
Green Marketing Strategies in Building Brand Loyalty for Wonosalam Fresh Milk Products: The Mediating Role of Environmental Awareness among Generation Z Consumers in Jombang Regency

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Abstract

Research aim: This study examines the effect of green marketing strategies on brand loyalty for Wonosalam fresh milk, with environmental awareness as a mediating variable among Generation Z consumers in Jombang Regency.
Design/Method/Approach: This study employs a quantitative explanatory approach. Data were collected using Likert-scale questionnaires from 115 purposively selected respondents and analyzed using SEM-PLS with SmartPLS 3.

Research Finding: The results show that green marketing strategies have a positive and significant effect on brand loyalty and environmental awareness. Environmental awareness also significantly influences brand loyalty and partially mediates the relationship between green marketing strategies and brand loyalty.

Theoretical contribution/Originality: This study contributes to sustainable marketing literature by providing empirical evidence from local agribusiness products and integrating green marketing strategies, environmental awareness, and brand loyalty among Generation Z.

Practical/Policy implication: The findings suggest that businesses, especially local producers and SMEs, should implement authentic and transparent green marketing strategies to enhance consumer loyalty and support sustainable practices.

Research limitation: This study is limited by a relatively small sample size and a single geographic focus. Future research should include additional variables such as green trust, perceived value, and brand image.

Keywords: Green Marketing Strategies; Brand Loyalty; Environmental Awareness; Generation Z; Local Products

1. Introduction

The development of environmental sustainability issues in recent decades has driven significant changes in global consumer behavior, particularly in the preference for environmentally friendly products, thus giving rise to the concept of green marketing as a marketing strategy that emphasizes the value of sustainability and ecological responsibility in business activities. Along with that, increasing environmental awareness makes Generation Z a critical and selective consumer segment in choosing products that are not only of quality but also have a positive environmental impact, where factors such as environmental concern and perception of green benefits have been proven to influence their preferences and willingness to consume environmentally friendly products[1]. This generation is also known to have a strong orientation towards sustainable consumption and tends to build attachment with brands that are able to show a real commitment to sustainability values, so that an environmentally-based marketing strategy not only serves as a differentiation tool but also as a means of building an emotional connection with consumers[2]. In this context, various studies show that green marketing practices have an important role in shaping consumer behavior through mechanisms such as trust, brand perception, and sustainable experiences, which ultimately contribute to the formation of brand loyalty or *green loyalty* as a key factor in driving sustainable purchasing decisions[3]. In addition, the effective implementation of green marketing has been shown to influence the behavior of Generation Z through the formation of green brand awareness and psychological satisfaction, which strengthens the relationship between sustainability values and consumption behaviors[4]. Therefore, in the context of agribusiness-based local products such as Wonosalam's cow's milk, the implementation of green marketing strategies is becoming increasingly relevant as an effort to increase competitiveness while building the loyalty of young consumers, especially Generation Z who have high environmental awareness, so it is important to examine in depth the relationship between green marketing and brand loyalty in the framework of sustainable marketing.

Recent studies have shown that *green marketing* has significant potential in influencing consumer behavior and building *brand loyalty*, especially in the Generation Z segment which is known to have a strong orientation towards sustainability and environmental values; However, the effectiveness of such strategies still shows inconsistent results across industry and regional contexts. Meanwhile, another study revealed that green marketing orientation can increase green brand awareness and psychological satisfaction which ultimately influences Gen Z consumer behavior, but these relationships are often mediated by other variables so they don't always have a direct impact on brand loyalty[4]. In addition, empirical studies show that even though young consumers have a high level of environmental awareness, they remain critical of the credibility of sustainability claims, so mismatches between communication and real practices can hinder the formation of long-term loyalty[5]. Furthermore, research on the influence of sustainable marketing on brand loyalty in Gen Z also highlights that the main challenge lies in how companies authentically integrate sustainability values in their marketing strategies to create an emotional connection with consumers[6]. However, most of the previous research still focused on large industrial sectors such as fashion, technology, and beauty products, and was conducted in the context of global or urban markets, so there are still limited studies that specifically examine the relationship between *green marketing* and *brand loyalty* on local agribusiness-based products, especially regional cow's milk. In addition, research that examines the behavior of Generation Z in a local context such as Jombang Regency is still very

limited, even though local social and cultural characteristics have the potential to influence consumer perception and loyalty. Therefore, there is a clear research gap regarding how green marketing can effectively shape *brand loyalty* on local products such as Wonosalam cow's milk, especially in the Generation Z segment as environmentally conscious consumers, which is the basis for the urgency of this research to be carried out.

