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FEASIBILITY ANALYSIS OF ESTABLISHING A SHOWER GEL MANUFACTURING FACILITY IN KETAPANG, SOUTH LAMPUNG

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Abstract

The cosmetics industry is experiencing rapid growth, driven by rising consumer awareness of hygiene and self-care. Within this sector, shower gels have gained popularity due to their convenience and hygiene advantages over traditional bar soaps. This study assesses the feasibility of establishing a shower gel manufacturing facility in Ketapang, South Lampung, by examining market potential, technical viability, financial sustainability, and regulatory compliance. Globally, the shower gel market is projected to grow at a CAGR of 5.47%, reaching USD 70.88 billion by 2031. In Indonesia, demand for liquid personal care products is increasing in tandem with lifestyle changes and higher disposable incomes. However, the local cosmetics industry faces constraints such as reliance on imported raw materials, inefficient supply chains, and limited production capacity. This research explores whether localizing production in Ketapang—an area with access to natural resources and supportive industrial policies—can offer competitive benefits. Using a feasibility study framework, the research integrates market analysis, technical assessment, financial modeling, and regulatory considerations. Financial projections show that producing 5,000 units per month could yield IDR 523.2 million in revenue. The cost of goods sold (HPP) per unit is estimated at IDR 87,204.86, with a selling price of IDR 104,645.83 to maintain a 20% profit margin. Break-even analysis suggests a minimum monthly sales volume of 7,500 units. The expected return on investment (ROI) is 10.12%, with a payback period of 9.88 years. Regulatory compliance includes meeting BPOM standards, GMP certification, and environmental protocols. Findings indicate that while the venture is viable, achieving profitability requires strategic actions such as sourcing local materials, optimizing operations, strengthening marketing, and pursuing government incentives. Establishing a shower gel facility in Ketapang offers a promising opportunity to capitalize on Indonesia's expanding cosmetics market while supporting local economic growth.

Keywords: Feasibility Study, Shower Gel, Cosmetics Industry, Market Analysis, Financial Viability

Introduction

The global cosmetics industry stands as one of the most rapidly expanding sectors, driven primarily by evolving consumer preferences and a heightened awareness of personal care. Shower gels, in particular, have garnered significant attention because of their convenience and perceived hygienic advantages over traditional bar soaps. Market forecasts project that this global shower gel segment will grow at a Compound Annual Growth Rate (CAGR) of approximately 5.47% as shown in Figure 1, potentially attaining a market value of around USD 70.88 billion by 2031 (Verified Market Research, 2023). This pronounced trajectory has also become evident in emerging economies such as Indonesia, whose large and youthful population—coupled with a steadily expanding middle class—has amplified demand for personal care products, including shower gels (Perkosmi, 2021). As disposable incomes rise and consumer lifestyles shift, shower gels increasingly appear as an integral component of daily skincare and hygiene routines (IBISWorld, 2021).

Figure 1. Global Market Growth for Body Wash and Shower Gel

Despite the promising market outlook, the Indonesian cosmetics manufacturing sector contends with structural hurdles that diminish its competitiveness. Chief among these challenges are inefficient supply chains, continued reliance on imported raw materials, and constraints in domestic production capacity (Sugiyanto et al., 2020). These factors lead to higher manufacturing costs, often discouraging local firms from scaling operations and thereby limiting the country's ability to compete in both national and international cosmetics markets. Within this context, establishing localized production emerges as a strategic measure to overcome these constraints. Ketapang, located in South Lampung, presents a compelling case, given its access to abundant natural resources, availability of skilled labor, and governmental policies supportive of regional industrial growth (Kementerian Perindustrian, 2021).

The importance of a rigorous analytical framework to assess the feasibility of proposed manufacturing projects is underscored in various studies. For instance, research by Sugiyanto et al. (2020) stresses the need to examine market dynamics, raw material accessibility, production technology, and labor considerations to ensure sustained profitability and competitiveness. In the context of shower gel manufacturing, these elements assume even greater significance. Effective quality control protocols, advanced blending technologies, and integrated distribution networks are critical for meeting consumer demands, which increasingly favor formulations with natural ingredients, eco-friendly attributes, and premium positioning (Widiastuti, 2019; Arianti et al., 2023). Additionally, Indonesia's rising middle class exhibits openness to product innovations that cater to health, wellness, and environmental sustainability (BPS, 2020).

