cost analysis has been applied to short-term manufacturing decisions, but the variable portion must be linked to the production alternative actually considered (Ruslan et al., 2023). The annual direct labor figure used in the present reconstruction is retained without alteration in Table 2.

Table 2. Direct Labor Costs

Description	Amount (Rp)
Direct labor	13.938.147.015

Direct labor recorded for 2025 amounted to Rp13,938,147,015, representing approximately 8.64% of the company's disclosed production costs before inventory adjustments. The amount describes labor expenditure associated with manufacturing activity during the reporting year rather than a measured marginal labor cost for a new order. Whether additional labor would be incurred depends on operational conditions such as existing shift allocation, overtime requirements, and the availability of production personnel. The hypothetical order model treats labor as variable only under the stated assumption that additional shifts or overtime would be required. Research concerning special-order profitability under idle capacity conditions illustrates why the availability of production resources can alter the relevant cost profile (Nopriati & Mintalangi, 2026). The company's financial statements separately disclose indirect manufacturing expenditure, allowing factory overhead to be examined without combining it with direct labor. The four factory overhead categories and their original recorded values are presented in Table 3.

Table 3. Factory Overhead Costs

Description	Amount (Rp)
Electricity, water, and gas	2.495.504.610
Factory supplies	1.511.399.730
Depreciation of fixed assets	9.706.862.463
Miscellaneous	12.594.495.263
Total factory overhead	26.308.262.066

Table 3 reports factory overhead of Rp26,308,262,066, comprising utilities, factory supplies, depreciation, and miscellaneous production expenditure. Miscellaneous overhead of Rp12,594,495,263 is the largest individual category, whereas depreciation of fixed assets amounts to Rp9,706,862,463. Electricity, water, and gas account for Rp2,495,504,610, and factory supplies account for Rp1,511,399,730. These descriptions do not disclose the extent to which miscellaneous expenditure would change when additional production occurs. Research on manufacturing cost accounting highlights the significance of selecting cost information that corresponds to the purpose of managerial evaluation (Indrayani et al., 2025). The subsequent special-order analysis consequently distinguishes observed overhead totals from assumptions about their variable or fixed behavior.

The three disclosed manufacturing categories total Rp161,298,780,008 before adjustments for inventories of work in process and finished goods. Opening and closing work-in-process inventories must be considered because the cost of units completed during the reporting year differs from the cost accumulated in production accounts. Changes in finished goods inventories further separate the cost of manufactured output from the cost recognized against sales during the period. These adjustments form the accounting bridge between manufacturing expenditure and the cost of goods sold used in the company's income statement. The significance of distinguishing production expenses from reported financial outcomes is also apparent in research examining manufacturing costs and profitability (Irmawati et al., 2024). The reconciliation is necessary for checking that the analytical cost base reproduces the amounts provided in the original financial disclosures. Table 4 retains the reported sequence of production costs, inventory adjustments, and cost of goods sold.

Table 4. Cost of Goods Sold

Description	Amount (Rp)
Production costs (materials + labor + overhead)	161.298.780.008
Work in process, beginning of year	16.160.464.760
Work in process, end of year	-16.237.551.188
Cost of goods manufactured	161.221.693.580
Finished goods, beginning of year	19.437.472.055
Finished goods, end of year	-19.395.394.978
Total cost of goods sold, 2025	161.263.770.657

Table 4 reports cost of goods manufactured of Rp161,221,693,580 after deducting closing work in process from the total of current production costs and opening work in process. The incorporation of opening and closing finished goods inventories produces cost of goods sold of Rp161,263,770,657. This amount agrees with the cost of goods sold figure identified in the original income statement narrative. Agreement between the reconstructed total and the disclosed total confirms arithmetic consistency but does not validate the variable-cost proportions assumed for a hypothetical additional order. Research addressing cost accounting decisions similarly separates information required for financial reporting from the narrower cost information relevant to a particular management alternative (Cainas & Kralik, 2024). Annual sales, shown in Table 5, provide the denominator for the scenario's assumed cost-to-sales ratios.

