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# The Impact of Sustainable Environmental Management in the Food and Beverage Industry on Customer Loyalty: A View of Brand Attitude

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## Abstract

With the development of society and economy, the output value of the service industry has accounted for greater proportion in Taiwan's Gross Domestic Product (GDP) measures, especially in the food and beverage (F&B) industry. When the homogeneity of products and services is higher, the market competition is more intense. Under these circumstances, if a restaurant wants to stand out, then it must not only maintain the relationship of existing customers, but also pay attention to society's perception of it. Therefore, in addition to creating profits and being responsible for the interests of shareholders, enterprises must consider their attitudes toward social responsibility, so that they can achieve a balance between economy and environment. This study took the consumers of Thai Town Cuisine as the empirical subjects, collecting a total of 288 valid questionnaires for a response rate of 80%. The results of statistical analysis and various hypotheses showed that: (1) environmental management has a significant positive correlation with brand attitude; (2) brand attitude has a significant positive correlation with customer loyalty; and (3) environmental management has a significant positive correlation with customer loyalty. Based on these results, this study offers some suggestions and hopes to help managers in the F&B industry to explore how to run their business from the aspect of environmental management, improve product quality, promote customer identity to their brand, and create positive behavior and brand loyalty to the restaurant.

**Keywords:** F&B industry, environmental management, brand attitude, customer loyalty

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## INTRODUCTION

With the progress of society and economy, the proportion of the service industry in Taiwan's GDP has grown yearly, from 53.27% in 1981 to 63.1% in 2016, and employment in this industry account for over 60% of the country's total employed population. According to the survey conducted by the Directorate-General of Budget, Accounting and Statistics (DGBAS) of the Executive Yuan for the Standard Industrial Classification (SIC) System, among all industries, competition in the accommodation and food service sectors is the most intense. The food and beverage (F&B) industry has particularly made a huge contribution to Taiwan's economy. On the other hand, the impact of the F&B industry on the ecological environment cannot be ignored when an economy is developing. As consumers' awareness of green consumption is rising, if F&B companies in a market that is competitive and expected to being environmentally friendly want to stand out, then they must not only strive to maintain their relationship with existing customers, but also implement the concept of

green marketing throughout the design, consumption, production, and services of their business. The positive social perception of F&B companies offering services with low environmental impact will certainly not be ignored.

Under the wave of global sustainable development promoted by the United Nations, corporate sustainability and corporate social responsibility have become the primary concern of operators. Sustainability and social responsibility mean that when a company is developing, it not only must meet its current needs, but also should not damage the needs of future generations. Enterprises are expected to have the voluntariness and consciousness of sustainability and social responsibility. In other words, enterprises are expected to actively fulfill their social responsibilities and maintain or extend the productive use and completeness of resources during their process of economic development. Only by adhering to the attitude of considering social responsibility for operations and shaping a brand image of "energy savings, carbon

reduction, and green brand” can enterprises achieve a balance between commercial interests, social responsibility, and environmental protection, thereby promoting compatibility between the economy and environment and seeking benefits for all stakeholders.

While modern enterprises are committed to economic and social development, they are expected to carry out economic activities with less energy consumption through governance structures, improve production efficiency, and strengthen positive impacts on the environment, so as to build a healthy environment and a stable society. The concept that companies must assume responsibility and action plans for achieving sustainable development is a major change in the traditional economic development model. It emphasizes coordination between the economy and the environment. For example, global warming issues such as ozone holes are global environmental challenges. Mitigating climate change requires the joint efforts of all countries around the world. Today, industrial management should not blindly seek profits without noticing environmental protection. The reduction of greenhouse gases (mainly carbon dioxide) is directly related to the energy structure and energy use of each country, and the energy issue affects the lifeline of national economic development. In order to keep global greenhouse gas emissions at their expected level, all countries need to make a refined and forceful commitment.