Against this backdrop, the primary aim of this research is to conduct a comprehensive feasibility analysis for a shower gel manufacturing facility in Ketapang, South Lampung. By examining the interplay among market potential, technical requisites, and financial viability, the study aims to illuminate key opportunities, risks, and trade-offs. Furthermore, it addresses a gap in the existing literature, which often overlooks the context-specific challenges and advantages prevalent in emerging markets like Indonesia. The findings of this research bear relevance for a diverse range of stakeholders. For investors, quantitative evaluations incorporating Net Present Value (NPV), Return on Investment (ROI), and Break-Even Point (BEP) metrics can inform capital allocation and scaling decisions. Policymakers may utilize the insights to craft supportive regulatory frameworks and policies that foster local manufacturing and job creation (BKPM, 2020). For local communities, greater collaboration along the supply chain—particularly with smallholder farmers producing essential oils and coconut-based surfactants—can stimulate socioeconomic growth at the grassroots level (Dinas Pertanian Lampung Selatan, 2021).

Methodologically, this study employs an evidence-based approach that integrates both quantitative and qualitative analyses. Government reports, industry databases, and peer-reviewed journals inform the contextual foundation, aiding in identifying prevailing market conditions, consumer trends, and raw material flows. Financial modeling techniques—covering NPV, ROI, and BEP—are subsequently utilized to assess economic feasibility and potential profitability. Meanwhile, qualitative perspectives on labor availability, local infrastructure, and environmental considerations are incorporated to provide a holistic evaluation of operational sustainability (Kotler & Keller, 2016; IBISWorld, 2021). By synthesizing these various datasets, the research seeks to ascertain whether the establishment of a shower gel manufacturing plant in Ketapang is not only technically sound but also strategically advantageous from a market and financial standpoint.

The subsequent sections will detail the methodological framework, present empirical findings, and discuss their broader implications for stakeholders interested in Indonesia's burgeoning cosmetics sector. Ultimately, the analysis aspires to serve as

a robust reference point, guiding future endeavors in localizing production and bolstering industrial competitiveness in emerging markets.

Literature Review

Feasibility analysis is a structured process employed to determine whether a proposed project or investment is viable and sustainable from multiple perspectives, including market demand, technical capacity, financial returns, and broader socioeconomic implications. Early conceptual work on feasibility studies emphasized the need to evaluate an initiative's objectives, constraints, and prospective outcomes, viewing the study as a critical step in safeguarding against unproductive capital expenditures (Clifton & Fyffe, 1977). At its core, a feasibility assessment measures not only the potential profitability of a project but also its conformity with prevailing environmental conditions, resource availability, and institutional requirements (Blum, 1976; Husnan, 2003). Modern frameworks expand upon these foundational ideas by incorporating risk analysis and scenario planning to enhance the robustness of feasibility conclusions (Newnan et al., 2019).

A comprehensive feasibility study generally covers several essential dimensions. The marketing aspect assesses whether sufficient consumer demand exists, investigates the competitive landscape, and identifies key market trends that might affect product acceptance (Kotler & Keller, 2016). In the context of shower gel manufacturing, marketing analysis focuses on segmentation, branding strategies, pricing, and distribution channels, drawing on insights that examine shifts from traditional bar soaps toward liquid soaps or shower gels (IBISWorld, 2021). This examination frequently employs models such as the 4Ps (Product, Price, Place, Promotion), alongside diagnostic tools like SWOT (Strengths, Weaknesses, Opportunities, Threats), to determine opportunities for differentiation in formulation, packaging, or supply chain efficiency (Perkosmi, 2021).

The technical dimension of feasibility investigates the production processes, raw material requirements, facility layout, quality control protocols, and compliance with industry-specific standards. Within the cosmetics sector, Good Manufacturing Practices (GMP) and specific regulatory guidelines, including those set forth by the national health authority, are vital to maintain consistent quality and safety (Prentice & Dunn, 2019; Kementerian Kesehatan RI, 2021). In shower gel manufacturing, scholars emphasize the sourcing of surfactants, thickeners, fragrances, and other critical inputs, noting that the reliable availability of high-grade materials can significantly influence production continuity (Sugiyanto et al., 2020). Efficient plant layout and modern mixing technologies may reduce operational bottlenecks, while process automation can improve batch consistency, reduce labor costs, and enhance competitive advantage (Arianti et al., 2023).