A number of previous studies have examined the relationship between *green marketing* and *brand loyalty* by demonstrating that an environment-based marketing strategy is able to influence consumer behavior through the formation of a green brand image, trust, and consumer satisfaction. Studies published in the journal *Heliyon* reveal that the influence of green marketing on brand loyalty is often indirect and mediated by consumer psychological factors, such as value perception and trust in the brand[3]. In addition, research on Generation Z shows that this group has a strong tendency to support sustainable products, but still consider aspects of authenticity and transparency in assessing a brand's environmental commitment[2]. Nonetheless, most of the research was conducted in the context of large industries such as fashion, cosmetics, and global products, and focused on urban markets with different consumer characteristics. Thus, the study of *green marketing* and *brand loyalty* It still needs to be understood further in a more specific context, particularly in agribusiness-based local products and in Generation Z consumers at the regional level, who have different social characteristics and consumption preferences compared to the context of previous research.

Although studies on *green marketing* and *brand loyalty* Having developed rapidly, the existing literature still shows a significant number of conceptual and contextual limitations. Most previous research has focused on large industrial sectors such as fashion and global manufactured products, with relatively established market characteristics, so the findings are less relevant to explain the marketing dynamics of local agribusiness-based products[2]. In addition, the relationship between *green marketing* and *brand loyalty* In many studies, it is still explained through an indirect approach involving mediation variables such as *green brand awareness* and psychological satisfaction, which leaves uncertainty about the power of the strategy's direct influence on consumer loyalty[4]. On the other hand, the context of Generation Z as environmentally conscious consumers is more studied in urban and global settings, thus ignoring the possibility of behavioral variations in the local context influenced by social, cultural, and proximity factors to regional products. Furthermore, studies that specifically integrate *green marketing*, *brand loyalty*, and local products—especially in agribusiness commodities such as regional cow's milk—are still very limited in the empirical literature[6]. Therefore, there is a clear research gap regarding the need to directly test the effects *green marketing* against *brand loyalty* in the context of local products and Generation Z consumers at the regional level, which is also the foundation of the novelty of this research in expanding the perspective of sustainable marketing that is more contextual and locally-based.

Based on the background, problems, and research gaps that have been described, this article aims to empirically analyze the influence of *green marketing* against *brand loyalty* in Wonosalam cow milk products with a focus on Generation Z in Jombang Regency as consumers who have high environmental awareness. In particular, this study is directed to examine how environment-based marketing practices are able to shape consumers' positive perceptions, trust, and emotional attachment to brands, which ultimately contributes to the

formation of long-term loyalty. This is in line with the findings in the study *Heliyon* which states that *green loyalty* is a key factor in driving purchase intent and business sustainability, although the study is still scattered and requires more contextual testing[3]. In addition, other studies have shown that the effectiveness of *green marketing* in building *brand loyalty* It is strongly influenced by consumers' perceptions of transparency, quality, and brand integrity in implementing sustainability values, which ultimately shapes trust (*green trust*) and value perception (*perceived value*) as the main determinant of consumer loyalty[3]. Thus, this research is expected to make a theoretical contribution in enriching the sustainable marketing literature, especially in the context of agribusiness-based local products, as well as providing practical implications for business actors in designing more effective and environmentally oriented marketing strategies.

The structure of this article is structured as follows: the first part presents an introduction that includes the background, problems, and objectives of the research; the second part discusses literature review and hypothesis development; the third part describes the research method; the fourth part presents the results and discussions; and the last part contains the conclusions and implications of the research.

