

The Impact of Green Marketing on Customer Satisfaction: A Case Study of the Food Industry

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ABSTRACT

The sustainable development of the food industry has become increasingly important, and the green marketing mix can serve as a source of competitive advantage in this context. A survey of 1.600 consumers was conducted using a 5-point Likert scale to measure responses. A multivariate regression model was used to test hypotheses. This research demonstrated the positive effect of the green marketing mix on Vietnamese customers' satisfaction in this industry, with green product having the most significant impact on customer satisfaction, while green promotion was the least impactful. These findings suggest practical implications for promoting green marketing in the food industry.

Keywords: Green marketing, customer satisfaction, food industry, Vietnam.

INTRODUCTION:

In the context of climate change and increasing environmental degradation, the trend of green consumption and sustainable development has become a top priority for businesses and consumers worldwide (Peattie & Crane, 2005). Green marketing is understood as the process of producing, pricing, placing, and promoting products to minimize negative environmental impacts (Polonsky, 2011). Especially in the food industry, which relates to public health, food safety, and natural resources, adopting green marketing strategies is crucial for raising awareness, building trust, and increasing customer satisfaction (Chen & Chang, 2013).

Customer satisfaction is a key measure that reflects how well consumers meet consumer expectations for a product or service (Oliver, 1999). When enterprises demonstrate environmental responsibility in their production and communication activities, customers tend to perceive added value not only in terms of functionality but also regarding ethics and society, thereby boosting satisfaction and loyalty (Leonidou et al., 2012). However, in Vietnam, the specific effects of green marketing efforts on customer satisfaction in the food industry have not been thoroughly examined. Although awareness of sustainable consumption is growing, Vietnamese consumers' green buying behavior still depends on economic factors, consumption habits, and their belief in the authenticity of green messages (Le et al., 2024).

Previous studies have primarily explored the relationship between green marketing and purchase intent (Rahbar & Wahid, 2011; Biswas & Roy, 2015), brand loyalty (Yazdanifard & Mercy, 2011), or enterprise image (Chen, 2010). However, the direct and

indirect effects of green marketing on customer satisfaction, especially in emerging economies like Vietnam, remain unclear. This creates a theoretical gap in extending the green marketing research model from pre-purchase behavior to post-purchase evaluation (Nguyen et al., 2023).

Additionally, many food businesses in Vietnam have adopted green strategies such as using biodegradable packaging, eco-labeling, or promoting organic products. However, the impact of these initiatives on customer satisfaction remains unclear. Some consumers view this as a genuine effort toward sustainable development, while others are skeptical of the product's "greenwashing," a phenomenon known as "greenwashing" (Delmas & Burbano, 2011). Therefore, empirical research is required to determine which green marketing factors positively influence customer satisfaction in the Vietnamese food industry.

This study aims to address the theoretical gap in the relationship between green marketing and customer satisfaction, and provide practical evidence to help Vietnamese food businesses improve their marketing strategies for sustainable development and enhance customer experience.

LITERATURE REVIEW

2.1. Green marketing

Initiated by the American Marketing Association (AMA) at their first workshop on green marketing in 1975, titled "Ecological Marketing," "Green Marketing" refers to marketing activities for products and services that are based on environmental factors or perceptions. Businesses that sell environmentally responsible products will have a competitive edge over

those that offer non-environmentally responsible alternatives (Ottman, 2011).

A green product is one that reduces environmental impacts throughout its lifecycle and after it is no longer in use. According to Fan et al. (2011), it is at the center of the 4Ps of green marketing, encompassing all components of the product such as materials used, the production process, and packaging. There are two types of green product characteristics: “five Rs” and product innovation (Peattie & Charter, 2003). The “five Rs” concept aims to make safe post-use recycling of items easier, including repair, reconditioning, reuse, recycling, and remanufacturing. Price is also a crucial factor in the green marketing mix. Price is the main element influencing a customer’s decision to choose a green product (Fan et al., 2011) because green products are typically more expensive than regular items. The desire to spend more money on environmentally friendly goods is increasing in industrialized countries, especially in Europe (European Commission, 2014).