Business management is facing growing pressure on environmental management and social responsibility, and environmental management is the core of the interaction between customers and service providers. Because the service provider and the service recipient have close contact during the service process, this contact will inevitably affect the customer’s feeling and evaluation of the service. Hence, this research conducted an empirical study on the impact of environmental management on brand attitude and customer loyalty in the F&B industry. It is expected to help F&B companies to explore how to manage their business, improve product quality, gain customers’ recognition of their brand, and obtain customer loyalty, thereby bringing stable and lasting profits to the company.

## LITERATURE REVIEW

### Environmental Management

Chen et al. (2015) noted that environmental management is an important public opinion. It directly involves the broad perspective of corporate

management and the company’s influence on society, especially in the external image of the company’s products. From a broad perspective, environmental management is defined as the overall intention and direction of an organization. Fernando and Wah (2017) pointed out that a company implements its environmental management through a variety of policies and procedures, and these implementations cannot be separated from the influences of the its diverse consumers. Abdelzaher and Newburry (2016) suggested that in addition to its own environmental protection obligations, enterprises should promote the concept of sustainable development and play a cooperative role in environmental protection.

On the issue of sustainable development, Przychodzen and Przychodzen (2015) indicated that enterprises are basically regarded as managers of natural resources. Therefore, enterprises must not only pursue economic goals, but also conduct environmental management based on the concept of environment protection. Campos and Vazquez-Brust (2016) noted that environmental management is when a company pursues its greatest commercial interests on the basis of emphasizing ethical values and respecting human beings, communities, and natural environment. Corporate sustainable development must cover a broader perspective. When a company seeks maximum profits for its stakeholders, it must not neglect its duties and obligations to society, environment, community, and employees. Tang et al. (2018) stated that in addition to improving product quality and environment maintenance, enterprises should be responsible to employees, directors, and shareholders, actively promote corporate governance, and maintain a sound interaction with society. Enterprises must combine social responsibility with their brands to enhance their corporate image and the additional value of their products.

This study cited three factors as measure for environmental management proposed by Yu et al. (2017): (1) environmental cost, (2) environmental benefit, and (3) environmental responsibility.

### Brand Attitude

Feng et al. (2016) defined brand attitude as a consistent response to an appropriate or inappropriate behavior for a specific brand. Abdul-Rashid et al. (2017) pointed out that brand attitude is customers’ overall assessment of a brand, and this assessment is based on the outstanding benefits or attributes of the brand. The customers judge whether these outstanding benefits

and attributes are good or bad for themselves and then generate an overall brand attitude. Lewis (2017) emphasized that brand attitude is like the total assessment of a brand by customers. It usually lays the foundation for consumer behavior, such as the choice of brand, the attitude of advertisement, brand attitude, and the intention of purchase. Many research studies on advertising effectiveness have proved that brand attitude can cause different consumer behaviors. Delmas and Pekovic (2015) argued that brand attitude includes brand image and brand loyalty. Brand image is an important reference for customers, mainly used to confirm the products and services of the seller or the enterprise, which can identify the difference between their products and services and the competitors'. Rozar et al. (2015) indicated that brand attitude is the customer's perception of the brand. Most customers judge the brand through their subjective perception, and so brand attitude is constructed with the rationality or sensibility of the customers. Tan et al. (2015) suggested that brand attitude is the customer's judgment on the brand, which can express the characteristics of the brand and the customer's perception. Hallam and Contreras (2016) proposed that brand attitude is an association that can reflect the customer's cognition of the brand through memory. If a customer has a better cognition of the products of the company, then he/ she will also have a better brand attitude towards the company's products.

This study took cognition, emotion, and behavioral intention, which were factors of attitude formation proposed by Lu and Liu (2018), as the measures towards attitude.

(1) Cognition: In the advertising attitude model, cognition forms brand trust. Brand trust can be divided into two factors: brand reliability and brand intentions.

(2) Emotion: Positive emotions can lead to a favorable partiality for the product. When the emotion of one person (sender) triggers the emotion of another person (receiver) through the contact, the partiality of attitude will be produced.

