

THE EFFECT OF GREEN MARKETING MIX ON BUSINESS PERFORMANCE OF MSMEs IN THE FOOD & BEVERAGE SECTORS IN DAERAH ISTIMEWA YOGYAKARTA WITH GREEN AWARENESS AS A MODERATING VARIABLE

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Abstract. This study investigates the impact of the green marketing mix on business performance, with green awareness serving as a moderating variable. A quantitative research design was employed, surveying 116 micro, small, and medium enterprises (MSMEs) in the food and beverage sector in Daerah Istimewa Yogyakarta, Indonesia. Data were collected using a snowball sampling technique and analyzed through multiple regression and moderated regression analyses using SPSS 27. The results reveal that green products, green place, and green price have a positive and significant influence on business performance. Conversely, green promotion was found to have no significant impact. Collectively, the green marketing mix exerts a positive influence on overall business performance. Furthermore, green awareness strengthens the relationship between the green marketing mix and business performance, indicating that higher levels of environmental awareness enhance the effectiveness of green marketing strategies. This study contributes to the green marketing literature by providing empirical evidence on the moderating role of green awareness within the MSME context. Practically, the findings suggest that MSMEs can improve performance by integrating environmentally responsible practices into their marketing strategies while fostering green awareness among both business owners and consumers.

Keywords: Business Performance; Green Awareness; Green Marketing Mix.

1. INTRODUCTION

According to data from the Ministry of Environment and Forestry in 2024, there were 35.3 million tons of waste generated annually. Of this amount, only 38.63% was categorized as managed waste, and the remaining 61.37% was categorized as unmanaged waste (KLHK, 2025). Based on this data, MSMEs contributed approximately 60% of total domestic waste in Indonesia (Madrais, 2025). This condition indicates the low effectiveness of the national waste management system, especially in terms of sorting, recycling, and reusing waste into value-added products.

According to data from the Indonesian Chamber of Commerce and Industry, the number of MSMEs in Indonesia reached 59.5 million units in 2024 (Kadin, 2024). This data indicates that MSMEs significantly contribute to the Indonesian economy, contributing 61% of Indonesia's Gross Domestic Product (GDP), equivalent to IDR 9.58 trillion. MSMEs are capable of absorbing 97% of Indonesia's workforce (Ayuningtyas, 2024). These figures confirm that MSMEs are the backbone of the national economy. According to data from the Ministry of Micro, Small, and Medium Enterprises (MSMEs), 84% of the public is interested in becoming entrepreneurs in businesses that prioritize environmentally friendly aspects (green economy) (Antara, 2025). According to data from the Indonesian Chamber of Commerce and Industry, there will be 6.4 million MSMEs operating in the food and beverage sector by 2024 (Kadin, 2024). According to the Central Statistics Agency, the sales value of MSMEs in the food and beverage sector will reach IDR 998.37 trillion in 2024. This represents a 48.04% increase from the sales value of businesses in 2016, which reached IDR 674.38 trillion (BPS, 2025).

According to data from the Yogyakarta Special Region Cooperatives & SMEs Office, there will be more than 327,700 MSMEs in the Special Region by 2024. This represents a 1.03% increase from the previous year's 324,000 MSMEs (Bapperida Jogja, 2025). Reported by the National Waste Management Information System (SIPSN). According to the Ministry of Environment and Forestry, food waste accounts for the largest portion of the waste in the Special Region of Yogyakarta (52.55%), followed by plastic at 27.49%. The environmental impact of the region is closely linked to its economic structure; of the 327,700 MSMEs operating in DIY, 111,000 units are concentrated in the food and beverage sector. This makes it the second-largest industry in the region, surpassed only by the trade sector, which comprises 170,000 units. Consequently, the high volume of production and consumption within the food and beverage industry serves as a primary driver for the generation of both organic and non-organic waste. These conditions underscore a critical requirement for MSMEs to transition toward more environmentally conscious and sustainable business strategies.

