The Influence of Social Norms and Attitude Towards Food Waste Reductions at Five-Star Hotels in Jakarta

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Abstrak. *Studi ini menyelidiki pengaruh norma dan sikap sosial terhadap niat untuk mengurangi sampah makanan di hotel bintang lima di Jakarta. Desain penelitian kuantitatif digunakan, mengumpulkan data dari 220 peserta, termasuk tamu hotel, pelanggan restoran, dan karyawan hotel, melalui kuesioner daring. Data dianalisis menggunakan Structural Equation Modeling–Partial Least Squares (SEM-PLS). Hasilnya menunjukkan bahwa norma sosial (β = 0,34, p < 0,001) dan sikap (β = 0,45, p < 0,001) secara signifikan dan positif memengaruhi niat pengurangan sampah makanan. Model tersebut memperhitungkan 61,6% varians dalam niat perilaku (R² yang disesuaikan), yang mencerminkan daya prediksi sedang. Temuan ini mendukung Teori Perilaku Terencana dan memberikan wawasan teoretis tentang perilaku konsumen di industri perhotelan. Dari perspektif praktis, studi ini menekankan perlunya kampanye edukasi yang berorientasi pada tamu dan strategi komunikasi yang digerakkan secara sosial untuk menumbuhkan budaya konservasi makanan. Keterbatasan studi ini antara lain ketergantungan pada data yang dilaporkan sendiri, yang mungkin rentan terhadap bias keinginan sosial. Penelitian selanjutnya dianjurkan untuk mengeksplorasi faktor-faktor tambahan, seperti persepsi kendali perilaku, norma moral, dan kesadaran lingkungan, guna memperkuat kapasitas penjelasan model dan mendorong praktik berkelanjutan yang lebih komprehensif di sektor perhotelan.*

Kata kunci: *Sampah Makanan; Norma Sosial; Sikap; Perhotelan Berkelanjutan; Hotel Bintang Lima; Jakarta.*

Abstract. *This study investigates the influence of social norms and attitudes on the intention to reduce food waste in five-star hotels in Jakarta. A quantitative research design was employed, collecting data from 220 participants, including hotel guests, restaurant patrons, and hotel employees, through an online questionnaire. The data were analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS). The results indicate that both social norms (β = 0.34, p < 0.001) and attitudes (β = 0.45, p < 0.001) significantly and positively affect food waste reduction intentions. The model accounts for 61.6% of the variance in behavioral intention (adjusted R²), reflecting moderate predictive power. These findings support the Theory of Planned Behavior and contribute theoretical insights into consumer behavior in the hospitality industry. From a practical perspective, the study emphasizes the need for guest-oriented educational campaigns and socially-driven communication strategies to foster a culture of food conservation. The study's limitations include the reliance on self-reported data, which may be subject to social desirability bias. Future research is encouraged to explore additional factors, such as perceived behavioral control, moral norms, and environmental awareness, to strengthen the model's explanatory capacity and promote more comprehensive sustainable practices within the hospitality sector.*

Keywords: *Food Waste; Social Norms; Attitude; Sustainable Hospitality; Five-Star Hotels; Jakarta.*

Introduction

Food waste has become a significant global issue, receiving growing attention from scholars, industry professionals, and policymakers. According to the Food and Agriculture Organization (FAO, 2021), approximately one-third of the food produced for human consumption is wasted annually, contributing to 8–10% of global greenhouse gas emissions. In Indonesia, food waste constitutes around 44% of total domestic waste (Waste4Change, 2023), exacerbating the country's waste management challenges. The hotel industry, particularly five-star hotels, plays a substantial role in food waste generation. Features such as all-you-can-eat buffets, room service, and high food presentation standards often lead to overproduction and excessive food consumption. For example, a study at Novotel Jakarta Cikini reported an average of 123 kg of food waste per day before managerial interventions were implemented (Mi'raj et al., 2023). This highlights the significant role luxury hotels play in promoting food waste reduction. While many studies have addressed the technical and operational aspects of food waste management in hotels, such as food redistribution, composting, and stock control, the psychological factors influencing food waste reduction are less explored.