Table 5. Sales in 2025

Year	Sales (Rp)
2025	165.084.182.499

Table 5 records total 2025 sales of Rp165,084,182,499, which establishes the financial scale used to construct the custom-order scenario. The assumed order has a normal selling value of Rp10,000,000,000, equivalent to approximately 6.06% of that reported annual sales figure. A proposed 10% discount reduces the modeled transaction revenue to Rp9,000,000,000, without establishing that such an order was actually received by the company. Because product-level sales prices, order quantities, and detailed cost behavior are not supplied in the disclosed information, the assumed order is assessed as a scenario rather than an observed commercial transaction. The baseline calculation also assumes sufficient idle capacity, no displacement of regular sales, incremental direct labor when additional shifts are needed, fixed miscellaneous overhead, and freight borne by the company. Earlier research on special-order pricing demonstrates the need to evaluate negotiated prices against costs that differ between decision alternatives (Ambarsari & Setiyono, 2023). These disclosed financial amounts and explicit scenario conditions establish the inputs for the relevant cost classification and differential profit analysis that follows.

Relevant Cost Classification, Differential Profit, and Pricing Sensitivity

The 2025 cost disclosures were reorganized into a decision-oriented classification to distinguish expenditures assumed to change with a hypothetical custom order from amounts treated as unaffected by that decision. Unlike the accounting presentation in the preceding tables, this classification addresses cost behavior under an incremental production decision rather than the financial reporting category of each expenditure. Raw materials, direct labor, utilities, factory supplies, and freight were classified as relevant under the baseline assumptions, while depreciation, miscellaneous factory overhead, general and administrative expenses, and other selling expenses were treated as irrelevant. The classification of direct labor as variable presumes additional shifts or overtime, whereas miscellaneous overhead is assumed to remain fixed regardless of order acceptance. Separating avoidable production expenditure from costs that remain unchanged between alternatives is a fundamental requirement of relevant cost analysis in manufacturing decisions (Sugijaya, 2023). Table 6 presents the annual expenditure components, their proportions of reported sales, and the classifications applied in the hypothetical special-order evaluation.

Table 6. Classification of Relevant and Irrelevant Costs

Cost Component	Amount (Rp)	% of Sales	Cost Behavior	Relevant/ Irrelevant
Raw materials consumed	121.052.370.927	73,33%	Variable	Relevant
Direct labor	13.938.147.015	8,44%	Variable (overtime/ additional shifts)	Relevant
Electricity, water, and gas	2.495.504.610	1,51%	Variable	Relevant
Factory supplies	1.511.399.730	0,92%	Variable	Relevant

Freight (selling expense)	4.427.043.923	2,68%	Variable	Relevant
Total relevant costs	143.424.466.205	86,88%		
Depreciation of fixed assets	9.706.862.463	5,88%	Fixed (<i>sunk cost</i>)	Irrelevant
Miscellaneous factory overhead	12.594.495.263	7,63%	Fixed (assumed)	Irrelevant
General and administrative expenses	35.869.602.486	21,73%	Fixed	Irrelevant

As presented in Table 6, the annual expenditure components classified as relevant amounted to Rp143,424,466,205, equivalent to approximately 86.88% of reported sales. Raw materials accounted for the largest proportion at 73.33%, indicating that material consumption dominates the estimated cost of additional production under the assumed cost structure. Direct labor represented 8.44%, while utilities, factory supplies, and freight contributed comparatively smaller proportions to the modeled expenditure requirement. Depreciation and miscellaneous factory overhead were excluded because the baseline scenario assumes that accepting the order would not alter these expenditures. General and administrative expenses and other selling expenses were similarly treated as unaffected by the proposed transaction. The distinction between unavoidable historical commitments and future economic consequences is consistent with research examining the sunk-cost fallacy in managerial decision-making (Biala, 2022). The resulting 86.88% coefficient represents an assumption derived from aggregate financial information rather than an empirically observed marginal production cost for a specific custom order.

The differential analysis applied these annual cost-to-sales ratios to a hypothetical transaction with a normal selling value of Rp10,000,000,000. A negotiated discount of 10% reduced the estimated order revenue to Rp9,000,000,000 while leaving the assumed quantity of production inputs unchanged. Each relevant expenditure was calculated by applying its corresponding annual ratio to the normal-price order value rather than to discounted revenue. This approach assumes that additional production would consume resources in approximately the same proportions as those reflected in the company's aggregate 2025 financial disclosures. Previous research on relevant costs establishes the analytical importance of comparing the additional revenue and expenditure generated by alternative acceptance and rejection decisions (Sengengeng et al., 2023). Table 7 presents the resulting differential cost calculation using the original monetary amounts and the two decision alternatives.

