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Feasibility Study of A New Concept "Warung Mie" Store of XYZ Restaurant in Amsterdam

Felicia Hana[1], Kurnia Fajar Afgani[2]
Institut Teknologi Bandung, Indonesia[1,2]
Email: felicia_fajr@sbm-itb-ac.id

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Abstract: XYZ restaurant is a takeaway restaurant offering homemade Indonesian dishes located in Amsterdam. After 3 years of operating, restaurant XYZ realized that the majority of customers pick noodles as their most favorite dish, which tends to sell out every day. The restaurant identified an opportunity to focus on noodle-based dishes by establishing a Warung Mie concept store in Amsterdam. This decision is supported by Amsterdam's status as an international city with a diverse culinary scene and the potential growth of the noodle market in the Netherlands. Moreover, many Dutch people are familiar with Indonesian cuisine. The project requires an initial investment of €154,062. Therefore, before implementing the project, the owner would like to analyze its feasibility and associated risks, which is the purpose of this study. There are five stages in constructing the feasibility study: constructing pro forma financial statements, calculating the weighted average cost of capital, calculating free cash flow to the firm (FCFF), conducting a financial feasibility analysis, and performing a risk assessment. The tools used to assess feasibility include the payback period (PP), net present value (NPV), internal rate of return (IRR), and profitability index (PI). Moreover, sensitivity analysis is used to conduct the risk analysis and assess the project's resilience to changes in key variables. Based on the market and financial analysis, the project is feasible and will generate profit in the future. The payback period would be 5 years, 1 month, and 3 days; NPV is €210,176; IRR is 19.5%; and PI is 2.4. The sensitivity analysis highlights that variations in total sales are the most impactful variable to the NPV, followed by salaries and wages. Therefore, restaurant XYZ is advised to focus on improving total sales. Additionally, implementing effective financial monitoring and control systems will help manage sales and salary expenses efficiently, mitigating potential risks associated with fluctuations in these variables.

INTRODUCTION

The Netherlands and Indonesia have maintained a close historical relationship for decades, due to the colonial era. Between 1945 and 1965, there are approximately 300,000 Indonesians moved to the Netherlands. The majority of them arrived in the late 1940s when Indonesia was struggling for independence. This migration hasn't only significantly impacted the Dutch population but also introduced Indonesian culture to the Netherlands. Over the years, Indonesian culture has spread and merged with Dutch culture, making it a familiar part of Dutch life.

According to data from the Indonesian Embassy in The Hague, there were over 11,000 Indonesian citizens living in the Netherlands in 2018. This number has grown by 27%, reaching around 15,000 Indonesian citizens by 2022, and 1.7 million people of Indonesian descent. As a result, the Netherlands now has the second-largest Indonesian diaspora population in the world, following Malaysia, which hosts 3.5 million Indonesians.

As the Dutch market is known for its diversity and multiculturalism, many Indonesians attempt to introduce their heritage, especially in food through a business. Based on the report from the Ministry of Foreign Affairs of the Netherlands, there were at least 350 Indonesian restaurants spread across the country as of June 2022. From this number, there are 75 restaurants (21,5%) situated in Amsterdam. The number has gradually increased by November 2023, with more than 400 Indonesian culinary businesses, ranging from restaurants, stalls, shops, and catering services. The familiarity of Dutch people with Indonesian cuisine, supported by the large number of Indonesian diaspora in the Netherlands, provides a good opportunity for continuing to develop the Indonesian culinary business in the country.

Given these conditions, along with the recovery from the post-COVID-19 pandemic, have increased people's interest in opening new restaurants in the Netherlands, one of which is XYZ. XYZ is a takeaway restaurant offering homemade Indonesian dishes located in the heart of Amsterdam. Established in June 2021, the restaurant brought the signature concept of Sajamba. The special thing about this restaurant is that customer can customize their meal, tailoring their preferences. XYZ restaurant offers a diverse array of options, including carbohydrate selections such as Bami Goreng, Nasi Kuning, Nasi Goreng, and Nasi Putih. Each meal will be offered with various meat choices, such as Rendang, Daging Bali, Semur, Ayam Kecap, Ayam Rica-Rica, and Sate, as well as vegetable offerings such as Gado-Gado, Sayur Lodeh, Tahu Tempe Tumis, and Sambal Goreng Buncis. The restaurant displays its dishes on a buffet, allowing customers to directly view the selections.

