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The Impact Of Digital Promotion Costs And Production Cost Efficiency On The Profitability Of Pt Mayora Indah Tbk During The 2022–2025 Period

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Abstract

This study aims to examine the effect of digital promotion costs and production cost efficiency on the profitability of PT Mayora Indah Tbk during the 2022–2025 period. Profitability is measured using Return on Assets (ROA). This research employs a quantitative approach with descriptive and verificative methods. Secondary data were collected from the quarterly financial statements of PT Mayora Indah Tbk for the period 2022–2025, resulting in 16 observations selected through purposive sampling. Data were analyzed using Statistical Package for the Social Sciences (SPSS) version 26, including descriptive statistics, classical assumption tests, multiple linear regression, t-test, F-test, and the coefficient of determination (R^2). The findings reveal that digital promotion costs and production cost efficiency have no significant partial effect on profitability, with significance values of 0.712 and 0.785, respectively ($p > 0.05$). Simultaneously, both variables also have no significant effect on profitability (F-test significance = 0.928, $p > 0.05$). The coefficient of determination (R^2) of 0.011 indicates that the two independent variables explain only 1.1% of the variation in profitability, while the remaining 98.9% is influenced by other factors outside the research model. These findings suggest that digital promotion costs and production cost efficiency are not the primary determinants of PT Mayora Indah Tbk's profitability during the study period.

Keywords: Digital Promotion Costs, Production Cost Efficiency, Profitability, Return on Assets (ROA).

INTRODUCTION

The increasingly competitive business environment requires manufacturing companies to manage their resources effectively in order to achieve optimal profitability.

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In the food and beverage industry, a company's success is determined not only by its ability to increase sales but also by the effectiveness of managing production costs and promotional expenses. These two cost components play an important role in determining a company's level of profitability.

Profitability is an indicator used to measure a company's ability to generate profits through its operational activities. A high level of profitability indicates that a company is capable of managing its assets and costs efficiently. Therefore, companies continuously strive to increase profits by controlling production costs and implementing effective promotional strategies. Production costs include all expenditures incurred during the manufacturing process, while promotional costs refer to expenses incurred to introduce products, retain customers, and increase sales.

Along with the rapid development of information technology, digital promotion has become one of the most widely adopted marketing strategies because it enables companies to reach broader consumer markets at relatively lower costs than conventional promotional methods. In practice, manufacturing companies face various challenges, including rising raw material prices, labor costs, energy costs, and distribution expenses. At the same time, increasingly intense market competition encourages companies to intensify promotional activities in order to maintain their market share. Consequently, companies must maintain a balance between increasing expenditures and achieving optimal profitability.

PT Mayora Indah Tbk is one of the largest food and beverage manufacturing companies in Indonesia and also faces these challenges. Based on the company's financial statements for the period 2022–2025, both production costs and promotional expenses showed an increasing trend each year. However, these increases were not consistently followed by proportional improvements in profitability. This indicates that higher expenditures do not necessarily generate equivalent increases in corporate profits. Theoretically, higher promotional expenditures are expected to increase sales, thereby improving profitability. Likewise, efficient production cost management is expected to reduce operational expenses and generate greater profits. Nevertheless, empirical conditions indicate that ineffective promotional strategies and high production costs may prevent companies from achieving optimal profitability. This situation demonstrates a discrepancy between theoretical expectations and empirical evidence.

Although the company has allocated substantial expenditures to production and promotional activities, the resulting improvement in profitability has not always been proportional. Such conditions may reduce resource utilization efficiency, decrease corporate profits, lower investor confidence, and weaken the company's competitive advantage. Several strategic efforts can be implemented to address these issues, including improving production efficiency, optimizing raw material utilization, adopting

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more advanced production technologies, and enhancing the effectiveness of digital promotional activities through consumer behavior analysis, social media optimization, and evaluation of promotional return on investment (ROI). The success of these strategies depends on the company's ability to manage costs efficiently, improve human resource quality, adopt technological innovations, and respond to changing economic conditions.

Previous studies examining the effects of promotional costs and production costs on profitability have produced inconsistent findings. Some studies concluded that both variables significantly influence profitability, whereas others found that only one variable has a significant effect. These inconsistent findings indicate the existence of a research gap that requires further investigation.

In addition to the research gap, an empirical gap is also evident in PT Mayora Indah Tbk. Although production costs and promotional expenses increased during the 2022–2025 period, profitability did not consistently improve. Therefore, this study aims to examine the extent to which digital promotional costs and production cost efficiency affect the profitability of the company.

