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Business Feasibility Analysis for MSMEs (Case Study of Arfer Outlet in Palu City)

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Abstract:

Purpose:
Micro, Small, and Medium Enterprises (MSMEs) are a crucial component of the Indonesian economy. Their role is crucial, not only as job creators but also as key drivers of the local economy. This study aims to analyze the feasibility of the Arfer Outlet in Palu City as an MSME in the beverage sector.

Methodology:
The research method uses a qualitative descriptive approach combined with quantitative analysis, focusing on two main aspects: non-financial and financial. The financial aspect is analyzed using five indicators: Net Present Value (NPV), Profitability Index (PI), Payback Period (PP), Internal Rate of Return (IRR), and Average Rate of Return (ARR).

Findings:
The results of the study indicate that the Arfer Outlet is financially feasible. It is indicated by an NPV value of Rp3,602,691 (positive), a PI of 1.35, an IRR of 48.93%, and an ARR of 85.96%. Although the PP value of 1.16 years slightly exceeds the economic life of the asset, the difference is still within reasonable limits, so the business is still considered feasible.

Implication:
These findings confirm that financial indicators can provide an objective picture of a business's sustainability prospects. Therefore, this study not only contributes to the literature on business feasibility studies for MSMEs in the beverage sector but also provides practical recommendations for micro-enterprise development in Indonesia.

INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) are a crucial component of Indonesia's economic structure. Their role is crucial, not only as job creators but also as the main driver of the local economy. According to data from the Ministry of Cooperatives and SMEs (2023), MSMEs contribute more than 60% to the national Gross Domestic Product (GDP) and absorb approximately 97% of the workforce. One subsector that has experienced rapid growth in recent years is the beverage industry. Amid changing consumer patterns and the rise of a more practical lifestyle, various types of contemporary drinks, such as iced coffee, milk tea, fruit juices, and even smoothies, have become trends among the younger generation. This phenomenon, coupled with the widespread use of social media for promotion, demonstrates that this subsector has significant potential for development, especially when supported by thorough business planning.

Despite the high growth potential of the beverage sector, MSMEs still face various challenges, particularly in investment planning and business management. Many entrepreneurs operate based on intuition or personal experience, without the support of systematic feasibility analysis. Limited understanding of financial management, cash flow planning, and risk identification often results in inappropriate decisions, even leading to losses. It emphasizes the need for comprehensive business feasibility studies as a tool for developing more rational, data-driven investment planning and decision-making.

A business feasibility study is a comprehensive evaluation process encompassing various aspects, both financial and non-financial. Financial aspects include indicators such as Net Present Value (NPV), Internal Rate of Return (IRR), Payback Period (PP), and Profitability Index (PI), which aim to measure a business's efficiency and potential profitability. Meanwhile, non-financial aspects include market analysis, legal analysis, technical analysis, socio-economic analysis, and human resource management analysis.

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Several previous studies have highlighted the importance of business feasibility analysis, albeit with varying focuses. Alfajri et al.'s (2023) study of the "Daeng Fruits" beverage business in Makassar demonstrated that a comprehensive analysis approach can provide a strong feasibility picture, both in terms of market demand and financial potential. Hidayat et al. (2022) examined the Meine Welt Coffee business in Palangka Raya and evaluated its feasibility based on six key aspects: legal, environmental, market and marketing, technical and technological, human resource management, and financial. These findings demonstrate that a combination of financial and non-financial evaluations is crucial in assessing business feasibility, particularly for MSMEs in the culinary sector.

In addition, Marcellina et al. (2024) used a mixed method to analyze the ATV rental business in Tridea Hills, combining financial evaluations through NPV, IRR, Net Benefit-Cost Ratio (Net B/C), and PP, as well as non-financial analysis related to market conditions and consumer perceptions. Boekoesoe et al. (2015) emphasized that the success of MSMEs is greatly influenced by non-financial aspects, such as managerial readiness, market access, and understanding of the community's socio-economic conditions. Hasan & Rohman (2024) showed that feasibility studies can reduce the risk of uncertainty in investment decision-making, while Fuadiyah et al. (2024) emphasized the importance of balancing financial benefits and social benefits from a sharia perspective. Pratama et al. (2019) also found that feasibility studies can improve the managerial capacity of MSMEs, so that businesses are run more systematically and with a long-term orientation.

While these studies provide important insights, most focus on partial financial and non-financial analyses and are applied only to specific sectors or locations. Therefore, few studies comprehensively integrate financial and non-financial analyses for beverage MSMEs in Palu City. This gap highlights the need for research that simultaneously assesses business feasibility from both perspectives to obtain a more comprehensive and in-depth picture.