(3) Behavioral Intention: When a consumer has an attitude towards a specific brand, this attitude can explain his/her future purchase behavior.

### **Customer Loyalty**

Dai et al. (2017) argued that loyalty can be inferred from the results of satisfaction and brand behavior. They defined loyalty as a strong and lasting commitment, which is presented in the behavior of a

repurchase of a favorite product or service. Ahmadi and Bouri (2017) pointed out that loyalty is a behavioral response to the decision of choosing an alternative item. Saeidi et al. (2015) indicated that customer loyalty is the intensity between personal attitude and repurchase. There are three factors that can influence the intensity of attitude: cognition, emotion, and resistance. In addition, social regulation and environment can also interfere in the intensity of this relationship. Therefore, customer loyalty is deemed as a decision made in choices, representing a behavioral response. Ezzi and Jarboui (2016) pointed out that customer loyalty is the customer's willingness to repurchase a specific product or service in the future. They indicated that there are two kinds of customer loyalty. One is true long-term loyalty, and the other is short-term loyalty. Regarding short-term loyalty, customers will immediately change their choice once they find another better option. Wei et al. (2017) explained that long-term loyalty is a long-term purchase, meaning that it is not easy to change customer habits. The causes of long-term loyalty include restrictions on competition by government regulations, patented technology that limits the production of alternatives, and strong promotional activities. Customer loyalty means that the customer has a preference to the employees, products, or services of a specific company.

This study cited the facets of customer loyalty proposed by He and Shen (2017), including the following.

(1) Word-of-mouth: It is when a user passes his/her service experience through a personal network to let others know of this experience.

(2) Repurchase Intention: Repurchase intention is the willingness of the customer to repurchase the original product or service from the same company - that is, the degree of a customer's psychological commitment to the service.

### **RESEARCH HYPOTHESES**

Chen et al. (2016) suggested that the implementation of an environmental management system can bring the following benefits to an enterprise. In terms of finance, an environmental management system can save costs and increase profitability. In the terms of business management, it can save energy, reduce waste, and increase efficiency. In terms of sales and marketing, it can improve product quality, increase competitiveness, and expand market share. In terms of public relations, it can enhance the corporate image,

strengthen the relationship between the company and the community and environmental groups, and increase customer loyalty. In terms of regulations, it can help the company meet the requirements of regulations and avoid pollution and punishment. Bae (2017) pointed out that good environmental management creates a safe environment for suitable and balanced transactions, thereby enhancing brand attitude. Yu et al. (2017) argued that an enterprise that adopts active environmental management can combine environmental objectives with the functions of its various departments. By using innovative environmental management, the enterprise can be immune from environmental resistance or penalties. It also can enhance its corporate image and consumers' brand attitude towards its products. Based on the above literature, this study establishes the following hypothesis.

**H1:** Environmental management has a significant positive correlation with brand attitude.

Choi and Huwang (2015) found that customer loyalty is affected by brand attitude, and so they emphasized the effective management of brand attitude. Based on past experience, Böttcher and Müller (2016) indicated that advertisements and corporate image will cause a decisive influence on brand attitude, as well as the loyalty and reputation of the brand (the willingness to repurchase). Lewis (2017) mentioned that brand attitude is a characteristic of having a desire or lacking a desire for a brand and a belief in evaluating the characteristic. Lozano (2015) noted that customer loyalty is a result of satisfaction and brand attitude. Lu and Liu (2018) argued that customer loyalty is basically affected by brand attitude. Based on the above literature, this study establishes the following hypothesis.