Regarding place, it is often called the distribution network or channel. A place can be either a physical or virtual store (Peattie & Charter, 2003). Anything that reduces the effort for the manufacturer and customer might be considered a green place. Because it provides customers with unmatched convenience and avoids the need for the manufacturer to pay commissions or other fees to many intermediaries, the internet can truly be described as a green place. Additionally, green promotion is a marketing strategy that utilizes advertising, marketing materials, sales promotions, direct marketing, on-site promotions, films, and other promotional tactics without jeopardizing the materialistic and spiritual interests of the consumer (Mahmoud, 2018). Green products will significantly influence clients if advertising strategies are effectively communicated to them (Ansar, 2013).

2.2. The relationship between green marketing and customer satisfaction

Customer satisfaction is an evaluative response to the perceived outcome of a specific consuming experience (Cadotte et al., 1987), including perceptual, evaluative, and psychological processes that contribute to overall enjoyment. Customers are genuinely satisfied when a product aligns with their expectations. According to marketing literature, customer satisfaction results from service quality, and there is a connection between customer satisfaction and loyalty. Additionally, Polonsky et al. (1998) and Rivera-Camino (2007) demonstrated that there is a strong link between customer satisfaction and green marketing methods. Customers have a strong desire to connect with environmentally conscious organizations.

Chen (2010) defines green customer satisfaction as a pleasing level of fulfillment related to consumption that aligns with customers’ environmental, sustainability, and green demands. Meeting or exceeding previous

expectations is essential for achieving green environmental satisfaction (Gelderman et al., 2021). Martínez (2015) argues that a satisfied customer’s perception of a product’s green image builds green trust and satisfaction, which promotes brand loyalty. Therefore, consumers are increasingly willing to support environmentally responsible enterprises.

2.3. Analytical framework

A green product refers to items with environmentally friendly traits such as organic materials, low-emission manufacturing processes, biodegradable packaging, and so on (Peattie & Crane, 2005; Polonsky, 2011). Eco-friendly products add extra value in perceived quality and ethical considerations for consumers, boosting their satisfaction levels (Chen, 2010; Biswas & Roy, 2015). Based on the above arguments, the research hypothesis is proposed as follows:

- **H1:** Green product has a positive relationship with customer satisfaction.

Green prices reflect sustainability costs or environmental values (Leonidou et al., 2012). Appropriate pricing policies that balance sustainable costs and perceived value increase perceptions of fairness and value, contributing to greater satisfaction (Monroe, 2003; Le et al., 2024). Based on the above arguments, the research hypothesis is proposed as follows:

- **H2:** Green price has a positive relationship with customer satisfaction.

Green logistics involves warehousing, transportation, and distribution methods that reduce environmental impact (green logistics, environmentally friendly stores) (Srivastava, 2007). Eco-friendly logistics and distribution channels enhance the shopping experience (convenience, safety) and improve enterprise image, leading to greater satisfaction (Srivastava, 2007; Leonidou et al., 2012). Based on the above arguments, the research hypothesis is proposed as follows:

- **H3:** Green place has a positive relationship with customer satisfaction.

Green promotion involves advertising messages, eco-labels, and transparent information about “green” efforts to encourage sustainable consumption (Peattie & Crane, 2005; Delmas & Burbano, 2011). Clear and honest communication of environmental benefits reduces suspicion of “greenwashing,” builds trust and positive perception, and thus improves satisfaction (Delmas & Burbano, 2011; Chen & Chang, 2013). Based on the above arguments, the research hypothesis is proposed as follows:

- **H4:** Green promotion has a positive relationship with customer satisfaction.