Table 7. Differential Cost Analysis of the Special-Order Decision

Item	Accept Order	Reject Order
Order revenue (Rp10,000,000,000 × 90%)	9.000.000.000	—
Raw materials (73.33%)	7.332.766.174	—
Direct labor (8.44%)	844.305.421	—
Electricity, water, and gas (1.51%)	151.165.579	—
Factory supplies (0.92%)	91.553.273	—
Freight (2.68%)	268.168.873	—
Total differential costs	8.687.959.320	—
Differential profit	312.040.680	0

Table 7 indicates that accepting the hypothetical order would generate revenue of Rp9,000,000,000 against estimated incremental expenditure of Rp8,687,959,320. The resulting differential profit amounts to Rp312,040,680, while rejecting the transaction produces neither additional order revenue nor incremental order expenditure. This estimated contribution represents approximately 3.47% of discounted revenue, indicating a relatively narrow margin between the proposed selling price and the assumed production requirements. Raw material expenditure alone reaches Rp7,332,766,174, making the estimated order contribution particularly sensitive to changes in input prices. Additional labor costs amount to Rp844,305,421, while utilities, factory supplies, and freight account for the remaining modeled differential expenditure. Empirical research on special-order decisions in processed-food enterprises supports evaluating acceptance according to whether additional revenue

exceeds the costs directly attributable to order fulfillment (Dewianawati et al., 2024). The positive contribution therefore supports conditional acceptance under the baseline assumptions, but it does not establish that an actual transaction with these characteristics occurred during the reporting period.

The estimated break-even selling price equals the total differential expenditure of Rp8,687,959,320, representing approximately 86.88% of the assumed normal order value. This relationship establishes a maximum baseline discount of approximately 13.12%, beyond which the modeled transaction would cease to generate a positive incremental contribution. By comparison, applying the company's reported cost-of-goods-sold ratio of approximately 97.69% to the normal order value produces an estimated full-cost amount of Rp9,768,577,959. The discounted revenue of Rp9,000,000,000 would consequently indicate a nominal loss of Rp768,577,959 under this conventional full-costing benchmark. The difference reflects the treatment of allocated production expenditure, including depreciation and miscellaneous overhead assumed to remain unchanged, although the relevant-cost calculation also includes freight expenditure that is outside the cost-of-goods-sold benchmark. Research on special-order pricing emphasizes the need to distinguish decision-relevant expenditures from conventional cost allocations when evaluating transactions offered below regular selling prices (Ambarsari & Setiyono, 2023).

The baseline financial advantage remains dependent on cost-behavior assumptions that cannot be independently established from the company's aggregate financial disclosures. Miscellaneous factory overhead amounts to Rp12,594,495,263, but the published expenditure category does not distinguish between variable and fixed components. Direct labor may also behave differently if additional production can be accommodated through existing working hours without overtime or supplementary staffing. Sensitivity testing therefore evaluates alternative selling-price discounts while changing the assumed treatment of direct labor and miscellaneous factory overhead. The alternative labor scenario excludes Rp844,305,421 in estimated additional labor expenditure, whereas the alternative overhead scenario incorporates 50% of the modeled miscellaneous overhead amount into relevant costs. The importance of identifying the cost information that changes between short-term decision alternatives is also addressed in managerial accounting research concerning relevant costing and tactical decisions (Cainas & Kralik, 2024). Table 8 reproduces the differential profit calculations across the original discount levels and alternative cost classifications.

Table 8. Sensitivity of Differential Profit to Discount Rates

Discount	Revenue	Baseline Scenario	No Additional Direct Labor	50% Miscellaneous Overhead Variable
5%	9.500.000.000	812.040.680	1.656.346.101	430.583.926
10% (baseline)	9.000.000.000	312.040.680	1.156.346.101	-69.416.074
13.12% (break-even)	8.687.959.320	0	844.305.421	-381.456.754
15%	8.500.000.000	-187.959.320	656.346.101	-569.416.074
20%	8.000.000.000	-687.959.320	156.346.101	-1.069.416.074

The sensitivity results in Table 8 demonstrate that baseline differential profit decreases from Rp812,040,680 at a 5% discount to Rp312,040,680 at 10%, before becoming negative when the discount reaches 15%. The 13.12% discount scenario represents the approximate baseline break-even condition, at which discounted order revenue equals the modeled differential expenditure. When no additional direct labor is required, estimated profit at the 10% discount increases to Rp1,156,346,101, and the maximum economically viable discount rises to approximately 21.56%. Conversely, classifying half of miscellaneous factory overhead as variable introduces approximately Rp381,456,754 in additional relevant expenditure, changing the 10% discount outcome into a loss of Rp69,416,074. Under this alternative classification, the maximum viable discount declines to approximately 9.31%, demonstrating that relatively small changes in cost assumptions can reverse the acceptance decision. Research examining differential costs in special-order decisions similarly emphasizes the dependence of incremental profitability on the expenditures specifically generated by additional production (Salsabilah et al., 2025).