Amid increasingly dynamic business competition, business performance is a crucial benchmark for the sustainability of MSMEs, particularly in the food and beverage sector. According to Yacob et al. (2021), Business performance can be measured by sales, market share, and profitability. Therefore, it is important for companies, including MSMEs, to develop marketing strategies to improve business performance. However, as public awareness of environmental and sustainability issues increases, conventional marketing paradigms need to transform. Therefore, the green marketing mix concept emerged as an extension of traditional marketing strategies, emphasizing sustainability principles in each component. Elements of the green marketing mix include green products, green prices, green places, and green promotion, which is entirely designed to minimize negative impacts on the environment and build a positive corporate image in the eyes of consumers who are increasingly aware of the importance of environmental sustainability (Akram, 2023). On the other hand, green awareness, the awareness of business actors and consumers regarding environmental issues, has emerged as a crucial element. This awareness has fueled demand for environmentally friendly products and encouraged businesses to integrate sustainability values into their operations (Hamoudi & Avilés-Palacios, 2023).

While previous literature has extensively explored business performance, the green marketing mix, and green awareness as individual constructs, empirical research investigating the interplay between these variables remains limited. Specifically, studies that examine the influence of the green marketing mix on business performance through the lens of green awareness as a moderating variable are still rare. This gap in the literature highlights the importance of the current study, which positions green awareness as a moderator to better understand how environmental consciousness strengthens the relationship between sustainable marketing strategies and MSME performance.

This research is important because MSMEs have a significant contribution to the national economy, specifically contributing 61% to Indonesia's Gross Domestic Product (GDP). By examining the influence of the green marketing mix on the business performance of Food & Beverage MSMEs in the Special Region of Yogyakarta, this research is expected to provide a tangible contribution in helping MSMEs in the food & beverage sector improve business performance, strengthen competitiveness, and maintain the sustainability of environmentally friendly businesses.

2. LITERATURE REVIEW

2.1 Business Performance

According to Gruenbichler et al. (2021) business performance is an instrument that enables the achievement of business goals and increases the competitiveness of small and medium enterprises (SMEs). To achieve business goals and objectives, business performance is defined

as the potential of any business to achieve maximum results by effectively utilizing available resources (Akhtar et al., 2022) .

2.2 Green Marketing Mix

The American Marketing Association defines the green marketing mix as a marketing process that involves developing products that are produced, used, or disposed of in a way that is less harmful to the environment and has a positive impact on the environment (Farradia et al., 2021). The green marketing mix is fundamentally comprised of four core components: product, place, price, and promotion (Hermawan, 2017). As an integrated strategic framework, it is designed to fulfill consumer requirements and preferences while concurrently advancing the attainment of organizational objectives.

In alignment with the green marketing framework, a green product is defined as an ecologically sustainable offering that avoids environmental pollution, minimizes resource waste, and remains fully recyclable. Green place strategies encompass environmental advocacy campaigns, strategic proximity to consumers, the implementation of ecological concepts, and the maintenance of streamlined distribution logistics (Amin et al., 2023). According to Collins et al. (2021), regarding valuation, green price refers to a product's cost structure that explicitly accounts for environmental considerations. Finally, according to Özgün-Ayar & Selvi (2025) green promotion serves as a strategic communication tool used by organizations to articulate sustainability commitments and environmental advantages to their target audience.

2.3 Green Awareness

Green awareness is conceptualized as a dedicated effort to enhance environmental consciousness among individuals. This construct extends beyond a foundational knowledge of ecological issues such as waste management, pollution control, reforestation, and the preservation of endangered species to include a broader, more comprehensive understanding of the human environment and its preservation (Kencanasari et al., 2021).