After operating for 3 years, XYZ restaurant has received positive sales feedback from both local and international customers. The restaurant has noted that the carbohydrate menu item, Bami Goreng, has resulted in the highest sales among customer preferences. Bami Goreng's main ingredient is instant noodles, enhanced with vegetables and signature seasoning. Many customers have requested that the restaurant offer various noodle flavors combined with Indonesian dishes. In August,

sales of Bami Goreng accounted for roughly 35% of customer choices, followed by Nasi Goreng with 30%. This number has gradually increased, peaking in May 2024 at 45% of customer preferences.

This condition, supported by a recent Amsterdam export event, resulted in high interest from visitors for Indonesian instant noodles. In the e-commerce sector, the Dutch noodles market is predicted to grow significantly with a CAGR of 17.7% from 2024 to 2028. Lastly, the latest market research conducted by Polaris also revealed that the global instant noodles market was valued at USD 52.16 billion in 2021 and is expected to grow at a CAGR of 5.91% during the forecast period. It also mentioned that the European market, especially the Netherlands, experience a sizable market share because of the high demand for Asian noodle varieties and the expanding desire for convenience foods.

Therefore, XYZ restaurant plans to open a new store with the concept of Indonesian "Warung Mie." in Amsterdam This concept provides convenience for customers with grab-and-go packaging that allows them to enjoy their food while walking around the city. The restaurant has identified this opportunity as unique and promising for investment. According to the list of Indonesian restaurants in the Netherlands provided by the Indonesian Embassy, no Indonesian restaurants currently embrace the Warung Mie concept. This fresh idea is expected to resonate well with both the Indonesian community and the broader Dutch population, given the widespread popularity of Indomie.

After receiving positive feedback from customers over 3 years of operation, XYZ restaurant has noticed a new demand to expand its market by focusing solely on noodle dishes. Consequently, the business plan for XYZ to open a new Indonesian store featuring the unique “Warung Mie” concept is perceived as a promising opportunity. This innovative approach could enhance profitability and provide a competitive advantage in the diverse Dutch market.

However, opening a new store involves significant challenges and risks, including market demand and financial viability. A comprehensive analysis is required to determine whether the implementation of the Warung Mie concept is feasible for XYZ restaurant. This research aims to evaluate these factors to help the decision-making process for opening a new concept store.

METHOD

The methodology for this research involves a structured approach to collecting and analyzing data to assess the feasibility of restaurant XYZ. Data collection begins with gathering information to provide insights into the research objectives. This process encompasses both primary and secondary data. Primary data is obtained through qualitative interviews with the owner of restaurant XYZ. These interviews are conducted to acquire relevant details for the feasibility analysis. Additionally, secondary data is collected through an examination of the restaurant's financial reports from 2023 to 2024, as well as research on Netherlands policy, academic journals, books, and other

pertinent sources.

The analysis of the collected data follows a multi-stage process. The first stage involves creating pro forma financial statements, including projections for the income statement and cash flow statement. These projections are based on historical data, current market conditions, and insights gained from interviews with the restaurant owner. These pro forma statements serve as the foundation for subsequent analysis by estimating expected revenue, expenses, and cash flows.

In the next stage, the Weighted Average Cost of Capital (WACC) is calculated. WACC represents the overall cost of capital, combining the cost of equity—compensating investors for the risk of investing in the firm—and the cost of debt, adjusted for tax savings. This calculation provides the appropriate discount rate for valuing the projected Free Cash Flow to the Firm (FCFF).

Following the determination of WACC, the third stage involves calculating the Free Cash Flow to the Firm (FCFF). This calculation utilizes the previously determined WACC percentage to evaluate the cash flows available to the firm. The fourth stage is a financial feasibility analysis, employing capital budgeting techniques such as the Payback Period, Net Present Value, Internal Rate of Return, and Profitability Index. These strategies are essential for providing a comprehensive evaluation of the project's potential returns and profitability.

The final stage involves conducting a risk assessment analysis to identify potential risks that may affect the project. Sensitivity analysis is used to examine how changes in key variables, such as the cost of goods sold, costs, and revenue, impact the project's outcomes. This analysis helps in understanding the project's vulnerability to various risk factors.

RESULTS AND DISCUSSION

Restaurant XYZ, established in June 2021 in Amsterdam, has gained a loyal customer base with its authentic Indonesian cuisine and popular dish, Bami Goreng. The restaurant plans to expand by launching a new concept, Warung Mie, which will focus on convenient grab-and-go noodle dishes. This new venture is set to open in 2025, with initial investments made in 2024. Warung Mie aims to attract both locals and tourists, operating daily from 3:00 PM to 8:00 PM to capture peak tourist hours. The restaurant will emphasize customer experience, offering a variety of Indonesian noodle-based dishes with traditional sides and a welcoming atmosphere.

