

A FEASIBILITY STUDY ON SMILE DISHWASHING LIQUID AT CABASAGAN, BOSTON, DAVAO ORIENTAL

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EXECUTIVE SUMMARY

Smile Dishwashing liquid business is a manufacturing business that deals with the distribution of dishwashing liquid to Retail stores and households in two neighboring municipalities - Cateel and Boston, Davao Oriental. The business will involve hard-working-freelance individuals that will help the distribution of product to efficiently and effectively achieve the business sales target. Dishwashing products are typically creations of a blending of surfactants, often accompanied by increasing amounts of foam or lather when in use to handwash wares such as cutlery, glasses, cooking utensils, cookware, plates, and/or bowls. In certain instances, dishwashing products have also been utilized to help clean up affected birds and other animals after mass oil spills. The hallmark of this industry is that it has a very cheap entry cost but a very high-profit margin.

The product will be formulated in three different scents namely, calamansi, lemon, strawberry and avocado scent in four different sizes/volumes – 1L, 500ml, 350ml, 250ml. The business will utilize Economy Pricing Strategy in product pricing. This pricing strategy involves computing the total cost of each goods sold and adding a minimum amount of mark-up. The establishment of the business will lead to a more active economy, provide the needs of the community members, increase employment rate, contribute to government income through tax and more. The feasibility study of establishing the business will mainly determine the viability of the business to the market, attainability of its technical and human resource requirements and its financial feasibility with all factors being considered.

Keyword: Dishwashing production, Financial projection, Strategic tools, Financial analysis

1. INTRODUCTION-1

Soap is an all-around product in all homes, hospitals, canteens, laundries, hospices, and toilets. It is vital in maintaining healthy home and surroundings. Dishwashing detergents can eliminate grease, food particles, and bacteria from our dishes, ensuring our family's health. They are also effective in keeping food facilities clean and preventing contamination from disease-causing microorganisms. Toxic substances can be kept out of our houses and the water supply using dish soap or dishwasher packs.

"Research and Markets" (2020)⁷ published a new article on the cleaning products industry that dishwashing supplies will grow by 275% as covid-19 drives demand for cleaning products. The need for cleaning supplies has increased due to COVID-19, which has increased the need to sanitize household surfaces routinely. Dishwashing products like dish soap and detergent are one segment that has increased. Due to COVID-19 lockdown procedures, more consumers are cooking and dining at home, which can be attributed to this growth.

Due to the surfactants it contains, dishwashing liquid can be used for various other purposes besides merely cleaning dishes. As emulsifiers and foaming agents, these chemicals have cleansing characteristics and combine to combat dirt, grime, and dried-on grease ("Maid for You," 2021)³.

They can also effectively clean windows, clothes, motorcycles, vehicles, and other items. Because of soap's significant function in our daily lives, demand for the product is high and is mostly unaffected by financial instability. Dishwashing soap may already be available on the market. Still, it is sold by large corporations at a price significantly greater than the product's worth due to shipping expenses. Thus, formulating dishwashing soap locally can lessen the price paid for the commodity and provide an almost unlimited supply to the consumer. Smile dishwashing liquid business will then be considered to cater to these needs.

1.1 Objectives of the Study

The study's general objective is to determine the viability of the Smile dishwashing liquid in Cabasagan, Boston, Davao Oriental. This specifically aims:

- To determine the target market
- To determine the strategic location
- To conduct a market survey
- To identify promotional strategies
- To identify the distribution channel
- To identify personnel requirements
- To formulate a business model
- To determine the capital requirements of the business
- To project financial statements
- To compute financial ratios(ROI, payback period, ROA, Net Profit Margin)
- To draw conclusions and recommendations

1.2 Products

The main products of the business are eco-friendly dishwashing liquids that will be made available to all households and different establishments such as offices, restaurants, and schools. Smile dishwashing liquid comes in four (4) different scents and sizes (see Table 1). Product differentiation will allow customers to choose according to their preference in scents and purchasing capacity.

Table-1: Products Scents and Sizes

Scent	250 ml	350ml	500ml	1liter
Lemon	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Calamansi	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Strawberry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Avocado	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1.3 Technology

Technology is the most important product manufacturing area, followed by quality assurance and control. Technology and operations management can reduce employee time spent on administrative activities, allowing firms to concentrate on growing their operations and improving customer service (Peek, 2019)⁵.

Supplies and Equipment	Functions
Large Container	A large barrel that holds the mixture
Mixer	A mechanical device stirs the mixture to incorporate all the materials.
Plastic bottles (labeled)	This will contain the finished product.
Plastic apron	A type of protective clothing worn by an employee for protection from minor chemical splashes and solids contamination.
Gloves	Used to protect the hands in handling liquid solution.
Mask	Provides coverage of nose and mouth to protect workers from inhaling harmful chemicals.
Protective eyewear	Workers wear this to protect their eyes against splashes of chemicals used in soap making.

Table -2: Supplies and Equipment

1.4 Intended Market

The business' target markets are the retail stores and different establishments such as schools, offices, and restaurants in Boston, Davao Oriental, as the main market for the product. The business will focus on more than one municipality. It also intends to include the Municipality of Cateel, Davao Oriental, to establish a wider market.

1.5 Environment

The company will provide comprehensive safe work processes, information sharing regarding workplace dangers, safety, and health training, and protective equipment to ensure a safer workplace. The right to refuse dangerous work, to report incidents, and to take part in their employer's safety and health program are all supported, as well as giving workers a better understanding of the hazards associated with their professions. The business will strongly support the Occupational Safety & Health Act (OSHA) and Pollution Prevention Act, which aim to safeguard workers and lessen environmental pollution.