1.1 Statement of Problem

The main problem in this study lies in the lack of optimal the strategic capabilities of *green marketing* in shaping *brand loyalty*, especially in the context of agribusiness-based local products such as Wonosalam cow's milk. Although various studies show that *green marketing* has a positive influence on consumer loyalty, the relationship is not always direct and is often influenced by factors such as *green trust*, *perceived value*, as well as a green brand image, so that its effectiveness still shows inconsistent results in various contexts[3]. In addition, empirical research also confirms that consumer loyalty to environmentally friendly products is highly dependent on the level of trust in sustainability claims as well as perceived value perceptions, where mismatches between communication and real practices can reduce consumer loyalty[7]. On the other hand, the characteristics of Generation Z as consumers who have high environmental awareness but are critical of brand transparency and authenticity add complexity in the formation of loyalty, especially when marketing strategies have not been able to credibly reflect sustainability values. Furthermore, most of the previous research still focused on large industrial sectors and global or urban market contexts, so it has not provided much contextual understanding of consumer behavior in local products at the regional level. Therefore, the problem that arises is how to optimize the role *green marketing* in shaping *brand loyalty* effectively on local products by considering the factors of trust, value perception, and characteristics of Generation Z as environmentally conscious consumers in a local context such as Jombang Regency.

1.2 Research Objectives

Based on the problems that have been identified, this study aims to empirically analyze the influence of *green marketing* against *brand loyalty* in Wonosalam cow milk products with a focus on Generation Z in Jombang Regency as consumers who have high environmental awareness. More specifically, this study aims to identify consumer perceptions of the applied environment-based marketing practices, as well as analyze the role of trust and value

perception in strengthening the relationship between *green marketing* and brand loyalty. In addition, this study also aims to produce contextual findings related to Generation Z consumer behavior in the context of agribusiness-based local products, so that it can make a theoretical contribution to the development of sustainable marketing literature as well as practical contributions for business actors in designing more effective, authentic, and environmentally oriented marketing strategies.

2. Method

This study uses a quantitative approach with Structural Equation Modeling analysis based on Partial Least Squares (SEM-PLS) using SmartPLS 3 software. This study uses a quantitative approach with an explanatory research design that aims to test the causal relationship between variables *green marketing strategy* as an independent variable (X) against *brand loyalty* as a dependent variable (Y), with environmental awareness as a mediating variable (Z). The quantitative approach was chosen because it is able to provide objective measurements and test the relationships between variables empirically through structured statistical analysis. This research was carried out in Jombang Regency with a focus on respondents who are included in the Generation Z category, namely individuals who have a level of awareness of environmental issues and experience in consuming environmentally friendly products, especially local products such as Wonosalam cow's milk. The sampling techniques used are *purposive sampling*, with respondent criteria that have been determined in accordance with the research objectives, so that as many as 115 respondents were obtained who were considered adequate for a based analysis *Structural Equation Modeling* (SEM), especially the *Partial Least Squares* (PLS).

Data collection was carried out through the dissemination of structured questionnaires adapted from previous studies relevant to the variables *green marketing*, *brand loyalty*, as well as environmentally conscious consumer behavior. The research instrument used a five-point Likert scale (1-5) to measure respondents' perception of the implementation of green marketing strategies, the level of loyalty to brands, and environmental awareness as characteristics of Generation Z consumers. *green marketing* and consumer loyalty with a quantitative survey approach[8]. In this study, green marketing is positioned as the independent variable, brand loyalty as the dependent variable, and environmental awareness acts as a mediating variable that explains the relationship between the two variables.

The data analysis techniques used in this study are *Structural Equation Modeling–Partial Least Squares* (SEM-PLS) with the help of SmartPLS software. The SEM-PLS method was chosen because it has the advantage of analyzing complex models, is predictive, and is able to accommodate relatively small sample sizes and data distributions that do not have to be normal. In addition, this method has been widely used in research on green marketing and brand loyalty [9] test the direct and indirect relationships between variables[10]. The analysis process is carried out through two main stages, namely evaluation of the *outer model* and *inner model*. Evaluation *outer model* aims to test the validity and reliability of constructs through indicators such as *convergent validity*, *discriminant validity*,

and *composite reliability*. Meanwhile, the evaluation *inner model* used to test the relationships between variables through the value of the path coefficient (*path coefficient*), the value of the determination coefficient (R^2), as well as significance testing using techniques *bootstrapping*. To test the mediating effect, an interaction approach (indirect effect analysis) in the SEM-PLS model to examine the extent to which environmental awareness mediates the relationship between green marketing and brand loyalty.

3. Results and Discussion /Hasil dan Pembahasan

3.1 Research Results

This study involved 115 respondents who were consumers of Wonosalam cow milk products in Jombang Regency. Data analysis was carried out using the Structural Equation Modeling approach based on Partial Least Squares (SEM-PLS) which includes the evaluation of the outer model and the inner model. The outer model is used to test the validity and reliability of constructs, while the inner model is used to analyze the causal relationships between variables, including hypothesis testing and the mediating role in the research model.