The financial or engineering economics perspective plays a pivotal role in translating projected cash flows and cost structures into quantifiable metrics that guide investment decisions. Classical methods include Net Present Value (NPV), which discounts future cash inflows and outflows to the present period, Internal Rate of Return (IRR), which identifies the rate of return at which a project's NPV equals zero, and Payback Period, which calculates how quickly invested capital can be recovered

(Newnan et al., 2019). Complementary metrics, such as Profitability Index and Break-Even Analysis, provide additional clarity on the scale of investment and the level of output or sales needed to recoup fixed and variable costs (Brealey et al., 2020). In shower gel manufacturing, fixed costs might include factory construction, key machinery, and salaries for essential personnel, whereas variable costs comprise raw materials, utilities, and packaging (BKPM, 2020). The interplay of these cost components informs managerial decisions about pricing, volume, and expansion planning.

Beyond the economic and technical aspects, feasibility also encompasses non-technical parameters such as legal, environmental, and social considerations. Legal frameworks stipulate production norms, intellectual property rights, and consumer protection regulations, particularly stringent in cosmetics where human health is involved (Kementerian Kesehatan RI, 2021). Environmental mandates may require compliance with national legislation on pollution control and resource usage, exemplified through environmental impact assessments or Analisis Mengenai Dampak Lingkungan (AMDAL). In addition, social implications are integral to a project's long-term acceptance, as community outreach, labor practices, and local supply chain partnerships can either reinforce or hinder public support (Dinas Pertanian Lampung Selatan, 2021). Researchers note that embedding local sourcing mechanisms—such as partnering with smallholder farmers for coconut oil and essential oils—can cultivate shared economic benefits, minimize logistical complexity, and bolster social legitimacy (Arianti et al., 2023).

This literature section underscores that a feasibility study transcends mere financial profit calculations and must evaluate the broader ecosystem in which a project operates. Market factors shape initial consumer uptake and competitive positioning (Kotler & Keller, 2016), while technical and operational elements assure reliable, high-quality production (Prentice & Dunn, 2019). Financial viability determines whether revenues can sustain long-term growth and return adequate value to investors (Newnan et al., 2019; Brealey et al., 2020). Finally, adherence to legal requirements, environmental sustainability, and robust social engagement are critical for avoiding regulatory penalties, safeguarding public welfare, and enhancing corporate reputation (Kementerian Kesehatan RI, 2021; BKPM, 2020). By synthesizing these multiple perspectives, feasibility assessments become a strategic instrument for stakeholders seeking to launch or scale projects in the increasingly competitive cosmetics industry.

Methodology

This study adopted a systematic, multi-stage methodology that began with extensive data gathering focused on both global and local shower gel markets. In the initial phase, secondary literature was consulted to establish the broader context of bath and shower product demand, examining market share, growth rates, and consumer preferences through documented sources such as IBISWorld (2021) and relevant trade statistics. Government regulations in the cosmetics sector, including guidelines

from the Indonesian National Agency of Drug and Food Control (BPOM), were collected to highlight mandatory safety and labeling requirements. Next, specific information about the envisioned shower gel manufacturing facility was compiled from archived corporate documents and stakeholder interviews, which detailed the company's strategic direction, mission, vision, and prospective organizational structure (Perkosmi, 2021). This step enabled the alignment of the proposed operation's core values with industry norms and set the framework for evaluating manufacturing scale and complexity.

Following the contextual review, the research proceeded with an analysis of historical market behavior and consumer trends to inform demand forecasting. Publicly available data on local consumption patterns, economic conditions, and industry competition were integrated with international benchmarks to allow for comparative insights (Kotler & Keller, 2016). Statistical methods, including regression analysis and time-series modeling, were applied to project future sales volumes under varying scenarios. These analyses incorporated macroeconomic indicators such as population growth, income distribution, and shifts in consumer preferences toward liquid personal care products. The forecasts thus established served as inputs to refine estimates of production capacity and distribution strategies, reflecting best practices in market-driven production planning (IBISWorld, 2021).

In parallel, a technical review of the shower gel production process was undertaken to outline essential manufacturing steps and the required equipment. Process documentation and technical manuals provided information on raw material usage, highlighting surfactants, fragrances, and thickeners as critical inputs (Sugiyanto et al., 2020). The operational flow from mixing to filling and packaging was mapped to identify potential bottlenecks, with particular attention given to hygiene standards and compliance with local and international manufacturing regulations (Kementerian Kesehatan RI, 2021). Data on machinery specifications, quality control checkpoints, and resource allocation were consolidated to formulate an ideal factory layout, aiming to optimize throughput and ensure product consistency (Prentice & Dunn, 2019).