Specifically, the influence of psychosocial factors, such as social norms and attitudes, on food waste reduction intentions remains underexamined, especially in five-star hotels in Jakarta, where behavioral interventions are often overlooked in favor of operational solutions. This study builds upon the framework of Muposhi and Musavengane (2023), who explored social marketing and corporate responsibility strategies in South African hotels, although their findings may not fully apply to the Indonesian context. Additionally, recent studies, such as Zain et al. (2024), suggest that innovative behaviors may negatively correlate with food waste reduction, underscoring the need for more localized behavioral investigations. Moreover, emerging frameworks like the Value-Belief-Norm model (Fatimah et al., 2024) and the Norm Activation Model (Goeltom et al., 2020) provide valuable perspectives on food waste reduction behaviors. Social norms refer to the perceived social pressures to engage in certain behaviors, while attitudes refer to an individual's evaluation of those behaviors. Both constructs are central to the Theory of Planned Behavior (Ajzen, 1991), which asserts that behavioral intention is the most immediate predictor of actual behavior. Understanding these psychosocial drivers in hotel food consumption is critical for developing more effective, behavior-based food waste management strategies. This study aims to address the following research questions: How do social norms influence the intention to reduce food waste? How do attitudes influence the intention to reduce food waste? By adopting the Theory of Reasoned Action (TRA), which explains that behavioral intention is shaped primarily by attitude and social norms (Fishbein & Ajzen, 1980), this research explores how these two factors influence individuals' intentions to reduce food waste in five-star hotels in Jakarta. The findings are expected to contribute to the theoretical understanding of behavioral models in the hospitality industry and offer practical recommendations for hotel management, such as developing guest-oriented educational campaigns and fostering pro-environmental food cultures in hotel operations.

Research Methodology

This study employed a quantitative research approach to examine the influence of social norms and attitudes on the intention to reduce food waste among individuals in five-star hotels in Jakarta. The research was grounded in the Theory of Reasoned Action (TRA) by Fishbein and Ajzen (1975), focusing on two primary factors: attitudes towards food waste reduction and subjective norms, which were conceptualized as social norms. The target population included hotel guests, restaurant patrons, and current or former employees with direct experience in five-star hotel environments in Jakarta. A purposive sampling technique was used, with inclusion criteria specifying guests who had stayed at a five-star hotel within the last 12 months, patrons who had dined at a five-star hotel buffet in the past six months, and employees with at least six

months of experience in food and beverage or operational roles. The required minimum sample size was calculated using G*Power software, assuming an effect size of 0.15, α = 0.05, and a power of 0.80, which indicated a minimum of 107 respondents. The final valid dataset consisted of 220 respondents, surpassing the minimum requirement. Data collection was carried out using an online questionnaire distributed via social media and professional networks, such as WhatsApp, LinkedIn, and Instagram. The instrument, adapted from Muposhi and Musavengane (2023), measured three key constructs: social norms (4 items), attitude (3 items), and intention to reduce food waste (3 items), each rated on a 6-point Likert scale. All items were pre-tested for clarity and internal consistency. For data analysis, Structural Equation Modeling–Partial Least Squares (SEM-PLS) was applied using SmartPLS version 4.0. The analysis consisted of two main stages: the measurement model evaluation, which assessed construct reliability and validity through indicators such as loading factors (> 0.70), Average Variance Extracted (AVE > 0.50), Composite Reliability (CR > 0.70), and discriminant validity (HTMT ratio < 0.90), and the structural model evaluation, which tested the hypothesized relationships using path coefficients, R² values, effect size (f²), and significance testing through bootstrapping with 5,000 resamples.