The contrasting scenarios indicate that the economic feasibility of a custom order cannot be established solely through a positive contribution calculated under one assumed cost structure.

Although the company's financial disclosures permit reconciliation of production expenditure and reported sales, they do not independently establish the marginal material requirements, labor flexibility, or variable characteristics of miscellaneous overhead associated with a particular customer transaction. The simulated profitability figures consequently represent conditional estimates derived from publicly reported accounting information rather than verified outcomes from completed commercial orders. Research concerning material-flow cost accounting reinforces the significance of cost-system characteristics and resource consumption information when evaluating manufacturing expenditures (Usul & Olgun, 2025). Production capacity introduces another potential source of variation because an order that displaces existing business may sacrifice contribution from regular sales that is not reflected in the baseline differential cost calculation. Evidence concerning special-order profitability under idle-capacity conditions similarly identifies resource availability as a determinant of whether additional production creates an economically favorable outcome (Nopriati & Mintalangi, 2026). A further evaluation of capacity-related and financing opportunity costs is consequently required to establish whether the modeled incremental contribution remains positive after the economic consequences of alternative resource uses are considered.

Capacity and Financing Opportunity Costs in Custom-Order Decisions

The baseline scenario indicates an incremental profit of Rp312,040,680 from the proposed custom order, conditional on a 10% selling-price discount and the production-cost assumptions established in the preceding analysis. This amount represents an estimated accounting contribution and does not independently establish whether accepting the order produces a superior economic outcome compared with alternative uses of the company's resources. Two resource categories require additional consideration, namely manufacturing capacity and working capital committed to production before customer payment is received. Relevant cost analysis requires the inclusion of forgone economic benefits when accepting one alternative prevents resources from being allocated to another potentially profitable activity (Cainas & Kralik, 2024). Research on special-order profitability similarly identifies unused production capacity as an important determinant of whether additional manufacturing activity generates incremental financial benefits (Nopriati & Mintalangi, 2026). The opportunity-cost evaluation consequently distinguishes conditions involving genuinely idle capacity from those involving displaced regular production and subsequently incorporates financing expenditure associated with the proposed transaction.

Under the assumption that sufficient manufacturing capacity remains unused, accepting the special order would not displace existing sales, leaving capacity-related opportunity cost at zero. In this condition, the incremental contribution remains Rp312,040,680 before considering the economic cost of working capital and other transaction-specific risks. A different outcome emerges when the required manufacturing resources would otherwise support regular sales with a normal selling value of Rp10,000,000,000. Applying the baseline differential expenditure of Rp8,687,959,320 produces an estimated regular-sales contribution of Rp1,312,040,680, equivalent to approximately 13.12% of the normal sales value. If the proposed order completely displaced these regular sales, the forgone contribution would exceed the special-order profit by Rp1,000,000,000, producing a negative net economic benefit of the same amount. The difference corresponds exactly to the negotiated discount, illustrating how an apparently profitable transaction can reduce total earnings when existing production opportunities are sacrificed. Such outcomes are consistent with managerial accounting principles that require opportunity costs to be considered when productive resources are constrained (Garrison et al., 2018).

The relationship between displaced production and incremental profitability can be evaluated by comparing the estimated contribution from the special order with the contribution sacrificed from equivalent regular sales. Dividing Rp312,040,680 by Rp1,312,040,680 produces a break-even displacement proportion of 23.782851%, representing the maximum regular-sales capacity that could be sacrificed before the initial incremental benefit is eliminated. The corresponding idle-capacity requirement is approximately 76.22% of the production resources needed to fulfill the hypothetical order, assuming proportional displacement costs and excluding financing expenditure. This threshold identifies a modeled operating condition rather than an observed capacity utilization rate at PT Wahana Interfood Nusantara Tbk. The company's annual report describes production capacity as sufficient, identifies installed capacity of 20,000 tonnes annually at its Sumedang facility, and discusses machinery

investment in relation to a 70% utilization threshold, but these disclosures do not establish the exact resources available for the proposed transaction. The distinction between available capacity and capacity committed to alternative production opportunities remains essential because changes in resource utilization can materially affect short-term profitability assessments (Nopriati & Mintalangi, 2026).