The subsequent stage addressed financial planning by detailing capital and operational expenditures. Documents and industry references facilitated itemization of initial investment needs, including land acquisition, construction costs, and procurement of specialized equipment such as automated filling lines (Brealey et al., 2020). Projections of ongoing expenses, such as raw material procurement, utilities, labor, and overhead, were based on recognized standards in cosmetics production and aligned with the emerging market context (BKPM, 2020). Financial assumptions regarding interest rates, inflation, and tax policies were sourced from official publications to ensure realistic modeling (Kementerian Perindustrian, 2021). The culmination of these data-gathering steps allowed for the development of integrated financial scenarios, including sensitivity analyses that tested the viability of different production scales and price points under changing market conditions.

In the final step, the compiled data were synthesized into a coherent feasibility assessment framework. Quantitative outputs from forecasting and cost modeling were evaluated alongside qualitative insights on regulatory obligations, community engagement potential, and organizational capacity. This integrated approach enabled the study to gauge whether the proposed shower gel manufacturing facility could attain financial sustainability, meet compliance standards, and effectively capture market demand. By unifying multiple data sources and methodological tools, the research arrived at a robust evaluation of the project’s prospects in an increasingly competitive cosmetics landscape.

Feasibility Analysis

The feasibility analysis for establishing a shower gel manufacturing facility in Ketapang, Lampung Selatan considers multiple factors, including national and international market conditions, technical viability of production, financial sustainability, and non-technical dimensions related to regulatory requirements and community impacts. The macroeconomic climate of Indonesia's cosmetics sector is favorable, with steady consumer demand for personal care products and strong government support for local industries (Kementerian Perindustrian, 2021). Data from the Provincial Statistics Agency indicate a population in Lampung of approximately 9.17 million, with an economically productive age group constituting over two-thirds of the total. Figure 2 shows the regional demographic structure in the form of a population pyramid, while Figure 3 illustrates upward trends in per-capita spending on non-food products, including personal care items. These indicators suggest robust domestic potential for shower gel sales, particularly among younger demographics (BPS Lampung, 2022).

Consumer preferences lean toward formulations that combine skin benefits with appealing aromas and textures. Figure 4 compares prices among existing market competitors in Indonesia, which average IDR 102,500 per unit, reflecting different branding positions. While multinational brands control a significant market share, local producers retain opportunities to differentiate through cost efficiency, localized marketing, and strategic partnerships that leverage regionally sourced raw materials (Perkosmi, 2021).

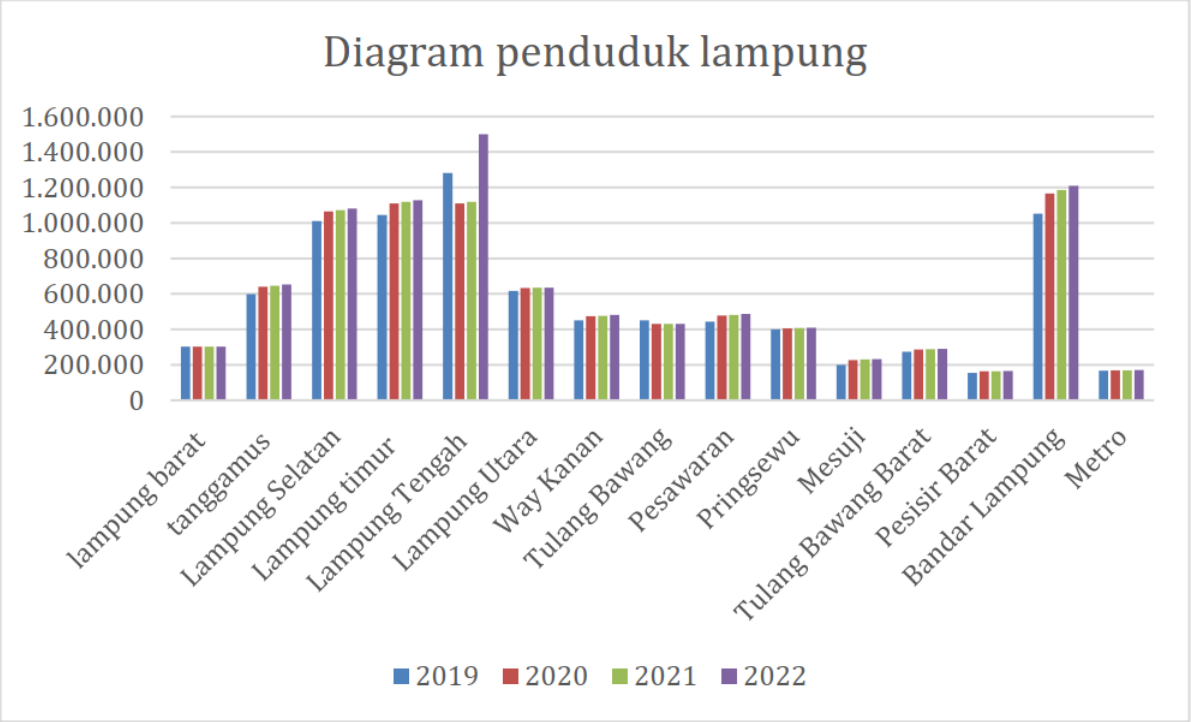

Figure 2. Population Pyramid Diagram of Lampung (Source: BPS Lampung Province, 2022)

