

The Impact of Human and Spatial Crowding on Customer Loyalty in Indonesia's Trending Sustainable Restaurants: The Mediating Role of Perceived Value and Brand Management

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Abstract. One of the main external environmental factors influencing consumer behavior in the trending food sector is crowding, both human and spatial, where crowding can have both positive and negative effects on consumer repurchase intentions. To explore whether crowding conditions should be managed or left to unfold naturally, this study will compare the direct effect of crowding on customer loyalty and its effect through three main mediators of consumer perception. This study uses a questionnaire instrument with 36 indicators across eight variables, collected through interviews with 500 respondents aged at least 15 years who have visited trending restaurants in Indonesia during 2022-2024, using a 5-point Likert scale, and analyzed using SEM-PLS with WarpPLS 8.0 software. Brand management strategies in the food industry need to be carefully formulated to address crowding, especially in light of sustainability issues that consumers are increasingly aware of. Research shows that the effect of crowding on customer loyalty is stronger when mediated by the restaurant's sustainability perception, consumer perceived value, and word-of-mouth communication, compared to its direct effect. In crowding conditions, restaurant managers need to implement effective crowd management, increase perceived value, and strengthen sustainable brand management elements.

Keywords: Crowding; Brand Management Strategies; Sustainable Food; Customer Loyalty

INTRODUCTION

Sustainable food consumption has become an increasingly important issue in the food-service industry, particularly as consumers pay greater attention to food quality, health, ethical sourcing, local ingredients, food safety, waste reduction, and environmental responsibility. In this context, sustainability is no longer limited to production practices but also extends to how restaurants communicate their values, manage consumer experience, and build long-term relationships with customers. Sustainable food systems require integrating production, distribution, consumption, and stakeholder engagement to ensure environmental, social, and economic benefits (FAO, 2020). Therefore, restaurants that adopt sustainability-oriented practices need not only operational improvements but also a coherent brand strategy that enables consumers to recognize and evaluate the credibility of their sustainability claims.

Within this context, Sustainable Strategic Brand Management (SSBM) becomes particularly relevant. SSBM refers to the way food-service businesses integrate sustainability values into brand image, brand attachment, brand attractiveness, and brand experience.

Previous studies indicate that sustainability-oriented branding can strengthen customer trust, brand reputation, market differentiation, and consumer loyalty when sustainability values are consistently communicated and experienced by consumers (Grubor & Milovanov, 2017; Ha, 2021; Castro-González et al., 2021; Pomering, 2017). In the food-service sector, sustainability may be reflected through the use of local ingredients, halal assurance, food safety, responsible sourcing, environmentally friendly packaging, waste reduction, and community-based supply-chain practices (Emamisaleh & Rahmani, 2017; Chen & Chang, 2013; Dangaiso, 2024; Sungnoi & Soonthonsmai, 2024).

However, the effectiveness of SSBM does not depend only on internal branding practices. It is also shaped by external environmental cues encountered during the dining experience. In restaurants, consumers evaluate sustainability claims not only through formal brand messages, but also through visible and experiential cues such as service quality, spatial design, queue conditions, customer density, employee responsiveness, and the overall atmosphere of the restaurant. This is consistent with environmental psychology, which explains that consumer responses are influenced by interactions between individuals and their physical and social environments (Mehrabian & Russell, 1976; Su & Swanson, 2017). Thus, a restaurant's sustainability-oriented brand may be strengthened or weakened by the way consumers experience its service environment.

One of the most visible external environmental cues in restaurants is perceived crowding. Crowding refers to consumers' subjective perception of density in a service environment. It includes human crowding, such as the number of people, queues, and intensity of social presence, as well as spatial crowding, such as seat arrangement, room size, physical distance, and movement space (Blut & Iyer, 2020; Liu & Ma, 2019). In restaurant settings, crowding may influence comfort, emotional response, perceived service quality, perceived popularity, and behavioral intention (Noone & Mattila, 2009; Song & Noone, 2017; Quan et al., 2021). Therefore, crowding is not merely an operational issue, but also a psychological stimulus that shapes how consumers interpret the restaurant experience.

Crowding becomes especially critical in Indonesia's trending restaurant industry. Many restaurants gain popularity through social media exposure, influencer recommendations, customer-generated content, and word-of-mouth. In such contexts, visible crowding may function as a social signal: a crowded restaurant can be interpreted as popular, trusted, affordable, or worth visiting. Prior studies suggest that crowd cues may strengthen perceptions of food quality, reputation, social approval, and brand attractiveness (Ali et al., 2021; Tse et al., 2002; Putri et al., 2023). At the same time, crowding can also elicit negative responses, such as

discomfort, long waiting times, reduced privacy, lower service quality, and lower satisfaction (Eroglu et al., 2005; O'Guinn et al., 2015; Robson et al., 2011; Zehrer & Raich, 2016). This dual effect makes crowding a strategic issue for restaurants whose brand value depends on both popularity and customer experience.

The relationship between crowding and SSBM is therefore important. For sustainable restaurants, crowding may either support or undermine the sustainability-oriented brand. When crowding is unmanaged, it may contradict the brand's promise of comfort, responsibility, and quality. However, when crowding is managed through efficient layout, queue control, responsive service, clear communication, and consistent sustainability cues, it may strengthen consumers' perceptions that the restaurant is popular, valuable, and socially approved. In this sense, crowding should not be understood only as a natural consequence of restaurant popularity but also as a strategic condition that can influence brand image, brand attachment, brand attractiveness, and brand experience. This argument is consistent with studies showing that crowding can shape brand-related perceptions and behavioral responses depending on service design, consumer goals, and emotional interpretation (Huang et al., 2018; Wang et al., 2021; Hwang et al., 2020; Sanz-Blas et al., 2024).

Despite growing interest in crowding and sustainable branding, previous studies have mostly examined these issues separately. Research on sustainable branding tends to focus on green marketing, brand equity, consumer trust, and loyalty (Ahmed & Hashim, 2022; Shandy et al., 2023; Kaur et al., 2024), while studies on crowding generally examine its effects on satisfaction, image, revisit intention, or word-of-mouth (Blut & Iyer, 2020; Quan et al., 2021; Siddique et al., 2022). Limited attention has been given to how perceived crowding operates within a sustainability-oriented branding framework, particularly in emerging-market restaurant contexts where trending popularity, social media visibility, consumer price sensitivity, and sustainability claims coexist. This gap is important because consumers may not evaluate sustainable restaurants solely on environmental claims, but also on whether the crowded dining experience still feels valuable, credible, and worth recommending.