**H2:** Brand attitude has a significant positive correlation with customer loyalty.

Chen et al. (2016) mentioned that environmental protection is positive pressure for enterprises and can stimulate enterprise innovation. Through innovation, enterprises not only can make environmental protection better, but can also have stronger competitiveness. Based on that, Braam et al. (2016) indicated researchers had found that an effective and integrated environmental management has many benefits for business management, including lower costs, higher efficiency, and better service quality (Lu et al. 2016). Enterprises can even gain a stronger competitive advantage through product or service differentiation (green product or service) and appropriate market

location (customer requests for eco-friendly product/service). Yadav et al. (2017) proposed other advantages for environmental management, including improving corporate image and increasing customer loyalty. He and Shen (2017) pointed out that an environmental management system can reduce expenditures, save costs, gain customers' recognition of the enterprise's efforts, and thus increase customers' purchase intention. For a hotel, investing in environmental management can increase customer loyalty, reduce the waste of resources, and make a sustainable environment for living. Based on the above literature, this study establishes the following hypothesis.

**H3:** Environmental management has a significant positive correlation with customer loyalty.

## RESEARCH METHODS AND DESIGN

### Research Variable Measurement

#### *Environmental management*

The questions in this facet, with reference to the study proposed by Yu et al. (2017), divided environmental management into three factors: (1) environmental cost; (2) environmental benefit; and (3) environmental responsibility.

#### *Brand attitude*

The questions in this facet were designed with reference to the research proposed by Lu and Liu (2018), including the following three factors: (1) cognition; (2) emotion; and (3) behavioral intention.

#### *Customer loyalty*

The questions in this facet were designed with reference to the research proposed by He and Shen (2017), including the following two factors: (1) word-of-mouth; (2) repurchase intention.

### Subjects and Sampling

This study was conducted on the F&B industry and took the consumers of Thai Town Cuisine as the empirical subjects. It used the intercept interview approach to invite customers who were leaving the restaurant to fill out the questionnaire. In total, 288 valid questionnaires were collected for a response rate of 80%. Each collected questionnaire was deemed as a valid sample of this study. After all the questionnaires were collected, this study adopted IBM SPSS Statistics to conduct data analysis and used statistical methods of factor analysis, reliability analysis, regression analysis, and analysis of variance to verify the hypotheses.

**Table 1.** Regression analysis of environmental management factors and brand attitude

Dependent Variable →	Brand Attitude					
	Cognition		Emotion		Behavioral Intention	
Independent Variable ↓						
Environmental management	$\beta$	$\rho$	$\beta$	$\rho$	$\beta$	$\rho$
Environmental cost	1.833*	0.026	1.733*	0.035	1.963*	0.014
Environmental benefit	1.624*	0.041	1.841*	0.022	1.994*	0.011
Environmental responsibility	2.044**	0.000	2.175**	0.000	2.271**	0.000
F value	28.416		31.557		36.243	
P value	0.000***		0.000***		0.000***	
R2	0.275		0.298		0.354	
Adjusted R2	0.246		0.271		0.328	

Note: \* p value < 0.05, \*\* p value < 0.01, \*\*\* p value < 0.001

### Analytical Method

This study used regression analysis to explore the relationship between environmental management, brand attitude, and customer loyalty.

## ANALYSIS AND DISCUSSION

### Factor Analysis of Environmental Management

This study conducted factor analysis on the environmental management scale and extracted three factors. The first factor is “environmental cost” (eigenvalues=2.815,  $\alpha$ =0.83). The second factor is “environmental benefit” (eigenvalues=2.433,  $\alpha$ =0.84). The third factor is “environmental responsibility” (eigenvalues=2.017,  $\alpha$ =0.81). The cumulative variability explained by these three factors in the extracted solution is 75.438%.

After conducting factor analysis of the brand attitude scale, three factors in total were extracted. The first one is “cognition” (eigenvalues=3.114,  $\alpha$ =0.85). The second factor is “emotion” (eigenvalues=2.688,  $\alpha$ =0.87). The third factor is “behavioral intention” (eigenvalues=2.324,  $\alpha$ =0.86). The cumulative variability explained by these three factors in the extracted solution is 77.662%.

Two factors in total were extracted after conducting factor analysis of the customer loyalty scale. The first one is “word-of-mouth” (eigenvalues=3.511,  $\alpha$ =0.90). The second factor is “repurchase intention” (eigenvalues=3.287,  $\alpha$ =0.92). The cumulative variability explained by these two factors in the extracted solution is 84.263%.