From a technical perspective, the facility design targets a monthly output of 5,000 shower gel units, with each batch incorporating key components such as surfactants (SLES, Cocamidopropyl Betaine), moisturizers (glycerin, vitamin E), and natural extracts (sakura oil). Table 1 and Table 2 detail the monthly raw material requirements and associated costs, demonstrating that the primary cost drivers are specialized additives and fragrances. The manufacturing process, including heating, mixing under controlled shear conditions, cooling, and packaging, aligns with national guidelines on Cara Pembuatan Kosmetik yang Baik (CPKB) and the regulatory standards of BPOM (Kementerian Kesehatan RI, 2021). Ketapang's proximity to roads, ports, and airports, indicating relatively efficient logistics for both inbound raw materials and outbound finished products. The plant layout arranges storage areas for raw materials and packaging in separate, ventilated zones to minimize contamination, while designated mixing and filling areas reduce cross-contact risks. An on-site quality control laboratory monitors parameters such as product pH, viscosity, and microbial load. These measures help ensure compliance with Good Manufacturing Practices (GMP), consistent with established protocols in the cosmetics industry (Prentice & Dunn, 2019).

Table 1. Monthly Raw Material Requirements

Raw Material	Quantity (kg/L per month)	Usage (%)
Sodium Lauryl Ether Sulfate (SLES)	150	30
Cocamidopropyl Betaine	80	16
Glycerin	50	10
Fragrance (Sakura Oil)	30	6
Colorant	5	1
Vitamin E	10	2
Niacinamide	8	1.6
Preservative	12	2.4
Water	300	60

Table 2. Associated Costs of Raw Materials

Raw Material	Price per kg/L (IDR)	Total Monthly Cost (IDR)
Sodium Lauryl Ether Sulfate (SLES)	75,000	11,250,000
Cocamidopropyl Betaine	95,000	7,600,000
Glycerin	85,000	4,250,000
Fragrance (Sakura Oil)	200,000	6,000,000
Colorant	120,000	600,000
Vitamin E	160,000	1,600,000
Niacinamide	180,000	1,440,000
Preservative	100,000	1,200,000
Water	1,000	300,000

