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Driving sustainable development goal alignment through green consumption marketing and public mind

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ABSTRACT

BACKGROUND AND OBJECTIVES: Sustainable development demands synchronized efforts across socioeconomic and environmental domains, specifically targeting poverty alleviation, food security, and environmental stewardship. Although sustainable consumption patterns and ecological marketing act as established catalysts for environmental transitions, the specific socio-civic pathways translating micro-level pro-environmental behaviors into macro-level policy alignment remain underexplored. To bridge this gap, the study objectives were to evaluate the direct and indirect pathways through which green consumption behavior and green marketing drive local alignment with the sustainable development goals through the mediating role of the public mind among residents in Nonthaburi Province, Thailand.

METHODS: A quantitative survey design was executed to gather data from 400 residents across administrative districts in Nonthaburi Province using proportionate stratified random sampling. The researchers collected primary data through structured questionnaires employing a 5-point Likert scale. Analytical procedures encompassed descriptive statistics, confirmatory factor analysis, and structural equation modeling to validate construct relationships and assess overall structural model fit.

FINDINGS: The results of structural equation modeling indicate that both green consumption behavior and green marketing significantly influence the realization of local sustainable development goals, operating through both direct pathways and indirect pathways mediated by public consciousness. The public mind demonstrated the strongest direct influence on sustainable development goals realization ($\beta = 0.69$, $p < 0.01$), followed by direct impacts from green consumption behavior ($\beta = 0.35$, $p < 0.01$) and green marketing ($\beta = 0.28$, $p < 0.01$). Additionally, green consumption behavior was the primary driver of public mind activation ($\beta = 0.37$, $p < 0.01$), surpassing green marketing ($\beta = 0.27$, $p < 0.01$). The validated structural model accounted for substantial variance in sustainable development goals alignment ($R2 = 0.97$) and the public mind ($R2 = 0.77$).

CONCLUSION: Green consumption behavior and green marketing are critical precursors to cultivating a collective public mind, which bridges individual eco-conscious actions with macro-level alignment of Sustainable Development Goals. Municipal authorities ought to embed the mobilization of public ecological awareness into environmental governance policies. Furthermore, this structural framework offers a scalable model adaptable to other rapidly urbanizing provinces in Southeast Asia.

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42	3	10

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INTRODUCTION

Global challenges—such as widening economic inequality, social disparity, and environmental degradation—continue to threaten global human well-being and ecosystem stability. In response, international policy agendas increasingly emphasize actionable strategies targeting environmental health, food security, and socioeconomic resilience. The United Nations formalized these global priorities through the 17 sustainable development goals (SDGs) for the 2015–2030 planning horizon (United Nations, 2023). Operationalizing macro-level national sustainability targets demands context-specific implementation at both the municipal and provincial tiers of governance. Nonthaburi Province, Thailand, offers an ideal empirical setting for this investigation due to its dense population, rapid urbanization, and economic integration with metropolitan Bangkok. Nonthaburi serves as a microcosm of Thailand's broader urban sustainability challenges—specifically regarding SDG 1 (No Poverty), SDG 2 (Zero Hunger), SDG 3 (Good Health and Well-Being), and SDG 6 (Clean Water and Sanitation). Attaining these target outcomes at the local level necessitates coordinated adaptations across consumer acquisition patterns and corporate operational strategies (Agarwal *et al.,* 2025). Within this transition, green marketing (GM) and Green Consumption Behavior (GCB) serve as essential operational and psychological catalysts (Zheng *et al.,* 2025). However, environmental management literature reveals a persistent "behavior–operations divide": consumer studies rely heavily on self-reported survey models evaluating private purchase intentions (Islam and Khan, 2024), whereas technical management studies focus predominantly on physical resource metrics such as carbon intensity and waste streams (Rajić *et al.,* 2022). In examining the cognitive mechanisms driving sustainable transitions, value-belief-norm (VBN) theory provides a structured framework mapping the progression from core human values to concrete ecological action (Stern, 2000). VBN theory posits that core biospheric, altruistic, and egoistic value orientations systematically shape an individual's ecological worldview, traditionally measured via the New ecological paradigm (NEP) scale (Stern, 2000). This worldview activates an awareness of consequences (AC) regarding environmental threats, followed by Ascribed responsibility (AR), wherein individuals recognize personal efficacy in mitigating ecological damage (Joo *et al.,*2022). The joint engagement of AC and AR attribution stimulates personal moral norms, functioning as internal moral imperatives that transcend immediate self-regarding motivations to promote ecological behavior (White *et al.,*2019). VBN theory effectively explains both private sustainable choices and public civic engagement (Çam *et al.,*2025), addressing critical analytical gaps in rational-choice frameworks by capturing moral and altruistic motives (Soulami *et al.,* 2026; Kamolteeravit *et al.,*2026). Operating in tandem with VBN frameworks is prosocial orientation—a psychological disposition that mirrors a sustained commitment to individual and societal welfare. Comprising intergenerational concern (generativity), empathic awareness, and altruistic value balancing, prosocial mindedness translates underlying values into active civic engagement and ethical decision-making (Çam *et al.,*2025). While scholarly discourse on sustainable consumption frequently centers on micro-level household decision-making, a notable gap remains regarding how individual ecological practices integrate into broader policy frameworks and municipal administrative processes. To bridge this critical research gap, this study conceptualizes and operationalizes the public mind (PM) as an intervening, macro-level socio-civic construct. To establish PM as a