Additionally, the company will ensure that the chemical containers are disposed of properly and provide personal protective equipment to protect those working. Chemicals used in production shall be handled with extreme caution to prevent waste that could have an adverse impact on the environment.

1.6 Competition

On a local level, different brands of dishwashing liquid are available in the market. Convenience stores and small businesses offer them to households, offices, and resellers. In addition, laundry soap as an alternative to dishwashing soap is made available to households by the sari-sari stores. Both are serious competitors in catering to the market demands for soap. On this account, the business will make its competitive advantage by offering the market a large volume of liquid soap that reduces home trash of sachets and is hassle-free when used in general cleaning activities. Moreover, the products are eco-friendly, cannot cause skin irritation, and are safe for humans and animals. The price of the product is much lesser than the price of products presents in the market.

Table-3: Competitors and Business Market Share

Competitors	Products	Market share
Convenience stores	Dishwashing brands (joy, smart, axion, and dazz.)	35%
Sari-sari stores	Laundry soaps	25%
Smile	Scented Eco-Friendly Dishwashing Liquid	40%
Total		100%

1.7 Industry

The dishwashing or soap industry comprises large corporations responsible for producing, promoting, retailing, and distributing various goods used for washing and scouring dishware. In the form of tablets and detergents, commercial and domestic end users frequently use dishwashing detergent in automatic dishwashers.

AMR estimates that the market for dishwasher tablets worldwide was worth \$596.1 million in 2018 and would grow at a CAGR of 6.8% to reach \$990 million by 2026's end. Between 2018 and 2026, the market for dishwasher tablets offers a \$393.9 million potential increase in income. In the Philippines, revenue in the Dishwashing Detergents segment amounts to US\$0.80bn in 2022. The market is anticipated to expand at 3.41% yearly (CAGR 2022-2026). In contrast to other countries, the United States generates the most revenue (\$3,153.00m in 2022). In 2022, per-person revenues of \$7.08 were produced based on population statistics.

1.8 Business Model

The proponents anticipate all the risks that come with establishing the business. In this regard, the proponents will design the business according to its perceived threats and how to gain a competitive advantage over the rival. The business will seek agents to sell the products to every household to obtain resellers. Let one of the agents' goals is to look for product resellers in their area. Through the agents who will introduce the products to households, the business can be able to establish its name. This will be the means of marketing the business. The business will grant lower prices for resellers and commissions for agents. A warehouse will be installed if a store to maintain the resellers' sales. Price will be set at a reasonable marking.

Customers may order online or call via the business number. The delivery schedule will be set to supply products to resellers efficiently. A good working relationship is much favored. Excellent customer service will be highly valued and given importance, along with an adequate supply of products to meet the demands consistently.

2. MARKET ANALYSIS

Marketing is a crucial component of the company because it significantly contributes to its success. The success of a business can be considerably influenced by determining the requirements and wants of consumers and providing the right goods and services to them. It is introducing a product or service to the market, advertising it, and attempting to increase sales. Marketing significantly impacts production and distribution (R, 2019).

2.2 Marketing and Sales Strategy

Establishing a brand name for the business is essential to be easily recognized. The term SMILE matches the notion that washing dishes is the most toilsome and sickening chore to most people. Instead of hating the said errands, the SMILE label will perk them up. It conveys a message to be positive and loves everything they do. The product's label will be made simple yet impactful to catch customers' attention easily (see Fig. 2.1). Online platforms like Facebook will be utilized as customers perceive it as a more convenient means of accessing information. A Facebook page will advertise the product's usefulness and price. The business will recognize itself as a new entrant in the market; thus, word of mouth is preferably considered.

The company will use content marketing, which emphasizes education more than selling, to sway consumer behavior. The products' uses and importance must be communicated to the market. This tactical marketing strategy focuses on producing and disseminating content pertinent to prospects' demands to draw in customers most compatible with and likely to buy the product.

The proponent will approach sari-sari stores, retail stores, and individuals interested in the products offering them an opportunity to be part of the business venture.



Figure -1: Product Label

4ps in Marketing

The 4Ps of marketing are a framework for improving the components of the "marketing mix." It aids in defining marketing choices in terms of price, product, promotion, and location to suit a client's need or desire (Team Asana, 2020).

Products

SMILE dishwashing liquid has four (4) different types based on scents. The formulation for each scent is the same; they only differ in how it smells on plates and the color it brings to the liquid. The lemon-scented liquid is yellow, and the calamari is green; both give fresh and clean whiffs on plates. Avocado is pale green compared to calamari, and strawberry is red, giving the consumer a sweet candy-clean scent.

Dishwashing products often blend surfactants, sometimes accompanied by increasing levels of foam or lather when used to handwash wares such as cutlery, glasses, cooking utensils, cookware, plates, and bowls. Dishwashing products have also been used to help clean up damaged birds and other animals following large oil spills in some cases. Dishwashing goods were identified to efficiently and successfully assist in the non-harmful removal of the oil from the animals.

Price

The business will utilize Economy Pricing Strategy in product pricing. This pricing strategy involves computing the total cost of each goods sold and adding a minimum amount of markup. An economic pricing strategy sets prices at the bare minimum to make a small profit. However, the idea is to make the bare minimum as many times possible by selling as much volume of products as possible.

Place

The business will be strategically situated in Cabasagan, Boston, Davao Oriental. This area is far from the community houses and offices. This could provide the production more space and freedom that protects children from inhaling harmful chemicals.



Figure-2: Business Location

Promotion

The main instrument for promoting the product is word of mouth through the agents distributing products to every household. The resellers will be given posters containing the business's name and essential information. Product labels will also be used to communicate basic product information to potential customers. Most importantly, the Facebook page will be created to have a wider potential market.

3. OPERATING ANALYSIS

This chapter presents the operation management and requirements of the business, personnel requirements, business regulations, and critical factors to consider.