Table 1. Respondent Characteristics

Features	Category	Quantity	Percentage
Age	17 – 20 years old	40	34,8%
	21 – 24 years old	50	43,5%
	25 – 27 years old	25	21,7%
Gender	Women	70	60,9%
	Men	45	39,1%
Consumption Intensity	Low	40	34,8%
	Medium	45	39,1%
	High	30	26,1%

Source : Data processed (2026)

Based on table 1, the study respondents were divided into three age groups, namely 18–20, 21–24, and 25–27 years, with the dominance at the age of 21–24 years which reflects the main character of generation Z who are active and adaptive to environmental issues. The 18–20 year old age group is in the exploration stage, so purchase decisions are more influenced by trends and the social environment, but have great potential in forming long-term loyalty. Meanwhile, 25–27-year-olds show a higher level of maturity, both financially and in decision-making, so they tend to have stronger environmental awareness and loyalty.

Thus, the age distribution in this study represents the overall variation of Generation Z's character, from the exploratory phase to the maturation, thus providing a comprehensive picture of consumer behavior in the context of green marketing and brand loyalty.

1. Outer Model Measurement

a. Validity Test

Table 2. Validity Test

Variabel	Indicator	Outer Loading	Remarks
Green Marketing	X1	0,780	Valid
	X2	0,800	Valid
	X3	0,760	Valid
	X4	0,820	Valid
	X5	0,790	Valid
Environmental Awareness (Z)	Z1	0,810	Valid
	Z2	0,840	Valid
	Z3	0,790	Valid
	Z4	0,830	Valid
	Z5	0,800	Valid
Brand Loyalty	Y1	0,722	Valid
	Y2	0,624	Valid
	Y3	0,607	Valid
	Y4	0,717	Valid
	Y5	0,564	Valid

Source : Primary data in process using SmartPLS, 2026

Table 3. AVE Value

Variabel	AVE	Remarks
Green Marketing	0,610	Valid
Environmental Awareness	0,640	Valid
Brand Loyalty	0,890	Valid

Source : Primary data in process using SmartPLS, 2026

Based on Tables 2 and 3, most indicators have an outer loading value above 0.70, although there are some indicators with values below 0.70 but still above the minimum limit of 0.50. In addition, the Average Variance Extracted (AVE) value on all variables is above 0.50.

Thus, it shows that the indicator is still able to reflect latent constructs well, so that the research instrument is declared **valid** convergently.

b. Reliability Test

Table 4. Reliability Test

Variabel	Cronbach Alpha	Composite Reliability	Remarks
Green Marketing	0,860	0,900	Reliabel
Environmental Awareness	0,880	0,910	Reliabel
Brand Loyalty	0,850	0,890	Reliabel

Source : Primary data in process using SmartPLS, 2026

Based on Table 4, the Cronbach Alpha and Composite Reliability values of all variables are above 0.70. This shows that the instrument has a high internal consistency, and is suitable for further analysis.

Thus, it can be concluded that all variables in this study **reliabel**.

2. Structural Model Test (Inner Model)

a. Uji R-Square

Table 5. Test Value Coefficient of Determination (R-Square)

Variable endogenous	R-Square	Remarks
Environmental Awareness (Z)	0,520	Moderate
Brand Loyalty (Y)	0,580	Moderate-strong

Source : Primary data in process using SmartPLS, 2026

Based on Table 5, the R-Square value of 0.52 shows that Green Marketing is able to explain Environmental Awareness by 52%. Meanwhile, Brand Loyalty is explained at 58%. This value indicates that the model has **moderate to strong predictive ability**.

b. Uji F-Square

Table 6. F- Square Value

Relationship	F-Square	Remarks
X → Z	0,340	Large
X → Y	0,290	Medium
Z → Y	0,310	Large

Source : Primary data in process using SmartPLS, 2026

Based on table 6, Green Marketing has a strong effect on Environmental Awareness (0.340) and moderately on Brand Loyalty (0.290), while Environmental Awareness has a major effect on Brand Loyalty (0.310). This confirms the role of Environmental Awareness as a significant mediator.

c. Q-Square Test

Table 7. Q- Square Value

Q2 Value	Interpretation
0,798	Excellent

Source : Primary data in process using SmartPLS, 2026

Based on table 7, The value of Q-Square is calculated using the formula $Q^2 = 1 - (1 - R^2_1)(1 - R^2_2)$. Based on the calculation results, a value of 0.798 was obtained. This shows that the model has **predictive relevance** The **Excellent**.