Result and Discussion

Results
This study employed Structural Equation Modeling–Partial Least Squares (SEM-PLS) using SmartPLS version 4.0. The analysis was conducted in two main stages: (1) evaluation of the measurement model (outer model), and (2) evaluation of the structural model (inner model).

Measurement Model Evaluation (Outer Model)
The measurement model was assessed using several key metrics, including standardized loading factors, Average Variance Extracted (AVE), Composite Reliability (CR), and discriminant validity, which was evaluated using the Heterotrait-Monotrait Ratio (HTMT). As detailed in the subsequent tables, all items exceeded the required thresholds, ensuring the reliability and validity of the constructs.
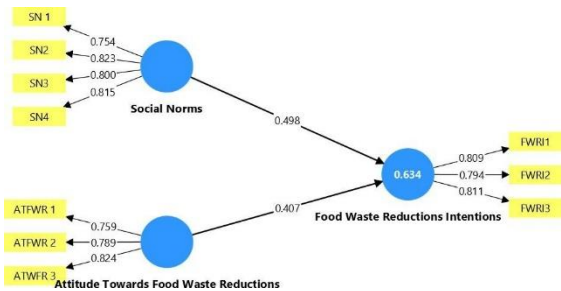

Figure 1. Outer Loading

Table 1. Outer Loading

	Social Norms	Attitude	Intentions Towards Food Waste Reductions
SNI	0,754		
SN2	0,823		
SN3	0,800		
SN4	0,815		
ATFWR1		0,759	
ATFWR2		0,789	
ATFWR3		0,824	
FWRII			0,809
FWRI2			0,794
FWRI3			0,811

Table 2. Reliability Test Result

	Cronbach Alpha	Composite Reliability	Rho_A	
Social Norms	0,810	0,875	0,814	Reliable
Attitude	0,701	0,834	0,705	Reliable
Intentions	0,728	0,846	0,728	Reliable

Table 3. Discriminant Validity HTMT

Variable	Social Norms	Attitude	Intentions
Social Norms		0,717	0,833
Attitude			
Intentions		0,845	

Table 4. AVE Result

Variable	AVE	
Social Norms	0,638	Valid
Attitude	0,626	Valid
Intentions Towards Food	0,638	Valid

Structural Model Evaluation (Inner Model)
The evaluation of the inner model aimed to test the hypothesized relationships between the latent variables. The analysis included path coefficients, t-statistics, p-values, effect size (f^2), and R^2 values. To ensure the robustness of the results, bootstrapping with 5,000 resamples was conducted.

Table 5. R Square Calculation

Variable	R- Square
Intentions Towards Food Waste Reductions	0.634

The R^2 value for the dependent variable (Intention to Reduce Food Waste) was 0.616, indicating that social norms and attitudes account for 61.6% of the variance in the intention to reduce food waste. This suggests moderate predictive power, as described by Hair et al. (2017).
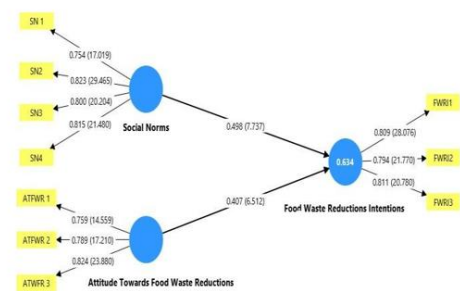

Figure 2. Inner Model

Table 6. VIF

	Social Norms	Attitude	Intentions Towards Food Waste Reductions
Social Norms			1,418
Attitude			
Intentions			1,418

Based on Table 6, a VIF value of <5 indicates that each existing variable does not produce multicollinearity.

Table 7. F-square Test

		F-square Test	
Path		*Food Waste Reduction Intentions*	Note
Social Norms ->Reductions	Intentions Towards Food	Waste 0,478	Large effect size
Attitude ->Reduction	Intentions Towards Food	Waste 0,319	Large effect size

Based on Table 7, the social norms variable has an effect size of 0.478, while the attitude variable has an effect size of 0.319. These values indicate that both variables significantly influence the intention to reduce food waste.