The research model is shown in Figure 1 below:

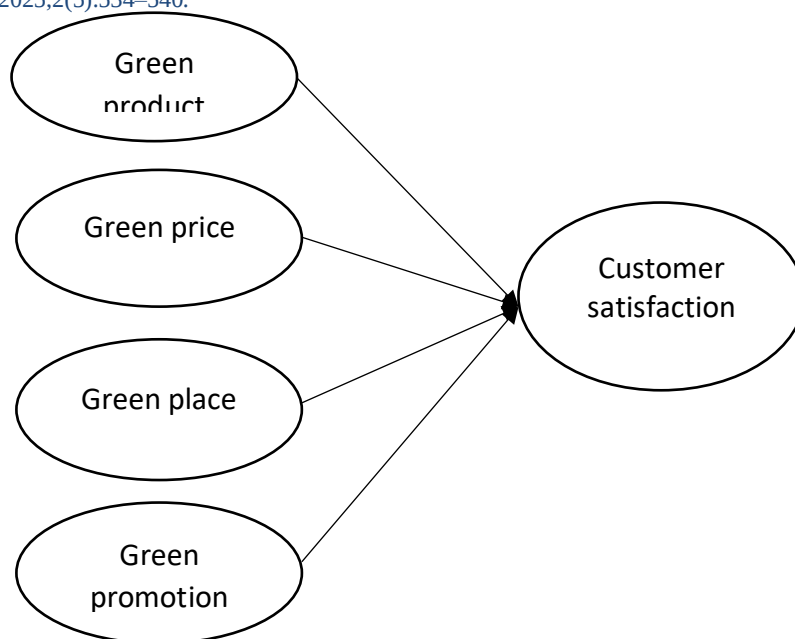


Figure 1: Research model

Source: Compiled by the author

METHODOLOGY

In this study, using quantitative and convenience sampling methods, exactly 23 questions were emailed to respondents via Google Forms, and links were delivered to them through social networking sites such as Facebook, Zalo, Instagram, and email. Likert scale was used in the survey. Respondents were asked to rate their agreement with five components on a scale of 1 to 5, with 1 indicating “strongly disagree” and 5 indicating “strongly agree” (Mugenda & Mugenda, 2003). There were 1.600 recorded responses. Participants in this study ranged in age from 18 to 35 years old. Additionally, survey respondents’ average monthly income ranged from less than 5 million VND to more than 15 million VND. All valid responses are coded and entered into SPSS. The primary goal of this study was to assess how green marketing factors influence customer satisfaction. These tests, including Cronbach’s Alpha, correlation analysis, and regression, will be conducted.

RESULTS

Cronbach’s Alpha values of the scales exceed 0.7, and no observed variables exhibit a corrected item-total correlation below 0.3. Consequently, all scales satisfy the criteria of the Cronbach’s Alpha test and are incorporated into the exploratory factor analysis, in accordance with the recommendation of Hair et al. (2010) (refer to Table 1).

Table 1: Cronbach’s Alpha

Scales	Sign	Items	Source	Cronbach’s Alpha	Corrected item-total correlation
Green product	Pro1	The food products I buy are made from eco-friendly ingredients.	Biswas and Roy (2015)	0.827	0.638
	Pro2	The product comes in recyclable or biodegradable packaging.			0.720
	Pro3	The product manufacturing process minimizes its environmental impact.			0.801
	Pro4	I believe that this product is safe and beneficial for consumers’ health.			0.782
	Pro5	I believe this product demonstrates the company’s dedication to environmental protection.			0.777
Green price	Pri1	The green product’s price is fair for the quality I received.	Leonidou et al. (2012)	0.835	0.621
	Pri2	I am willing to pay a higher price for an environmentally friendly product.			0.765
	Pri3	The price represents the production cost and the product’s sustainable value.			0.707