The market analysis reveals several factors influencing Warung Mie's potential success. Strengths include a unique offering of Indonesian noodles not previously available in Amsterdam and the convenience of takeaway options. However, the reliance on imported ingredients and the challenge of building brand awareness pose weaknesses. Opportunities arise from Amsterdam's growing tourism industry, increasing interest in international cuisines, and a rising popularity of Indonesian food. Yet, threats such as a competitive market, potential regulatory changes, and rising prices must be addressed.

The SWOT analysis highlights how Warung Mie can leverage its unique offering and authentic recipes to capitalize on growing tourism and interest in international cuisines. Addressing weaknesses like brand awareness and supply chain issues through

targeted marketing and strong supplier relationships will be crucial. The TOWS analysis suggests using Warung Mie's unique aspects to stand out in a competitive market while managing increasing prices and regulatory risks.

A PESTLE analysis outlines the political stability in the Netherlands, the moderate economic growth, and the emphasis on sustainability. Technological advancements support efficient operations, while legal and environmental regulations impose certain constraints on the business.

Porter's Five Forces analysis indicates a moderate threat of new entrants due to the complex food and beverage industry environment. The bargaining power of suppliers is high due to the reliance on Indonesian ingredients, and the bargaining power of buyers is moderate to high, influenced by the variety of dining options and food delivery apps. The threat of substitutes is low to moderate, as Warung Mie's unique Indonesian offerings reduce direct competition. Industry rivalry is moderate, with a competitive landscape but limited direct competition for Indonesian-style noodles. The marketing mix for Warung Mie includes a focus on unique and customizable noodle dishes, competitive pricing, and a strategic location in central Amsterdam. Promotion will involve social media marketing, traditional advertising, and online ordering through delivery platforms.

The business model canvas outlines a mass market approach, targeting tourists and locals seeking convenient, authentic Indonesian food. Key partners include suppliers of Indonesian ingredients and delivery platforms. Key activities encompass food preparation, customer service, and marketing. The business will rely on skilled employees, high-quality equipment, and strategic funding. Revenue will primarily come from direct sales and online orders, while costs include rent, equipment, labor, and ingredient expenses. Overall, Warung Mie's success will depend on effectively leveraging its unique offerings, managing operational challenges, and navigating the competitive landscape of Amsterdam's food and beverage market.

Financing Requirement

Table 1. Financing Requirement

Name	Costs (€)
Kitchen equipment	13,500
CCTV	350
Table and chair	500
Inventory - ingredients	5,000
Rent	48,000
Operation Expense	86,712
Total	154,062

Source: owner's information, 2024

The initial investment for the first year requires €154,062. Therefore, restaurant XYZ must determine whether the upcoming concept of the "Warung Mie" store will generate positive cash flow and be worth accepting the project. Capital budgeting techniques are thus implemented to further assess the feasibility of the new concept store.

Determine the Assumption for Pro Forma Financial Statement

The presumption was created based on historical data and direct discussion with the owner of restaurant XYZ. The assumption is made as a foundation for further forecasting the financial feasibility, as follows:

Table 2. Account Assumptions

Account	Assumption		Growth	Growth Assumption
Revenue				
Total Sales	The total sales of the store are obtained by combining all categories of the product menu, including main dishes, side dishes, and drinks. The main dishes consist of dry and soup noodles, while the side dishes include Kerupuk Udang and Kerupuk Opak Pedas. Drinks are Teh Botol and still water. The main dishes contribute the most to the total sales.	revenue growth	4,5%	Based on forecasted growth of the noodles market in the Netherlands.
	COGS			
Noodle Costs	Noodles are the main ingredients of the dish. Indonesian instant noodles cost is €0.5 per piece in 2023.	% of inflation	2%	Based on the forecasted annual inflation of goods in Netherlands
Crackers	Crackers include the cost of Kerupuk Udang and Kerupuk Opak Pedas, which accounted for €1 each.	% of inflation	2%	Based on the forecasted annual inflation of goods in Netherlands
Drinks	Drinks include Teh Botol (€1) and still water (€0.5).	% of inflation		Based on the forecasted annual inflation of