3.1 Production and Operation Requirements

The warehouse will operate from Mondays to Saturdays, 7 am to 5 pm. Mixing ingredients will be done in the afternoon because they must be set aside and stored in barrels for 12 hours or more to ensure their effectiveness. The mixture will be filled into plastic bottles in the morning and distributed to resellers and agents simultaneously. The sales team will take their desired quantity to the warehouse for distribution during that specified time. Delivery to resellers will be scheduled accordingly.

3.2 Production Process

Formulation:

- MC GEL
- Industrial Salt
- Anti – Bacterial
- Colorant
- Purified water
- Grease Cutter
- Preservative
- Bubble Enhancer

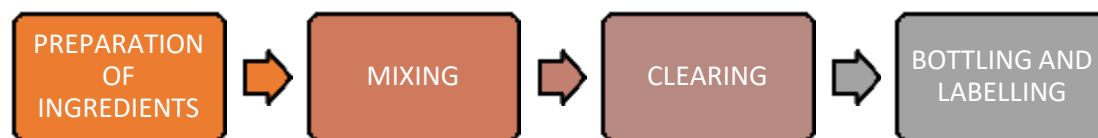


Figure-3: Production Procedure

3.3 Legal Requirements to Operate

To ensure the legality of the business, it will be registered under the Securities and Exchange Commission in the form of a partnership. The business will also secure the following requirements:

- Barangay Clearance
- Police Clearance
- Medical Clearance
- Residence Certificate
- Fire Certificate
- Sanitary Clearance
- Payment receipt of the business

3.4 Management and Personnel Requirements

The business will employ personnel to manage the operation and facilitate production to achieve an efficient and effective business venture.

Table-4: Management and Personnel Requirements

Position	Job Description	Qualification
Manager/Owner	<ul style="list-style-type: none"> • Develop and put into practice the overall manufacturing plan. • Find and hire workers; cultivate connections with important vendors and the sales team. • Review profit and loss data, analyze sales and revenue statistics, and develop estimates. • Suggest new operational tactics to increase store performance and productivity. • Verify that the shop complies with all legal requirements for health and safety. 	<ul style="list-style-type: none"> • Strong work ethic and a desire to improve and succeed • Excellent leadership skills • Team player • Good time management skills • Great interpersonal and communication skills.
Production Assistant	<ul style="list-style-type: none"> • Update records of physical inventory totals, receipts, changes, and returns to ensure the facility's inventory system is accurate. • Maintain current logs of all stockroom receipts, records, and withdrawals. • In charge of labeling, pricing, and returning materials. 	<ul style="list-style-type: none"> • Reliability and dependability are key traits. • Education: At least a High School graduate or college level • Must be of legal age • In good health
Production Worker	<ul style="list-style-type: none"> • Maintaining the facility clean and stocked daily, both before and after closing. • In charge of filling bottles and combining contents. Accountable for the distribution and delivery of goods to resellers. 	<ul style="list-style-type: none"> • Must be of legal age • Male • In good health • Has good work ethics
Sales Agent/Freelancers	<ul style="list-style-type: none"> • Promote and market items • Share commercial information 	<ul style="list-style-type: none"> • Is anyone willing to sell • Must have good character • Trustworthy

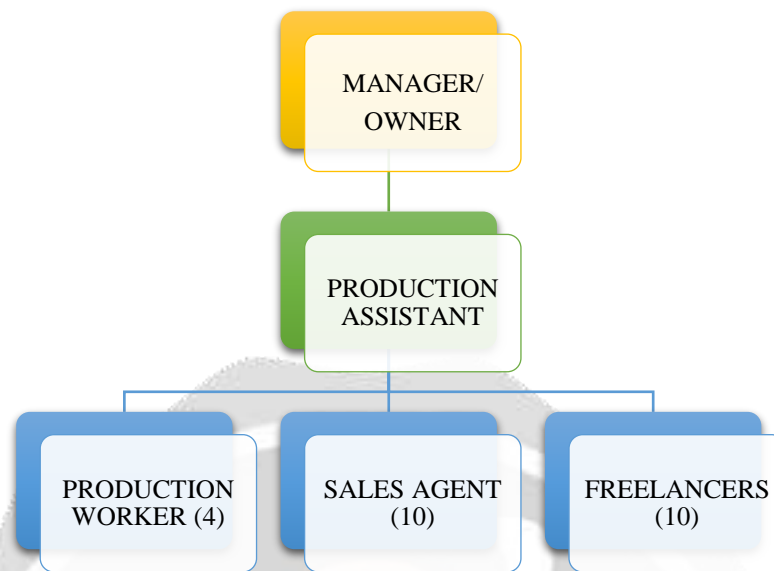


Figure-4: Organizational Chart

3.5 Critical Factors

Critical factors are the areas of the business that are vital to its success. It gives people focus and ensures that tasks and projects are aligned across teams to successfully and effectively meet the mission or the strategic goals and objectives of the business (Daniel, 2022).

3.6 SWOT Analysis

SWOT analysis of Smile Dishwashing Liquid analyzes the brand by its strengths, weaknesses, opportunities & threats. The internal factors are strengths and weaknesses, while opportunities and threats are the external factors. SWOT Analysis is a proven management framework that enables a brand to benchmark its business & performance compared to its competitors (Barr-Jones, 2022).