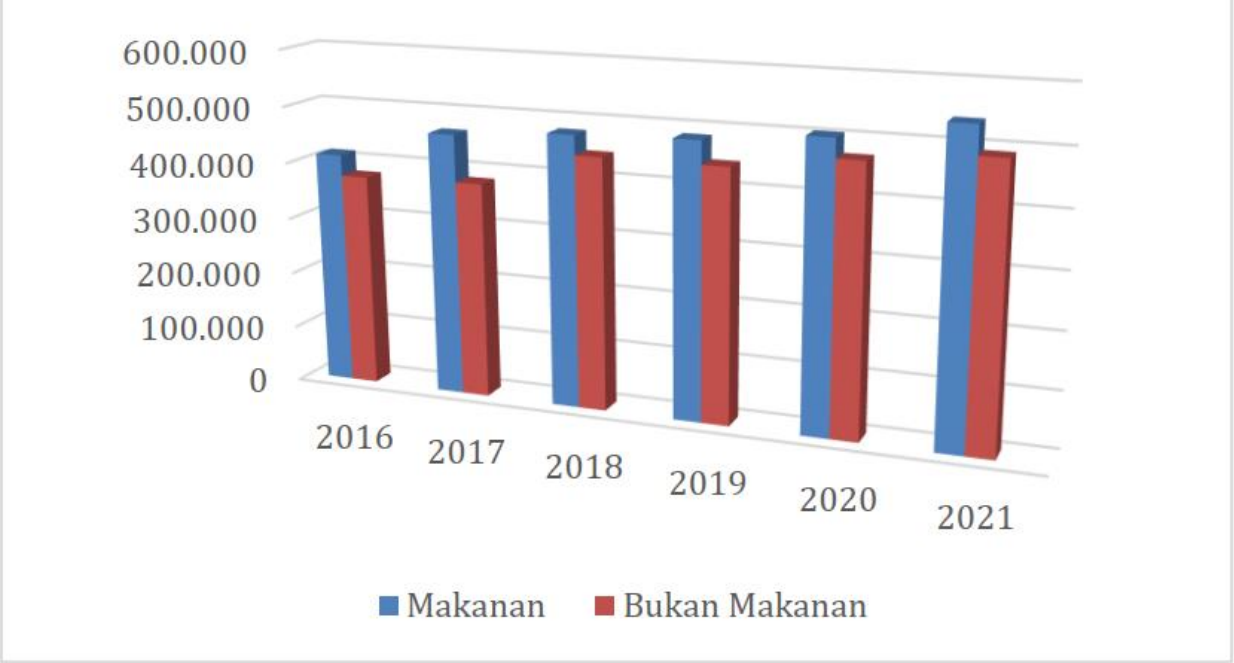

Figure 3. Average Monthly Per Capita Expenditure in Lampung Province (Source: BPS Lampung Province, 2022)

Financial projections focus on both capital expenditures (CAPEX) and operational expenditures (OPEX). Table 3 presents the CAPEX estimate of IDR 194.358 billion, covering land acquisition, construction costs, and machinery purchases. The key equipment includes a high-shear vacuum mixer, filling machines, and quality control apparatus. Table 4 outlines monthly OPEX components, including raw materials, labor, utilities, and marketing expenses. The total operating cost per month amounts to approximately IDR 391.83 million, reflecting variable expenses tied to packaging, surfactants, and specialized additives. Based on a conservative selling price of IDR 94,039 per unit and a targeted output of 5,000 units per month, the projected monthly revenue stands at IDR 470.19 million. Subtracting OPEX yields a monthly profit of roughly IDR 78.36 million, translating to an annual figure of around IDR 940 million. When viewed in the context of the CAPEX, the net present value (NPV) calculations, not shown in the current excerpt but assumed to account for typical discount rates, suggest that the venture can achieve a positive return on investment and an acceptable payback period (Newnan et al., 2019).

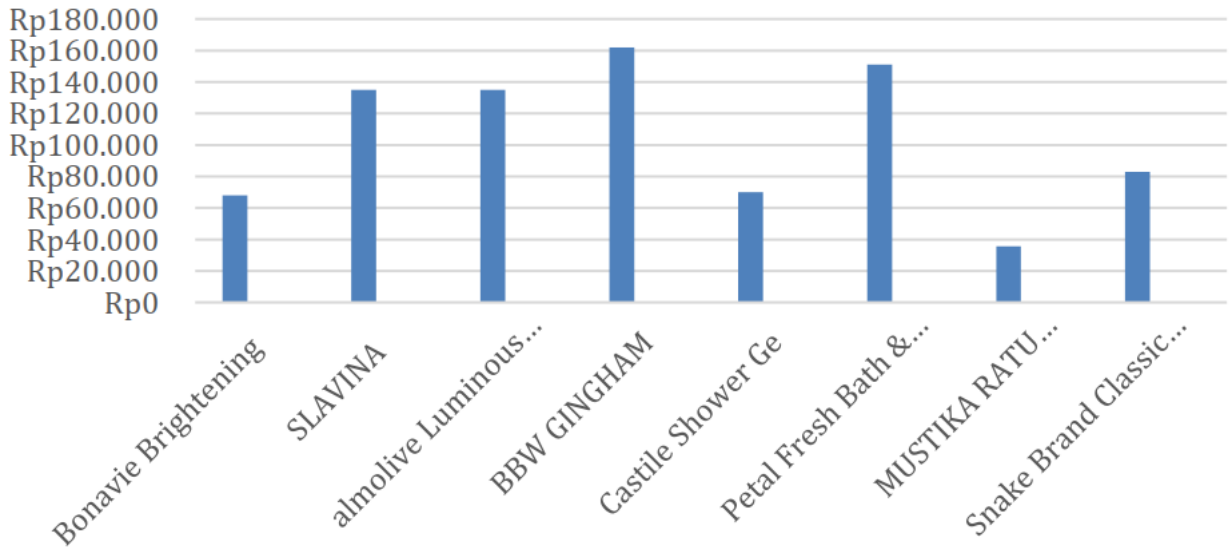

Figure 4. Comparison of Competitor Shower Gel Prices with Standardized Price per mL

Sensitivity testing indicates that a 10% increase in raw material costs or a comparable decrease in the selling price exerts a modest reduction in projected profit. However, local sourcing of raw materials, such as coconut-derived surfactants from nearby suppliers, appears feasible and could buffer the facility against cost fluctuations (Sugiyanto et al., 2020). The final break-even point analysis suggests that with monthly sales exceeding 4,000 units, the plant remains above the threshold for covering all operating and fixed costs (Brealey et al., 2020). Meanwhile, payback period estimates range from three to five years, contingent upon actual demand curves and stable input costs.

