The Influence of Environmentally Friendly Concept on Tourists' Breakfast Buffet Consumption Behavior

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Abstract

Purpose

This study investigates the influence of environmentally friendly concepts on tourists' breakfast buffet consumption behavior, with a particular emphasis on reducing food waste in hotels.

Design/methodology/approach

160 tourists, equally divided between a hotel in Bangkok and a hotel on an island in Thailand, participated in a quantitative study. To evaluate the predictive ability of eco-friendly practices on food waste behavior, data were gathered via structured questionnaires and analyzed using multiple regression analysis and descriptive statistics in JAMOVI version 2.5.6.

Findings

Both urban and island tourists placed a high value on hotels that implemented eco-friendly practices, particularly those that reduced food waste. With warning labels having a major impact on decreases in food waste, the island hotel showed excellent predictive power. The Bangkok hotel model, on the other hand, lacked statistical significance. Overall, the findings support the notion that environmentally conscious hotel operations can foster sustainable consumption patterns, reduce food waste, and promote the health and well-being of visitors.

Originality

By comparing the settings of urban and island hotels, this study contributes to the growing body of research on sustainable hospitality, highlighting how environmentally friendly practices impact consumer behavior. It provides factual evidence that environmental management techniques, particularly those related to food waste, can be more effective in settings with limited resources.

Practical implications

The findings suggest that hotels can reduce food waste by implementing visible and persuasive environmental messages, adopting stricter eco-friendly policies, and tailoring strategies to their operating contexts.

Keywords: Environmentally Friendly Concept; Green Concept; Breakfast Buffet; Consumption Behavior; Health and Quality of Life

Introduction

Sustainability can only be achieved by properly managing the natural resources and the proper disposal of pollutants and toxic wastes. It is also important to promote recycling and waste reduction by consumers, companies, and industries. Moreover, it is also crucial to help developing countries adopt sustainable consumption trends by 2030 (UNDP Global, 2025). Another critical goal that Thailand is keen on achieving as part of its global endeavors to develop the Sustainable Development Goals (SDGs) is Goal 12, to which

Thailand has made commitments. Goal 12: Ensure Sustainable Consumption and Production Patterns also includes several objectives, among which one is to reduce the emission of harmful chemicals into the environment (12.4), to reduce food waste (12.3), to manage natural resources sustainably and effectively (12.2) and to spread awareness among people about sustainable development in society (12.8) (Sustainable Development Goal Research and Support Project, 2018).

The 20-Year National Strategy of Thailand aims to promote growth that prioritizes environmental sustainability, achieving sustainable development in all aspects, including social, economic, environmental, and governance. The strategy is based on the location approach, which involves defining strategies and plans and enables all concerned parties to participate directly. The underlying beliefs in terms of this approach are based on shared growth, which will indeed bring about sustainability of the future generations and aims at creating sustainable growth within a climate-friendly society, through the reduction of greenhouse gas emissions and adaptation towards minimizing the effects of natural disasters and climate change (Office of the National Economic and Social Development Council, 2019).

The Bio-Circular-Green (BCG) economic model is a developing strategy that aligns with the United Nations' Sustainable Development Goals (SDGs) and is one of the key principles guiding Thailand's economic and social development. It advocates for the application of science, technology, and innovation to make four sectors namely, agriculture and food, energy and materials, health and medicine, and tourism and services more competitive (The Office of National Higher Education Science Research and Innovation Policy Council, 2019).

Over the past few years, the tourism sector has undergone a tremendous change, with an increasing number of tourists opting to use eco-friendly products. To a great extent, this transition can be attributed to the growing environmental awareness and the desire to make a positive contribution to sustainability. Energy efficiency is becoming a popular feature in hotels and resorts, and it is preferred by environmentally conscious guests (Llanso, 2024). Eco-hotels normally comply with certain rules to ensure that the environmental effects of tourism are reduced. Although there is no standard definition of an eco-friendly hotel, hotels that take into consideration the preservation of energy and the minimization of pollution are considered. Most environmentally friendly hotels proudly display their certification, indicating a commitment to sustainable practices (Zhichao and Yashu, 2024).

Energy management systems implemented in hospitality facilities would also ensure that their guests have a comfortable, personalized stay without wasting energy. For instance, intelligent HVAC systems and lighting controls can be configured to adjust according to occupancy and preferences, ensuring that rooms have optimal temperatures and lighting. Such care also saves energy in hotels, while creating a positive memory for guests, who are more likely to visit the hotel again or recommend it to others (Llanso, 2024). The environmentally and climate-conscious hotel management is also paramount in encouraging tourists to participate in conserving the environment. The management is not only beneficial to the hotel but also to the community, society, and tourists.