Regular Sales Capacity Displaced	Opportunity Cost (Rp)	Differential Profit (Rp)	Net Benefit (Rp)	Decision
0% (idle)	0	312,040,680	312,040,680	Accept
10%	131.204,068	312,040,680	180,836,612	Accept
23.78% (break-even)	312.040,680	312,040,680	0	Break-even
50%	656,020,340	312,040,680	-343,979,660	Reject
100% (fully utilized)	1,312,040,680	312,040,680	-1,000,000,000	Reject

Figure 1. Capacity Opportunity Cost

Capacity allocation becomes more complex when regular customer orders, contract manufacturing arrangements, and private-label production compete for the same manufacturing resources. Under constrained production conditions, accepting a discounted order could replace transactions generating a higher contribution, even when the additional revenue exceeds the order's directly attributable production expenditure. The company's two major customers accounted for 54.11% of reported 2025 sales, indicating substantial customer concentration that warrants attention when evaluating nonstandard pricing arrangements. Although this concentration does not establish that a special-order discount would influence other contracts, broader adoption of similar price reductions could weaken the contribution generated by regular business activities. A separately negotiated transaction with defined production quantities and limited pricing applicability would reduce exposure to unintended changes in established selling-price arrangements. Research on price-setting power in cocoa value chains indicates that commercial relationships and bargaining conditions influence how economic returns are distributed among market participants (Staritz et al., 2023). The economic attractiveness of the proposed order must consequently be assessed against realistically available production alternatives rather than the assumption that every unit of additional output can be accommodated without sacrificing existing business.

Working capital represents the second potential opportunity cost because the proposed transaction requires estimated incremental production expenditure of Rp8,687,959,320 before the associated customer payment becomes available. The financing scenario assumes that these funds remain committed for approximately 90 days, consisting of 30 days for production and 60 days of customer credit, with the latter falling within the company's reported credit terms of 30–120 days. Borrowing terms disclosed in Notes 16 and 20 provide annual rates ranging from 3.35% for a BRI overdraft facility secured by a deposit to 11.25% for the MTN II coupon. Applying these rates over 90 days using a 365-day calculation basis produces estimated financing opportunity costs of Rp71,764,924 and Rp241,001,611, respectively. Deducting these costs from baseline incremental profit reduces the estimated net economic benefit to between Rp71,039,069 and Rp240,275,756, depending on the financing rate applied. Table 9 summarizes the combined implications of production displacement and financing costs, distinguishing the baseline model from alternative scenarios in which resource commitments reduce the benefit of order acceptance.

Table 9. Capacity and Financing Opportunity Cost Scenarios

Scenario	Capacity Opportunity Cost (Rp)	Financing Opportunity Cost (Rp)	Net Economic Benefit (Rp)
Idle capacity without financing cost	0	0	312.040.680
Complete displacement of equivalent regular sales	1.312.040.680	0	−1.000.000.000
Idle capacity with financing at 3.35%	0	71.764.924	240.275.756
Idle capacity with financing at 11.25%	0	241.001.611	71.039.069

The scenarios in Table 9 indicate that financing costs reduce the economic benefit of the proposed order even when no regular production is displaced. At the lower financing rate, the incremental benefit remains Rp240,275,756, whereas the higher rate reduces it to Rp71,039,069, leaving a comparatively narrow margin against additional unforeseen expenditure. Incorporating financing opportunity costs decreases the estimated break-even discount from the baseline 13.12% to approximately 10.71%–12.40%. When the conservative assumption that 50% of miscellaneous factory overhead is variable is combined with financing costs, total relevant economic expenditure rises to approximately Rp9,144,331,936–Rp9,320,999,191. The corresponding break-even discount declines to approximately 6.79%–8.56%, indicating that the proposed 10% discount would no longer generate a positive net benefit under these combined assumptions. A discount below 6.79% would preserve a positive modeled contribution across the tested cost-classification and financing scenarios, provided that additional capacity displacement and credit losses do not arise. The sensitivity of the decision to alternative expenditure classifications supports the use of differential-cost assessments rather than relying exclusively on historical production costs when evaluating special-order pricing (Kurniawati et al., 2025).