				goods in Netherlands
Supporting Ingredients Costs	Raw ingredients comprise all the necessary ingredients to complement dishes, including beef (€1.5) , chicken (€1.4), eggs (€0.25), vegetables (0.25), and basic ingredients.	% of inflation	2%	Based on the forecasted annual inflation of goods in Netherlands
Packaging Costs	All food and beverage businesses in the Netherlands are obliged to use eco-friendly packaging materials for food boxes. The cost of each food box is €0.15 per piece.	% of inflation	2	Based on the historical income statement of restaurant XYZ
Operating Expenses				
Salary	Warung Mie will employ one all-round workers, one chef, and one manager. All roles are paid hourly: €13.27 for all-round workers, €16.5 for the chef, and €18 for the manager. The store will open every day with 5 working hours each day.	minimum salary growth	3,75%	Based on the average change of minimum salary by government policy
Rent	The rent of the store will be paid yearly	-	-	Assumed to be constant as the owner will use his relative's place
Maintenance	According to the owner's experience, maintenance of kitchen equipment used to be done once in 3 months or 4 times in a year.	% of the equipment 's initial value	1.5%	Based on the historical income statement of restaurant XYZ
Marketing	Marketing expenses include optimization of social media, such as Facebook and Instagram to engage with customers and increase exposure of the store.	% of sales	1%	Based on the historical income statement of restaurant XYZ

Utility Costs	Utility cost includes water, electricity, and gas.	Utility cost growth	6,5%	Based on the historical data of utility prices in Amsterdam
Depreciation				
Kitchen Equipment	Depreciation is calculated by allocating each asset over its productive lifetime of the equipment. The owner stated that kitchen equipment on average has 10 years of useful life. Therefore, the depreciation expense annually is €1,350.	-	-	Based on straight-line method of depreciation expense
CCTV	CCTV assumed to have 5 years of useful life. The initial value is €350. Hence, the depreciation expense anually is €70.	-	-	Based on straight-line method of depreciation expense
Table and chair	Table and chair have 7 years of useful life. The initial value is €500 and the depreciation expense €71.43.	-	-	Based on straight-line method of depreciation expense
Tax	As the forecasted income will be below € 75,518, entrepreneur will pay income tax of 36.93%.	% of earning before tax	36,93%	Based on the government policy in 2024.

Source: Research data, 2024

Monthly Pro Forma Income Statement

The monthly pro forma income statement and cash flow statement are based on historical data and input from the restaurant owner. The owner mentioned that the restaurant's monthly revenue varies significantly throughout the year due to seasonal changes. August is the busiest month, with the highest revenue, as it is the peak of summer, attracting many tourists to Amsterdam. The summer season starts in June, leading to a gradual increase in revenue that peaks in August. From September onwards, revenue begins to decline as the tourist season winds down and the weather cools. Hence, December usually has the lowest revenue due to the cold winter weather, which discourages dining out and travel. The owner also noted other factors influencing revenue fluctuations, such as local events, holidays, and marketing efforts.

Table 3. Monthly Income Statement (Month 1-6)

Warung Mie Amsterdam						
Income Statement						
	Jan	**Feb**	**Mar**	**Apr**	**May**	**June**
Revenue						
Sales	€14,345	€15,062	€16,568	€20,711	€20,089	€21,696
Net Sales	€14,345	€15,062	€16,568	€20,711	€20,089	€21,696
Cost of Goods Sold	€4,135	€4,342	€4,776	€5,970	€5,791	€6,254
Gross Profit	€10,210	€10,721	€11,793	€14,741	€14,298	€15,442
Operating Expenses						
Salaries & Wages	€6,688	€6,688	€6,688	€6,688	€6,688	€6,688
Rent Expense	€4,000	€4,000	€4,000	€4,000	€4,000	€4,000
Maintenance Expenses	€50.63	-	-	€50.63	-	-
Marketing Expenses	€201.36	€201.36	€201.36	€201.36	€201.36	€201.36
Utilities	€320	€320	€320	€320	€320	€320
Total Operating Expenses	€11,260	€11,209	€11,209	€11,260	€11,209	€11,209
EBITDA	-€1,050	-€489	€583	€3,481	€3,089	€4,233
Depreciation	€124	€124	€124	€124	€124	€124
EBIT	-€1,174	-€613	€459	€3,357	€2,965	€4,109
Tax	€1,101	€1,101	€1,101	€1,101	€1,101	€1,101
Net Income	**-€2,275**	**-€1,714**	**-€642**	**€2,256**	**€1,864**	**€3,008**