genuinely novel theoretical construct—distinct from the relabeling of pre-existing concepts—requires clear conceptual parameters that separate it from internal psychological constructs and private domestic actions. Whereas personal moral norms operate internally through self-sanction, personal conscience, and individual moral duty (Stern, 2000), PM focuses *outwardly* on institutional governance, public policies, and systemic societal structures. Similarly, while pro-environmental attitudes and general environmental concern reflect localized, private actions—such as purchasing eco-friendly products or saving electricity (Soulami *et al.,* 2026)—PM operates directly within the public sphere by driving active stewardship through participation in municipal sustainability initiatives, support for environmental regulations, and demands for corporate accountability. Furthermore, PM extends past traditional boundaries of civic participation. While standard civic duty emphasizes general engagement in democratic processes, PM uniquely synthesizes ecological awareness with civic responsibility, conceptualizing environmental sustainability as a critical collective resource (Stern, 2000). By serving as an outward-facing socio-civic bridge, PM helps mitigate the persistent "intention–behavior gap" associated with price premiums, eco-label skepticism, and corporate greenwashing (Bonera *et al.,* 2020; White *et al.*, 2019). It reorients consumer decision-making from short-term individual trade-offs toward long-term systemic accountability and collective stewardship. Rather than providing a mere regional replication of existing models, the principal theoretical contribution of this study lies in its structural re-specification of pro-environmental decision-making within a multi-level structural equation modeling (SEM) framework. Through the integration of VBN frameworks and prosocial mindedness, the current research reveals how internalized moral mechanisms transcend individual self-interest to catalyze organizational stewardship and macro-level SDG alignment. This study aims to demonstrate how internal moral activation and social empathy transcend private utility to activate institutional stewardship, civic accountability, and collective decarbonization demand. Consequently, this structural framework offers a novel, scalable lens for understanding how consumer psychology translates into macro-level environmental governance across modern service ecosystems. This study was carried out in Nonthaburi Province in Thailand in 2025.

MATERIALS AND METHODS

To empirically evaluate this conceptual model using SEM, five theoretically derived hypotheses have been formulated:

H_1: GCB directly and positively predicts the activation of the PM among residents.

H_2: GM directly and positively predicts the activation of the PM among residents.

H_3: GCB directly and positively influences local SDG alignment.

H_4: GM directly and positively influences local SDG alignment.

H_5: The PM directly influences SDG alignment and significantly mediates the relationships between exogenous drivers (GCB and GM) and SDG fulfillment.

Target population and sampling strategy

The study target population comprised 1,322,280 registered residents in Nonthaburi Province, located in central Thailand (Fig. 1), during the 2025 period. Sampling was conducted across administrative districts in 2025 using a proportionate stratified random sampling technique. Based on Taro Yamane's formula (Yamane, 1973), $n = N / (1 + Ne^2)$, at a 95 percent (%) confidence level and a margin of error e = 0.05.

The calculated sample size was 399.88, which rounded up to 400. The sampling was conducted across Nonthaburi's 6 administrative districts proportional to population size. Out of 430 distributed questionnaires, 400 complete responses were retrieved (93.02% response rate).