In line with this gap, this study aims to analyze the feasibility of beverage MSMEs comprehensively. The main focus of the study covers non-financial and financial aspects, such as Net Present Value (NPV), Profitability Index (PI), Payback Period (PP), Internal Rate of Return (IRR), and Average Rate of Return (ARR). The results of this study can provide a valid basis for consideration for MSMEs and policymakers in designing more efficient, targeted, and sustainable beverage business development strategies.

METHODS

This study used qualitative descriptive methods and quantitative analysis techniques to evaluate the feasibility of MSMEs in the beverage sector. The study was conducted with one MSME in Palu City. The main objective of this study was to assess business feasibility based on two aspects: non-financial and financial. Data were collected through direct observation and structured interviews with business owners.

The non-financial aspects studied include economic aspects. The financial aspects are analyzed using a formula consisting of five indicators as follows:

Net Present Value (NPV).

$$NPV = \sum_{t=1}^{n} \frac{CF_t}{(1+r)^{\mathrm{n}}} - C_0$$

Description:
CFt: Cash flow in year t
r: Discount rate
t: Year t
n: Number of years
C0: Initial investment (initial outlay)
Criteria:

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NPV > 0 → business is feasible
NPV < 0 → business is not feasible

Profitability Index (PI).

$$PI = \frac{Present\ Value\ of\ Future\ Cash\ Flows}{Initial\ Investment}$$

Criteria:
PI > 1 → the business is feasible.
PI < 1 → the business is not feasible.

Payback Period (PP).

$$PP = \frac{Initial\ Investment}{Annual\ Net\ Profit}$$

Criteria:
PP < economic life of asset → viable business.
PP > economic life of asset → high-risk business.

Internal Rate of Return (IRR). IRR is the discount rate (r) that makes NPV = 0. NPV formula for a 1-year project:

$$NPV = \frac{CF}{1+r} - C_0$$

NPV = 0, namely

$$\frac{CF}{1+r} = C_0$$

$$1 + r = \frac{CF}{C_0}$$

$$\boldsymbol{r = \frac{CF}{C_0} - 1}$$

Description:
Cf: Cash Flow in Year 1
C0: Initial Investment
Criteria:
IRR > discount rate (r) → business is feasible.
IRR < discount rate (r) → business is not feasible.

Average Rate of Return (ARR).

$$ARR = \frac{Net\ Profit\ Amount\ per\ year}{Initial\ capital}\ X\ 100\%$$

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RESULTS AND DISCUSSION

Arfer Outlet is a micro-enterprise founded by Ferawati Saputri Pratama in 2024. The business sells ready-to-drink soft drinks such as Pop Ice, Teh Poci, and Es Milo. Operations are conducted through a simple booth located on Jl. Asam 2, West Palu, Central Sulawesi.

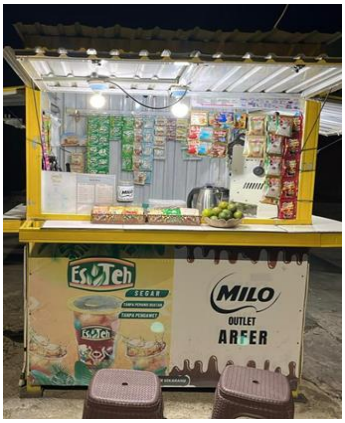

Figure 1. Arfer Outlet

Arfer Outlet is a culinary business (food and beverage), targeting students, college students, and the general public. The products offered are quite popular due to their affordable prices, appealing flavors, and fast and convenient service. The booth sales concept offers flexibility in mobility and efficiency in operational management. Since its inception, the business has received a positive response from the surrounding community and has significant potential for further growth in the future.

Revenue. Based on data obtained directly from the business owner, the average daily revenue of the Arfer Outlet reaches Rp150,000. Assuming 360 days of operation per year, the total annual revenue is estimated at Rp54,000,000. These results represent the sales performance of the Arfer Outlet over a single business period.

Investment Costs.