2.4 Hypothesis Development

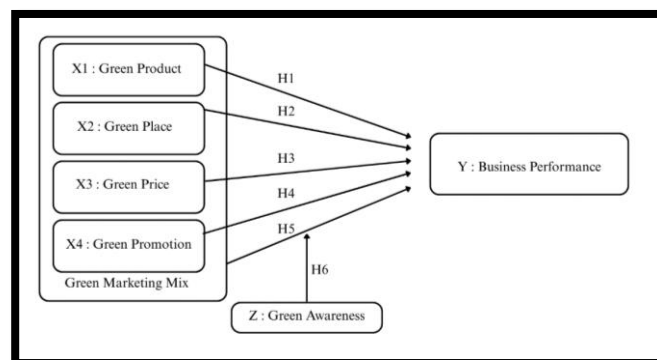


Figure 1. Framework of Thought

Drawing from the established conceptual framework, this study proposes six primary hypotheses to examine the relationships between the green marketing mix, green awareness, and business performance:

H1: Green products have a positive effect on business performance

Empirical evidence suggests that the adoption of green products enhances organizational outcomes. Putri et al. (2023) demonstrated that environmentally friendly products contribute positively to business performance. Similarly, Bahri (2022) confirmed this relationship, while

Hussain (2022) emphasized that green products exert a favorable influence on overall business success.

H2: Green places have a positive effect on business performance

Research indicates that the presence of green spaces fosters improved business performance. For instance, Putri et al. (2023) and Akhtar et al. (2022) reported that the presence of green spaces contributes positively to organizational outcomes, while Akram (2023) similarly emphasized that environmentally friendly spaces enhance business performance.

H3: Green prices have a positive effect on business performance

Several studies have consistently demonstrated the positive relationship between green initiatives and business performance. Akram (2023) highlighted that adopting green pricing practices positively influences business performance. This finding is corroborated by Putri et al. (2023) and Akhtar et al. (2022), both of whom confirmed that environmentally conscious pricing exerts a favorable effect on organizational success.

H4: Green promotion has a positive effect on business performance

Green promotional activities have also been shown to strengthen business outcomes. Putri et al. (2023) found that green promotion enhances performance, a conclusion supported by Khan et al. (2024). Similarly, Adela & Rahman, (2022) demonstrated that environmentally oriented promotional strategies positively affect business performance.

H5: Green marketing mix simultaneously has a positive effect on business performance

The integration of green elements across the marketing mix has been widely recognized as advantageous. Putri et al. (2023) reported that the green marketing mix collectively improves business performance. Hussain (2022) and Bahri (2022) likewise concluded that adopting a comprehensive green marketing mix exerts a simultaneous positive influence on organizational outcomes.

H6: Green awareness strengthens the influence of green marketing mix on business performance

Finally, green awareness has been identified as a moderating factor that amplifies the impact of the green marketing mix. Setyawati et al. (2020) observed that heightened environmental awareness strengthens the relationship between green marketing practices and business performance. This assertion is further supported by Khan et al. (2024) and Mahmoud et al. (2024) who found that green awareness enhances the effectiveness of the green marketing mix in driving organizational success.

3. RESEARCH METHODS

3.1 Sample

The population in this study was all food and beverage MSMEs in the Special Region of Yogyakarta. The sample collection technique used was snowball sampling. The primary data obtained in this study consisted of respondents' perceptions in the form of statements that had been tested for validity and reliability. The questionnaire was then distributed online via Google Forms. A total of 116 responses were collected, with no outliers.

3.1.1 Dependent variable

The dependent variable in this study is business performance. Based on research conducted by Rokhman et al. (2023), there are three indicators of business performance: financial performance, production performance, and marketing performance.

3.1.2 Independent variables

The independent variables in this study are the green marketing mix, which consists of green products, green place, green price, and green promotion. According to research conducted by Munamba & Nuangjamnong (2021), there are four indicators for each of these independent

variables. Green product indicators are a green product companies focus on manufacturing products that have the lowest rate of negative human reflection; green product companies contribute to producing green products with less pollution; there is an effective control on green products that green product companies produce; and green product companies make products free of strong toxic materials. Green place indicators are environmentally friendly products are sold at reputable agents; green product companies make delivery is easy; green products companies aim to work with environmentally friendly agents; and the stores of green product companies are clean. Green price indicators are green product companies raise the prices of their products which negatively affects the environment that happens due to misuse; increased prices of green products sometimes stop me from purchasing them; the price difference between green products and conventional products is large; and green products have a price that is proportional to their quality. Green promotion indicators are green product companies devote a special day to the environment; green product companies favor hosting environmental activities, festivities, seminars, and conferences; employees of green products companies advise customers on how to use their products not to harm the environment; and green product companies contribute to supporting environmental centers

3.1.3 Moderating variables

The moderating variable in this study is green awareness. According to Wu et al. (2024), there are nine indicators to measure green awareness. These indicators are environmental information awareness, concern for environmental issues, social involvement, environmentally friendly behavior, energy conservation, water conservation, dissemination of environmental information, participation in environmental activities, and awareness of personal responsibility for the environment.