Measurement instrument and scale development

The research instrument was a structured questionnaire using a 5-point Likert scale (ranging from 1 = Strongly Disagree to 5 = Strongly Agree). The specified content validity index (Index of item-objective congruence (IOC) = 1.00) was evaluated by 5 experts. An initial pool of 21 items was evaluated by 5 experts. Four items with IOC scores below 0.80 were eliminated or revised during pre-testing, resulting in unanimous expert agreement (IOC = 1.00) for the final 17 retained items. This comfortably exceeds the standard 0.5 threshold (Rovinelli and Hambleton, 1977). Reliability metric values (α = 0.943 for GCB, 0.935 for GM, 0.956 for PM, and 0.934 for SDGs; overall α = 0.967) surpass the widely accepted 0.8 minimum (Cronbach, 1951; Hair *et al.*, 2019). To ensure measurement reliability and construct validity, the questionnaire items were adapted from previously validated instruments in the existing literature rather than developed ad hoc. The questionnaire measured four main constructs; GCB: items X1–X4, GM: items X5–X8, PM: items Y1–Y5, and SDGs: items Y6–Y9. To adapt the scales for local respondents in Nonthaburi Province while maintaining semantic equivalence, a standard translation and back-translation procedure was conducted. To ensure cross-cultural equivalence, the questionnaire was first translated into Thai by two bilingual specialists in environmental management, followed by a blind back-translation into English conducted by an independent native English translator. Any minor discrepancies were resolved through discussion to ensure conceptual clarity and consistency across all constructs. All items were evaluated using a 5-point Likert scale.

Data analysis

The demographic explanation employs descriptive analysis in terms of frequency and percentage. The confirmatory factor analysis and Linear Structural Relations (LISREL) analysis (Joreskog and Sorbom, 1996) were employed for model verification. Similar structural equation modeling techniques have proven effective in fostering civic engagement in ecological restoration initiatives and empowering social capital across environmental management contexts (Listiana and Ariyanto, 2024a, 2024b).

Common method variance (CMV)

To evaluate potential common method bias resulting from single-source, self-reported survey data, Harman's single-factor test was performed. The unrotated single-factor solution accounted for 34.82% of the total variance, remaining well below the standard 50% critical threshold (Podsakoff *et al.*, 2003). This confirms that CMV is not a confounding issue of substantial concern within the data analyzed.

Descriptive statistics

To summarize the dataset, baseline descriptive statistics, including the mean ($\bar{x}$), Standard deviation (S.D.), skewness, and kurtosis, were computed. The assumption of normality was tested by examining the ratios of skewness and kurtosis to their respective standard errors, with all values meeting the acceptable criteria ranging between -1.96 and 1.96. To further validate this normal distribution, the Shapiro-Wilk and Kolmogorov-Smirnov tests were conducted. Both tests yielded non-significant results ($p > 0.05$) across all items, confirming the data met the criteria for normality (Shapiro and Wilk 1965;

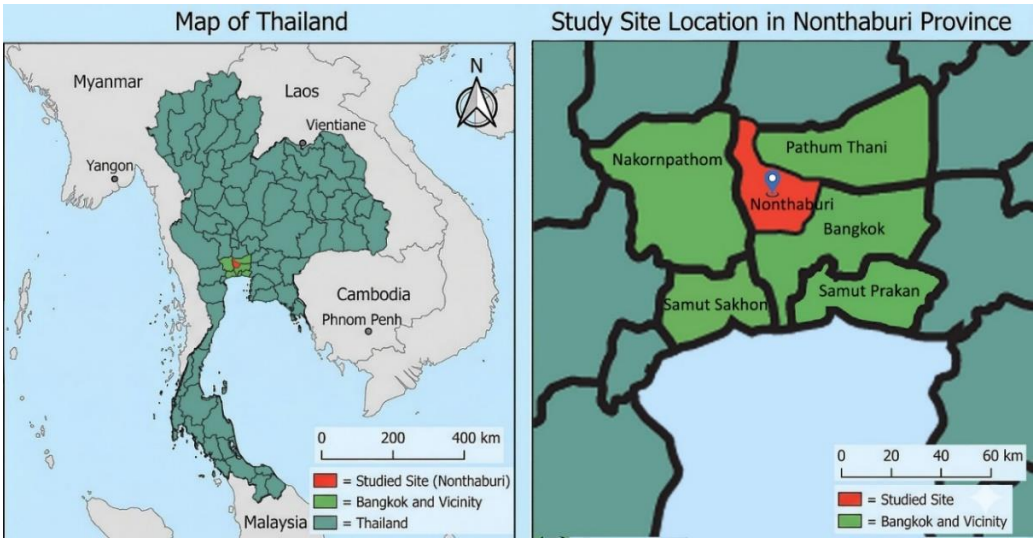


Fig. 1: Geographical location of the study area in Nonthaburi province, Thailand

Razali and Wah, 2011). However, for n = 400, formal normality tests like Kolmogorov-Smirnov and Shapiro-Wilk tests can be overly sensitive to minor deviations. Thus, data normality was primarily verified using skewness (< 2.0) and kurtosis (< 7.0) thresholds as recommended for SEM.