The purpose of this research is to investigate the effects of the environmentally friendly notions on the behavior of tourists regarding consuming a breakfast buffet. Food waste reduction in hotels is a crucial concern in sustainable development within the tourism sector. The study will enhance the understanding of the impact of eco-friendly operations in the hospitality industry and contribute to improved environmental management practices. Additionally, it is expected to have a positive impact on the health and quality of life of tourists by promoting sustainable consumption, reducing the environmental impact of leftover food, and fostering a sustainable environment for a better vacation experience.

Method

Participants

The sample of the proposed research was a group of tourists who used the services of the breakfast buffet in a hotel in Bangkok and an island hotel. According to the computations, the minimum required sample for the predictor variable was 74 participants based on predictor variables with four to six predictors. Thus,

160 respondents were chosen for analysis, consisting of 80 tourists from each of the hotels, for a total of 160 respondents. The non-random method was used to select the participants.

Procedure

The research approach employed was quantitative. The research design employed an exploratory and correlational approach to analyze the interrelationship between environmentally friendly practices and tourists' consumption behavior in the breakfast buffet. This study employed a designed questionnaire, which was administered to tourists in urban and island hotels. The collected data was a result of four weeks, and the hotel management teams of the two locations were cooperative in the data collection. During their breakfast buffet time, tourists were approached; thus, the sample obtained consisted of tourists who had a direct experience of the buffet service. Informed consent was taken, and all the participants were voluntarily recruited.

Instrument

A self-administered questionnaire was used as the instrument for data collection and was divided into three sections. Part 1 provided demographic details, including age, gender, and educational background. Part 2 collected the opinions about the environmentally friendly practices that the hotel carries out and responded with the Likert scale. Part 3 also explored the tourists' attitudes towards their behavior of consuming breakfast buffets, and a rating scale was used accordingly. Three experts tested the validity of the questionnaire, and the result showed that all the items had an Item-Objective Congruence (IOC) index above 0.67. Cronbach's alpha coefficient was used to determine reliability, and a reliability score of 0.956 was obtained, which implies that the instrument was very reliable in collecting data.

Data analysis

The statistical analyses were conducted in JAMOVI 2.5.6. The demographic data and tourists' perceptions of environmentally friendly practices were described using frequency, percentage, mean, and standard deviation as descriptive statistics. Inferential statistical tests, such as multiple regression analysis, were done to test the associations between the environmentally friendly practices and breakfast buffet consumption behavior. With the help of such analyses, important patterns were detected, and the predictive value of environmentally friendly practices concerning food wastage and consumption behaviour was measured.

Results

The demographic information indicated that in terms of gender, the island hotel had more guests who were females (70 percent) than males (30 percent). In contrast, the urban hotel had almost equal guests with the girls (53.8 percent) slightly higher than the boys (46.3 percent). In terms of age, the highest age group at the island hotel was above 50 years (52.4%), compared to the Bangkok hotel, which had a higher proportion of 31 to 40 years (47.5%). Regarding marital status, the island hotel consisted of almost equal proportions of single and married (50% and 47.5%, respectively), with most of the guests in the Bangkok hotel being single (70%). Regarding education, the guests of both hotels were mainly bachelor's degree holders, 56.3 and 63.7, respectively, at the island and the Bangkok hotels. Concerning occupation, the employees at the company were the highest in the two hotels, with occupancy of 42.5 and 52.5 in the island and Bangkok hotel, respectively. Lastly, monthly income distributions demonstrated that the highest income at the island hotel was 20,001-30,000 baht (47.5%), in comparison with the 10,000-20,000 baht (38.8%) and 20,001-30,000 baht (30%) at the Bangkok hotel.

Table I. presents the means and standard deviations of opinions regarding environmentally friendly practices.

	Hotel (Island)		Hotel (Bangkok)	
	□̄	S.D.	□̄	S.D.
Sum A	4.61	0.745	4.65	0.888
Sum B	4.81	0.635	4.87	0.763

Sum C	5.49	0.798	5.67	0.912
D	2.26	0.725	2.45	0.855
E	2.89	1.29	2.52	1.31

**Significant differences, p< .01.
Sum A = The total average score of opinions regarding adherence to environmentally friendly principles at home
Sum B = The total average score of opinions regarding environmentally friendly practices
Sum C = The total average score of opinions regarding the importance of hotels in implementing environmentally friendly principles
D = The perceived level of messages on warning labels about the quantity of food taken before consumption
E = The amount of food waste