Table-5: SWOT Analysis

Strengths	Weaknesses
<ul style="list-style-type: none"> • Product Variation • Affordable price • Efficient distribution • Best Quality • Availability • Excellent customer service 	<ul style="list-style-type: none"> • New in the market • Brand awareness is limited • People’s resistance to change/ brand loyalty • High brand switching among customers
Opportunities	Threats
<ul style="list-style-type: none"> • Expansion of business markets • Additional Capital • Increasing retailers and freelancers • Tie-ups with hotel chains and restaurants. • Formulation of new liquid scents 	<ul style="list-style-type: none"> • Delayed the delivery of the supply • An increasing number of competitors • Workers’ health condition • Natural calamities • Inflation

Strengths

The business produces a variety of dishwashing scents to provide the customers' preferences and choices. It is always good to offer many options to the market to cater to all the demands of different customers at an affordable price. These will make the business more attractive to all potential customers. Large distribution networks and efficient distribution are the key strengths. Best quality and availability will create brand loyalty to customers. A good customer service culture will undoubtedly be a competitive advantage for the company.

Weaknesses

One of the weaknesses that the business may encounter is its newness in the industry, given that it will be the first dishwashing liquid soap manufacturer in the locality. Brand awareness is limited since the business will only rely on word of mouth and social media for its advertisement.

Another area for improvement is people's resistance to change/ brand loyalty, which will challenge the business to establish a stable market. Lastly, the high brand switching amongst customers due to the availability of options, hence limited loyalty.

Opportunities

Favorable chances for the business to gain profit advantage are the expansion of business markets. The larger the market, the greater the chance of earning. Additional capital for the business is essential for the increase in production volume and marketing support. Increasing retailers and freelancers means increasing market penetration, and lastly, the Tie-ups with hotel chains and restaurants will create a stable line of customers. The proponents also deemed the new formulation of liquid scents as an opportunity that increases product variance, which could mean increased production volume and choice for customers.

Threats

Several threats in a business venture must be carefully considered to reduce the rates of failures. Delays in supply delivery and natural calamities are threats that can affect production efficiency. Increasing the number of competitors lessens the business's market share. Inflation and unstable workers' health conditions can greatly affect the business as it increases costs of production and operating expenses.

3.7 Porter's Five Forces

Porter's Five Forces Analysis is a strategic management tool used to assess an industry and identify the underlying levels of profitability. The company will use Porter's Five Factors to understand better how the five competing factors affect profitability and to devise a strategy for increasing Smile's competitive edge and long-term profitability (Martin, 2022).

Table-6: Porter's Five Forces Analysis

The threat of new entrants	Threats from the Substitutes	Bargaining Power of the Buyers	Bargaining power of the suppliers	The Intensity of the Competitive Rivalry
High	High	Moderate	Moderate-High	High

Threat of New Entrants

New entrants are a threat that could highly affect the business' profitability. New entrants that offer similar products bring innovation and new ways of doing things, putting pressure on the business through lower pricing strategies, reducing costs, and providing new value propositions to the customers. SDL must manage these difficulties and construct effective barriers to maintain its competitive edge. Smile will handle the threat by innovating new products and ways of service. New products bring new customers to the field and give old customers a reason to buy Smile Dishwashing Liquid consistently. The business can lower the fixed cost per unit by building economies of scale.

Threats of the Substitutes

Industry profitability decreases when a new product or service addresses similar client wants in various manners. The threat of a substitute product or service is serious if it delivers a value proposition distinct from current market alternatives. The Smile dishwashing business will be more service-oriented than just product oriented. Understanding the customer's core need rather than what the customer is buying and increasing the switching cost for the customers.

Bargaining Power of the Buyers

Buyers want to acquire the greatest products at the lowest possible price. The smaller and stronger the client base, the greater the customers' negotiating power and capacity to seek rising discounts and offers. SMILE

will be building a large base of customers. This will be helpful in two ways: reducing the buyers' bargaining power and allowing the firm to streamline its sales and production process.

Bargaining Power of the Suppliers

Almost all the Cleaning Products industry companies buy their raw materials from numerous suppliers. Suppliers in dominant positions can decrease the margins SMILE can earn. Powerful suppliers use negotiating power to extract higher prices from firms in dishwashing products. The overall impact of higher supplier bargaining power is that it lowers the overall profitability of the business. Smile will choose to build an efficient supply chain with multiple suppliers. It also considers experimenting with product designs using different materials so that if one raw material's prices go up, the company can shift to another.

The Intensity of the Competitive Rivalry

When existing companies in a sector compete fiercely, prices fall, and the industry's overall profitability suffers. This competition affects the organization's overall long-term profitability. Smile will manage threats by building a sustainable differentiation, scale to compete better, and collaborating with competitors to increase the market size rather than just competing for a small market.

3.8 PEST Analysis

Political factors

Government regulation and political influence can both have an impact on business. Political stability is advantageous because it stabilizes the business's community. Levels of corruption, particularly in the consumer products industry, are advantageous when kept to a minimum since they influence the prices set for consumers. Pricing restrictions, taxation - tax rates and incentives, wage legislation - minimum wage and overtime, and product labeling in Cleaning Products are all costs that can benefit the business in the long run. Because the company uses plastic materials in its packaging, rules from the government following the Solid Waste Management Policy are expected. This is a threat at some point throughout the production.

Economic Factors

Macroeconomic factors, such as the inflation rate, savings rate, interest rate, foreign exchange rate, and economic cycle, determine the aggregate demand and investment in an economy. In contrast, microeconomic elements like industry norms impact the firm's competitive edge. SMILE can use the country's economic factors, such as growth rate and inflation & industry's economic indicators, such as the Cleaning Products industry growth rate and consumer spending, to forecast the growth trajectory.

- Labor costs
- Economic growth rate
- Discretionary income
- Unemployment rate
- Inflation rate
- Interest rates

Social Factors

Society's manner of life and culture affect the organizational culture in a given setting. How marketers comprehend the consumers in a particular market and create the marketing message for domestic consumers is significantly influenced by the shared ideas and attitudes of the populace. These Social factors are:

- Demographics and skill level of the population
- Culture (gender roles and social conventions.)
- Education level
- Entrepreneurial spirit and broader nature of the society. Some societies encourage entrepreneurship, while some do not.
- Attitudes (health and environmental consciousness.)
- Leisure interests

SMILE will carefully examine these factors to ensure that the business ways fit the society's culture.