The company's financial position introduces further uncertainty because customer credit exposure and operating liquidity can influence the realization of estimated incremental earnings. Notes to the 2025 financial statements report trade receivables overdue by more than 90 days of Rp54,878,345,265 from total trade receivables of Rp113,721,977,315, alongside a recognized allowance for losses of Rp51,113,991,719. The company also reported a net loss of Rp250,858,277,822 and negative operating cash flow of Rp91,989,102,398, while the independent auditor identified material uncertainty related to going concern. These figures do not establish the probability of default on the hypothetical order, but they demonstrate why payment timing, customer creditworthiness, and available liquidity warrant explicit consideration before committing additional working capital. Production-cost uncertainty presents another exposure because cocoa procurement prices may change between contract negotiation and manufacturing, potentially reducing the contribution generated by a fixed selling price. Research concerning cocoa production challenges and commodity-market instability highlights the vulnerability of cocoa-related businesses to supply conditions and price fluctuations (Kongor et al., 2024). Advance payments, shorter credit periods, transaction-specific credit assessments, and contractual adjustments for material price changes could reduce these risks without altering the underlying distinction between relevant and irrelevant production costs.

The resulting decision framework supports conditional acceptance of the proposed custom order rather than an unconditional recommendation based solely on the initial positive differential profit. Acceptance would be economically justified when the order's incremental contribution exceeds its avoidable expenditure, financing opportunity cost, and any contribution sacrificed through the displacement of regular production. Under the baseline assumptions, the transaction produces Rp312,040,680 in additional profit before financing, but the alternative scenarios demonstrate that this advantage can disappear when cost behavior, available capacity, or funding requirements differ from initial expectations. Evidence from earlier research supports the usefulness of differential analysis for special-order decisions, although positive incremental accounting profit must be interpreted alongside the specific resources committed to each transaction (Elma et al., 2024). For PT Wahana Interfood Nusantara Tbk, a conservative pricing policy would require sufficient unused production capacity, a negotiated discount below the modeled 6.79% threshold under the tested adverse conditions, credit arrangements that limit funding exposure, and protection against material input-price escalation. The principal limitation is that product-level selling prices, production quantities, actual custom-order terms, marginal input consumption, and detailed overhead behavior were unavailable, requiring the analysis to rely on explicitly defined scenarios rather than verified transaction outcomes. The analytical contribution lies in demonstrating how financial-statement-based relevant cost classification can be integrated with capacity displacement, financing opportunity costs, and pricing sensitivity to develop a more restrictive and economically informed evaluation of custom-order decisions in food manufacturing.

CONCLUSION

Relevant cost analysis of PT Wahana Interfood Nusantara Tbk indicates that special-order decisions should be based on incremental revenues and avoidable expenditures rather than total production costs reported for financial accounting purposes. Using the company's 2025 financial disclosures and a hypothetical custom-order scenario, the analysis identifies relevant costs equivalent to 86.88% of normal sales and estimates differential profit of Rp312,040,680 at a 10% selling-price discount. The baseline break-even discount reaches approximately 13.12%, provided that the assumed cost behavior remains unchanged and sufficient production capacity is available. In contrast, the full-costing approach indicates a loss of Rp768,577,959 because it allocates depreciation and miscellaneous manufacturing overhead assumed to remain unaffected by the additional order. Sensitivity analysis demonstrates that classifying 50% of miscellaneous overhead as variable changes the estimated outcome at a 10% discount into a loss of Rp69,416,074, reducing the maximum viable discount to approximately 9.31%. These findings establish that the financial attractiveness of custom orders depends on accurate cost classification, incremental production requirements, and the sensitivity of contribution margins to alternative expenditure assumptions.

The inclusion of financing opportunity costs reduces the estimated baseline net benefit to Rp71,039,069–Rp240,275,756, while combining financing expenditure with the conservative overhead assumption decreases the break-even discount to approximately 6.79%–8.56%. Capacity opportunity cost remains zero when production utilizes genuinely idle resources, whereas the modeled maximum displacement of equivalent regular-sales capacity is approximately 23.78% before financing costs are considered. Conditional acceptance is financially defensible when sufficient idle capacity is available, the negotiated discount remains below 6.79% under the tested conservative scenarios, and incremental economic benefits exceed all associated opportunity costs. Advance payments or shorter credit periods, contractual provisions for cocoa raw material price adjustments, and restrictions limiting the transaction to a one-time order would further reduce financing exposure, procurement uncertainty, and potential disruption to regular pricing arrangements. The findings remain conditional because product-level expenditure, actual order quantities, marginal cost behavior, and transaction-specific capacity requirements could not be independently established from the available annual financial disclosures. The study contributes an integrated managerial decision framework combining relevant cost classification, differential profitability, pricing sensitivity, production capacity, and working-capital opportunity costs, providing a structured basis for evaluating custom-order feasibility while identifying the need for transaction-level operational evidence before implementation.

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