Source: author's analysis, 2024

Table 4. Monthly Income Statement (Month 7-12)

Warung Mie Amsterdam						
Income Statement						
	July	**Aug**	**Sep**	**Okt**	**Nov**	**Des**
Revenue						
Sales	€27,121	€28,477	€24,205	€21,300	€18,318	€13,739
Net Sales	€27,121	€28,477	€24,205	€21,300	€18,318	€13,739
Cost of Goods Sold	€7,818	€8,208	€6,977	€6,140	€5,280	€3,960
Gross Profit	€19,303	€20,268	€17,228	€15,161	€13,038	€9,779
Operating Expenses						
Salaries & Wages	€6,688	€6,688	€6,688	€6,688	€6,688	€6,688
Rent Expense	€4,000	€4,000	€4,000	€4,000	€4,000	€4,000
Maintenance Expenses	€50.63	-	-	€50.63	-	-
Marketing Expenses	€201.36	€201.36	€201.36	€201.36	€201.36	€201.36
Utilities	€320	€320	€320	€320	€320	€320
Total Operating Expenses	€11,260	€11,209	€11,209	€11,260	€11,209	€11,209
EBITDA	€8,043	€9,059	€6,019	€3,901	€1,829	-€1,431
Depreciation	€124	€124	€124	€124	€124	€124
EBIT	€7,919	€8,935	€5,894	€3,776	€1,705	-€1,555
Tax	€1,101	€1,101	€1,101	€1,101	€1,101	€1,101
Net Income	**€6,818**	**€7,834**	**€4,793**	**€2,675**	**€604**	**-€2,656**

Source: author's analysis, 2024

Yearly Pro Forma Income Statement and Cash Flow Statement

Based on the monthly pro forma and yearly assumption, a yearly pro forma income statement and cash flow statement are created.

Table 5. Yearly Income Statement (2024 - 2029)

Warung Mie Amsterdam						
Income Statement						
	2024F	**2025F**	**2026F**	**2027F**	**2028F**	**2029F**
Revenue						
Sales		€241,632	€252,505	€263,868	€275,742	€288,150
Net Sales		€241,632	€252,505	€263,868	€275,742	€288,150
Cost of Goods Sold		€69,651	€71,044	€72,465	€73,914	€75,393
Gross Profit		€171,981	€181,461	€191,403	€201,828	€212,758
Operating Expenses						
Salaries & Wages		€80,254	€83,263	€86,385	€89,625	€92,986
Rent Expense		€48,000	€48,000	€48,000	€48,000	€48,000
Maintenance Expenses		€202.50	€202.50	€202.50	€202.50	€202.50
Marketing Expenses		€2,416.32	€2,525.05	€2,638.68	€2,757.42	€2,881.50
Utilities		€3,840	€4,090	€4,355	€4,639	€4,940
Total Operating Expenses		€134,712	€138,080	€141,582	€145,223	€149,010
EBITDA		€37,268	€43,381	€49,821	€56,604	€63,748
Depreciation		€1,491	€1,491	€1,491	€1,491	€1,421
EBIT		€35,777	€41,889	€48,329	€55,113	€62,326
Tax		€13,212	€15,470	€17,848	€20,353	€23,017
Net Income		**€22,564**	**€26,420**	**€30,481**	**€34,760**	**€39,309**

Source: author's analysis, 2024

Table 7. Yearly Income Statement (2030 - 2034)

Warung Mie Amsterdam					
Income Statement					
	2030F	**2031F**	**2032F**	**2033F**	**2034F**
Revenue					
Sales	€301,117	€314,667	€328,827	€343,625	€359,088
Net Sales	€301,117	€314,667	€328,827	€343,625	€359,088
Cost of Goods Sold	€76,901	€78,439	€80,007	€81,608	€83,240
Gross Profit	€224,217	€236,229	€248,820	€262,017	€275,848
Operating Expenses					
Salaries & Wages	€96,473	€100,091	€103,844	€107,738	€111,778
Rent Expense	€48,000	€48,000	€48,000	€48,000	€48,000
Maintenance Expenses	€202.50	€202.50	€202.50	€202.50	€202.50
Marketing Expenses	€3,011.17	€3,146.67	€3,288.27	€3,436.25	€3,590.88
Utilities	€5,261	€5,603	€5,967	€6,355	€6,768
Total Operating Expenses	€152,948	€157,043	€161,302	€165,732	€170,340
EBITDA	€71,269	€79,186	€87,518	€96,285	€105,508
Depreciation	€1,491	€1,420	€1,491	€1,491	€1,491
EBIT	€69,777	€77,766	€86,027	€94,794	€104,017
Tax	€25,769	€28,719	€31,770	€35,007	€38,413
Net Income	**€44,009**	**€49,047**	**€54,257**	**€59,786**	**€65,603**