Technological Factors

A firm should do a technological analysis of the industry and the speed at which technology disrupts the industry. Slow technological disruption will allow more time, whereas rapid disruption may give a firm little time to adapt and be profitable. Technology analysis involves understanding the following impacts -

- Recent technological developments in the field of dishwashing soap production

- Technology's Impact on product offering
- Impact on cost structure in the Cleaning Products Industry
- Impact on Value chain structure in the Consumer Goods sector

4. FINANCIAL ANALYSIS

This chapter presents the necessary documents to display the financial standing of the proposed business over a given period—Income Statement, Cash Flow Statement, Balance Sheet, Partner's Equity, notes to financial statements, and Start-Up Schedule for establishing the proposed business.

Table-7: Start-up Schedule

START-UP SCHEDULE							
ACTIVITIES	MAR 2023	APRIL 2023	MAY 2023	JUNE 2023	JULY 2023	AUGUST 2023	SEP 2023
Data Gathering	▶						
Business Proposal Decision		▶					
Business Feasibility Study			▶				
Acquiring of Land				▶			
Construction of Building					▶		
Acquiring Equipment and Furniture & Fixture						▶	
Acquiring Raw Materials						▶	
Business Registration						▶	
Hiring Employees							▶
Formal Operation							▶

4.1 Financial Projection

Financial projections are crucial tool for individuals and businesses, providing a forward-looking view of the financial performance. It includes estimates of revenue, expenses, profits, and cash flows, which are crucial for budgeting, Securing funding, and assessing overall financial health of the entity.

Scents	Product Volume	Quantity	Frequency	Annual
Calamansi	1 liter	15	3	540.00
	500 ml	20	2	480.00
	350 ml	25	3	900.00
	250 ml	34	3	1,224.00
Strawberry	1 liter	24	2	576.00
	500 ml	42	3	1,512.00
	350 ml	12	3	432.00
	250 ml	36	3	1,296.00
Avocado	1 liter	36	2	864.00
	500 ml	58	3	2,088.00
	350 ml	34	2	816.00
	250 ml	40	3	1,440.00
Lemon	1 liter	32	2	768.00
	500 ml	30	3	1,080.00
	350 ml	54	3	1,944.00
	250 ml	38	3	1,368.00
				17,328.00

Table-8: Demand Schedule

Table-9: Sales Forecast

Scents	Volume	Price	Demand schedule	Monthly sales	Annual Sales
	1 liter	100	540	162,000.00	1,944,000.00
Calamansi	500 ml	50	480	2,000.00	24,000.00
	350 ml	35	900	2,625.00	31,500.00
	250 ml	25	1,224	2,550.00	30,600.00
Strawberry	1 liter	100	576	4,800.00	57,600.00
	500 ml	50	1,512	6,300.00	75,600.00
	350 ml	35	432	1,260.00	15,120.00
	250 ml	25	1,296	2,700.00	32,400.00
Avocado	1 liter	100	864	7,200.00	86,400.00
	500 ml	50	2,088	8,700.00	104,400.00
	350 ml	35	816	2,380.00	28,560.00
	250 ml	25	1,440	3,000.00	36,000.00
Lemon	1 liter	100	768	6,400.00	76,800.00
	500 ml	50	1,080	4,500.00	54,000.00
	350 ml	35	1,944	5,670.00	68,040.00
	250 ml	25	1,368	2,850.00	34,200.00
Total					<u>2,699,220.00</u>

Assumption: Sales will increase by 5% every year.

Table-10: Promotional Expenses

	Quantity	Unit cost	2023	2024	2025	2026	2027
Pamphlet	10,600	1	10,600.00	10,600.00	10,600.00		
Product label	17,328	0.05	866.40	892.39	919.16	946.74	975.14
Total			11,466.40	11,492.39	11,519.16	946.74	975.14

Assumption: In promotional expenses, product labels will increase by 3% each year, and pamphlets/flyers will only be incurred for 3 years from the start of operation.

Table-11: Supplies Expense

Particulars	2023	2024	2025	2026	2027
Office Supplies	5,000	5,100	5,202	5,306	5,412
Cleaning Supplies	4,200	4,284	4,370	4,457	4,546
Other Supplies	3,300	3,366	3,433	3,502	3,572
Total	<u>12,500</u>	<u>12,750</u>	<u>13,005</u>	<u>13,265</u>	<u>13,530</u>

Assumption: Supplies Expense increases by 2% each year.

Table-12: Tools and Equipment

Particulars	Cost	Units	Total
Large Container	2,500	10	25,000
Mixer	1,499	4	5,996
PPE			
Plastic apron	359	5	21,540
Gloves	137	5	8,220
Mask	20	24	5,760
Protective eyewear	100	10	12,000
Total			<u>78,516</u>

Table-13: Permits and Licenses

Particulars	2023	2024	2025	2026	2027
DTI Business Registration	700				
Business Permit	7,500	7,500	7,500	7,500	7,500
BIR	3,300	3,300	3,300	3,300	3,300
Sanitary Fee	2,500	2,500	2,500	2,500	2,500
Mayor's Permit	600	600	600	600	600
Total	<u>14,600</u>	<u>13,900</u>	<u>13,900</u>	<u>13,900</u>	<u>13,900</u>
Assumption: Permits and licenses will have no increase for 5 years.					