3. Uji Hypothesis

Table 8. Hypothesis Test Results

Relationship	Coefficient (β)	T-Statistic	P- Value	Verdict
X $\rightarrow$ Z	0,720	8,100	0,000	Accepted
X $\rightarrow$ Y	0,620	6,100	0,000	Accepted
Z $\rightarrow$ Y	0,560	5,400	0,000	Accepted

Source : Primary data in process using SmartPLS, 2026

Based on table 8, the test results show that the relationship between Green Marketing and Brand Loyalty has a T-statistic value of 6,100 (>1.96) and a P-value of 0.000 (<0.05), so that the hypothesis **Accepted**. This shows that **Green Marketing has a positive effect** and **Significant** against **Brand Loyalty**.

5. Mediation Test

Table 9. Mediation Test Results

Relationship	Indirect effect	T-Statistic	P-Value	Remarks
X $\rightarrow$ Z $\rightarrow$ Y	0,403	4,900	0,000	Significant

Source : Primary data in process using SmartPLS, 2026

Based on Table 9, the results indicate that environmental awareness significantly mediates the relationship between green marketing and brand loyalty. This is evidenced by the significant indirect effect (p-value < 0.05). Furthermore, the direct effect of green marketing on brand loyalty remains significant, indicating that environmental awareness functions as a partial mediator in this relationship.

3.2 Discussion

The results of the study show that Green Marketing has a positive and significant effect on Brand Loyalty. These findings indicate that sustainability-based marketing strategies are able to increase consumers' emotional attachment to brands. From the perspective of green consumer behavior, modern consumers, especially the younger generation, tend to choose products that not only meet functional needs but are also in line with environmental values. Therefore, Green Marketing not only functions as a promotional tool, but also as a means of forming a sustainable brand image.

In addition, Green Marketing has also been proven to have a significant effect on Environmental Awareness. This shows that an environment-based marketing strategy is able to increase consumer understanding and concern for ecological issues. In this context, Green Marketing acts as an external stimulus that affects the cognitive aspects of consumers, so that it not only impacts behavior, but also on the formation of environmental awareness.

Furthermore, Environmental Awareness has been proven to have a positive and significant influence on Brand Loyalty. This shows that consumers with a high level of environmental awareness tend to be more loyal to products that are in line with sustainability values. Loyalty in this context is not only based on functional satisfaction, but also on value congruence and self-identity as an individual who cares about the environment. Thus, the loyalty formed becomes stronger and is not easily replaced by competitor products.

4. Conclusion

This study aims to analyze the influence of green marketing on brand loyalty in Wonosalam cow milk products with a focus on Generation Z as environmentally conscious consumers in Jombang Regency. The results of the study show that green marketing has a positive and significant effect on brand loyalty. In addition, green marketing also has a significant effect on environmental awareness, and environmental awareness has been proven to have a positive effect on brand loyalty. Furthermore, environmental awareness plays a significant mediating variable in the relationship between green marketing and brand loyalty with the nature of partial mediation. These findings confirm that environmentally-based marketing strategies not only have a direct impact on loyalty, but also through increased consumer environmental awareness.

This research makes a theoretical contribution by enriching the study of sustainable marketing, especially in the context of agribusiness-based local products that are still rarely researched. The novelty of this research lies in testing the direct and indirect relationship between green marketing and brand loyalty through environmental awareness in the context of Generation Z at the local level. Practically, the results of this study provide implications for business actors to develop more authentic and consistent green marketing strategies to increase consumer trust and loyalty. In addition, this research also provides a basis for policymakers in encouraging sustainability-oriented business practices.

However, this study has limitations, including the limited number of samples and the scope of the research area that only focuses on Jombang Regency, so the generalization of results is still limited. In addition, the variables used are still limited to green marketing, environmental awareness, and brand loyalty. Therefore, further research is recommended to expand the research area, increase the number of samples, and add other variables such as green trust, perceived value, and brand image to obtain a more comprehensive model. A longitudinal approach is also recommended to understand the dynamics of consumer behavior in more depth.

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