The comparative results between the island hotel and the Bangkok hotel are as follows. Regarding opinions on adherence to environmentally friendly principles at home (Sum A), the island hotel had a mean score of 4.61 (S.D. = 0.745), while the Bangkok hotel had a mean of 4.65 (S.D. = 0.888). For opinions on environmentally friendly practices (Sum B), the island hotel scored 4.81 (S.D. = 0.635) compared to 4.87 (S.D. = 0.763) at the Bangkok hotel. Opinions on the importance of hotels implementing environmentally friendly principles (Sum C) yielded mean scores of 5.49 (S.D. = 0.798) for the island hotel and 5.67 (S.D. = 0.912) for the Bangkok hotel. The perceived level of messages on warning labels about the quantity of food taken before consumption (D) was 2.26 (S.D. = 0.725) for the island hotel and 2.45 (S.D. = 0.855) for the Bangkok hotel. Finally, the amount of food waste (E) averaged 2.89 (S.D. = 1.29) at the island hotel and 2.52 (S.D. = 1.31) at the Bangkok hotel.

Results of Environmentally Friendly Practices Influencing Tourists' Breakfast Buffet Consumption Behavior

Multiple correlation analysis was conducted to examine the relationships among the variables studied. The correlation coefficients between variables ranged from 0.212 to 0.760, which did not exceed the threshold of 0.80 (Cooper and Schindler, 2006). This indicates that the variables were not highly correlated with each other. Furthermore, the study considered the Variance Inflation Factor (VIF) to test for multicollinearity. The VIF values of the independent variables ranged from 1.16 to 4.71, all of which were below the cutoff value of 10, indicating no multicollinearity among the independent variables (Lee et al., 2000).

Table II. Presents the normality test results.

	Hotel (Island)		Hotel (Bangkok)	
	Statistic	p-value	Statistic	p-value
Normality test (Shapiro-Wilk)	0.973	0.088	0.951	0.104

This indicates that the data used in the analysis met the preliminary assumptions.

Table III. Results of the predictive equation analysis for the amount of food waste at the hotel

Predictor variables	Predictive equation	
	Hotel (Island)	**Hotel (Bangkok)**
Sum A	-0.0637	0.1317
Sum B	0.4685	0.0362
Sum C	-0.2190*	-0.1038

D	0.7256**	0.1187
R	0.901	0.167
R^2	0.813	0.0280
Adjusted R^2	0.803	-0.0239
F	8.13	0.539
P	<.001	0.707

**Significant differences, p< .01., *Significant differences, p< .05.

A normality test was conducted to assess whether the data were normally distributed.
The interpretation: if the p-value was greater than 0.05, the data were considered normally distributed; if the p-value was less than or equal to 0.05, the data were deemed not normally distributed.
Results of the predictive equation analysis for the amount of food waste at both hotels are as follows.
Hotel (Island):

a) Regression coefficients (Beta): Sum A: -0.0637 (not statistically significant) Sum B: 0.4685 (not statistically significant) Sum C: -0.2190* (statistically significant) D: 0.7256** (highly statistically significant)
b) Model performance: R = 0.901 (very strong correlation between predictor variables and the dependent variable)
R^2 = 0.813 (the model can explain 81.3% of the variance in the dependent variable)
Adjusted R^2 = 0.803 (the adjusted value remains high)
F = 8.13, P < .001 (the model is statistically significant)

Variable D had the highest influence on the amount of food waste, exhibiting a positive relationship. Sum C had the second-highest influence, showing a negative relationship. This model indicates high effectiveness in predicting the amount of food waste at the island hotel.
Hotel (Bangkok):

a) Regression coefficients (Beta): Sum A: 0.1317 (not statistically significant), Sum B: 0.0362 (not statistically significant), Sum C: -0.1038 (not statistically significant), D: 0.1187 (not statistically significant)
b) Model performance: R = 0.167 (very low correlation between predictor variables and the dependent variable)
R^2 = 0.0280 (the model can explain only 2.8% of the variance in the dependent variable)
Adjusted R^2 = -0.0239 (the adjusted value is negative)
F = 0.539, P = 0.707 (the model is not statistically significant)

None of the variables had a statistically significant influence on the amount of food waste. This model did not reveal effectiveness in predicting the amount of food waste at the Bangkok hotel.

Discussion

The results of the study titled "The Influence of Environmentally Friendly Concept on Tourists' Breakfast Buffet Consumption Behavior" are as follows.
The hotel guests at the island tended to be predominantly female and older in age, whereas the Bangkok hotel attracted a more gender-diverse group with a younger age profile. The Bangkok hotel had a higher proportion of single individuals, while the island hotel had a greater share of married guests. Both hotels' customers were primarily holders of bachelor's degrees. Company employees comprised the main occupational group for both hotels; however, the island hotel exhibited greater occupational diversity.

Additionally, customers at the island hotel tended to have higher income levels compared to those at the Bangkok hotel.