### Correlation Analysis between Environmental Management and Brand Attitude

This study used regression analysis to test this hypothesis and the theoretical structure. The result of the first regression analysis is shown in **Table 1**. This regression equation reached a significant level (F value=28.412,  $p$ <0.001), indicating that environmental management has a significant impact on cognition.

Among them, “environmental cost”, “environmental benefit”, and “environmental responsibility” have a significant positive impact on the cognition factor of brand attitude, all of which hit a significant level ( $\beta$ =1.833,  $p$ <0.05,  $\beta$ =1.624,  $p$ <0.05,  $\beta$ =2.044,  $p$ <0.01).

The result of the second regression analysis is shown in **Table 1**. This regression equation reached a significant level (F value = 31.557,  $p$ <0.001), indicating that environmental management has a significant impact on emotion. Among them, “environmental cost”, “environmental benefit”, and “environmental responsibility” have a significant positive impact on the emotion factor of brand attitude, all of which reached a significant level ( $\beta$ =1.733,  $p$ <0.05,  $\beta$ =1.841,  $p$ <0.05,  $\beta$ =2.175,  $p$ <0.01).

The result of the third regression analysis is shown in **Table 1**. This regression equation reached a significant level (F value = 36.243,  $p$ <0.001), indicating that environmental management has a significant impact on behavioral intention. Among them, “environmental cost”, “environmental benefit”, and “environmental responsibility” have a significant positive impact on the behavioral intention factor of brand attitude, all of which hit a significant level ( $\beta$ =1.963,  $p$ <0.05,  $\beta$ =1.994,  $p$ <0.05,  $\beta$ =2.271,  $p$ <0.01). Therefore, H1 is supported.

### Correlation Analysis of Environmental Management and Brand Attitude on Customer Loyalty

This study used regression analysis to test this hypothesis and the theoretical structure. The result of the first regression analysis is shown in **Table 2**. This regression equation reached a significant level (F value =31.433,  $p$ <0.001), indicating that environmental management has a significant impact on word-of-mouth. Among them, “environmental cost”, “environmental benefit”, and “environmental responsibility” have a significant positive impact on the

**Table 2.** Regression analysis of environmental management factors and customer loyalty

Dependent Variable →	Customer Loyalty							
	Word of Mouth		Repurchase Intention		Word of Mouth		Repurchase Intention	
Independent Variable ↓	β	ρ	β	ρ	β	ρ	β	ρ
Environmental management								
Environmental cost	2.055**	0.000	2.089**	0.000				
Environmental benefit	2.112**	0.000	2.186**	0.000				
Environmental responsibility	2.233**	0.000	2.275**	0.000				
Brand attitude								
Cognition					2.147**	0.000	2.196**	0.000
Emotion					2.341**	0.000	2.358**	0.000
Behavioral intention					2.256**	0.000	2.411**	0.000
F value	31.433		35.837		33.186		38.751	
P value	0.000***		0.000***		0.000***		0.000***	
R2	0.301		0.347		0.324		0.378	
Adjusted R2	0.275		0.323		0.306		0.351	

Note: \* p value < 0.05, \*\* p value < 0.01, \*\*\* p value < 0.001

word-of-mouth factor, all of which reached a significant level ( $\beta=2.055$ ,  $p<0.01$ ,  $\beta=2.112$ ,  $p<0.01$ ,  $\beta=2.233$ ,  $p<0.01$ ). The result of the second regression analysis is shown in **Table 2**. This regression equation reached a significant level (F value = 35.837,  $p<0.001$ ), denoting that environmental management has a significant impact on repurchase intention. Among them, “environmental cost”, “environmental benefit”, and “environmental responsibility” have a significant positive impact on the repurchase intention factor, all of which reached a significant level ( $\beta=2.089$ ,  $p<0.01$ ,  $\beta=2.186$ ,  $p<0.01$ ,  $\beta=2.275$ ,  $p<0.01$ ). Therefore, H3 is supported.

