

The Impact of Marketing Strategy, Product Innovation, Capital, and Operational Costs on MSME Revenue in Medan Johor District

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ABSTRACT

This study aims to evaluate and examine the extent to which marketing strategies, product innovation, capital, and operational costs both individually and collectively affect the income of Micro, Small, and Medium Enterprises (MSMEs) in the Medan Johor District. This research employs a quantitative approach. The population in this study consists of all MSME actors in Medan Johor District, with a sample size of 73 MSMEs. Based on the analysis results, it was found that the four variables marketing strategy, product innovation, capital, and operational costs collectively have a significant effect on MSME income. However, when analyzed separately, only the capital variable showed a positive and significant influence on MSME income. Meanwhile, marketing strategy, product innovation, and operational costs did not exhibit a significant individual effect. The coefficient of determination test yielded an Adjusted R Square value of 0.487, indicating that 48% of the variation in MSME income can be explained by these four variables, while the remaining portion is influenced by other factors outside this study.

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Introduction

Micro, Small, and Medium Enterprises (MSMEs) play a vital role in supporting the national economy. In Indonesia, MSMEs have even been regarded as saviors during times of economic crisis caused by foreign debt burdens, due to their flexibility and close connection to local communities. However, MSMEs face numerous fundamental challenges, such as limited managerial skills, lack of operational expertise, and restricted access to broader markets, which ultimately hinder optimal business development (Windusancono, 2021).

In business activities, income serves as a key indicator of success, as it reflects how well sales performance translates into profits. Money, as a result of income, functions not only as an economic tool but also plays a social role. This aligns with Simmel's view that money is not merely a medium of exchange but also a critical element in shaping social interactions in modern society (Harnia, 2021).

An effective marketing strategy is essential in boosting MSME income. Marketing is the process of designing and presenting products to consumers with the ultimate goal of encouraging purchases. In today's globalized world, marketing can no longer rely on conventional methods. Business actors who fail to adapt to technological advancements risk being left behind by their competitors (Sembiring & Siregar, 2020).

In addition to marketing, product innovation is another key factor in gaining a competitive edge. According to Susanto, innovation involves applying new ideas in the form of products, services, or business processes whether revolutionary or incremental improvements to existing concepts (Mahzura, 2020). MSMEs that are capable of innovating tend to be more adaptable to changing consumer preferences and are more resilient in facing competition.

Capital is another critical aspect in the context of MSMEs. It can originate from personal funds or loans from other parties and is used to sustain and grow the business. Proper management of capital significantly contributes to business growth, while capital constraints often become a major obstacle for entrepreneurs seeking expansion (Anggraini et al., 2019). Therefore, access to financing sources plays an essential role in supporting MSME success.

Operational costs are closely related to a business's activities and have a direct impact on profit margins. High operational costs can erode profit, making cost efficiency a priority. In practice, operational

costs for MSMEs include selling expenses, administrative costs, and general expenses that must be managed carefully to avoid surpassing revenue (Putri, 2023).

Data from the Department of Cooperatives and MSMEs of Medan City shows that the culinary sector dominates the MSME landscape in the region. In 2020, out of 1,603 recorded MSMEs, 843 businesses (52.59%) were engaged in the culinary sector, followed by the production sector with 637 businesses (39.74%), services with 112 businesses (6.09%), and livestock/fisheries with only 11 businesses (0.69%) (<http://umkm.depkop.go.id>). This indicates that the culinary sector holds significant economic potential in Medan, especially in the Medan Johor District, which consistently has the highest number of culinary MSMEs compared to other districts. Data from 2019–2021 shows fluctuations in the number of culinary MSMEs across several districts, but Medan Johor consistently ranks at the top, reflecting a high level of entrepreneurial activity and interest in this sector (Department of Cooperatives and MSMEs of Medan City, 2022).

Nevertheless, the large number of business actors also implies intense competition within the culinary sector in Medan Johor. This condition demands continuous innovation and effective marketing strategies from business owners to remain competitive. Additionally, product quality plays a critical role. Products that fail to meet quality standards risk losing consumer trust, which ultimately leads to decreased revenue.