Table-14: Building Construction

Raw Materials	Quantity	Cost	Total
Gravels (5 mini. dam)	15pcs	1,800	27,000
Nails			-
#4	12 kls	60	720
#3	9 kls	85	765
Umbrella Nails	25 kls	70	1,750
Vulcaseal	12pcs	60	720
Galvanized Iron	60 pcs.	400	24,000
Plain Sheet	30 pcs	350	10,500
Roll Up Package			30,000
Cement	210 pcs	230	48,300
Hollow blocks	3,000 pcs	14	42,000
Steel bar 10 mm	150 pcs	245	36,750
Steel bar 8 mm	150.00	125	18,750
Wood			-
2x5x12/12=10	900 board feet (90 pcs)	42	37,800
2x4x12/12=8	480 board feet (60 pcs)	42	20,160
3 2x3x12/12=6	540 board feet (90 pcs)	42	22,680
Laborer	12 constructors	8,000	96,000
Masson	6 person	15,000	90,000
Paint	20 gallons	2,000	40,000
Painters	4 painters	4,415	17,660
Total			<u>565,555</u>

Table-15: Furniture and Fixture

Particulars	Unit Cost	Quantity	Total
Table	1,000	4	4,000
Chair	500	5	2,500
Cabinet	15,000	6	90,000
Total			<u>96,500</u>

Table-16: Depreciation

Particulars	Cost	Useful Life	Depreciation
Tools and Equipment	78,516	8	9,815
Multicab	120,000	10	12,000
Building	565,555	40	14,139
Furniture and Fixture	96,500	10	9,650
Total			<u>45,603</u>

Table-17: Maintenance

Particulars	Annual cost
Maintenance and Repair	<u>20,000</u>
Assumption: Maintenance will be incurred in 2025 and constant until 2027.	

Table-19: Wages, Salaries, and Commission

Particulars	Cost	Quantity	2023	2024	2025	2026	2027
Production Worker	10,400	4	499,200	509,184	27,520	28,071	28,632
Sales Agent	22,493.50	10	269,922	283,418	297,589	312,468	328,092
Freelancer	11,246.75	10	134,961	141,709	148,795	156,234	164,046
Total			<u>904,083</u>	<u>934,311</u>	<u>473,904</u>	<u>496,773</u>	<u>520,770</u>
Assumption: Salaries increase by 2% each year. Expense on wages/commission of agents and freelancer is 10% and 5% of the sales, respectively.							

Table-20: SSS/PHIC Contribution

Particulars	SSS	PHIC	2023	2024	2025	2026	2027
Production Worker	988	234	14664	14,957	15,256.43	15,562	15,872.79
Total			<u>14,664</u>	<u>14,957</u>	<u>15,256</u>	<u>15,562</u>	<u>15,873</u>
Assumption: Employees' benefits increase by 2% every year.							

Table-21: Utilities Expense

Particulars	Monthly	Annual Cost
Electricity Bill	2,100	25,200
Internet	1,500	18,000
Total	<u>3,600</u>	<u>43,200</u>
Assumption: Utilities expense increase by 1% every year.		

Particulars	Amount
Miscellaneous Expense	<u>6,000</u>
Assumption: Miscellaneous expense remains the same for 5 years.	

Table-22: Miscellaneous

Table-23: Capital Requirements

Assets	960,571.00
Operating capital	8,485.25
Initial purchases	83,070.00
Total	1,052,126.25
Assumption: Required initial capital will be divided equally by the partners.	

Table-24: Bank Loan Amortization

Year	Principal	Interest (10%)	Payment Amount	Remaining Principal
				500,000.00
2023	100,000.00	50,000.00	150,000.00	400,000.00
2024	100,000.00	40,000.00	140,000.00	300,000.00
2025	100,000.00	30,000.00	130,000.00	200,000.00
2026	100,000.00	20,000.00	120,000.00	100,000.00
2027	100,000.00	10,000.00	110,000.00	-
Total	500,000.00	150,000.00	650,000.00	
Assumption: Loans are payable for 5 years.				

Table-25: Purchases

Purchases	Quantity	Unit Cost	Monthly Cost	Annual Cost
MC Gel	105	180	18,900.00	226,800.00
Industrial Salt	1	850	850.00	10,200.00
Colorant	8	100	800.00	9,600.00
Degreaser	8	200	1,600.00	19,200.00
Bubble Enhancer	8	180	1,440.00	17,280.00
Anti-Bacterial	10	300	3,000.00	36,000.00
Purified Water	256	25	6,400.00	76,800.00
Preservative	6	80	480.00	5,760.00
Scent	8	200	1,600.00	19,200.00
Bottles (1 Liter)	2000	7	14,000.00	168,000.00
500 ml	2000	5	10,000.00	120,000.00
350 ml	3000	4	12,000.00	144,000.00
250 ml	4000	3	12,000.00	144,000.00
Total				996,840.00
Assumption: Purchases increase by 2 % every year.				

Table-26: Ending Inventory

Particulars	2023	2024	2025	2026	2027
Inventory	149,526.00	152,516.52	155,566.85	158,678.19	161,851.75
Assumption: 15% of the total purchases is the ending inventory.					