The result of the third regression analysis is shown in **Table 2**. This regression equation reached a significant level (F value = 33.186,  $p<0.001$ ). It indicated that brand attitude has a significant impact on word-of-mouth. Among them, “cognition”, “emotion”, and “behavioral intention” have a significant positive impact on the word-of-mouth factor, all of which reached a significant level ( $\beta=2.147$ ,  $p<0.01$ ,  $\beta=2.341$ ,  $p<0.01$ ,  $\beta=2.256$ ,  $p<0.01$ ). The result of the fourth regression analysis is shown in **Table 2**. This regression equation hit a significant level (F value = 38.751,  $p<0.001$ ), meaning that brand attitude has a significant impact on repurchase intention. Among them, “cognition”, “emotion”, and “behavioral intention” of brand attitude have a significant positive impact on the repurchase intention factor, all of which reached a significant level ( $\beta=2.196$ ,  $p<0.01$ ,  $\beta=2.358$ ,  $p<0.01$ ,  $\beta=2.411$ ,  $p<0.01$ ). Therefore, H2 is supported.

**CONCLUSIONS**

According to the research results herein, environmental management and brand attitude have the most direct impact on customer loyalty. Environmental management and brand attitude are the most important

considerations for customers when choosing a F&B company. Under the strong competitive setting of various F&B businesses, many well-known F&B companies have attracted customers with price reductions or promotions in order to gain greater a competitive advantage, but many of them have neglected the importance of environmental management. However, customers’ environmental awareness is continuing to increase. When customers go to a restaurant, they not only demand food safety, but also pay more attention to environmental sanitation. Today’s customers place great emphasis on brands, especially the quality stability of a brand. If a customer is harmed in the dining process and cannot continue to recognize the quality of the restaurant, then this may cause great harm to the corporate image of this restaurant.

**SUGGESTIONS**

Based on the research results, this study proposes the following suggestions.

1. F&B companies must keep up with the times, must carry out good environmental management, must provide a friendly F&B environment and healthy and sustainable meals, and should connect well with customers. When these efforts are accomplished, the brand will undoubtedly be recognized by customers. If these efforts can be strengthened with appropriate activities, public relations, and marketing, then the brand can even touch the strong emotions of customers, and brand attitude will then be deeply rooted in their hearts.

2. Climate warming is one of the major crises for the world in recent years. It not only damages human health, but also affects sustainable development of the F&B industry. It is imperative to mitigate climate change, and carbon reduction is a top priority. Under

these circumstances, people are paying greater attention to environmental protection and health and also have the awareness of green consumption. F&B companies must take the lead in the implementation of environmental management. For example, F&B companies can carry out green programs, such as respecting the environment, paying attention to the production of foods, making good use of food waste for carbon farming, strictly selecting food sources, adopting energy-efficient cooking methods, improving sewage, exhaust gas, and garbage disposal, reducing carbon emissions in the stages of planting or feeding, transportation, production or processing, and sales, and utilizing better resources. Customers should be guided to comply with the various indicators and measures of the environmental management set by the F&B companies, so as to achieve the expected benefits of environmental management. In the long term, the F&B industry can achieve a win-win result that balances the environment and commercial benefits.

3. F&B companies must understand the demands of customers and transform these demands into essential elements for product design and service planning. What customers buy is the value or benefit of the product or service and not just the physical product or service itself. Operators should use the outcome-driven method to speculate on the criteria that the target audience uses to determine the value of the product or service and use them to generate ideas for the design of their products and services that customers want. This is also great practice for identifying opportunities and segmenting markets. The industry issues that the F&B industry must face are not just safety and environmental protection. For real business benefits, resource protection, environmental maintenance, safety, and health, allocating resources from the perspective of sustainable development and delivering the concepts of green consumption and green diet are trends that the F&B industry should focus on in the future.

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