This study addresses this gap by examining perceived crowding not merely as a physical or social density condition, but as an external psychological cue that may influence customer loyalty through SSBM, perceived value, and word-of-mouth. The study focuses on Indonesia's trending sustainable food-service industry because this context provides a relevant setting in which crowding, trending popularity, and sustainability-oriented branding interact. By integrating environmental psychology and sustainable brand management perspectives, this

study shifts the discussion from whether crowding is positive or negative to how crowding can be strategically interpreted and managed to enhance perceived value and customer loyalty.

Accordingly, this study aims to analyze the direct effect of perceived crowding on word-of-mouth and customer loyalty, and to examine its indirect effect through sustainable strategic brand management and perceived value. The contribution of this study is twofold. Theoretically, it extends crowding literature by positioning crowding as a strategic social and environmental cue within sustainable restaurant branding. Practically, it provides insights for restaurant managers on how to manage crowding in trending food-service settings not merely as an operational problem, but as part of a broader strategy to strengthen consumer value perception, positive word-of-mouth, and customer loyalty.

METHODS

Research Design

This study employed a quantitative explanatory design to examine the direct and indirect relationships among perceived crowding, sustainable strategic brand management, perceived value, word-of-mouth, and customer loyalty in the context of trending food-service businesses in Indonesia. The target respondents were consumers who had prior dining experience in restaurants that gained trending popularity during the 2022–2024 period. In this study, a “trending” restaurant was operationally defined as a food-service establishment that experienced rapid public visibility and consumer attention through social media exposure, customer-generated content, online food reviews, influencer recommendations, or peer word of mouth during the 2022–2024 period. A restaurant was considered eligible if respondents recognized it as trending and had personally visited it during the relevant period. This study did not rely solely on the number of official social media followers as the benchmark because trending popularity in Indonesia’s food-service industry is often generated by user-generated content, food-review accounts, TikTok or Instagram exposure, and peer recommendations, rather than solely through the restaurant’s official account. Therefore, the operational definition emphasized consumers’ actual exposure and visit experience, which was more consistent with the study’s focus on perceived crowding and consumer evaluation.

Respondent Sampling

This study used a purposive sampling approach with screening. This sampling technique was considered appropriate because the study required respondents with specific dining experience, namely consumers who had personally visited viral or trending restaurants in Indonesia during the 2022–2024 period. Respondents were eligible to participate if they met

three inclusion criteria: they were at least 15 years old, had visited at least one viral or trending restaurant during the study period, and were able to evaluate the restaurant's crowding condition, sustainability-oriented brand management, perceived value, word-of-mouth, and customer loyalty. In this study, a trending restaurant was defined as a food-service establishment that gained rapid public attention through social media exposure, online food reviews, influencer recommendations, customer-generated content, or peer word of mouth. Before completing the questionnaire, respondents were screened by asking whether they had visited a restaurant that they perceived as viral or trending during the 2022–2024 period. Only respondents who confirmed relevant dining experience were allowed to continue.

A purposive screening approach was selected because there is no official sampling frame or comprehensive database of viral restaurant visitors in Indonesia. Therefore, probability sampling was not feasible. The sampling strategy was designed to capture consumers who had relevant experience with the phenomenon under investigation rather than to statistically represent all Indonesian restaurant consumers. As a result, the findings should be interpreted as reflecting the perceptions of qualified viral restaurant visitors in the sample.

The survey initially collected 537 responses. After data screening, 37 responses were excluded due to incomplete information, repetitive response patterns, or failure to meet the inclusion criteria. The final dataset consisted of 500 valid responses. This sample size was considered adequate for Partial Least Squares Structural Equation Modeling because it exceeded the minimum requirement for estimating a model with multiple latent constructs and structural paths.

Data Collection

Data were collected using a structured Indonesian-language questionnaire. The questionnaire consisted of 36 indicators derived from eight latent variables: perceived crowding, brand image of sustainable food, brand attachment to sustainable food, brand attractiveness of sustainable food, brand experience of sustainable food, perceived value of sustainable food, word-of-mouth toward sustainable food, and customer loyalty. Perceived crowding covered both human and spatial crowding. Brand image of sustainable food measured perceptions of atmosphere, food quality, and interior design. Brand attachment to sustainable food captured passion and emotional connection. Brand attractiveness of sustainable food reflected restaurant popularity, food type popularity, and service attractiveness. The brand experience of sustainable food consisted of sensory, affective, intellectual, and behavioral experiences. Perceived value of sustainable food measured perceived worth, price appropriateness, and affordability. Word-of-mouth toward sustainable food measured

willingness to tell others and recommend the restaurant, while customer loyalty measured willingness to pay more, buy, and repurchase.

The survey was administered using a Google Forms-based instrument and distributed through online platforms, including social media and WhatsApp groups. In several cases, trained undergraduate and postgraduate research assistants helped guide respondents through the questionnaire to ensure they understood the screening questions and measurement items. Respondents completed the survey in approximately 5 to 7 minutes. All items were measured using a five-point Likert scale, ranging from 1 = strongly disagree to 5 = strongly agree. Participation was voluntary, and respondents provided digital informed consent before completing the questionnaire.

Data Analysis Method

Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with WarpPLS 8.0. PLS-SEM was selected because the study aimed to predict customer loyalty and examine a complex model involving multiple latent constructs and indirect pathways. The measurement model was evaluated using indicator loading, composite reliability, Cronbach's alpha, average variance extracted, and discriminant validity. The structural model was assessed using path coefficients, p-values, collinearity indicators, model fit indices, and the explained variance of endogenous constructs.

Hypothesis Development

Perceived Crowding, Word-of-Mouth, and Customer Loyalty

In restaurant settings, the physical and social environment plays an important role in shaping consumer perceptions, emotional responses, and behavioral intentions. Perceived crowding refers to consumers' subjective evaluation of density in a service environment, including both human crowding and spatial crowding. Human crowding reflects the perceived number of visitors, queues, and intensity of social presence, whereas spatial crowding reflects the perceived limitation of physical space, seating arrangement, and freedom of movement. Previous studies indicate that crowding can influence consumers' psychological states, perceived service quality, overall dining experience, and post-consumption behavior (Kim & Park, 2008; Ali et al., 2021; D. Wang et al., 2021).