The novelty of this study lies in its specific focus on PT Mayora Indah Tbk during the 2022–2025 period by examining digital promotional costs and production cost efficiency as determinants of profitability. The findings are expected to provide valuable insights for company management in formulating marketing strategies and cost management policies, while also serving as a reference for investors and future researchers.

Based on the financial data of PT Mayora Indah Tbk for the 2022–2025 period, production costs constitute the largest cost component and have shown a continuous upward trend each year. Promotional expenses have also increased, whereas net profit has fluctuated over the same period. These conditions indicate that increases in production and promotional expenditures do not necessarily lead to improvements in profitability. Therefore, statistical analysis is required to examine the influence of these two variables on the company's profitability.

Based on the above phenomenon, this study is entitled "Analysis of the Impact of Digital Promotional Costs and Production Cost Efficiency on the Profitability of PT Mayora Indah Tbk during the 2022–2025 Period."

Objectives

This article aims to analyze the impact of digital promotional costs and production cost efficiency on the profitability of PT Mayora Indah Tbk during the 2022–2025 period. Specifically, this study aims to:

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1. Analyze the effect of digital promotional costs on the profitability of PT Mayora Indah Tbk.
2. Examine the effect of production cost efficiency on the profitability of PT Mayora Indah Tbk.
3. Determine the simultaneous effect of digital promotional costs and production cost efficiency on the profitability of PT Mayora Indah Tbk.

DISCUSSION

Description of the Research Object

The object of this study is PT Mayora Indah Tbk, a manufacturing company operating in the food and beverage industry and listed on the Indonesia Stock Exchange (IDX). The research data were obtained from the company's quarterly financial statements for the 2022–2025 period.

This study examines three variables: digital promotional costs (X_1), production cost efficiency (X_2), and profitability (Y), which is measured using Return on Assets (ROA). During the study period, promotional costs and production costs generally showed an increasing trend. However, these increases were not consistently accompanied by improvements in profitability.

The research dataset consists of 16 observations and was analyzed using IBM SPSS Statistics Version 26. The analytical methods employed include descriptive statistical analysis, classical assumption tests, multiple linear regression analysis, and hypothesis testing to determine the effects of digital promotional costs and production cost efficiency on the profitability of PT Mayora Indah Tbk.

Descriptive Statistical Analysis

Descriptive statistical analysis was conducted to provide a summary of the characteristics of each research variable. The descriptive statistics include the number of observations (N), minimum value, maximum value, mean, and standard deviation.

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Promosi	16	208.26	1167.03	849.7156	228.86009
Produksi	16	4306.30	8794.38	6088.0862	1290.62046
ROA	16	-.38	5.94	2.1700	1.79075
Valid N (listwise)	16				

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Based on the descriptive statistical results, all research variables consist of 16 observations. The Promotional Costs variable has a minimum value of IDR 208.26 billion, a maximum value of IDR 1,167.03 billion, a mean value of IDR 849.72 billion, and a standard deviation of 228.86. Since the standard deviation is lower than the mean, the promotional cost data exhibit a relatively low level of dispersion.

The Production Costs variable has a minimum value of IDR 4,306.30 billion, a maximum value of IDR 8,794.38 billion, a mean value of IDR 6,088.09 billion, and a standard deviation of 1,290.62. These results indicate that production costs fluctuated during the study period, although the data distribution remained relatively stable.

Meanwhile, the Profitability (ROA) variable has a minimum value of -0.38%, a maximum value of 5.94%, a mean value of 2.17%, and a standard deviation of 1.79. The negative minimum value indicates that the company experienced a relatively low return on assets during one observation period, whereas the maximum value reflects the company's ability to generate relatively high profits. Since the standard deviation is lower than the mean, the variability of the profitability data can be considered moderate.

Classical Assumption Tests

After the data quality assessment confirmed that the research data were suitable for further analysis, the next step was to conduct the classical assumption tests. These tests are required before performing multiple linear regression analysis to ensure that the regression model satisfies the underlying statistical assumptions.

Normality Test

The normality test was conducted to determine whether the research data were normally distributed. In this study, the normality test was performed using the Shapiro–Wilk method because the sample size was fewer than 50 observations (N = 16).