Table 7. Inner Model Result

Hypotesis	Path Coefficient	T-statistics	P. Value	F^2	Result
Social Norms-Intentions	0.34	4.21	0.000	0.191 (medium)	Hypothesis Supported
Attitude - Intentions	0.45	5.76	0.000	0.224 (medium)	Hypothesis Supported

Discussion

The results of this study underscore the prominent role of personal beliefs and attitudes in influencing food waste reduction behaviors. Specifically, the stronger effect of attitude (β = 0.45) compared to social norms (β = 0.34) suggests that individuals' evaluations of the ethical, environmental, and social importance of reducing food waste hold more weight than external social pressures. This finding implies that interventions designed to nurture internal value formation, through educational campaigns and value-driven communication, could be more effective than those relying solely on normative influence. These findings are consistent with Muposhi and Musavengane (2023), who emphasized the role of psychosocial factors in promoting sustainable behaviors in hotel environments. Conversely, the study's results contrast with Zain et al. (2024), who reported that innovation in hotel operations can sometimes hinder food waste reduction due to inconsistent implementation practices.

The R² value in this study (61.6%) also aligns with the 68% reported by Elkhwesky et al. (2024), further supporting the robustness of the model applied in this context. In addition to the Theory of Reasoned Action (TRA), the study's findings resonate with other emerging behavioral frameworks, such as the Value-Belief-Norm (VBN) model (Fatimah et al., 2024) and the Norm Activation Model (Schwartz, 1977). These models highlight the influence of moral obligations and environmental values on behavior, presenting opportunities for future research to expand on these frameworks for a more comprehensive understanding of sustainable behaviors. The observed influence of both attitude and social norms suggests that food waste reduction behaviors are shaped by a combination of internal beliefs and external social expectations.

In hospitality settings, social norms reflect the influence of collective hotel culture, such as peer behavior during buffet services or staff-led reinforcement of sustainable practices, while attitude captures an individual's personal evaluation of food waste reduction. This study, though valuable, is constrained by its reliance on self-reported data, which may be subject to biases, including social desirability bias. Therefore, future research should consider combining self-reports with direct behavioral observations or the use of tracking tools to assess actual food waste behaviors. From a practical perspective, the findings stress the importance of aligning industry strategies with evolving social norms. For instance, adapting to behavior-related challenges such as those encountered during the COVID-19 pandemic demonstrates how hotels can reinforce sustainable practices through stakeholder collaboration and the continuous adaptation of social expectations (Kristiana, Pramono, & Brian, 2021).

Conclusion

This study sought to examine the impact of social norms and attitudes on the intention to reduce food waste in five-star hotels in Jakarta. The analysis, conducted using the Structural Equation Modeling–Partial Least Squares (SEM-PLS) approach, reveals that both social norms (β = 0.34, p < 0.001) and attitudes (β = 0.45, p < 0.001) significantly and positively influence individuals' intentions to reduce food waste. These findings align with the Theory of Reasoned Action (Fishbein & Ajzen, 1975), which asserts that behavioral intention is the immediate precursor to behavior. Consequently, the results underscore the need for hotel management to expand their focus beyond technical solutions such as portion control or inventory tracking. Interventions should also

incorporate guest-focused communication strategies, such as:
1) Designing dynamic pricing models for buffet meals to curb overconsumption
2) Utilizing visual nudges and digital prompts during food service
3) Partnering with food rescue platforms to redistribute surplus food
4) Training staff to promote sustainable consumption behaviors

Future research should include additional variables such as perceived behavioral control, moral obligation, and environmental awareness, as these may moderate the relationship between attitude, social norms, and intention. Longitudinal studies and the use of objective food waste data (e.g., kitchen waste logs or weight-based systems) would be valuable to validate self-reported intentions. Moreover, comparative studies across different hotel segments or regions could offer insights into how varying socio-cultural contexts influence waste-reduction behaviors.

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