The effect of restaurant crowding is theoretically ambivalent. On the one hand, high crowding may create discomfort, reduce perceived control, and weaken service evaluation. On the other hand, in trending restaurant contexts, crowding may also serve as a social cue that signals popularity, reputation, food quality, and social approval. This is particularly relevant in trending food-service settings, where consumers often interpret long queues and high visitor

density as evidence that a restaurant is worth trying. Strategic density management may also transform potentially negative crowding into positive emotions, satisfaction, and word-of-mouth intention when supported by effective service and an attractive dining environment (Putri et al., 2023).

Therefore, perceived crowding may directly influence consumers' willingness to recommend the restaurant and remain loyal to it. However, its direct effect is expected to be weaker than its indirect effect through sustainable brand management and perceived value, because crowding alone may not be sufficient to generate positive communication or loyalty unless consumers interpret the crowded experience as valuable and meaningful.

H1a: Perceived crowding has a positive and significant effect on word-of-mouth toward sustainable food.

H1b: Perceived crowding has a positive and significant effect on customer loyalty.

Perceived Crowding and Sustainable Strategic Brand Management

Sustainable Strategic Brand Management refers to consumers' perceptions of how restaurants integrate sustainability values into brand image, brand attachment, brand attractiveness, and brand experience. In sustainable food-service businesses, branding is not limited to logos, names, or promotional claims; it also encompasses how consumers experience food quality, atmosphere, service, responsible sourcing, environmental values, and emotional engagement. Sustainable brand management can strengthen corporate credibility, consumer trust, brand equity, and loyalty when sustainability practices are communicated and experienced consistently (Castro-González et al., 2021; Pomering, 2017; Ahmed & Hashim, 2022).

Perceived crowding may influence brand image, as crowded restaurants are often perceived as popular, reputable, and socially approved. In trending restaurant contexts, human crowding may enhance the perception that a restaurant is attractive and trusted by many consumers. However, spatial crowding can cause discomfort when physical space is poorly managed. Previous studies show that crowding can negatively affect restaurant image when it creates stress and poor service evaluation, but it can also strengthen brand perception when accompanied by appealing décor, efficient service, and a high-quality atmosphere (Siddique et al., 2022; Quan et al., 2021; Putri et al., 2023). Thus, perceived crowding may support brand image when the crowded environment is interpreted as a sign of popularity and quality.

H2a: Perceived crowding has a positive and significant effect on the brand image of sustainable food.

Crowding may also influence brand attachment. Although crowding is often associated with lower satisfaction, it may strengthen emotional attachment under certain conditions. When consumers perceive a restaurant as socially meaningful, popular, or aligned with their personal values, the crowded environment may reinforce their emotional connection with the brand. Prior studies suggest that social crowding may increase brand attachment as consumers use brands to fulfill belongingness and psychological connection needs (Huang et al., 2018; D. Wang et al., 2021). In sustainable restaurant contexts, this attachment may be stronger when consumers perceive that the restaurant represents values they support, such as ethical sourcing, health, local food, or environmental responsibility.

H2b: Perceived crowding has a positive and significant effect on brand attachment to sustainable food.

Perceived crowding may further influence brand attractiveness. A crowded restaurant can signal that the brand is desirable, distinctive, and worth visiting. In the food-service industry, visible queues and high visitor density may create perceptions of exclusivity, popularity, and superior food quality. However, this positive effect depends on whether the restaurant can manage the crowded situation without reducing comfort and service quality. Previous studies indicate that crowding may diminish satisfaction when perceived as inefficient management, but may enhance attractiveness when consumers interpret it as evidence of popularity and strong brand appeal (Argo et al., 2005; Maeng et al., 2013; Eroglu et al., 2005).

H2c: Perceived crowding has a positive and significant effect on brand attractiveness of sustainable food.

Perceived crowding may also shape brand experience. A lively restaurant atmosphere can stimulate consumers' cognitive and emotional responses, especially when the crowded environment is associated with excitement, social validation, and trend participation. In sustainable food-service settings, brand experience is formed through sensory, affective, intellectual, and behavioral interactions with the restaurant. A crowded but well-managed restaurant can create a dynamic, memorable experience, while excessive or poorly managed crowding can undermine comfort and satisfaction. Previous studies suggest that crowding and service density can influence brand experience and subsequent consumer behaviors, including word-of-mouth and loyalty (Brakus et al., 2009; Hwang et al., 2020; Zhu et al., 2023; Sanz-Blas et al., 2024).

H2d: Perceived crowding has a positive and significant effect on brand experience of sustainable food.

Sustainable Strategic Brand Management and Perceived Value

Perceived value refers to consumers' overall evaluation of whether the benefits obtained from a product or service are worth the monetary and non-monetary costs incurred. In sustainable food-service settings, perceived value involves not only price and quality but also emotional, functional, social, ethical, and sustainability-related benefits. Consumers may perceive higher value when a restaurant offers food quality, fair pricing, health benefits, sustainability credibility, and a meaningful dining experience (Zeithaml, 1988; Holbrook, 1999; Wang et al., 2023).

Brand image may enhance perceived value because a favorable restaurant image helps consumers trust food quality, sustainability claims, and the brand's overall credibility. When consumers perceive that a restaurant has a strong, sustainable image, they are more likely to believe that the price, waiting time, and dining effort are justified.

H3a: Brand image of sustainable food has a positive and significant effect on the perceived value of sustainable food.

Brand attachment may also strengthen perceived value because emotionally attached consumers tend to evaluate a brand more favorably. When consumers feel connected to a restaurant's sustainability values, they may perceive the dining experience as more meaningful and more likely to be repeated. An emotional connection can increase the perceived value of the restaurant beyond its functional food attributes.

H3b: Brand attachment to sustainable food has a positive and significant effect on the perceived value of sustainable food.

Brand attractiveness may increase perceived value by making the restaurant appear more desirable, distinctive, and socially relevant. Consumers are more likely to perceive value when they believe the restaurant offers appealing menus, popular menu items, attractive service, and sustainability-oriented practices that set it apart from competitors.

H3c: Brand attractiveness of sustainable food has a positive and significant effect on the perceived value of sustainable food.

Brand experience is expected to have a strong effect on perceived value because consumers evaluate restaurants through direct sensory, affective, cognitive, and behavioral experiences. In sustainable restaurants, sustainability claims become valuable only when they are supported by enjoyable food, a comfortable atmosphere, responsive service, and memorable interaction. Previous studies show that positive brand experience can strengthen perceived value, satisfaction, and loyalty (Brakus et al., 2009; Kang et al., 2017; Hsu, 2023).