Regarding opinions on environmentally friendly practices, the mean scores for adherence to environmentally friendly principles at home (Sum A), opinions towards environmentally friendly practices (Sum B), and the perceived importance of hotels implementing environmentally friendly principles (Sum C) were all high (>4). This may indicate general satisfaction or positive evaluation in these areas. In contrast, the mean scores for perceived level of messages on warning labels about the quantity of food taken before consumption (D) and the amount of food waste (E) were low (< 3), suggesting potential problems or dissatisfaction in these aspects. The Bangkok hotel generally received higher evaluations in the variables of adherence to environmentally friendly principles at home (Sum A), environmentally friendly practices (Sum B), importance of hotels in implementing environmentally friendly principles (Sum C), and perceived level of messages on warning labels about the quantity of food taken before consumption (D). However, the island hotel scored higher only in the amount of food waste variable (E). Notably, the Bangkok hotel exhibited greater variance (standard deviation) across these measures, indicating a wider diversity of opinions. These findings align with the study by Juvan, Grün, and Dolnicar (2018), which identified several factors that are associated with higher food waste at hotel breakfast buffets: with some countries of origin wasting significantly less food than others, and the combination of more food being available in the breakfast area and more people being in attendance increases food waste.

The model for the island hotel proved high effectiveness in predicting the amount of food waste, with perceived level of messages on warning labels about the quantity of food taken before consumption (D) (which had a low mean in the previous data) having the greatest influence. This can be explained by the fact that island hotels often face limited resources, both in terms of raw materials and waste management. Therefore, they require an efficient food management system to reduce food waste generated by consumers, especially in buffet systems where guests tend to serve themselves more food than needed by knowing and becoming aware of the impacts of the leftover food whether environmental, costs, or their reputation in the eyes of their peers, the tourists will tend to minimise the volume of the food they carry along and this will consequently reduce the volume of food wastages. That is in line with Greene, Grad, Zinn, and Dolnicar (2024), who proposed a new intervention that, although unsuccessful in the present research, has the potential to cut down buffet plate waste, provided that guests could be inspired to adhere to meal instructions. The network of the Bangkok hotel could not anticipate the quantity of food waste. Moreover, the circumstances cause the amount of leftover food to vary at both hotels. This can be attributed to the fact that some island hotels have adopted stricter environmental policies, such as Zero Waste programs, composting programs, or community-based waste management programs. On the contrary, hotels in cities are less concerned with these problems since they are concerned primarily with fast service, and they compete primarily on convenience. The findings are in line with Pizzo, Suter, Bauer, and Reisch (2025), who presented the message associated with food waste, emphasizing the salience of food waste as a problem and that the restaurant is actively engaged in minimizing the food waste, and encouraging its guests to participate in their efforts before they choose their meal.

Findings that have been obtained not only improve the effectiveness of food waste management in hotels, but also contribute to the health and quality of life of tourists. This is achieved through the promotion of sustainable consumption practices and a greater awareness of the environmental impacts of food waste. Such practices foster environmentally friendly behavioral changes that not only contribute to reducing food waste but also positively impact the overall health of tourists, encouraging them to actively engage in environmental conservation activities.

Conclusions

This paper has confirmed that the environmental friendliness concept can significantly affect the consumption behavior of tourists in breakfast buffets. The results show that following environmentally friendly principles by hotels will help reduce food waste and encourage sustainable consumption practices,

which in turn favorably affect the health and quality of life of tourists. In particular, sustainable consumption practices can promote food waste reduction, which not only mitigates the negative environmental effects but also helps maintain healthier diets, thereby avoiding health risks associated with overeating. The island hotel was also characterized by a strong level of efficiency in forecasting the volume of food waste depending on the perceived degree of warning label messages about the volume of food consumed after being taken. The study is important in enhancing knowledge of food waste management in the tourism sector and promoting environmental sustainability in hotels. The findings can be utilized in the development of sustainable operational practices in the hospitality and tourism sectors, which would positively impact the health and quality of life of both tourists and the broader community in the future. Future research in this field should focus on developing effective strategies to promote sustainable consumption patterns in hotels, raising awareness about food waste minimization, and evaluating the impact of these practices on sustainable development, as well as the health and quality of life of tourists.

Acknowledgements

The project above has been reviewed and approved according to the Standard Operating Procedures by the Ethical Committee of the Research Institute. The Research Ethics Committee of Kasembundit University has exempted the following study, which is to be carried out in compliance with the international guidelines for human research protection, as the Declaration of Helsinki, The Belmont Report, CIOMS Guideline, International Conference on Harmonization in Good Clinical Practice (ICH-GCP) [Study code KBU R015/66P]

Financing

This article is part of a research project on Sustainable Green Tourism and Hospitality Management, funded by Kasem Bundit University.

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