3.2 Analysis Method

Data analysis in this study includes descriptive statistical analysis, classical assumption tests (normality test, linearity test, heteroscedasticity test, and multicollinearity test), as well as hypothesis testing (determination coefficient, t-test, F-test, and Moderated Regression Analysis test) using SPSS Statistics version 27. Respondents descriptive will be presented through descriptive statistical analysis in tabular form, by referring to the average value to describe the data. The classical assumption test ensures the validity & reliability of the research results, ensuring that the theoretical data used is unbiased and stable.

The classical assumption tests in this study include the normality test using the Kolgomorov-Smirnov test, by referring to the Sig. Mento Carlo value. The linearity test by referring to the Deviation from Linearity value. The heteroscedasticity test uses the park test by referring to the Sign value. The multicollinearity test by referring to the Tolerance and Variance Inflation Factor values. Partial hypothesis testing is carried out using the t-test, while simultaneous testing is carried out using the F-test. In this study, there are two coefficients of determination, namely the coefficient of determination without a moderating variable and the coefficient of determination with a moderating variable. Thus, there are multiple regression equations and moderated regression equations which are stated as follows:

3.2.1 The multiple regression equation is:

$$Y = a + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + e$$

3.2.2 The moderate regression equation is:

$$Y = a + b_1 X + b_2 XZ + e$$

3.2.3 Information:

$$Y = \text{Predicted value}$$

- a = Constant number
- b = Regression coefficient
- X = Value of independent variable
- Z = Moderate variable value
- e = Standard error

4. RESULT AND DISCUSSION

4.1 Descriptive Statistics

The research sample consisted of 116 food and beverage MSMEs located in the Special Region of Yogyakarta, whose demographic and operational profiles were categorized by gender, age, educational background, regional domicile, length of operation, number of employees, and annual revenue. The results of the descriptive analysis are shown in Table 2:

Table 1 Respondent Characteristics

No	Respondent Characteristics	Amount	Percentage
1.	Gender	Man	47 40.52%
		Woman	69 59.48%
2.	Age	≤ 20 Years	8 6.90%
		> 20 Years - 30 Years	69 59.48%
		> 30 Years - 40 Years	16 13.79%
		> 40 Years - 50 Years	15 12.93%
		> 50 Years	8 6.90%
3.	Last education	Elementary School/Equivalent	1 0.86%
		Junior High School/Equivalent	1 0.86%
		High School/Equivalent	64 55.17%
		Diploma (D1/D2/D3/D4)	10 8.62%
		Bachelor degree)	38 32.76%
		Masters (S2)	1 0.86%
		Doctorate (S3)	1 0.86%
4.	Regency/City Domicile	Sleman	41 35.34%
		Kulon Progo	15 12.93%
		Bantul	25 21.55%
		Gunung Kidul	12 10.34%
		Yogyakarta City	23 19.83%
5.	Business Operating Period	3 Years - 8 Years	84 72.41%
		>8 Years - 13 Years	23 19.83%
		>13 Years - 18 Years	5 4.31%
		>18 Years - 23 Years	2 1.72%
		>23 Years	2 1.72%
6.	Number of employees	≤ 5 Workers	80 68.97%
		>5 Workers - 20 Workers	28 24.14%
		>20 Workers ≤ 99 Workers	8 6.90%
7.	Annual Turnover	≤ Rp. 300,000,000	79 68.10%
		>Rp. 300,000,000 – Rp. 2,500,000,000	23 19.83%
		>Rp. 2,500,000,000 ≤ Rp. 50,000,000,000	14 12.07%