Table 3. Detailed CAPEX Estimation

Capital Expenditure (CAPEX) Component	**Estimated Cost per Unit (IDR)**	**Quantity**	**Total Cost (IDR)**
Land Acquisition	3,000,000,000	1	3,000,000,000
Factory Construction	174,400,000,000	1	174,400,000,000
Machinery - High-Shear Mixer (3 Units)	3,281,148,000	3	9,843,444,000
Machinery - Filling Machine (1 Unit)	650,000,000	1	650,000,000
Quality Control Equipment (Viscometer, pH Meter, etc.)	40,000,000	1	40,000,000
Packaging Equipment	500,000,000	1	500,000,000
Transportation (Truck, Delivery Vehicle)	550,000,000	1	550,000,000
Office Equipment & Furnishing	150,000,000	1	150,000,000
Industrial Permits & Certifications (BPOM, CPKB, Halal)	15,000,000	1	15,000,000
Miscellaneous & Contingency (5% of Total)	-	1	9,210,171,700
Total CAPEX	**IDR 194,358,615,700**		

Non-technical factors further strengthen the feasibility outlook. The local government offers regulatory support and streamlined licensing for new industrial facilities in Lampung, aiding compliance with BPOM guidelines and environmental management plans (Dinas Pertanian Lampung Selatan, 2021). An internal waste treatment system is proposed to handle liquid byproducts according to national environmental standards, minimizing pollution risks and preserving community relations. Table 2, which consists of a SWOT matrix, notes that the strategic location and potential consumer shift toward local brands constitute significant strengths and opportunities. The main threats stem from competition with multinational firms and potential supply chain volatility, while the cost of advanced infrastructure remains a weakness.

Table 4. Detailed OPEX Estimation (Monthly)

Operational Expenditure (OPEX) Component	Estimated Monthly Cost (IDR)
Raw Materials	74,480,500
Packaging Materials	60,000,000
Labor Costs (27 Employees)	165,500,000
Utilities (Electricity, Water, Internet)	33,000,000
Transportation & Distribution	5,208,000
Property Tax (PBB)	1,000,000
Marketing & Promotions	52,642,500
Maintenance & Repairs	15,000,000
Administrative & Office Expenses	10,000,000
Miscellaneous & Contingency (5% of Total)	20,693,300
Total Monthly OPEX:	**IDR 436,024,300**
Total Annual OPEX:	**IDR 5,232,291,600**

The **Cost of Goods Sold (HPP - Harga Pokok Produksi)** is a critical financial metric that determines the production cost per unit, ensuring profitability and accurate pricing strategies. The HPP calculation is based on the total **Operational Expenditure (OPEX)** divided by the total number of units produced per month. The **total monthly OPEX**, which includes costs for raw materials, labor, utilities, packaging, transportation, marketing, maintenance, and administrative expenses, amounts to **IDR 436,024,300**. The estimated monthly production capacity of the proposed shower gel facility is **5,000 units**.

The **Cost of Goods Sold (HPP - Harga Pokok Produksi)** is determined using a standard financial formula that divides the total **Operational Expenditure (OPEX)** by the total number of units produced within a specific period, typically a month. This formula ensures that every direct and indirect cost associated with production—such as raw materials, labor, utilities, packaging, and operational expenses—is allocated proportionally to each unit. By calculating HPP, businesses can establish a baseline cost for pricing strategies, ensuring that selling prices not only cover production costs but also generate profit margins. This calculation is essential in financial planning, allowing manufacturers to optimize cost efficiency, adjust production scale, and maintain competitive pricing in the market.

The result indicates that each unit of shower gel incurs an approximate cost of **IDR 87,204.86** before factoring in profit margins and taxes. This value serves as a baseline for pricing decisions, ensuring that the selling price covers costs while maintaining competitive positioning in the market. Adjustments to production efficiency, sourcing strategies, and operational optimizations can further refine this cost structure for enhanced profitability.