Table 1. Initial Investment of Arfer Outlet

Name of goods	Amount	Unit price	Total	Percentage %
Sales Booth	1	4.000.000	4.000.000	62,41
Sealer Machine	1	1.100.000	1.100.000	17,17
Blender	1	200.000	200.000	3,12
Electric Kettle	1	150.000	150.000	2,34
Sugar Container, Powder and Measuring Spoon	-	-	150.000	2,34
Topping Display Jar/Container	4	30.000	120.000	1,87
Cooler Box	1	250.000	250.000	3,90
Cok Roll	1	75.000	75.000	1,17
Light	1	50.000	50.000	0,78
Plastic Chair	3	50.000	150.000	2,34
Banner	1	100.000	10.000	1,56

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Knife	1	30.000	30.000	0,47
Scissors	2	20.000	40.000	0,62
Ice Cube Scoop	1	15.000	15.000	0,23
Grated cheese	1	15.000	15.000	0,23
Total			**6.410.000**	**100**

Based on the data presented in Table 1, the total investment cost required to run the Arfer Outlet business is recorded at IDR 6,410,000. The largest cost component comes from constructing the sales booth, accounting for 62.41% of the total investment. Meanwhile, the smallest cost components are ice scoops and cheese graters, each accounting for only 0.23%.

Fixed Costs.

Table 2. Initial Investment for Arfer Outlet

Name of goods	Total	Percentage %
Electricity	250.000	31,88
Equipment Depreciation	534.167	68,12
Total	**784.167**	**100**

Table 2 shows the total monthly fixed costs for the Arfer Outlet business, amounting to Rp784,167. The largest component comes from equipment depreciation (68.12%), while the smallest component comes from electricity costs (31.88%).

Variable Costs.

Table 3. Initial Investment for Arfer Outlet

Name of goods	Amount	Price	Percentage %
Plastic Cup	600 pcs	168.000	5,63
Plastic Roll Sealer Machine	1 roll	85.000	2,85
Straw	600 pcs	90.000	3,01
Orange	15 kg	270.000	9,04
Pop Ice Powder	16 pack	230.000	7,70
Milo Powder	5 kg	350.000	11,72
Teh	5box	75.000	2,51
Jelly/Cincau	3box	97.500	3,26
Koko Krunch	3 kg	165.000	5,52
Cheese	4 kg	256.000	8,57
Sugar	25 kg	400.000	13,40
Sweetened condensed milk	20 cans	260.000	8,71
Ice	120 bags	600.000	20,10
Total			**100**

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Table 3 above shows the total monthly variable costs for the Outlet Arfer business, amounting to Rp2,986,500. The largest cost component comes from ice cubes (20.10%), while the smallest component comes from plastic rolls for the sealing machine (2.85%).

Feasibility Analysis

1. Net Present Value (NPV). Based on the analysis using the Net Present Value (NPV) method, the net cash flow (CF) in the first year is Rp15,162,000, the discount rate (r) is 10%, and the initial investment (C_0) is Rp10,180,667. The NPV calculation is as follows:

$$NPV = \frac{15.162.000}{(1+0{,}1)^1} - 10.180.667$$

The calculation results show that the present value of the cash flows is Rp13,783,358. Therefore, the resulting NPV is Rp3,602,691.

2. Profitability Index (PI). The Profitability Index (PI) is calculated to assess the efficiency of investment use. With a Net Present Value (NPV) of Rp3,602,691 and an initial investment (C_0) of Rp10,180,667, the following calculation is obtained:

$$PI = \frac{(3.602.691 + 10.180.667)}{10.180.667}$$

Thus, the resulting Profitability Index (PI) value is 1.35.

3. Payback Period (PP). The Payback Period (PP) calculation is performed to determine the length of time required for the initial investment to be recouped by annual net profit. Based on the analysis, the initial investment is IDR 10,180,667, and the annual net profit is IDR 8,752,000. The PP calculation is as follows:

$$10.180.667 \div 8.752.000 = 1{,}16\ tahun$$

Thus, the resulting Payback Period (PP) is 1.16 years, or approximately 14 months.

4. Internal Rate of Return (IRR). The rate of return on investment is calculated using the Internal Rate of Return (IRR) by taking into account the net cash flow and the initial investment. The net cash flow is Rp15,162,000, while the initial investment is Rp10,180,667. The calculation yields:

$$\frac{15.162.000}{10.180.667} - 1 = 0{,}4893$$

Thus, the resulting Internal Rate of Return (IRR) is 0.4893, or 48.93%.

5. Average Rate of Return (ARR). The Accounting Rate of Return (ARR) is used to evaluate the rate of return on investment based on the annual net profit compared to the initial investment. The annual net profit obtained is IDR 8,752,000, while the initial investment capital is IDR 10,180,667. Calculation of the Average Rate of Return (ARR):

$$ARR = \frac{8.752.000}{10.180.667} \text{ x } 100\% = 85{,}96\%$$

Thus, the resulting Average Rate of Return (ARR) value is 85.96%.