Source: (Data processing, 2025)

4.2 Classical Assumption Test

a. Normality test

The normality test aims to determine whether the data used in this study is normally distributed. The statistical test used is the Kolmogorov-Smirnov test, with reference to the significance value. A significance level >0.05 is confirmed to be normally distributed. The

following table shows the test results:

Table 2 Normality Test Results Table

Significance Value	Significance Value Limit	Information
0.104	0.05	Normally distributed

Source: (Data Processing, 2025)

b. Linearity test

The linearity test is used to determine whether the relationship between two variables under study is linear and significant. The linearity test is performed using the Test for Linearity value at a significance level of 0.05. The results of the linearity test can be seen in the following table:

Table 3 Linearity Test Results Table

Variables	Sign Value.	Sign Value Limit.	Information
X1 to Y	0.559	0.05	Linear relationship
X2 to Y	0.512	0.05	Linear relationship
X3 to Y	0.559	0.05	Linear relationship
X4 to Y	0.469	0.05	Linear relationship
X1,X2,X3, & X4 to Y	0.506	0.05	Linear relationship

Source: (Data Processing, 2025)

c. Heteroscedasticity test

The heteroscedasticity test is used to determine whether there are unequal variances in the variables within the model. In this study, the Park test was used to detect the presence or absence of heteroscedasticity. A significance level > 0.05 indicates no heteroscedasticity. The results of the heteroscedasticity test can be seen in the following table:

Table 5. Table of Heteroscedasticity Test Results

Variables	Sign Value.	Sign Value Limit.	Information
X1	0.096	0.05	Free from heteroscedasticity
X2	0.476	0.05	Free from heteroscedasticity
X3	0.759	0.05	Free from heteroscedasticity
X4	0.840	0.05	Free from heteroscedasticity

Source: (Data Processing, 2025)

d. Multicollinearity test

The multicollinearity test is used to determine whether there is a significant relationship (correlation) between independent variables. In this study, the multicollinearity test uses the Tolerance and Variance Inflation Factor (VIF) values. If the Tolerance value is > 0.10 and the VIF value is < 10 , then the data in the regression model is free from multicollinearity. The results of the multicollinearity test can be seen in the following table:

Table 6. Multicollinearity Test Results Table

Variables	Tolerance Value	VIF value	Tolerance Value Limit	VIF Value Limit	Information
X1	0.494	2,023	>0.10	<10	Free from multicollinearity
X2	0.154	6,474	>0.10	<10	Free from multicollinearity
X3	0.419	2,389	>0.10	<10	Free from multicollinearity
X4	0.145	6,914	>0.10	<10	Free from

Variables	Tolerance Value	VIF value	Tolerance Value Limit	VIF Value Limit	Information
					multicollinearity

Source: (Data Processing, 2025)

4.3 Hypothesis Testing

4.3.1 The multiple regression equation

Table 7. Table of Multiple Regression Equation Test Results

Model	Unstandardized		Standardized beta coefficients	t	Sig.
	B	Std. Error			
(Constant)	3.397	1,346		2,525	0.013
X1	0.358	0.106	0.235	3,377	0.001
X2	0.336	0.148	0.283	2,272	0.025
X3	0.411	0.105	0.296	3,905	0.001
X4	0.201	0.156	0.166	1,286	0.201

Based on table 7, it can be seen that the multiple regression equation is:

$$Y = 3.397 + 0.358 X_1 + 0.336 X_2 + 0.411 X_3 + 0.201 X_4 + e$$

Information:

Y = Predicted value

a = Constant number

b = Regression coefficient

X = Value of independent variable

e = Standard error

4.3.2 The moderate regression equation

Table 8. Table of Moderated Regression Equation Test Results

Model	Unstandardized		Standardized coefficients beta	t	Sig.
	B	Std. Error			
(Constant)	8,988	1,323		6,792	0,001
X	0,062	0,043	0,166	1,439	0,153
XZ	0,005	0,001	0,739	6,418	0,001