H3d: Brand experience of sustainable food has a positive and significant effect on the perceived value of sustainable food.

Perceived Value, Word-of-Mouth, and Customer Loyalty

Consumers who perceive high value in a restaurant are more likely to share positive experiences and recommend the restaurant to others. In trending food-service contexts, word-of-mouth is particularly important because restaurant popularity often grows through customer-generated communication, social media sharing, online reviews, and peer recommendations. Perceived value may encourage consumers to tell others that the restaurant is worth visiting, especially when the dining experience justifies the cost, queue, and effort involved (Foroudi et al., 2021; Bushara et al., 2023; Nguyen et al., 2024).

H4: Perceived value of sustainable food has a positive and significant effect on word-of-mouth toward sustainable food.

Perceived value may also strengthen customer loyalty. When consumers believe that the restaurant offers benefits that exceed its costs, they are more likely to revisit, repurchase, choose the restaurant again, and pay a premium price. In sustainable food-service settings, loyalty may be driven not only by taste and price, but also by trust, sustainability credibility, emotional satisfaction, and perceived fairness of the overall dining experience (Ahmed et al., 2023; Renaldi et al., 2024; Qiu et al., 2024).

H5: Perceived value of sustainable food has a positive and significant effect on customer loyalty.

Word-of-mouth may further enhance customer loyalty because consumers who actively recommend a restaurant tend to reinforce their own positive evaluation of the brand. Positive WOM reflects satisfaction, trust, and emotional involvement. In restaurant contexts, recommendations to friends, family, and online audiences may strengthen consumers' commitment to revisit and maintain their relationship with the restaurant (Foroudi et al., 2021; Quan et al., 2021; Molinillo et al., 2019).

H6: Word-of-mouth toward sustainable food has a positive and significant effect on customer loyalty.

Figure 1 presents the research framework structure of the CL model, which explores the direct and mediated effects of CWD on CL.

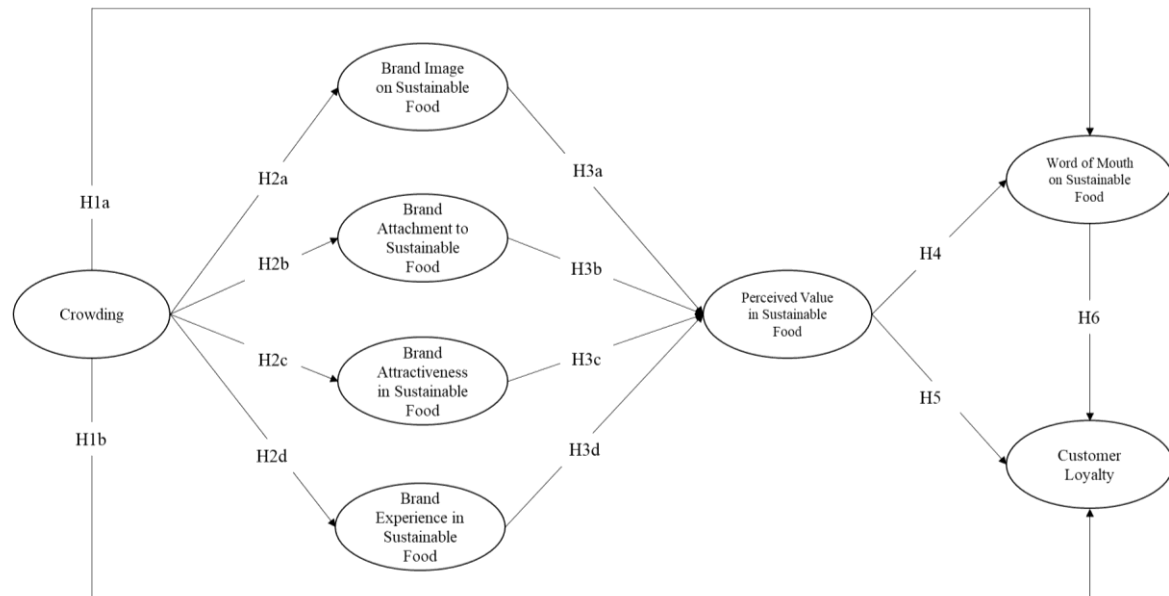


Figure 1. Research Framework

RESULT AND DISCUSSION

Result

Demographic statistics

Table 1. Demography participant

Respondent Characteristics	Variables	N	%
Gender	Female	345	69.00%
	Male	155	31.00%
Age	17-25 Years	466	93.20%
	26-35 Years	34	6.80%
Domicile	Malang	353	70.60%
	Gresik	24	4.80%
	Surabaya	14	2.80%
	Mojokerto	11	2.20%
	Other	98	19.60%
Occupation	Students	392	78.40%
	Civil Servants	18	3.60%
	Private Employee	30	6.00%
	Academics	11	2.20%
	Other	49	9.80%
Allowance/ month	< 30,92 USD	94	18.80%
	USD 30,93 - 61,83	170	34.00%
	USD 61,83- 123,67	137	27.40%
	USD 123,68- 185,50	48	9.60%
	> 185,60 USD	51	10.20%

All 500 responses were properly organized and sorted by demographic details. Table 1 includes the demographic details of participants.

Table 2. Indicators' Loading Factors, Reliability, and Validity.

Variables	Item	β	CR	α	AVE	P value
CWD	CWD 1	0.745	0.878	0.813	0.643	<0.001
	CWD 2	0.856				<0.001
	CWD 3	0.845				<0.001
	CWD 4	0.756				<0.001
BI-SF	BI-SF 1	0.702	0.777	0.618	0.566	<0.001
	BI-SF 2	0.662				<0.001
	BI-SF 3	0.665				<0.001
	BI-SF 4	0.701				<0.001
BA-SF	BA-SF 1	0.844	0.885	0.804	0.719	<0.001
	BA-SF 2	0.843				<0.001
	BA-SF 3	0.856				<0.001
BAS-SF	BAS-SF 1	0.770	0.819	0.705	0.532	<0.001
	BAS-SF 2	0.765				<0.001
	BAS-SF 3	0.736				<0.001
	BAS-SF 4	0.640				<0.001
BE-SF	BE-SF 1	0.772	0.872	0.816	0.579	<0.001
	BE-SF 2	0.638				<0.001
	BE-SF 3	0.780				<0.001
	BE-SF 4	0.807				<0.001
	BE-SF 5	0.795				<0.001
PV-SF	PV-SF 1	0.870	0.857	0.747	0.668	<0.001
	PV-SF 2	0.701				<0.001
	PV-SF 3	0.869				<0.001
WOM-SF	WOM-SF 1	0.839	0.876	0.808	0.643	<0.001
	WOM-SF 2	0.606				<0.001
	WOM-SF 3	0.882				<0.001
	WOM-SF 4	0.850				<0.001
CL	CL 1	0.710	0.876	0.828	0.542	<0.001
	CL 2	0.813				<0.001
	CL 3	0.705				<0.001
	CL 4	0.758				<0.001
	CL 5	0.796				<0.001
	CL 6	0.615				<0.001