Production in the culinary business involves various resources, such as human labor, raw materials, equipment, capital, and skills. Efficient production processes contribute to cost reduction and increased profit margins. Therefore, to increase the income of culinary MSMEs, a comprehensive approach is needed that includes marketing strategies, product innovation, capital management, and operational cost efficiency.

Based on this background, it is essential to conduct in-depth research on the influence of marketing strategy, product innovation, capital, and operational costs on the income levels of culinary MSMEs, particularly in the Medan Johor District. This research is expected to offer empirical contributions to MSME development policies and assist entrepreneurs in designing more effective strategies to grow their businesses amid increasing competition.

Literatur Review

The Effect of Product Innovation on the Income Level of Culinary MSMEs in Medan Johor District

Product innovation must possess competitive advantages, appeal, uniqueness, and alignment with consumer preferences. Business actors need to plan product innovation carefully and consider its long-term impact. The development of product innovation plays a crucial role in increasing income for MSME entrepreneurs, as it enhances product value, attracts new customers, and retains existing ones (Hasibuan et al., 2019). Based on this, the hypothesis proposed is:

H1: Product innovation has a positive and significant effect on the income level of culinary MSMEs in Medan Johor District.

The Effect of Capital on the Income Level of Culinary MSMEs in Medan Johor District

Capital is a critical factor that determines the sustainability of a business. Once an entrepreneur has a clear business concept and strong character, the next step is to determine the funding sources to operate the business. Capital functions as a vital support element for every entrepreneur in achieving their desired income levels. The amount of initial capital used significantly affects the revenue generated, as it determines the scale of business operations and potential for growth (Safitri & Setiaji Khasan, 2018). Thus, the hypothesis formulated is:

H2: Capital has a positive and significant effect on the income level of culinary MSMEs in Medan Johor District.

The Effect of Operational Costs on the Income Level of Culinary MSMEs in Medan Johor District

Operational costs generally include expenses related to sales and administration, which are necessary to generate optimal income or profit. Income is the result of business activities, usually derived from sales revenue. Aprilyana and Nugroho (2020) suggest that an increase in operational costs including marketing and general administrative expenses can contribute positively to the company's income, especially when such expenditures are managed effectively to boost productivity and market reach. Based on this, the hypothesis proposed is:

H3: Operational costs have a positive and significant effect on the income level of culinary MSMEs in Medan Johor District.

Method

This research was conducted on culinary MSMEs located in Medan Johor District, focusing on observing the income levels of businesses in the area. A quantitative approach was employed, using numerical data analyzed through statistical techniques. The study aims to examine the income levels of culinary MSMEs, with income as the dependent variable influenced by marketing strategies, product innovation, capital, and operational costs as independent variables. The data used are annual and primarily sourced from direct interactions with respondents through questionnaires. Primary data were gathered from the research site by distributing structured questionnaires to culinary MSME actors in Medan Johor to measure how the independent variables affect income levels.

The population in this study includes all culinary MSME entrepreneurs in Medan Johor District, totaling 73 business actors. A purposive sampling technique was applied to select samples based on specific criteria relevant to the study's focus, making it suitable for a non-generalizable quantitative study. Data collection involved distributing questionnaires to obtain information on the impact of marketing strategies, product innovation, capital, and operational costs on income levels.

Each variable in this study is defined with measurable indicators and assessed using a Likert scale. Marketing strategy is evaluated based on sales evaluation, traffic analysis, brand awareness, customer satisfaction, and the use of social media. Product innovation is measured through product quality, variety, style, and design. Capital is assessed based on financing accessibility, capital amount, sources, efficiency, and structure. Operational costs are examined through cost of goods sold, marketing expenses, administrative and general costs, and cost efficiency. Finally, income level is measured by revenue growth, market share, investment capability, and debt repayment ability.

Results and Discussion

Validity Test

The validity test was conducted by comparing the calculated correlation coefficient (r_{count}) with the r table value of 0.230 ($df = n - 2$, with $n = 73$). If $r_{count} > r_{table}$, the statement item is considered valid.