Scales	Sign	Items	Source	Cronbach's Alpha	Corrected item-total correlation
	Pri4	Enterprises have clear pricing policies for green products.			0.712
Green place	Pla1	Green products are sold at eco-friendly stores.	Leonidou et al. (2012)	0.819	0.602
	Pla2	Transporting and storing products helps reduce waste and pollution.			0.671
	Pla3	I find it easy to access and purchase green products when needed.			0.729
	Pla4	Place channels, whether online or in-person, make it easier for me to buy green products.			0.733
Green promotion	Prom1	Enterprises offer clear and transparent details about how environmentally friendly their products are.	Chen and Chang (2013)	0.823	0.675
	Prom2	I believe in advertising messages that highlight the environmental benefits of the product.			0.711
	Prom3	Promotional activities help me better understand the benefits of green consumption.			0.689
	Prom4	Enterprises honestly communicate about green products without exaggeration.			0.707
	Prom5	I often see ads promoting green products in the media.			0.743
Customer satisfaction	CS1	I'm satisfied with the overall quality of the green product I use.	Chen (2010)	0.816	0.666
	CS2	Using green products has been a positive experience for me.			0.724
	CS3	Green products meet my expectations well.			0.790
	CS4	I will continue supporting this business to promote green products.			0.703
	CS5	Overall, I believe that choosing green products is the correct decision.			0.667

The exploratory factor analysis of the second shows that the factors formed at the Eigenvalue reached 1.763, the KMO reached 0.832 (sig. = 0.00), the total variance explained was 73.291%, and all load factor values were greater than 0.5. These indicators demonstrate that the exploratory factor analysis aligns well with the research data (see Table 2).

Table 2: The results of EFA

Items	Factors				
	1	2	3	4	5
Pro1	0.887				
Pro3	0.873				
Pro2	0.865				
Pro4	0.857				
Pro5	0.841				
CS2		0.888			
CS3		0.874			
CS1		0.863			
CS5		0.850			
CS4		0.848			
Pla1			0.890		
Pla3			0.881		
Pla2			0.872		
Pla4			0.866		
Prom3				0.885	

Items	Factors				
	1	2	3	4	5
Prom1				0.870	
Prom5				0.863	
Prom2				0.820	
Prom4				0.813	
Pri1					0.886
Pri4					0.875
Pri3					0.867
Pri2					0.850
Eigenvalue = 1.763, % of Variance = 73.291%, KMO = 0.832, Sig. = 0.000					

Source: Analysis results from SPSS 26

The results of the correlation test between the independent and dependent variables showed a significance value less than 0.05. Therefore, a linear relationship exists between the independent variables and the dependent variables. Variables that are potentially satisfactory are included in the regression analysis, as recommended by Hair et al. (2010) (see Table 3).

Table 3: Correlation analysis

	CS	Pro	Pri	Pla	Prom
CS	1				
Pro	0.484**	1			
Pri	0.321***	0.273**	1		
Pla	0.314***	0.211***	0.202***	1	
Prom	0.487***	0.178***	0.216**	0.222**	1

***significant at $p < 0.001$, **significant at $p < 0.01$

Source: Analysis results from SPSS 26

The results of the linear regression analysis showed that the R^2 was 0.682, meaning the model explained 68.2% of the variation in the dependent variable. This coefficient is considered quite good (greater than 0.5). Simultaneously, the VIF coefficient is less than 2, indicating there is no multicollinearity among the independent variables. Additionally, the Durbin-Watson value of 1.839 meets the condition that it is within the range that supports the hypothesis that the residuals do not have first-order serial correlation.

Table 4: Multivariate regression analysis

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	SD	Beta			Tolerance	VIF
1	Constant	0.313	0.067		2.526	0.001		
	Pro	0.345	0.078	0.410	2.472	0.003	0.768	1.820
	Pri	0.332	0.065	0.390	2.571	0.012	0.789	1.832
	Pla	0.278	0.070	0.313	2.479	0.004	0.755	1.790
	Prom	0.255	0.068	0.302	2.288	0.010	0.779	1.808

Source: Analysis results from SPSS 26

Table 4 displays four independent variables that are statistically significant and highly reliable, with $p < 0.05$. At a significance level of 5%, the tolerance values are 0.768, 0.789, 0.755, and 0.779, respectively. Based on the regression results in Table 4, the standardized regression model determines the influence of green marketing on customer satisfaction among Vietnam's food industry as follows:

$$CS = 0.410Pro + 0.390Pri + 0.313Pla + 0.302Prom$$

According to the standardized regression equation, green product has the strongest positive relationship with customer satisfaction in the food industry, with a standardized regression coefficient of 0.410. The factors “green price” and “green place” ranked second and third, respectively, with standardized regression coefficients of 0.390 and 0.313. Lastly, “green promotion” showed the lowest association with the customer satisfaction, with a standardized regression coefficient of 0.302. Therefore, hypotheses H1 through H4 are supported.