Source: author's analysis, 2024

STAGE 2 - Calculating Weighted Average Cost of Capital (WACC)

After preparing the cash flow statement, the Weighted Average Cost of Capital (WACC) is required to discount future cash flows to their present value. The owner has indicated that Warung Mie will finance the initial investment entirely with owner's equity, with no debt involved. As a result, the WACC in this case will be equivalent to the Cost of Equity, which is determined using the Capital Asset Pricing Model (CAPM).

The formula to calculate cost of equity is mentioned below:

$$\text{Cost of Equity (Re)} = Rf + \beta \times (Rm - Rf)$$

Where:

- Re = Cost of Equity
- Rf = Risk-Free Rate
- β = Beta of the Stock
- Rm = Expected Market Return

Table 8. Weighted Average Cost of Capital

	Value	Assumption
Risk-Free Rate	2.65%	Based on the Netherlands' 10-year government bond yield.
Beta	-4.12%	Based on the calculation of historical return data of Koninklijke Ahold Delhaize NV, an IPO company in the food and beverage field.
Expected Market Return	5.94%	Based on the AEX (Amsterdam Exchange Index) which is a stock market index composed of Dutch companies that trade on Euronext Amsterdam. The index is composed of a maximum of 25 of the most frequently traded securities on the exchange.

Source: Research data, 2024

Therefore, the equation will be as follows:

$$Re = 2.65\% + -4.12\% \times (5.94\% - 2.65\%) = \mathbf{2.51\%}$$

STAGE 3 - Calculating Free Cash Flow to the Firm (FCFF)

Afterward, the free cash flow statement can be calculated using data from pro forma financial statement. The company's free cash flow for the proposed strategy (2024 -2034) can be seen below:

Table 9. Free Cash Flow to the Firm (2024-2029)

Description	0	1	2	3	4	5
Operating Cash Flow						
Cash Inflow						
Sales		€241,632	€252,505	€263,868	€275,742	€288,150
Total Cash Inflow		€241,632	€252,505	€263,868	€275,742	€288,150
Cash Outflow						
Cost of Goods Sold		€69,651	€71,044	€72,465	€73,914	€75,393
Salaries & Wages		€80,254	€83,263	€86,385	€89,625	€92,986
Rent Expense		€48,000	€48,000	€48,000	€48,000	€48,000
Maintenance Expenses		€203	€203	€203	€203	€203
Marketing Expenses		€2,416	€2,525	€2,639	€2,757	€2,882
Utilities		€3,840	€4,090	€4,355	€4,639	€4,940
Depreciation		€1,491	€1,491	€1,491	€1,491	€1,421
Tax		€13,212	€15,470	€17,848	€20,353	€23,017
Total Cash Outflow		€219,067	€226,086	€233,387	€240,982	€248,841
Total Operating Cash Flow		€22,564	€26,420	€30,481	€34,760	€39,309
Investing Cash Flow						
CAPEX	€19,350					
OPEX	€134,712					
Total Investing Cash Flow	€154,062					
Financing Cash Flow						
Owner's Capital	€154,062					
Total Financing Cash Flow	€154,062					
Total Net Cash Flow		€22,564	€26,420	€30,481	€34,760	€39,309

Cumulative Net Cash Flow		€22,564	€48,984	€79,465	€114,225	€153,534

Source: author's analysis, 2024

Table 10. Free Cash Flow to the Firm (2030-2034)

Description	6	7	8	9	10
Operating Cash Flow					
Cash Inflow					
Sales	€301,117	€314,667	€328,827	€343,625	€359,088
Total Cash Inflow	€301,117	€314,667	€328,827	€343,625	€359,088
Cash Outflow					
Cost of Goods Sold	€76,901	€78,439	€80,007	€81,608	€83,240
Salaries & Wages	€96,473	€100,091	€103,844	€107,738	€111,778
Rent Expense	€48,000	€48,000	€48,000	€48,000	€48,000
Maintenance Expenses	€203	€203	€203	€203	€203
Marketing Expenses	€3,011	€3,147	€3,288	€3,436	€3,591
Utilities	€5,261	€5,603	€5,967	€6,355	€6,768
Depreciation	€1,491	€1,420	€1,491	€1,491	€1,491
Tax	€25,769	€28,719	€31,770	€35,007	€38,413
Total Cash Outflow	€257,109	€265,620	€274,571	€283,838	€293,484
Total Operating Cash Flow	€44,009	€49,047	€54,257	€59,786	€65,603
Investing Cash Flow					
CAPEX					
OPEX					
Total Investing Cash Flow					
Financing Cash Flow					
Owner's Capital					
Total Financing Cash Flow					
Total Net Cash Flow	€44,009	€49,047	€54,257	€59,786	€65,603