Measurement Model

Prior to hypothesis testing, convergent validity, discriminant validity, and reliability tests were conducted on the measurement scales for the eight latent constructs: BI-SF, BA-SF, BAS-SF, BE-SF, PV-SF, WOM-SF, and CL. Convergent validity (CV) assesses the extent to which a construct's values are correlated with the variance of its indicators, which can be evaluated through factor loadings. A minimum expected path coefficient of 0.70 is considered acceptable,

with higher coefficients providing stronger evidence of CV (Hair et al., 2020). Table 2 shows that all indicator values have factor loadings greater than 0.60, indicating that the indicators are valid. The AVE value, which stands for Average Variance Extracted, can be used to assess convergent validity testing. If the AVE is 0.5 or higher, the construct explains more than half of the indicators' average variance (Ketchen, 2016). Conversely, if the AVE value is less than 0.5, then there are more errors in the items than the variance explained by the construct. Based on the table above, the latent variables in the study have AVE values greater than 0.5. It can be concluded that the overall average of the latent variables used in the study explains more than half of the variance in the indicators, indicating that all indicators reflect the latent variables well. The composite reliability and Cronbach's Alpha values, which are deemed reliable when greater than 0.70 (Hair et al., 2020). Further confirm that all latent variables in the SEM-PLS analysis meet the reliability criteria.

The discriminant validity test, as presented in Table 3, indicates that the square root of the AVE for each latent variable is greater than the correlation values between that construct and the other latent variables. This demonstrates that each latent variable is distinct and that the indicators accurately reflect the intended construct, thereby confirming the measurement model's discriminant validity.

Table 3. Discriminant Validity and Correlations Among Constructs

Variabel	CWD	BI-SF	BA-SF	BAS-SF	BE-SF	PV-SF	WOM-SF	CL
CWD	0.802							
BI-SF	0.004	0.683						
BA-SF	0.014	0.561	0.848					
BAS-SF	0.040	0.664	0.727	0.730				
BE-SF	0.065	0.604	0.761	0.726	0.761			
PV-SF	-0.034	0.531	0.544	0.565	0.627	0.817		
WOM-SF	0.010	0.509	0.576	0.565	0.609	0.553	0.802	
CL	0.145	0.534	0.615	0.566	0.661	0.524	0.529	0.736

Structural model testing

The results of the model fit test indicate that the structural equation model demonstrates a good level of fit, as indicated by the goodness-of-fit (GoF) statistics. Specifically, the Average Path Coefficient (APC) value of 0.242, the Average R-Square (ARS) value of 0.202, and the Average Absolute Residuals (AARS) value of 0.199 all meet the required thresholds. The ARS value of 0.202 reflects weak explanatory power, indicating that the model accounts for only approximately 20% of the variance in customer loyalty. This may be attributed to the exclusion of potentially influential variables such as customer experience, brand image, price perception,

and service quality, which have been identified in prior literature as significant determinants of customer loyalty. Future research is encouraged to incorporate these variables to enhance the model's explanatory power and provide a more comprehensive understanding of customer loyalty. These metrics suggest a substantial relationship and a moderate amount of variance explained by the model, both considered satisfactory for social science research. The Average Variant Inflation Factor (AVIF) value = 1.837 and Average full collinearity VIF (AFVIF) = 2.281 are both well below the common threshold of 3.3, indicating that multicollinearity is not a significant concern. This indicates that multicollinearity is not a concern in this study, which represents a methodological strength of the research. The Tenenhaus GoF model fit value of 0.348 falls within the medium range, further supporting the model's fit. Further validation of the model is demonstrated by the Standardized Path Coefficient for Residuals (SPR) = 1.000, the Sum of Squared Residuals (SSR) = 1.000, and the Nonlinear Latent Between-Construct Direct Effect (NLBCDR) = 1.000, all of which exceed the 0.7 threshold, indicating strong model validity. Although several fit indices yielded values of 1.000, the focus of model evaluation is directed toward the R-square values, which indicate the proportion of variance explained by the structural model. The Relative Goodness of Fit for Confirmatory Research (RSCR) value = 1.000 also reinforces the model's robustness. Figure 2 presents the path coefficients, which indicate the direction of the relationships between the latent variables. Path coefficient values range from -1 to 1, and those closer to 1 indicate a positive and significant relationship (Hair et al., 2020). The analysis results for each variable, denoted by β , indicate a positive, significant relationship.

Hypothesis Testing

Table 4 and Figure 2 provide support for various hypotheses regarding the relationships between key factors. All confirmed hypotheses demonstrate a positive and significant influence, as indicated by statistically significant values ($p < 0.001$), with the exception of Hypothesis 1a.