DISCUSSION AND IMPLICATIONS

Discussion

The findings show that all four aspects of the green marketing mix, green product, green price, green place, and green promotion, positively affect customer

satisfaction in Vietnam's food industry. Among them, green products have the most substantial impact ($\beta = 0.410$), confirming that environmentally friendly products are the primary driver of customer satisfaction. This indicates that Vietnamese consumers are

increasingly valuing products that are safe, organic, and environmentally friendly. This finding is consistent with prior research by Chen (2010) and Biswas and Roy (2015), which show that the quality, safety, and eco-labeling of green products boost consumer trust and satisfaction. In the Vietnamese market, where food safety concerns remain high, green products offer both functional and emotional benefits for consumers.

The second most influential factor is green price ($\beta = 0.390$). Although price-sensitive, Vietnamese consumers are willing to pay more for products that show genuine environmental benefits and transparent pricing strategies. This supports Le et al. (2024), who found that perceived fairness and value-based pricing positively impact satisfaction in green consumption. Therefore, clear communication about how price reflects product quality and environmental protection can boost consumer confidence and satisfaction.

Green place ($\beta = 0.313$) ranks third, showing that environmentally responsible distribution channels, such as eco-friendly packaging, local sourcing, and sustainable logistics, significantly contribute to customer satisfaction. This finding aligns with Leonidou et al. (2012), who highlighted that sustainable place strategies can improve convenience, freshness, and brand trust. For Vietnam's food industry, green distribution practices not only support environmental values but also enhance perceived product quality and safety during delivery.

Finally, green promotion ($\beta = 0.302$) shows the weakest yet still significant influence on customer satisfaction. This suggests that although promotional efforts like green advertising, eco-labels, and corporate social responsibility campaigns do impact perceptions, their effectiveness is limited if consumers see them as insincere or exaggerated. Consistent with Delmas & Burbano (2011), this finding underscores the importance of authenticity and credibility in communication to prevent skepticism toward greenwashing. In Vietnam, improving consumer education and transparent storytelling about environmental initiatives could boost promotional effectiveness.

Implications

Theoretically, this study advances green marketing literature by empirically confirming the impact of all four marketing mix components on customer satisfaction within a developing market setting. Previous research often looked at green product or promotion individually (Chen, 2010; Rahbar & Wahid, 2011), while this study shows the combined and comparative effects of all four factors. The strong influence of green products and pricing highlights the significance of perceived value and authenticity as factors that mediate satisfaction in green consumption. Therefore, this research enhances understanding of how green marketing strategies collectively influence consumer satisfaction in emerging economies.

Practically, the results offer actionable insights for Vietnam's food industry. First, enterprises should focus on developing high-quality, certified green products that meet environmental and safety standards, as these have the most direct impact on customer satisfaction. Second, transparent and value-based pricing should be adopted to justify premium prices and foster consumer trust. Third, green distribution practices such as local sourcing, recyclable packaging, and eco-friendly logistics should be improved to boost both environmental performance and consumer perception. Lastly, genuine communication about green initiatives should replace superficial promotion, focusing on educational content and measurable impact to build long-term loyalty.

CONCLUSION

While conducting this research, it faced flaws and restrictions. It is important to remember during studies, especially when analyzing data, that perception is both a human opinion and a psychological construct. Additionally, factors like individual culture, personality, and beliefs can influence how customers perceive credibility.

Regarding the survey sample, this report could benefit from a larger sample and from testing the findings through more extensive qualitative analysis and diverse data collection strategies. This could reveal that the behavior and the need to purchase green items may differ from what this study initially discovered.

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