Table 1 Validity Test Results

No	Variable	Indicator Code	Correlation Coefficient (r_{count})	r_{table}	Validity
1	Marketing Strategy	X1.1 – X1.7	0.415 – 0.808	0.230	Valid
2	Product Innovation	X2.1 – X2.7	0.256 – 0.763	0.230	Valid
3	Capital	X3.1 – X3.7	0.243 – 0.783	0.230	Valid
4	Operating Costs	X4.1 – X4.7	0.230 – 0.864	0.230	Valid

Based on the correlation results, all indicators in the four independent variables have a correlation coefficient greater than 0.230. Therefore, each indicator for *Marketing Strategy*, *Product Innovation*, *Capital*, and *Operating Costs* is declared **valid**.

Reliability Test

A questionnaire is considered reliable if each variable has a Cronbach's Alpha value above 0.60.

Table 2 Reliability Test Results

Variable	Cronbach's Alpha	Number of Items	Reliability
Marketing Strategy	0.896	7	Reliable
Product Innovation	0.831	7	Reliable
Capital	0.822	7	Reliable
Operating Costs	0.867	7	Reliable
Income Level	0.650	7	Reliable

All variables have Cronbach's Alpha values exceeding 0.60. Therefore, the instrument used in this research is considered **reliable**, indicating that respondents' answers are consistent and the measurement tool is dependable.

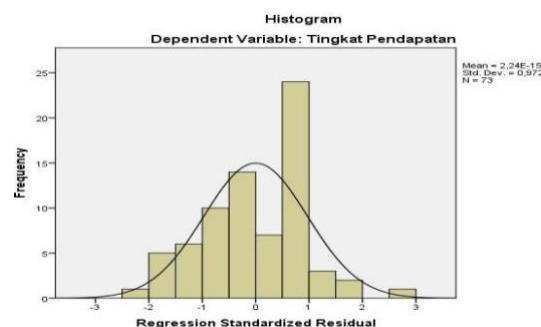
Normality Test

The normality test aims to determine whether the residual data in the regression model is normally distributed. The test was performed using three methods: histogram graph, normal probability plot, and the Kolmogorov–Smirnov test.

Histogram Graph

If the histogram graph forms a curve that is symmetrical like a bell shape or the letter "U", and not skewed to the left or right, then the residual data is considered normally distributed.

Figure1 : Histogram of Normality Test



Based on the histogram graph, the residual distribution forms a symmetrical curve, indicating that the data is normally distributed.

Normal Probability Plot

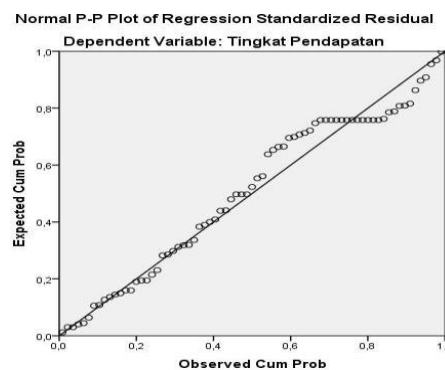


Figure 2: Normal Probability Plot

If the points in the plot lie along the diagonal line and follow its direction, then the data is considered normally distributed. The data points lie close to the diagonal line and follow its direction. Thus, the data is normally distributed.

Kolmogorov–Smirnov Test

This test compares the residual distribution to a normal distribution. If the significance value is greater than 0.05, the data is considered normally distributed.

Table 3. Kolmogorov–Smirnov Test Results

Statistic	Value
N	73
Mean	0E-7
Std. Deviation	1.3728
Most Extreme Differences	0.112
Kolmogorov–Smirnov Z	0.095
Asymp. Sig. (2-tailed)	0.323

Source: SPSS Output (Processed)

Since the significance value is $0.323 > 0.05$, the residuals are normally distributed.

Multicollinearity Test

This test aims to detect whether there is multicollinearity among the independent variables. The condition of no multicollinearity is met if the tolerance value is > 0.10 and the VIF is < 10 .