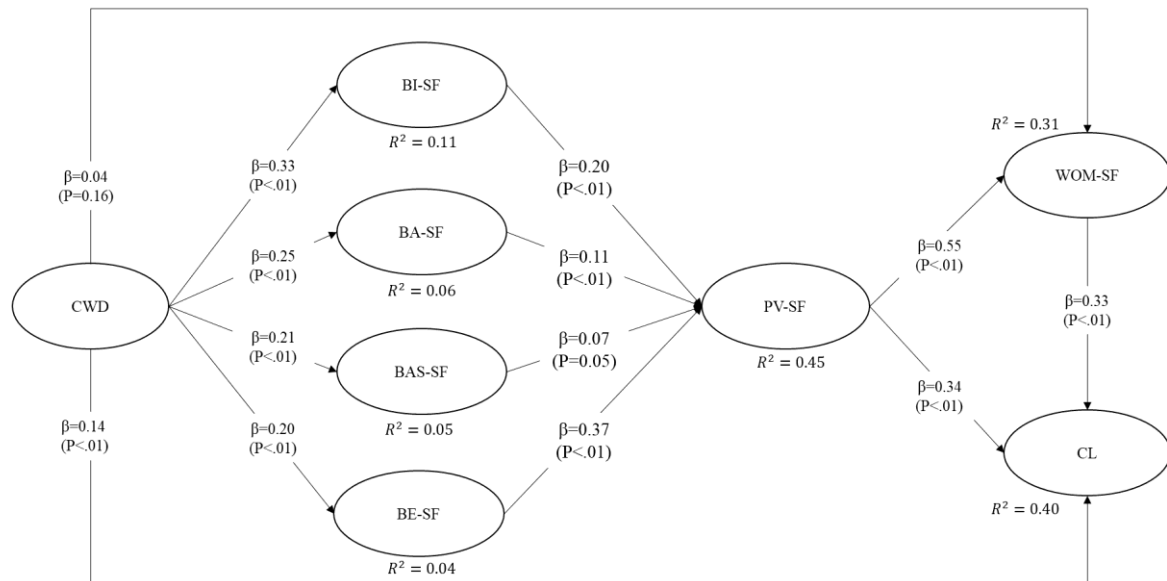


Figure 2. The Influence of Crowding on Customer Loyalty

Table 4. Result of the hypothesis test

Hyp.	Path	Coefficient (β)	<i>P</i> -value	Result
H1a	CWD $\rightarrow$ WOM-SF	0.04	0.16	Not Supported
H1b	CWD $\rightarrow$ CL	0.14	<0.01	Supported
H2a	CWD $\rightarrow$ BI-SF	0.33	<0.01	Supported
H2b	CWD $\rightarrow$ BA-SF	0.25	<0.01	Supported
H2c	CWD $\rightarrow$ BAS-SF	0.21	<0.01	Supported
H2d	CWD $\rightarrow$ BE-SF	0.20	<0.01	Supported
H3a	BI-SF $\rightarrow$ PV-SF	0.20	<0.01	Supported
H3b	BA-SF $\rightarrow$ PV-SF	0.11	<0.01	Supported
H3c	BAS-SF $\rightarrow$ PV-SF	0.07	0.05	Supported
H3d	BE-SF $\rightarrow$ PV-SF	0.37	<0.01	Supported
H4	PV-SF $\rightarrow$ WOM-SF	0.55	<0.01	Supported
H5	PV-SF $\rightarrow$ CL	0.34	<0.01	Supported
H6	WOM-SF $\rightarrow$ CL	0.33	<0.01	Supported

Discussion

The Effect of Perceived Crowding on Word-of-Mouth Toward Sustainable Food

The results show that perceived crowding did not have a significant direct effect on word-of-mouth toward sustainable food. This finding suggests that crowded restaurant conditions alone are not sufficient to encourage consumers to recommend a restaurant. Although the physical environment plays an important role in shaping perceptions of brand value, service quality, and overall dining experience, the effect of crowding depends on how consumers interpret and experience the crowded setting (D. Wang et al., 2021). Human crowding may

signal popularity and social approval, but spatial crowding may also create discomfort, long waiting times, limited movement, and perceived service pressure. Therefore, consumers may distinguish between a restaurant that is merely crowded and a restaurant that is truly worth recommending.

This finding is consistent with the ambivalent nature of crowding. Previous studies show that high crowding can reduce perceived service quality, whereas effective ambiance and service management can turn potential dissatisfaction into a positive experience. Tolerance toward crowding also varies across cultural and demographic groups; Asian consumers may be more sensitive to crowding than Western consumers, and female consumers may prefer less crowded environments due to comfort and safety concerns (Kim & Park, 2008; Ali et al., 2021). Thus, the non-significant direct effect in this study indicates that perceived crowding functions primarily as an attention-generating cue rather than as a direct cue to make recommendations. Word of mouth emerges only when the crowded experience is supported by service quality, spatial comfort, perceived value, and credible sustainability practices. This refines previous findings that strategic density management can generate positive emotions, satisfaction, and word-of-mouth recommendations (Putri et al., 2023). In this study, crowding must first be translated through sustainable strategic brand management and perceived value before it becomes a basis for recommendation behavior.

The Effect of Perceived Crowding on Customer Loyalty

Empirical results reveal that CWD (number of people, queue conditions, and feelings of tightness) and spatial CWD (seat spacing, room size, and ornaments) have a significant positive effect of 0.14 on C. This finding demonstrates that dimensions of crowding directly reinforce key loyalty outcomes, specifically consumers' willingness to pay more, their certainty in choosing the restaurant, confidence in food attributes, and subsequent repeat purchases.. This research suggests that crowds are often associated with perceptions of food quality and a good reputation, which, in turn, encourage increased customer visits. Consequently, effective management of both human and spatial crowding is crucial for building and sustaining CL in the restaurant industry.

The Effect of Perceived Crowding towards:

The brand image of sustainable food

The structural analysis indicates that perceived crowding in restaurants has a significant positive impact of 0,33 on Sustainable Food Brand Image (BI-SF), rendering it the strongest predictor among all strategic brand management dimensions. Rather than acting as a spatial constraint, crowding serves as a visible reputational cue that signals popularity, quality, and

social approval within Indonesia's trend-driven food service sector. Driven by the mechanisms of social proof and collectivist consumer behavior, high density and physical queues function as cognitive shortcuts for evaluating credibility. Ultimately, the crowd serves as persuasive social evidence that enhances the restaurant's brand narrative, allowing consumers to infer institutional trustworthiness and cultural relevance.

The positive influence of perceived crowding reflects the distinct behavioral characteristics of young Indonesian consumers within viral foodservice markets. For this demographic, physical density transcends operational conditions and serves as a symbolic marker of trend participation and social recognition. Visiting highly congested venues offers prestige and symbolic value, driven by collective validation rather than objective superiority. This mechanism aligns with collectivist cultural theory, which posits that individuals in collectivist societies heavily rely on social norms, peer approval, and interpersonal signals to guide their consumption choices. In this context, a crowded environment delivers immediate social proof that the establishment is endorsed by the wider community.

However, the strategic utility of crowding is bounded and highly conditional. While human crowding enhances brand image by signaling high demand and reputational prestige, where high visitor density implies culinary quality and affordability, spatial crowding can severely damage consumer perceptions if it leads to physical discomfort, restricted movement, and operational bottlenecks. Therefore, the empirical evidence does not justify maximizing density; instead, it demands a strategic equilibrium in which crowding signals popularity without undermining service quality or the brand's sustainability orientation. Unmanaged crowding risks long wait times and tight seating, ultimately eroding brand equity and institutional sustainability.