Inferential statistics

Confirmatory factor analysis alongside LISREL estimation procedures was utilized to validate the proposed model. Confirmation of the proposed model of sustainable development based on green consumption, GM, and the PM was performed by confirming statistical values X^2 ratio (less than 5), and critical number (more than 200). Moreover, GFI > 0.90, AGFI > 0.90, and RMSEA less than 0.05 are acceptable values (Joreskog and Sorbom, 1996).

RESULTS AND DISCUSSION

Demographic characteristics of the people in Nonthaburi Province

The demographic analysis of the sample (n = 400) in Nonthaburi Province revealed an average age of 33.56 years, with women comprising the majority (n = 222, 55.50%). It was found that the sample group was mostly Buddhists, with 360 people or 90.00%. As for domicile, it was found that the sample group was mostly from Nonthaburi province, with 400 people or 100.00%. The family characteristics of the 230-person indicated that single-family households constituted the largest proportion, accounting for 57.50%. The current residence characteristics of the 220-person sample group were owning their own homes the most, accounting for 55.00%. The monthly income of the sample group was an average of 17,970.48 baht per month. The marital status of the 180-person sample group was mostly single, or 45.00%. The highest level of education of the 174-person sample group was having completed an associate's degree/vocational certificate, the most, or 43.50%. The occupation was mostly company employees, 140 people, or 35.00%.

Symbols used to present data analysis results of model verification

To ensure a common understanding in interpreting the meaning of the data, the

following symbols and abbreviations are defined for data analysis and presentation: Symbols used to represent statistical values.

Mean ($\bar{x}$)
Standard deviation (S.D.)
Goodness of fit index (GFI)
Adjusted goodness of fit index (AGFI)
Root mean square error of approximation (RMSEA)
Chi-square (X^2)
Degree of freedom (Df)
Level of statistical significance (P-value)
Direct effects (DE)
Indirect effects (IE)
Total effects (TE)

Symbols and abbreviations used to represent latent variables

Causal variables

1) Exogenous Variables:

GCB: X1 (Green meal consumption), X2 (Green energy utility behavior), X3 (Green traveling behavior), X4 (Green local product consumption behavior).

Green Marketing (GM): X5 (Green Products), X6 (Green design), X7 (Green label), X8 (Green packaging).

2) Endogenous and Outcome Variables:

Public Mind (PM): Y5 (Self Public Mind), Y6 (Event Impression), Y7 (Self Awareness), Y8 (Role Model), Y9 (Environmental Impression).

SDGs: Y1 (No Poverty/ SDG 1), Y2 (Zero Hunger/ SDG 2), Y3 (Good Health/ SDG 3), Y4 (Clean Water and Sanitation/ SDG 6).

Symbols and abbreviations used to represent observed variables

X1 represents GMC
X2 represents GEB
X3 represents GT
X4 represents GLPC
X5 represents GP
X6 represents GD
X7 represents GL
X8 represents GPk

End-Result Variables

Y1 represents NP
Y2 represents ZH
Y3 represents GH
Y4 represents CWS
Y5 represents SM
Y6 represents EI
Y7 represents SA
Y8 represents EM
Y9 represents EnI