Table 4. Multicollinearity Test Results

Variable	Tolerance	VIF
Marketing Strategy	0.361	2.770
Product Innovation	0.279	3.590
Capital	0.304	3.285
Operating Costs	0.418	2.390

Source: SPSS Output (Processed)

All variables meet the criteria, indicating that the regression model is free from multicollinearity.

Heteroscedasticity Test

This test is used to determine whether the residual variance is constant across observations. It was tested using scatterplot and Glejser test.

Scatterplot

If the scatterplot shows a random distribution of points without a clear pattern and spreads both above and below the Y-axis value of 0, then there is no heteroscedasticity.

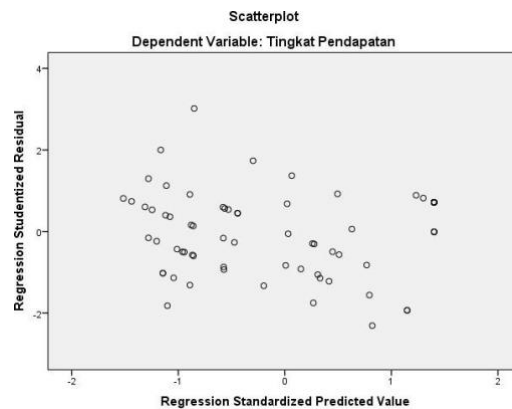


Figure 3: Scatterplot of Heteroscedasticity Test

The points appear to be scattered randomly without a specific pattern, indicating no heteroscedasticity.

Glejser Test

If the significance value of each independent variable is greater than 0.05, then heteroscedasticity is not present.

Table 5. Glejser Test Results

Variable	Sig. Value
Marketing Strategy	0.937
Product Innovation	0.707
Capital	0.661
Operating Costs	0.304

Source: SPSS Output (Processed)

All significance values are above 0.05, thus indicating that the model is free from heteroscedasticity.

Coefficient of Determination (R^2)

The coefficient of determination is used to measure how much variation in the dependent variable can be explained by the independent variables.

Table 6. Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.718	0.515	0.487	1.413

Source: SPSS Output (Processed)

The Adjusted R^2 of 0.487 indicates that 48.7% of the variation in MSMEs' income level in Medan Johor is explained by marketing strategy, product innovation, capital, and operating costs, while the remaining 51.3% is explained by other factors.

Hypothesis Testing

Partial Test (t-test)

This test aims to determine whether each independent variable has a partial effect on the dependent variable.

Table 7. t-Test Results

Variable	t-value	Sig. Value	Conclusion
Marketing Strategy	2.534	0.014	Significant Positive Influence
Product Innovation	2.884	0.005	Significant Positive Influence
Capital	-2.391	0.020	Significant Negative Influence
Operating Costs	2.458	0.017	Significant Positive Influence

Source: SPSS Output (Processed)

1. Marketing Strategy, Product Innovation, and Operating Costs have a positive and significant effect.
2. Capital has a negative but significant effect.

Simultaneous Test (F-test)

The F-test determines whether the independent variables simultaneously influence the dependent variable.

Table 8. ANOVA (F-Test Results)

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	153.185	4	38.296	20.544	0.000
Residual	126.760	68	1.864		
Total	279.945	72			

Source: SPSS Output (Processed)

The F-value of 20.544 is greater than the F-table value of 3.97, and the significance value is less than 0.05. Therefore, the independent variables (Marketing Strategy, Product Innovation, Capital, and Operating Costs) have a simultaneous and significant influence on the income level of MSMEs in Medan Johor.

Discussion

The Influence of Marketing Strategy on MSME Income

The results of the partial hypothesis testing show that marketing strategy has a positive and significant effect on MSME income. This means that the better the marketing strategy applied, the higher the income generated by MSMEs. Effective marketing enables businesses to reach their target market, increase brand awareness, and drive sales, which in turn enhances income performance. This finding is consistent with the theory proposed by Kotler and Keller (2016), who argue that marketing strategy is a fundamental tool for achieving business success. It is further reinforced by the study of Siregar and Sembiring (2022), which found that MSMEs utilizing social media promotion and personalized marketing techniques saw a notable increase in sales and revenue. In today's digital economy, marketing is not only about promoting products, but also about building relationships and adapting to the behavior of increasingly digital-savvy consumers.