To effectively harness these dynamics, restaurants must implement responsive managerial frameworks that align with community expectations. Strategic interventions include designing spacious dining areas that facilitate community interaction, maintaining rigorous consistency in food quality, and actively publicizing sustainable sourcing initiatives, such as partnerships with local farmers on digital platforms. Furthermore, mitigating environmental externalities, such as addressing carbon dioxide emissions through optimized parking infrastructure, helps foster a positive reputation. Quantitatively, the robust role of crowding is evidenced by its standardized path coefficient of 0.33, indicating that a one-standard-deviation increase in perceived crowding corresponds to a 0.33 standard-deviation increase in sustainable brand image. Rather than a percentage growth, this metric underscores that image formation is highly sensitive to external, visible social signals. Consequently, optimizing crowding

dynamics acts as a critical signaling mechanism for quality, reputation, and long-term viability in the contemporary food industry (Barraza et al., 2021).

Brand attachment to sustainable food

The analysis reveals that CWD in restaurants has a significant positive effect of 0.25 on consumer perceptions of the BA-SF strategy implemented by restaurants. It has been found that a crowded social and physical environment can strengthen customers' emotional bonds by enhancing consumer motivation to stay connected, fostering commitment to sustainable food practices, offering affordable prices, and reinforcing personal values and beliefs. Perceived crowding also positively affected brand attachment to sustainable food, with a standardized path coefficient of 0.25. The finding suggests that consumers who perceive higher crowding may also report stronger emotional attachment to the restaurant brand. In viral restaurant settings, crowding may create a sense of participation in a shared social experience, especially among young consumers who associate popular restaurants with lifestyle identity, social belonging, and trend participation. Efficient space management, such as environmentally friendly design that prioritizes customer comfort and supports brand sustainability, can enhance the restaurant's reputation as an innovator in sustainability, positioning it as a leader in future-oriented practices. BA serves as a mediator between CWD perceptions and consumer purchasing behavior, where consumers with strong emotional connections to the brand are more likely to continue purchasing even in crowded, uncomfortable environments, due to the cognitive and emotional ties formed with the brand (Gharib et al., 2017). Furthermore, elements of affection and passion strengthen consumer attachment through emotional relationships and enhance motivation to engage with the brand (Dwivedi et al., 2019).

Brand attractiveness of sustainable food

The brand attractiveness of sustainable food had only a weak, marginal effect on its perceived value. This finding suggests that attractiveness may help capture consumers' initial attention, but it is not sufficient to create strong value perception. Brand attractiveness reflects the extent to which consumers perceive a brand as desirable, distinctive, and socially appealing based on quality, innovation, emotional associations, and differentiating attributes (Esch et al., 2006; Saraniemi & Ahonen, 2008). In viral restaurant contexts, perceived crowding may enhance attractiveness because crowds can signal popularity, exclusivity, and public approval. However, attractiveness does not automatically translate into perceived value.

This weak effect can be explained by the difference between visibility and value formation. A crowded, visually appealing restaurant may look popular and worth trying, but perceived value requires consumers to evaluate whether the dining experience justifies the

price, wait time, effort, and sustainability claims. Perceived value involves economic, functional, hedonic, social, individual, and relational benefits (Zeithaml, 1988; Holbrook, 1999; Day, 1999; Lusch et al., 2007; Wiedmann et al., 2009; Flores & Vasquez-Parraga, 2015). Therefore, consumers may perceive a sustainable restaurant as attractive, but they will judge it valuable only when the actual experience delivers food quality, efficient service, spatial comfort, fair pricing, and credible sustainability practices.

Thus, brand attractiveness functions more as an entry-point cue than as a strong value-forming mechanism. It may stimulate curiosity and visit intention, but perceived value is more strongly shaped by direct experience and credible benefits. This explains why brand attractiveness had a much weaker effect on perceived value than brand experience. For sustainable restaurants, popularity, aesthetics, and viral appeal must be supported by consistent service quality, authentic sustainability practices, and meaningful consumer benefits.

The brand experience of sustainable food

Perceived crowding positively affected the brand experience of sustainable food, with a standardized path coefficient of 0.20. The result suggests that a crowded but well-managed restaurant environment may create a lively, memorable, and socially engaging experience. However, the lower coefficient relative to brand image indicates that crowding is more powerful at shaping external brand perception than at producing deep experiential value. Brand experience requires not only social density, but also food quality, comfort, service responsiveness, and consistency between sustainability claims and the actual dining experience. Well-managed CWD, such as when a restaurant is crowded yet still provides efficient service, can foster a dynamic atmosphere and signal the restaurant's popularity, thereby creating a positive experience for customers. In some cases, younger consumers, particularly Millennials and Generation Z, are willing to endure CWD, associating it with trends and social validation, which influences their purchase intentions. Conversely, effective CWD management, including the use of environmentally friendly materials, proper lighting, and thoughtful layout, can enhance the dining experience by creating a comfortable atmosphere that aligns with sustainable values. When customers feel at ease in a well-designed space, they are more likely to appreciate the restaurant's commitment to sustainability. Thus, the combination of positive human CWD and appealing spatial design can enhance the sustainable brand experience, increase customer satisfaction, and foster loyalty to the restaurant. Gómez-Suárez & Veloso (2020) found that BE and BA are key drivers of WOM behavior in the hospitality industry.

The Effect of Sustainable Strategic Brand Management on Perceived Value of Sustainable Food

BI-SF has a positive and significant effect on PV-SF, with a coefficient of 0.20. A corporate image that emphasizes sustainability encourages consumers to prioritize the environmental and social impacts of food production. Restaurants that successfully build a sustainable BI foster stronger relationships with customers through shared sustainability values, which in turn enhance positive perceptions of long-term value (Ningrum et al., 2024). Research also indicates that adopting sustainable practices can increase brand equity, consumer loyalty, and perceived quality (Agu et al., 2024). Furthermore, providing information about the health and environmental impacts of food helps consumers better appreciate sustainable options, creating meaningful experiences that strengthen CL. BI-SF also has a significant effect on PV-SF, with a coefficient of 0.11, as consumers' emotional attachment to sustainable brands influences their perceptions of the value offered. Practices such as using local ingredients and ensuring food safety enhance a restaurant's appeal, motivating consumers to pay a premium for high-quality and ethically produced food (Putri et al., 2023).