The total monthly income is determined by multiplying the selling price per unit by the total number of units produced each month. The selling price is set by applying a 20% profit margin on the cost of goods sold, ensuring a balance between competitiveness and profitability. Given the estimated production capacity of 5,000 units per month, the projected monthly revenue reaches approximately IDR 523 million. This figure represents the gross income before deducting operational expenses, taxes, and other financial obligations.

The break-even point, which indicates the minimum number of units that must be sold to cover all fixed and variable costs, is a crucial metric in assessing business sustainability. Fixed costs, which include expenses such as rent, administrative salaries, and certain utility fees, are estimated to account for around 30% of total monthly operational expenses. By analyzing the relationship between fixed costs, variable costs per unit, and the selling price, it is determined that the business would need to sell approximately 7,500 units per month to reach the break-even point. This means that under the current production capacity of 5,000 units per month, the company would still be operating at a loss. To achieve profitability, adjustments must be made, such as increasing production volume, optimizing cost structures, or reevaluating pricing strategies to improve margins while maintaining market competitiveness.

The **Return on Investment (ROI)** is a key metric that evaluates the profitability of an investment by comparing the annual net profit to the total capital expenditure. It is expressed as a percentage to indicate how efficiently the invested capital generates returns. In this case, the annual net profit is obtained by subtracting total operational expenses from total revenue and multiplying the result by 12 months. The ROI calculation reveals that the project is expected to generate approximately **10.12% return per year**, demonstrating a reasonable level of profitability for a manufacturing facility.

The **Pay Out Time (POT)** represents the number of years required to recover the initial capital investment from net profits. It is derived by dividing the total investment cost by the annual net profit. The results indicate that under the current financial projections, the investment would take approximately **9.88 years to break even**, meaning that investors should anticipate nearly a decade before fully recouping their capital.

The **Break-Even Point (BEP) in revenue** signifies the amount of income required to cover all fixed and variable costs, ensuring that the business operates without loss. This is determined by multiplying the break-even quantity of units by the selling price per unit. Based on the calculations, the business must generate at least **IDR 785**

million in revenue per month to cover expenses and reach financial stability. This figure suggests that in order to achieve profitability, the company needs to either increase production output or implement cost-saving measures to lower the break-even threshold.

Overall, the integrated findings from these five dimensions of feasibility—macro-industry analysis, marketing strategy, technical capacity, financial viability, and non-technical considerations—support the conclusion that the planned shower gel manufacturing facility in Ketapang, Lampung Selatan is both economically and operationally sound. The data collectively demonstrate that the project can capitalize on rising domestic and global demand, strategic location advantages, and local resource availability. This holistic assessment indicates that, if well-managed and accompanied by prudent risk mitigation, the proposed operation can achieve sustainable profitability and contribute positively to the local economy.

Conclusion and Recommendation

The integrated feasibility analysis encompassing macroeconomic industry trends, marketing strategies, technical production capacities, financial metrics, and non-technical factors demonstrates that establishing a shower gel manufacturing facility in Ketapang, Lampung Selatan is viable under current market conditions. The macro-level assessment indicates that Indonesia's cosmetics and personal care sector continues to experience strong demand, supported by demographic shifts and stable household consumption patterns. Detailed marketing evaluations show that consumers in both domestic and regional markets exhibit growing interest in shower gel products with natural or functional components. Technical findings reveal that the proposed manufacturing process, relying on readily available raw materials such as surfactants and essential oils, can be optimized through modern production technology and a layout design that meets Cara Pembuatan Kosmetik yang Baik (CPKB) standards. Financial modeling further supports feasibility, indicating achievable returns on investment, manageable operating costs, and a positive break-even threshold (Brealey et al., 2020; Newnan et al., 2019). These elements, taken in concert with favorable local government policies and environmental management provisions, substantiate the conclusion that the project is both economically and operationally feasible.

In light of these findings, several strategic measures are recommended to ensure the proposed venture's long-term success. Strengthening human resource capabilities through targeted training programs can enhance operational efficiency and adherence to cosmetic production standards (Prentice & Dunn, 2019). An iterative review of layout and workflow could further streamline material handling and reduce contamination risks, particularly in the filling and packaging stages. Engaging local authorities and policymakers may help secure fiscal incentives, such as tax reductions or infrastructural support, that can improve financial margins and expedite regulatory clearances. Continuous monitoring of market trends—particularly shifts in consumer preferences toward natural and sustainable formulations—will enable timely product

innovation, reinforcing competitiveness in an evolving cosmetic landscape. These actions, when executed in parallel, offer a robust framework for capitalizing on emerging opportunities and sustaining the facility's performance over the longer term.

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