The Influence of Product Innovation on MSME Income

Product innovation also shows a positive and significant influence on MSME income. This supports Joseph Schumpeter's theory, which emphasizes innovation as the engine of economic and entrepreneurial growth. MSMEs that are able to develop new products or enhance existing ones gain a competitive advantage,

attract new customers, and generate higher income. Product innovation reflects a business's ability to adapt and respond to dynamic market needs, leading to greater consumer interest and loyalty. This is supported by Pratama and Widiyanti (2021), who found that product improvements—such as enhanced design, improved packaging, and the addition of unique features—had a direct and significant impact on consumer purchase decisions and MSME revenue, especially in the food and beverage sector. Innovation, therefore, is not just a creative act but a strategic necessity for survival and growth.

The Influence of Capital on MSME Income

Interestingly, capital shows a negative but significant effect on MSME income. This suggests that an increase in capital does not always translate into higher income, particularly if it is not accompanied by sound financial management. MSMEs with abundant capital but poor planning may face issues such as overinvestment, excessive debt, or operational inefficiencies that ultimately reduce profitability. Riyanto (2020) highlights that without financial literacy and effective capital utilization, businesses may misuse funds, leading to waste and increased financial burden. This finding serves as a critical insight that capital alone is not a guarantee of success; what matters more is how that capital is allocated, managed, and integrated into the overall business strategy. For MSMEs, capital must be seen as a strategic enabler, requiring accountability, budgeting skills, and investment discipline to produce positive returns.

The Influence of Operating Costs on MSME Income

Operating costs are found to have a positive and significant impact on MSME income. This indicates that spending on core business functions such as raw materials, labor, and production equipment—can improve operational efficiency and product quality, ultimately boosting customer satisfaction and revenue. This finding aligns with the research by Amalia and Nugroho (2021), who emphasized that well-managed operational expenses significantly enhance output and performance in MSMEs. It also implies that operational costs should not be perceived solely as expenses to be minimized, but as strategic investments that can yield long-term financial benefits if planned and executed efficiently.

The Simultaneous Influence of Marketing Strategy, Product Innovation, Capital, and Operating Costs on MSME Income

The results of the simultaneous hypothesis testing, as indicated by the F-test, show that the four independent variables marketing strategy, product innovation, capital, and operating costs—collectively have a significant influence on MSME income. This reflects the interrelated and synergistic nature of these variables in determining business success. For instance, an effective marketing strategy is likely to support the success of product innovations in reaching the market, while innovation often requires financial backing and operational support. Conversely, poorly managed capital can undermine innovation and marketing efforts, whereas efficient operating cost management supports all other business functions. Therefore, MSMEs must adopt a comprehensive and integrated strategy that harmonizes marketing, innovation, financing, and operations to enhance income and achieve sustainable growth in an increasingly competitive environment.

Conclusion

Based on the research findings, it can be concluded that marketing strategy, product innovation, capital, and operating costs all have significant partial and simultaneous effects on MSME income in Medan Johor. Marketing strategy and product innovation positively impact income, highlighting the importance of effective market reach and continuous product development to maintain competitiveness. Efficient management of operating costs also contributes positively by improving productivity and service quality. Interestingly, capital shows a significant negative effect on income, underscoring the critical role of financial management and managerial capacity. Simply having more capital does not guarantee success; how capital is utilized strategically and efficiently matters more to business performance.

Therefore, MSMEs are advised to focus on adaptive marketing strategies aligned with digital trends, prioritize ongoing product innovation, and improve financial management skills to optimize capital use. Operating costs should be viewed as strategic investments that support long-term business growth. For policymakers and supporting institutions, providing training on strategic planning, financial management, and digital transformation is essential. Funding programs should include financial management components to reduce misuse risks. Strengthening collaboration between the private sector, academia, and government will help build a competitive and sustainable MSME ecosystem, driving broader economic development.

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