Cumulative Net Cash Flow	€197,543	€246,590	€300,847	€360,633	€426,236

Terminal Cash Flow

To calculate the final cash inflow at the end of the project's life, the terminal cash flow must be determined. This calculation will be based on the Free Cash Flow to the Firm (FCFF) in year 10, the Weighted Average Cost of Capital (WACC), and the growth rate. In this case, the growth rate for Warung Mie is assumed to be 1.5%, aligning with benchmarks from similar businesses and the owner's assumptions based on past experience. Therefore, the calculation for the terminal cash flow is as follows:

$$\text{Terminal Cash Flow} = \frac{(FCFF\ year10)\ x\ (1 + growth\ rate)}{(WACC - growth\ rate)}$$

$$= \frac{€65{,}603\ x\ (1 + 1.5\%)}{(2{,}51\% - 1.5\%)}$$

$$= €6{,}592{,}776.73$$

STAGE 4 - Perform Financial Feasibility Analysis

To assess the financial feasibility of the Warung Mie project, the calculation of the Payback Period (PP), Net Present Value (NPV), Profitability Index (PI), and Internal Rate of Return (IRR) must be conducted. Each of these indicators will determine if the project meets the predetermined acceptance criteria. The owner has set an acceptance limit for the payback period at three years, aiming for a quick return on investment to enjoy financial benefits after retirement. The summary of all methods and their results is shown below:

Table 11. Financial Feasibility Analysis

Assessment Method	Result	Acceptance Criteria	Accept/ Reject
Payback Period	5 years, 1 month, and 3 days	Maximal 6 years	Accept
Net Present Value	€210,176	NPV > 0	Accept
Profitability Index	2.4	PI > 1	Accept
Internal Rate of Return	19.5%	IRR > WACC	Accept

Based on the results, the financial analysis of the Warung Mie project is highly favorable. The project is expected to recover its initial investment within 5 years, 1 month, and 3 days, accepted within the acceptable limit of 6 years. This payback period indicates a quick return on investment, making it an attractive option for the owner who aims to gather funds before retirement. Additionally, the Net Present Value (NPV) of €210,176 is significantly positive, suggesting that the project's cash inflows, discounted at the Weighted Average Cost of Capital (WACC), exceed its initial and ongoing costs, thereby generating substantial value over its lifetime. Furthermore, with a Profitability Index (PI) of 2.4, the project demonstrates

high profitability, indicating that for every euro invested, the project returns €2.40. This high ratio signifies very efficient use of capital and strong potential returns. Lastly, the Internal Rate of Return (IRR) is high at 19.5%, which is well above the WACC. This high IRR underscores the project's expected rate of return exceeding the cost of capital, reinforcing the financial attractiveness of the Warung Mie project.

STAGE 5 - Perform Risk Analysis with Sensitivity Analysis

According to the acceptance criteria of the capital budgeting indicator, the store of Warung Mie is feasible to work on. However, a sensitivity analysis must be conducted to further complement the analysis by assessing the variable impact. The calculation evaluates how changes in key variables affect the project's net present value outcomes. It also identifies which variables have the most significant impact on the results, helping prioritize focus areas. In this study, the NPV chosen to test the sensitivities are 5%, 10%, -5%, and -10%.