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Promosi	.187	16	.137	.891	16	.058
Produksi	.125	16	.200*	.954	16	.559
ROA	.130	16	.200*	.957	16	.599

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Based on the results of the normality test presented in Table 3.5, the significance (Sig.) value for the Promotional Costs variable is 0.058, for the Production Costs variable

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is 0.559, and for the Profitability (ROA) variable is 0.599. All significance values are greater than 0.05.

According to the decision criterion, if the significance value is greater than 0.05, the data are considered to be normally distributed. Therefore, it can be concluded that the Promotional Costs, Production Costs, and Profitability (ROA) variables in this study are normally distributed.

Multicollinearity Test

The multicollinearity test was conducted to determine whether a high correlation exists among the independent variables in the regression model. A good regression model should be free from multicollinearity. The test was performed by examining the Tolerance values and the Variance Inflation Factor (VIF). If the Tolerance value is greater than 0.10 and the VIF value is less than 10, it can be concluded that the regression model does not suffer from multicollinearity.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.118	2.468		.858	.406		
	Promosi	.001	.003	.125	.378	.712	.696	1.436
	Produksi	.000	.000	-.092	-.278	.785	.696	1.436

a. Dependent Variable: ROA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.609	1.263		2.856	.013
	Promosi	-.001	.001	-.128	-.428	.676
	Produksi	.000	.000	-.357	-1.197	.253

a. Dependent Variable: ABS_RES

Heteroscedasticity Test

In this study, the heteroscedasticity test was conducted using the Glejser method by regressing the absolute residual values (ABS_RES) on the independent variables, namely Promotional Costs and Production Costs.

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The decision criterion for the Glejser test is that if the significance (Sig.) value of each independent variable is greater than 0.05, the regression model is considered free from heteroscedasticity.

Based on the test results, the Promotional Costs variable has a significance value of 0.676, while the Production Costs variable has a significance value of 0.253. Both significance values are greater than 0.05.

Therefore, it can be concluded that the regression model does not exhibit heteroscedasticity. This indicates that the residual variance is constant (homoscedasticity), meaning that the regression model satisfies one of the classical assumptions and is appropriate for further analysis.

Autocorrelation Test

The autocorrelation test was conducted to determine whether there is a correlation between the residuals of one observation period and those of the previous period in the regression model. A good regression model should be free from autocorrelation.

In this study, the autocorrelation test was performed using the Durbin–Watson (DW) test. The decision criterion is based on the Durbin–Watson statistic obtained from the regression analysis. In general, a Durbin–Watson value close to 2 indicates that the regression model does not exhibit autocorrelation.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.107[a]	.011	-.141	1.91259	2.230

a. Predictors: (Constant), Produksi, Promosi

b. Dependent Variable: ROA

Based on the results of the data analysis using IBM SPSS Statistics, the Durbin–Watson value obtained was 2.230.

A Durbin–Watson value close to 2 indicates that the regression model is free from autocorrelation. Therefore, the residuals from one observation period are not correlated with those from another observation period.

Accordingly, it can be concluded that the regression model used in this study is free from autocorrelation and satisfies one of the classical regression assumptions.

Multiple Linear Regression Analysis

Multiple linear regression analysis is a statistical method used to examine the effect of two or more independent variables on a single dependent variable. In this study,

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multiple linear regression analysis was employed to analyze the effects of Digital Promotional Costs (X_1) and Production Cost Efficiency (X_2) on Profitability (Y), as measured by Return on Assets (ROA), at PT Mayora Indah Tbk during the 2022–2025 period.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.118	2.468		.858	.406		
	Promosi	.001	.003	.125	.378	.712	.696	1.436
	Produksi	.000	.000	-.092	-.278	.785	.696	1.436

a. Dependent Variable: ROA

Based on the results of the data analysis using IBM SPSS Statistics Version 26, the following multiple linear regression equation was obtained:

ROA = 2.118 + 0.001 (Promotional Costs) − 0.000 (Production Costs) + e

Based on the regression equation, the results can be interpreted as follows:

1. The constant value of 2.118 indicates that when the variables Promotional Costs and Production Costs are assumed to be constant or equal to zero, the estimated value of Profitability (ROA) is 2.118.
2. The regression coefficient for Promotional Costs is 0.001, indicating that a one-unit increase in Promotional Costs is expected to increase Profitability (ROA) by 0.001 units, assuming that the other variables remain constant. The positive coefficient indicates a positive relationship between Promotional Costs and Profitability.
3. The regression coefficient for Production Costs is −0.000, indicating that a one-unit increase in Production Costs is expected to decrease Profitability (ROA) by 0.000 units, assuming that the other variables remain constant. The negative coefficient indicates an inverse relationship between Production Costs and Profitability.