Source: (Data Processing, 2025)

Based on the results presented in Table 8, the moderated regression equation can be expressed as:

$$Y = 8.988 + 0.062 X + 0.005 XZ + e$$

Information:

Y = Predicted value

a = Constant number

b = Regression coefficient

X = Value of independent variable

Z = Moderate variable value

e = Standard error

4.3.3 The parsial test (t-test)

Based on table 7, the variables green product (X1), green place (X2), and green price (X3) demonstrated calculated t-values exceeding the t-table threshold, with corresponding significance levels below 0.05. Consequently, these three factors exert a positive and statistically significant partial effect on business performance. Conversely, the green promotion (X4)

variable yielded a calculated t-value lower than the t-table value and a significance level exceeding 0.05. These results indicate that, within this model, green promotion does not have a statistically significant partial influence on business performance.

4.3.4 The simultaneous test (F-test)

The test in this study used an F-table value of 2.45 and a significance level of 0.05. The following table shows the results of the simultaneous test (F) in this study:

Table 9. F Test Results Table

Model	Sum of squares	df	Mean square	F	Sig.
Regression	630,259	4	157,565	76,279	0.001
Residual	229,284	111	2,066		
Total	859,543	115			

Source: (Data Processing, 2025)

Based on the table above, it can be seen that the calculated F value > F table, and the significance value is less than 0.05. Thus, the green marketing mix simultaneously has a positive and significant effect on business performance.

4.3.5 Coefficient of Determination

In this research, two distinct coefficients of determination were calculated: the initial coefficient of determination excluding the moderating variable and the subsequent coefficient including it.

Table 10. Table Coefficient of Determination (Without Moderating Variables)

Model	R	R Square	Adjusted R Square	Std. Error of the estimate
1	0.856	0.733	0.724	1,437

Source: (Data Processing, 2025)

Based on Table 9, the Adjusted R-Square value is reported as 0.724. This indicates that the regression model accounts for 72.4% of the variance in business performance, attributable to the variables of green product, green place, green price, and green promotion. The remaining 27.6% of the variance is explained by factors not included within the model.

4.3.6 Moderated Regression Analysis (MRA) Test

According to Creswell (2022) moderated regression analysis is a statistical analysis technique used to determine the extent to which moderator variables can influence or strengthen the relationship between independent variables and dependent variables. The moderation test in this study is conducted by comparing the Adjusted R-Square values obtained from two regression models. The first model is estimated without the inclusion of the moderating variable, whereas the second model incorporates the moderating variable.

Table 11. Comparison Table of Adjusted R Square Values

No	Information	Adjusted R Square
1	The first regression equation	0.724
2	Second regression equation	0.798

Source: (Data Processing, 2025)

The baseline model, estimated without the moderating variable, reports an Adjusted R-Square of 0.724, indicating that 72.4% of the variance in business performance is explained by the green marketing mix dimensions. When green awareness is incorporated as a moderate

variable, the Adjusted R-Square rises to 0.798, thereby accounting for 79.8% of the variance. This improvement in model fit demonstrates that green awareness contributes additional explanatory power, strengthening the relationship between the green marketing mix and business performance.

4.4 Discussion

4.4.1 The influence of green products on business performance

The regression analysis indicates that the green product variable has a coefficient of 3.377 with a significant value of 0.001 (< 0.05), confirming a positive and significant effect on business performance. This demonstrates that adopting eco-friendly products—such as those made with sustainable materials, cleaner production processes, and recyclable packaging—enhances consumer value perception. Modern consumers evaluate not only product functionality but also ecological impact. Thus, the first hypothesis (H1) is accepted. These findings are consistent with Putri et al. (2023), Hussain (2022), and Bahri (2022), all of whom concluded that green products positively influence business performance.