Table 12. Sensitivity Analysis with 5% Swing

Input Variable	Before	Variable Swing	After	NPV Swing
Total Sales	€2,969,222	5%	€3,117,683	25.30%
COGS	€762,662	5%	€800,795	-6.60%
Salaries & Wages	€952,437	5%	€1,000,059	-8.21%
Marketing Expenses	€29,692.22	5%	€31,176.83	-0.26%
Utilities	€51,819	5%	€54,410	-0.44%

Table 13. Sensitivity Analysis with 10% Swing

Input Variable	Before	Variable Swing	After	NPV Swing
Total Sales	€2,969,222	10%	€3,266,144	50.59%
COGS	€762,662	10%	€838,928	-13.19%
Salaries & Wages	€952,437	10%	€1,047,680	-16.42%
Marketing Expenses	€29,692.22	10%	€32,661.44	-0.51%
Utilities	€51,819	10%	€57,000	-0.89%

Source: author's analysis, 2024

Table 14. Sensitivity Analysis with -5% Swing

Input Variable	Before	Variable Swing	After	NPV Swing
Total Sales	€2,969,222	-5%	€2,820,761	-25.30%
COGS	€762,662	-5%	€724,529	6.60%
Salaries & Wages	€952,437	-5%	€904,815	8.21%
Marketing Expenses	€29,692.22	-5%	€28,207.61	0.26%
Utilities	€51,819	-5%	€49,228	0.44%

Source: author's analysis, 2024

Table 15. Sensitivity Analysis with -10% Swing

Input Variable	Before	Variable Swing	After	NPV Swing
Total Sales	€2,969,222	-10%	€2,672,300	-50.59%
COGS	€762,662	-10%	€686,396	13.19%
Salaries & Wages	€952,437	-10%	€857,193	16.42%
Marketing Expenses	€29,692.22	-10%	€26,723.00	0.51%
Utilities	€51,819	-10%	€46,637	0.89%

Source: author's analysis, 2024

Based on the results, the change in variable swing will significantly impact total sales which highlights the critical importance of revenue generation for the project's success. In contrast, increases in the Cost of Goods Sold (COGS) and salaries & wages notably decrease NPV, underscoring the need for effective cost management in these areas. Although marketing expenses and utility costs show minimal impact on NPV, the overall focus should be on strategies that drive sales growth while maintaining efficient cost control, particularly in primary expenses such as COGS and labor. These insights emphasize the project's strong potential profitability, if revenue enhancement and cost control are strategically prioritized.

CONCLUSION

The feasibility analysis for Warung Mie involved depicting market conditions and evaluation using several capital budgeting techniques to determine the project's viability and potential for success. The market analysis tools include SWOT, TOWS, PESTLE, Porter's Five Forces, Marketing Mix (4P), Market Sizing (TAM, SAM, SOM), and Business Model Canvas (BMC). While the financial analysis incorporated the Payback Period, Internal Rate of Return (IRR), Net

Present Value (NPV), and Profitability Index (PI), each of which provides critical insights into the project's financial health and expected performance.

The market analysis revealed strengths such as the unique appeal of Indonesian noodles and the opportunities in Amsterdam. The PESTLE analysis showed favorable conditions and trends that could benefit the project. Porter's Five Forces analysis found that competition is manageable. The Marketing Mix (4P) and Market Sizing (TAM, SAM, SOM) indicated strong customer demand and market potential. The Business Model Canvas (BMC) provided a clear picture of the business model and how it will generate profit.

The Net Present Value of the project accounted for €210,176. A positive NPV signifies that the project is expected to generate value beyond the initial investment, indicating that it will likely add to the company's overall wealth. This outcome reflects the project's potential to yield future cash flows that exceed its cost, thus supporting its financial attractiveness. The Payback Period is calculated to be 5.07 years, equal to 5 years, 1 month, and 3 days which is well within the owner's requirement of 6 years. This metric reveals that the project will offset its initial investment relatively quickly, meeting the owner's expectation of achieving a return on investment within a specific period. This rapid payback enhances the project's attractiveness as it aligns with the company's financial goals and risk tolerance.

The Profitability Index (PI) for the project is 2.4. This figure exceeds the minimum acceptable value of 1, suggesting that the project is expected to generate more value than its cost. The Internal Rate of Return (IRR) for the project is 19.5%, which surpasses the Weighted Average Cost of Capital (WACC) of 2.51%. This implies that the project's return on investment exceeds the cost of financing, demonstrating its potential to deliver returns that justify the financial risk.

In addition to these capital budgeting techniques, a sensitivity analysis was performed to assess the project's resilience to changes in key variables. The analysis highlights that variations in total sales are the most impactful variable to the NPV, followed by salary and wages. Overall, the financial analysis, encompassing NPV, IRR, PI, and Payback Period, confirms that the Warung Mie is financially feasible. The results align with the company's financial criteria and objectives, indicating that the project is likely to be a worthwhile investment. The sensitivity analysis further supports the project's viability by demonstrating that it can withstand reasonable variations in key financial variables. Thus, the Warung Mie is considered a sound investment opportunity and is recommended for approval.

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