BAS-SF has a significant impact on PV-SF, with a coefficient of 0.07, as restaurants offering sustainable food menus attract consumers concerned about health and social responsibility. Studies show that consumers are more likely to support restaurants that prioritize sustainability, which strengthens their attraction to and loyalty to the restaurant. Meanwhile, BE-SF has a substantial impact on PV-SF, with a coefficient of 0.37, by creating a dining experience that integrates sustainability values, such as the use of organic ingredients and environmentally friendly practices (Agu et al., 2024). This experience not only strengthens customers' emotional connections but also enhances positive perceptions of food and service value, leading to stronger brand loyalty. Consistent, sustainable practices also increase consumers' willingness to pay more and encourage positive WOM (Ningrum et al., 2024), allowing restaurants to optimize their market position and attract customers who prioritize sustainability.

The Effect of Perceived Value of Sustainable Food on Word-of-Mouth and Customer Loyalty

The analysis results reveal a positive and significant relationship between PV-SF and WOM-SF with a coefficient of 0.55. PV refers to how customers assess the benefits they receive relative to the costs they incur, including factors such as food quality, service, atmosphere, price, and overall customer experience in the food industry (Nguyen et al., 2024). Consumers who perceive high value in a product or service are more likely to share their positive

experiences with others, such as friends or family (Mayr & Zins, 2012; Nguyen et al., 2024). PV plays a crucial role in shaping consumer preferences and behavior, fostering loyalty, and increasing the likelihood of recommendations. By understanding customer needs and preferences, companies can enhance the value they deliver by tailoring their offerings to align with customers' perceptions of value (Bushara et al., 2023).

PV-SF also positively and significantly impacts CL by 0.34, indicating that PV is a key factor driving repeat purchases of certain products or brands (Maghembe & Magasi, 2024). Consumers perceive PV through factors such as the nutritional value of dishes, cleanliness, halal certification, alignment between price and food quality, and experiences that align with the effort put in, such as waiting in line. These factors contribute to building consumer loyalty to the restaurant. Loyal consumers, who view the brand or company positively, are more likely to make repeat purchases, pay higher prices, and leave positive reviews (Espinosa et al., 2018; Ningrum et al., 2024; Tartaglione et al., 2019). This loyalty fosters a long-term relationship between the company and its customers, solidifying the brand's position going forward.

Previous research shows that BI significantly impacts WOM, as evidenced by the Mie Gacoan Restaurant in Malang City, where aspects of the BI, such as atmosphere, food quality, and attractive interior design, encourage customers to recommend the restaurant to others (Rahma et al., 2024). WOM, shaped through sensory, emotional, intellectual, and behavioral experiences, can boost CL by influencing their closest circles, such as family, relatives, and friends, who tend to trust this information more (J. Hwang & Lee, 2019; Tjahjaningsih et al., 2020). Positive brand experience (BE) in a restaurant can significantly enhance BI and encourage WOM. Customers who have pleasant experiences are more likely to recommend the product to their inner circle, as shown in prior research (Arisandi, 2022; Gómez-Suárez & Veloso, 2020; Li, 2018). The higher the perceived quality of the brand experience, the stronger its impact on brand reputation and customers' desire to share their experiences with others.

The Word-of-Mouth towards Customer Loyalty

WOM-SF has a positive and significant impact on consumer loyalty (CL), with a coefficient of 0.33 in the trend food industry. Key factors contributing to consumer loyalty and trust include positive experiences, the promotion of positive WOM, and active customer participation. Loyal customers directly contribute to a company's profitability by providing a consistent revenue stream through repeat and increased purchases, thereby positively influencing the restaurant's performance. These factors significantly enhance the relationship between customers and brands, fostering sustainable consumer loyalty (Azhari et al., 2023). Therefore, effective management of customer WOM in a restaurant setting can improve BI and

encourage positive WOM. Moreover, the perception of CWD in restaurants influences consumer loyalty through evaluations of service quality, with consumers' consumption goals, whether utilitarian or hedonic, acting as a moderating factor (Noone & Mattila, 2009).

CONCLUSION

This study concludes that perceived crowding in Indonesia's viral sustainable restaurant context should not be understood merely as a physical density problem or an unavoidable consequence of popularity. Instead, crowding can function as a strategic social cue when consumers interpret it as a sign of popularity, public approval, and brand legitimacy. The findings show that perceived crowding does not automatically lead to positive word of mouth. Rather, its influence becomes meaningful when it is supported by sustainable strategic brand management and translated into perceived value.

The main theoretical contribution of this study lies in repositioning crowding from a simple environmental stimulus into a culturally embedded branding mechanism. In the context of young consumers and viral restaurants in Indonesia, visible crowding may strengthen brand image by serving as social proof. Consumers may perceive a crowded restaurant as more reputable, desirable, and worth visiting, especially when the crowd is associated with trend participation and collective validation. However, this positive interpretation depends on how well the restaurant manages the crowded environment.

The study also highlights that sustainable branding creates loyalty not only through formal sustainability claims, but through the consumer's lived experience. Consumers are more likely to perceive value when sustainability-oriented branding is supported by food quality, service efficiency, spatial comfort, emotional engagement, and credible communication. Thus, sustainable restaurants should not rely solely on popularity or on being crowded. They need to ensure that the crowded dining experience remains consistent with the brand promise of quality, responsibility, and value.

From a managerial perspective, restaurant managers should manage crowding strategically rather than allowing it to occur naturally without control. Crowding may strengthen brand perception when it signals popularity, but it may damage the consumer experience when it causes discomfort, long wait times, poor service, or limited movement. Therefore, effective queue management, spatial design, service responsiveness, employee communication, and sustainability cues are essential to transform crowding into a positive brand resource.

This study has several limitations. First, the sample was dominated by young consumers and students, with most respondents belonging to Generation Z; therefore, the findings should be interpreted primarily as evidence of young consumers' behavior in viral sustainable restaurant settings rather than as a general representation of all Indonesian consumers. Second, the use of screened purposive sampling limits the statistical generalizability of the results, while the Indonesian context may restrict the applicability of the findings to regions with different cultural characteristics, consumer preferences, and levels of sustainability awareness. Future studies should involve more diverse respondents across age groups, occupations, regions, and restaurant categories; distinguish more explicitly between human crowding and spatial crowding; and examine additional variables such as service quality, price fairness, perceived authenticity, digital engagement, consumer trust, digital ordering applications, government regulation, and environmental awareness. Future research may also test whether sustainable strategic brand management is better conceptualized as a higher-order construct, given the close empirical relationship among its brand-related dimensions.

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