Net Present Value (NPV). The analysis results show that the Net Present Value (NPV) of Outlet Arfer is IDR 3,602,691. This positive value indicates that the net cash flow generated is sufficient to cover the initial

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investment costs while generating additional profits. Therefore, Outlet Arfer is declared financially viable as it meets the investment feasibility criteria (NPV > 0). The Net Present Value (NPV) calculation also takes into account the time value of money, thus providing a more accurate picture of investment feasibility than other simple evaluation methods (Rahmawati et al. 2022).

This positive Net Present Value (NPV) also indicates that Outlet Arfer has successfully created economic added value in accordance with investment feasibility principles (Wibowo et al. 2025). With a value of IDR 3,602,691, Outlet Arfer has the potential to generate sustainable economic benefits. Although the value is relatively small, this figure is still a positive signal that the project is capable of generating profits above the initial investment costs and encouraging future business growth. Therefore, Outlet Arfer is a prospective and feasible investment.

Profitability Index (PI). The analysis results show that the Profitability Index (PI) for Outlet Arfer is 1.35. This value indicates that every Rp1 invested can generate a present value of Rp1.35 in cash flow. Based on investment feasibility criteria, if the PI is greater than 1, the investment is considered feasible due to its potential to create added value. Therefore, a Profitability Index (PI) of 1.35 confirms that the investment in Outlet Arfer is quite efficient and has the potential to generate adequate returns for investors, further strengthening the conclusion that this business is financially viable.

Payback Period (PP). The analysis results indicate that the Payback Period (PP) for the Arfer Outlet is 1.16 years. This value slightly exceeds the economic life of the assets used, which is 1 year. Based on investment feasibility criteria, a project is considered feasible if the payback period is shorter than or equal to the economic life of the assets. Although technically the payback period is approximately two months longer, this difference is still considered reasonable, and the financial risks involved are relatively acceptable. It aligns with research by Wati (2016), which states that even if the Payback Period exceeds the asset's life, tolerance for small deviations is still acceptable as a basis for investment feasibility. It indicates that capital can still be recovered within a short time, especially with stable sales potential. Therefore, even though the Payback Period (PP) slightly exceeds the economic life of the assets, the Arfer Outlet business remains financially viable.

Internal Rate of Return (IRR). The analysis results show that Outlet Arfer's Internal Rate of Return (IRR) is 48.93%, far exceeding the discount rate of 10%. Based on investment feasibility criteria, a business is feasible if the Internal Rate of Return (IRR) exceeds the cost of capital. This high Internal Rate of Return (IRR) indicates that Outlet Arfer is capable of generating returns far exceeding the minimum expected rate; thus, the business can be considered financially secure and profitable.

This finding aligns with research conducted by Nurcahyo et al. (2025) on the King Juice Farhan Malabar Bogor MSME, which showed an IRR of 25.20%, exceeding the discount rate used. These results confirm that businesses with an IRR above the discount rate have good prospects and are financially viable. Therefore, the Internal Rate of Return (IRR) of 48.93% at the Arfer Outlet reinforces the evidence that this business has strong investment appeal and significant capacity for future growth and development.

Average Rate of Return (ARR). The calculation of the Arfer Outlet's Average Rate of Return (ARR) of 85.96% indicates that the business's annual net profit far exceeds the initial investment. Based on investment feasibility criteria, a business is considered viable if the ARR exceeds the applicable average return standard. This high Average Rate of Return (ARR) reflects optimal capital utilization and the potential for long-term, sustainable profits. This finding aligns with research by Murnawati et al. (2016) on straw mushroom cultivation MSMEs, which also showed that businesses with a high Average Rate of Return (ARR) are feasible to develop because they provide quick returns, manageable risks, and promising profit prospects. Therefore, the Average Rate of Return (ARR) of 85.96% at the Arfer Outlet confirms the business's excellent and competitive prospects.

CONCLUSION

The results of the study indicate that the Arfer Outlet business in Palu City is financially feasible. It is evidenced by a positive Net Present Value (NPV) of Rp3,602,691, a Profitability Index (PI) of 1.35, an Internal Rate of Return (IRR) of 48.93%, and an Average Rate of Return (ARR) of 85.96%, indicating efficiency and

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business profit prospects. Although the Payback Period (PP) of 1.16 years slightly exceeds the economic life of the asset, the difference is still tolerable, so that the business is still considered feasible. From a non-financial aspect, this business has good market potential and a supportive business environment. These findings contribute to the literature on MSME business feasibility studies in the beverage sector, especially for micro-scale businesses, by demonstrating that financial indicators are able to provide an objective picture of the potential for business sustainability.

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