4.4.2 The influence of green places on business performance

The green place variable shows a regression coefficient of 2.272 with a significant value of 0.025 (< 0.05), indicating a positive and significant relationship with business performance. This suggests that environmentally conscious business premises and distribution systems contribute to improved outcomes. Examples include energy-efficient locations, waste management, and sustainable spatial planning. From the consumer's perspective, clean and eco-friendly spaces foster satisfaction, repeat purchases, and stronger loyalty. The second hypothesis (H2) is therefore accepted. These findings align with Putri et al. (2023), Akram (2023), and Akhtar et al. (2022) who all found that green places positively affect business performance.

4.4.3 The influence of green prices on business performance

The regression coefficient for green prices is 3.905 with a significant value of 0.001 (< 0.05), confirming a positive and significant impact on business performance. This indicates that consumers are willing to pay higher prices when they reflect environmental value. Green pricing not only covers production costs but also signals a company's commitment to sustainability. For MSMEs, adopting green pricing enhances perceptions of product quality, as eco-friendly goods are often viewed as safer and more responsible. The third hypothesis (H3) is accepted. These findings are consistent with Akram (2023), Akhtar et al. (2022), and Putri et al. (2023) who emphasized that green pricing positively influences business performance.

4.4.4 The influence of green promotion on business performance

The regression coefficient for green promotion is 1.286, below the critical value of 1.9818, with a significant level of 0.201 (> 0.05). This indicates that green promotion does not significantly influence business performance, leading to the rejection of the fourth hypothesis (H4). This outcome is consistent with Kania & Bukhori (2025) and Renaldo et al. (2024), who found that green promotion only partially impacts performance. The limited effect may stem from the high costs of eco-friendly promotional strategies, such as sustainable media, environmental campaigns, and certifications. While green promotion alone is not impactful, the study shows that when integrated with green product, price, and place, it contributes positively to overall performance. This underscores the importance of synergy within the green marketing mix. These findings align with Yandi et al. (2023) who emphasized that comprehensive implementation of the green marketing mix drives success.

4.4.5 The influence of green marketing mix on business performance

The green marketing mix demonstrates a regression coefficient of 76.279 with a significance value of 0.001 (< 0.05), confirming its simultaneous positive and significant effect on business performance. The R-squared value of 72.4% indicates that most of the variation in business performance is explained by the integration of green product, price, place, and promotion. This highlights that success stems from a holistic strategy rather than isolated variables. Consistent application of the green marketing mix strengthens a company's environmentally responsible image, which builds consumer trust, loyalty, and market share. The fifth hypothesis (H5) is accepted. These findings align with Putri et al. (2023), Bahri (2022), and Hussain (2022), who all found that the green marketing mix collectively enhances business performance.

4.4.6 *The influence of green marketing mix on business performance with green awareness as a moderating variable*

The green marketing mix explains 72.4% of business performance, with the remaining 27.6% influenced by external factors. When moderated by green awareness, the R-squared value rises to 79.8%, reflecting a 7.4% increase. This demonstrates that consumer environmental awareness strengthens the impact of green marketing strategies. Businesses achieve greater success when targeting consumers who value sustainability. MSMEs are encouraged to incorporate environmental education into their marketing, such as highlighting eco-friendly production processes and product benefits through social media, packaging, and direct communication. The sixth hypothesis (H6) is accepted. These findings are consistent with Setyawati et al. (2020), Khan et al. (2024), and Mahmoud et al. (2024), all of whom concluded that green awareness amplifies the effect of the green marketing mix on business performance.

CONCLUSION

The findings of this study indicate that green product, green place, and green price each exert a positive partial effect on business performance, whereas green promotion does not demonstrate a significant partial influence. Nevertheless, when considered collectively, the green marketing mix including green promotion has a positive and significant impact on business performance. This outcome underscores the importance of implementing the green marketing mix in a holistic and integrated manner rather than in isolation, particularly with respect to promotional activities. In doing so, firms are more likely to achieve improvements in overall business performance.

Moreover, the results reveal that green awareness functions as a moderating variable, amplifying the effect of the green marketing mix on business performance. Consequently, companies should strategically target consumers who exhibit environmental awareness when deploying green marketing initiatives. The integration of green marketing mix elements with consumer environmental consciousness enhances the perceived value of sustainability efforts and, in turn, contributes to superior business performance outcomes.

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