Therefore, the regression analysis indicates that Promotional Costs have a positive relationship with Profitability (ROA), whereas Production Costs have a negative relationship with Profitability (ROA). However, to determine whether these relationships are statistically significant, hypothesis testing using the t-test and F-test is required.

Hypothesis Testing

1. t-Test (Partial Test)

The t-test was conducted to examine the partial effect of each independent variable, namely Promotional Costs and Production Costs, on the dependent variable,

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Profitability (ROA). The hypothesis testing was performed at a 5% significance level (α = 0.05).

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.118	2.468		.858	.406
	Promosi	.001	.003	.125	.378	.712
	Produksi	.000	.000	-.092	-.278	.785
a. Dependent Variable: ROA						

Based on the test results, the Promotional Costs variable has a t-value of 0.378 with a significance value of 0.712. Since the significance value is greater than 0.05 (0.712 > 0.05), it can be concluded that Promotional Costs do not have a statistically significant effect on the Profitability (ROA) of PT Mayora Indah Tbk during the 2022–2025 period. The Production Costs variable has a t-value of −0.278 with a significance value of 0.785. Since the significance value is also greater than 0.05 (0.785 > 0.05), it can be concluded that Production Costs do not have a statistically significant effect on the Profitability (ROA) of PT Mayora Indah Tbk during the 2022–2025 period.

Therefore, the results of the partial (t-test) indicate that neither Promotional Costs nor Production Costs have a statistically significant effect on Profitability (ROA) during the study period. These findings suggest that changes in Promotional Costs and Production Costs are not sufficient to explain variations in the company's Profitability (ROA).

2. F-Test (Simultaneous Test)

The F-test, or simultaneous test, was conducted to determine whether all independent variables jointly (simultaneously) influence the dependent variable. In this study, the F-test was used to examine whether Promotional Costs and Production Costs simultaneously affect the Profitability (ROA) of PT Mayora Indah Tbk.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.547	2	.274	.075	.928[b]
	Residual	47.554	13	3.658		
	Total	48.102	15			
a. Dependent Variable: ROA						
b. Predictors: (Constant), Produksi, Promosi						

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Based on the results of the F-test presented in the ANOVA table, the calculated F-value is 0.075, with a significance value of 0.928. Since the significance value is greater than 0.05 (0.928 > 0.05), H_0 is accepted and H_3 is rejected.

Therefore, it can be concluded that Promotional Costs and Production Costs do not simultaneously have a statistically significant effect on the Profitability (ROA) of PT Mayora Indah Tbk during the 2022–2025 period.

These findings indicate that changes in Promotional Costs and Production Costs, when considered together, are not sufficient to explain variations in Profitability (ROA) during the study period. In other words, there are likely other factors outside the research model that have a greater influence on the company's profitability.

Coefficient of Determination (R^2)

The coefficient of determination (R^2) is used to measure the extent to which the independent variables explain the variation in the dependent variable.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.107[a]	.011	-.141	1.91259

a. Predictors: (Constant), Produksi, Promosi

Based on the regression analysis presented in the Model Summary table, the R Square value is 0.011. This result indicates that the Promotional Costs and Production Costs variables explain only 1.1% of the variation in Profitability (ROA).

The remaining 98.9% of the variation is explained by other factors outside the research model that were not included in this study, such as sales volume, operating costs, asset utilization efficiency, raw material prices, market conditions, corporate strategy, and other factors that may influence the company's profitability.

Therefore, it can be concluded that the explanatory power of Promotional Costs and Production Costs in accounting for changes in the Profitability (ROA) of PT Mayora Indah Tbk during the 2022–2025 period is very low.

CONCLUSION

1. Promotional Costs do not have a statistically significant effect on the Profitability (ROA) of PT Mayora Indah Tbk during the 2022–2025 period.
2. Production Costs do not have a statistically significant effect on the Profitability (ROA) of PT Mayora Indah Tbk during the 2022–2025 period.

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3. Promotional Costs and Production Costs, simultaneously, do not have a statistically significant effect on the Profitability (ROA) of PT Mayora Indah Tbk during the 2022–2025 period.

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