Table-27: Projected Income Statement

Smiley Dishwashing Liquid Income Statement For the Years Ended Year 1-Year 5					
Particulars	2023	2024	2025	2026	2027
Sales Revenue	2,699,220.00	2,834,181.00	2,975,890.05	3,124,684.55	3,280,918.78
Beginning Inventory	-	149,526.00	152,516.52	155,566.85	158,678.19
Purchases	996,840.00	1,016,776.80	1,037,112.34	1,057,854.58	1,079,011.67
Ending Inventory	149,526.00	152,516.52	155,566.85	158,678.19	161,851.75
Less: Cost of Sales	847,314.00	1,013,786.28	1,034,062.01	1,054,743.25	1,075,838.11
Gross Profit	1,851,906.00	1,820,394.72	1,941,828.04	2,069,941.31	2,205,080.67
Less: Operating Expense					
Supplies Expense	12,500.00	12,750.00	13,005.00	13,265.10	13,530.40
Promotional Expense	11,466.40	11,492.39	11,519.16	946.74	975.14
Depreciation Expense	45,603.38	45,603.38	45,603.38	45,603.38	45,603.38
Maintenance	-	-	20,000.00	20,000.00	20,000.00
Wages and Salaries	904,083.00	934,311.15	473,903.91	496,773.49	520,770.04
SSS/PHIC Contribution	14,664.00	14,957.28	15,256.43	15,561.55	15,872.79
Utilities Expense	43,200.00	43,632.00	44,068.32	44,509.00	44,954.09
Permits and license	14,600.00	13,900.00	13,900.00	13,900.00	13,900.00
Interest expense	50,000.00	40,000.00	30,000.00	20,000.00	10,000.00
Miscellaneous Expense	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00
Total Operating Expense	1,102,116.78	1,122,646.20	673,256.19	676,559.26	691,605.84
Net Income Before Tax	749,789.23	697,748.52	1,268,571.85	1,393,382.04	1,513,474.83
Less: Income Tax 32%	239,932.55	223,279.53	405,942.99	445,882.25	484,311.95
Net Income After Tax	<u>509,856.67</u>	<u>474,469.00</u>	<u>862,628.86</u>	<u>947,499.79</u>	<u>1,029,162.89</u>

Table-28: Projected Cash Flow

Smiley Dishwashing Liquid Cash Flow Statement For the Years Ended Year 1-Year 5					
PARTICULARS	2023	2024	2025	2026	2027
Cash Flow from Operating Activities					
Cash received from customers	2,699,220.00	2,834,181.00	2,975,890.05	3,124,684.55	3,280,918.78
Purchases	996,840.00	1,016,776.80	1,037,112.34	1,057,854.58	1,079,011.67
Depreciation expense	45,603.38	45,603.38	45,603.38	45,603.38	45,603.38
Operating expense	1,102,116.78	1,122,646.20	673,256.19	676,559.26	691,605.84
Income Tax (32%)	239,932.55	223,279.53	405,942.99	445,882.25	484,311.95
Net Cash Inflow	405,934.05	517,081.85	905,181.90	989,991.83	1,071,592.70
Cash Flow from Investing Activities					
Land Payment	100,000.00				
Acquisition of Equipment	78,516.00				
Payment for Construction of Building	565,555.00				
Multicab	120,000.00				
Acquisition of Furniture and Fixtures	96,500.00				
Net Cash Outflow	(960,571.00)				
Cash Flow from Financing Activities					
SDL, Capital	600,000.00				
Proceeds from loan	500,000.00				
Payment of loan principal		100,000.00	100,000.00	100,000.00	100,000.00
Withdrawal			(80,000.00)		
Net Cash Inflow	1,100,000.00	400,000.00	220,000.00	200,000.00	100,000.00
Total Cash Flow	545,363.05	917,081.85	1,125,181.90	1,189,991.83	1,171,592.70
Add: Cash Beginning Balance	-	545,363.05	1,462,444.90	2,587,626.80	3,777,618.63
Cash Ending Balance	545,363.05	1,462,444.90	2,587,626.80	3,777,618.63	4,949,211.33

Table-29: Projected Balance Sheet

Smiley Dishwashing Liquid Statement of Financial Position As of Year, 1-Year 5					
ASSETS	2023	2024	2025	2026	2027
Current Assets					
Cash			2,587,626.80		
	545,363.05	1,462,444.90		3,777,618.63	4,949,211.33
Inventory			155,566.85		
	149,526.00	152,516.52		158,678.19	161,851.75
Total Current Assets			2,743,193.65		
	694,889.05	1,614,961.42		3,936,296.82	5,111,063.08
Non-Current Assets					
Land			100,000.00		
	100,000.00	100,000.00		100,000.00	100,000.00
Equipment			78,516.00		
	78,516.00	78,516.00		78,516.00	78,516.00
Building			565,555.00		
	565,555.00	565,555.00		565,555.00	565,555.00
Furniture & Fixture			96,500.00		
	96,500.00	96,500.00		96,500.00	96,500.00
Multicab			120,000.00		
	120,000.00	120,000.00		120,000.00	120,000.00
Less: Accumulated Depreciation			136,810.13		
	45,603.38	91,206.75		182,413.50	228,016.88
Total Non-Current Assets			823,760.87		
	914,967.62	869,364.25		778,157.50	732,554.12
Total Assets			3,566,954.53		
	<u>1,609,856.67</u>	<u>2,484,325.67</u>		<u>4,714,454.32</u>	<u>5,843,617.20</u>
Liabilities & Partner's Equity					
Loan Payable			300,000.00		
	500,000.00	400,000.00		200,000.00	100,000.00
Total Liabilities			300,000.00		
	500,000.00	400,000.00		200,000.00	100,000.00
Partner's Equity					
Retained Earnings			862,628.86		
	509,856.67	474,469.00		947,499.79	1,029,162.89
Partner's Drawing			-		
			(80,000.00)		
SDL Capital			2,484,325.67		
	600,000.00	1,609,856.67		3,566,954.53	4,714,454.32
Total partners equity			3,266,954.53		
	1,109,856.67	2,084,325.67		4,514,454.32	5,743,617.20
Total Liabilities & Partner's Equity			3,566,954.53		
	<u>1,609,856.67</u>	<u>2,484,325.67</u>		<u>4,714,454.32</u>	<u>5,843,617.20</u>

Table-30: Partner's Equity

Smile Dishwashing Liquid Statement of Changes in Partner's Equity As of the Years Ended Year 1-Year 5					
PARTICULARS	2023	2024	2025	2026	2027
Capital Beginning	600,000.00	1,609,856.67	2,484,325.67	3,566,954.53	4,714,454.32
Add: Net Income	509,856.67	474,469.00	862,628.86	947,499.79	1,029,162.89
Total	1,109,856.67	2,084,325.67	3,346,954.53	4,514,454.32	5,743,617.20
Less: Drawing	0.00	0.00	-80,000.00	0.00	0.00
Ending, Balance	<u>1,109,856.67</u>	<u>2,084,325.67</u>	<u>3,266,954.53</u>	<u>4,514,454.32</u>	<u>5,743,617.20</u>

4.1 Financial Ratio Analysis

It is a calculation where financial values are determined to get an insight into the overall financial health of a company and its market. The value thus obtained can be used for balance sheets, statements of cash flow, and other important financial statements.

A. Return on Investment (ROI)

Return on Investment (ROI) is a financial metric that provides a comprehensive assessment of the efficiency, profitability, and value generated by an investment endeavor.

$$\text{ROI} = \frac{\text{Net Income}}{\text{Initial Investment}}$$

Table-31: Return on Investment

Return on Investment	Net Income	509,857	474,469	862,629	947,500	1,029,163
	Initial Investment	1,100,000	1,100,000	1,100,000	1,100,000	1,100,000
Return on Investment		<u>46%</u>	<u>43%</u>	<u>78%</u>	<u>86%</u>	<u>94%</u>

Interpretation: The above return on investment ratio measures the return gained from an investment compared to the initial investment amount. An ROI of 46%, 43%, 78%, 86%, and 94% means that an investment of 1,100,000 has generated a return of 46%, 43%, 78%, 86%, and 94% relative to its initial investment cost. It indicates a substantial profit and is considered a relatively high ROI.

B. Net Profit Margin (NPM)

Net Profit Margin (NPM) is a financial metric used to quantify the profitability and operational efficiency of SDL by evaluating the proportion of net profit derived from the total revenue.

$$\text{NPM} = \frac{\text{Net Income}}{\text{Revenue}}$$

Table-32: Net Profit Margin

Net Profit Margin	Net Income	509,857	474,469	862,629	947,500	1,029,163
	Revenue					

		2,699,220	2,834,181	2,975,890	3,124,685	3,280,919
NPM		<u>19%</u>	<u>17%</u>	<u>29%</u>	<u>30%</u>	<u>31%</u>

Interpretation: a net profit of 19%, 17%, 29%, 30%, and 31% suggest that for every peso of revenue generated, the business retains 19, 17, 29, 30, and 31 cents as net profit respectively. A higher net profit margin is generally favorable, as it implies that the SDL is generating more profit for each peso of revenue.

C. Return on Assets (ROA)

Return on Assets (ROA) is a financial ratio that measures a business' profitability and efficiency in generating profits from its total assets. It quantifies the ability of SDL in utilizing its assets to generate earnings.

$$\text{ROA} = \frac{\text{Net Income}}{\text{Total Asset}}$$

Table-33: Return on Asset

Return on Asset	Net Income	509,857	474,469	862,629	947,500	1,029,163
	Total Asset	1,609,857	2,484,326	3,566,955	4,714,454	5,843,617
ROA		<u>32%</u>	<u>19%</u>	<u>24%</u>	<u>20%</u>	<u>18%</u>

Interpretation: The assets used by the business yielded 32%, 19%, 24%, 20%, and 18% of the net income, respectively. These indicates that the business is effectively using its assets to generate profit. It further suggests that SDL has a strong operational efficiency, effective cost management, and successful revenue generating strategies in place.

D. Payback Period

The payback period is financial metric used to assess the length of time required to recover the initial investment in a project or investment opportunity.

Table-34: Payback Period

Payback Period	Initial Investment	1,100,000
	Net Cash Flow	545,363.05
Ratio		<u>2.017005</u>

Interpretation: The payback ratio of 2.02 means that it will take approximately two years and two months of operation for the cumulative cash inflows generated by the investment to equal or surpass the initial cash outflow. This suggest that the initial investment of 1,100,000 will be recovered within 2 years and two months of business operation. The implication is that the investment has a relatively short payback period, indicating a faster return on investment and potentially lower risk compared to investment with longer payback period.

5. CONCLUSION

Smile dishwashing liquid business will be producing effective all-around cleaning dishwashing liquid that intends to sell and distribute its product to the municipality of Boston and Cateel targeting all retailers and business establishments. The main production and product warehouse will be situated at Cabasagan, Boston, Davao Oriental. Products will be promoted online, house-to-house selling, flyers, and tarpaulins. The business will welcome sales agents and freelancers to sell and promote the business's existence in the area. The entire venture will be managed and operated by a manager, an associate manager, and two production workers assigned specific responsibilities. The initial investment is Php 1,100,000 to cover the capital requirements of establishing the business.

5.1 Findings

The study shows that Smile Dishwashing Liquid is feasible in the proposed area, given that 96% of the population is interested in patronizing the business venture. Dishwashing can be used in all sorts of cleaning, may it be at the house, business, and public places that, make it profitable with a 19% net profit margin in the first year alone. The income statement shows that the business has had no negative income and positive cash flow for 5 years. The amount the partners initially invested will be acquired back by the investors in cash in 2 years and 1 month of operation.

5.2 Recommendations

The partners should consider expanding the business market and increasing the number of retailers for a wider distribution area of the products. They should further consider the formulation of a new variety of dishwashing liquids and the formulation of dishwashing paste to compete with an existing dishwashing liquid brand. One-piece availability and formulation or creation of dishwashing liquids in sachet are likely to be considered for an affordable and convenient purchase of consumers.

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