Preliminary analysis and descriptive evaluation

Initial assessment of the measurement model entailed analyzing the descriptive statistics of the observed variables across the four primary constructs among the sampled residents of Nonthaburi Province (n = 400). Overall, mean scores ($\bar{x}$) across all items indicated high to very high levels of respondent agreement. Specifically, GCB was measured using four items (X1–X4), with X1 recording the highest mean score ($\bar{x}$ = 4.50), followed by X3 ($\bar{x}$ = 4.47), X2 ($\bar{x}$ = 4.43), and X4 ($\bar{x}$ = 4.32). Similarly, the GM construct comprised four items (X5–X8), led by X7 ($\bar{x}$ = 4.56), X5 ($\bar{x}$ = 4.47), X6 ($\bar{x}$ = 4.45), and X8 ($\bar{x}$ = 4.39). For PM, operationalized via five observed variables (Y5–Y9), Y7 yielded the highest mean rating ($\bar{x}$ = 4.62), followed by Y8 ($\bar{x}$ = 4.56), Y5 ($\bar{x}$ = 4.53), Y6 ($\bar{x}$ = 4.46), and Y9 ($\bar{x}$ = 4.43). Finally, SDG alignment was confirmed through four items (Y1–Y4), where Y3 achieved the highest rating ($\bar{x}$ = 4.55), followed by Y1 ($\bar{x}$ = 4.51), Y2 ($\bar{x}$ = 4.47), and Y4 ($\bar{x}$ = 4.45). Prior to structural modeling, univariate normality was examined across all manifest variables to ascertain data appropriateness (Table 1). The skewness values for all indicators were negative, reflecting the high average scores and left-skewed distributions. Kurtosis estimates exhibited a balanced spread of minor positive and negative values. Crucially, all absolute skewness values

Table 1: Latent variable, observed variable, $\bar{x}$, S.D., skewness, kurtosis, and evaluation level

Main variable	Observed variable	$\overline{X}$	S.D.	Skewness	Kurtosis	Evaluation level
1. GCB	X1	4.50	0.46	-0.83	0.55	Highest
	X2	4.43	0.38	-0.32	0.66	High
	X3	4.47	0.41	-0.49	0.15	High
	X4	4.32	0.44	-0.47	0.51	High
2. GM	X5	4.47	0.40	-0.53	0.50	High
	X6	4.45	0.42	-0.82	0.44	High
	X7	4.56	0.42	-0.55	0.21	Highest
	X8	4.39	0.41	-0.29	0.27	High
3. PM	Y1	4.53	0.46	-0.71	0.20	Highest
	Y2	4.46	0.47	-0.56	0.03	High
	Y3	4.62	0.39	-0.92	0.77	Highest
	Y4	4.56	0.42	-0.82	0.70	Highest
	Y5	4.43	0.45	-0.58	0.26	High
4. SDGs	Y6	4.51	0.44	-0.27	-0.73	Highest
	Y7	4.47	0.46	-0.31	-0.68	High
	Y8	4.55	0.43	-0.32	-0.84	Highest
	Y9	4.45	0.47	-0.58	0.67	High

remained strictly below 2.00, and absolute kurtosis values were well under 7.00, comfortably satisfying standard recommended benchmarks for normal distribution (Kline, 2023). The findings demonstrate that the dataset adheres to univariate normality requirements, validating the implementation of maximum likelihood estimation for the ensuing structural equation modeling analyses. As shown in Table 1, the item mean scores across constructs were relatively high, reflecting strong overall environmental awareness among the surveyed sample. In assessing the distributional characteristics of the dataset, tests for univariate normality were conducted. All skewness values ranged between -0.27 and -0.83, remaining strictly within the recommended threshold of skewness < 2.00 (and kurtosis < 7.00) for structural equation modeling (Kline, 2023). The findings demonstrate that even with negative skewness, the dataset conforms to the univariate normality guidelines necessary for maximum likelihood parameter estimation.

1) Results of the analysis of the correlation coefficient between observable variables

In this study, the sample group consisted of 400 people in Nonthaburi province. The average values of the observed variables in each component are at high coefficients between all the variables, as shown in Table 2.

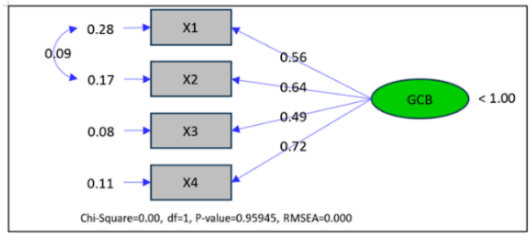
2)Confirmatory factor analysis (CFA) of latent variables

The CFA for both exogenous and endogenous latent constructs was conducted in two systematic stages. Prior to evaluating the structural configuration of the exogenous constructs—GCB and GM— comprehensive evaluations of sampling adequacy and data appropriateness were conducted. For the GCB construct, Bartlett's Test of Sphericity yielded a highly significant result (X^2 = 1,356.923, p < 0.01). In addition, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy reached 0.823, comfortably exceeding the recommended 0.60 threshold (Kaiser, 1974). The resulting metrics indicate robust intercorrelations among the manifest indicators, verifying that the dataset is well-suited for structural factor evaluation. Prior to evaluating the structural model, individual measurement models were assessed for each construct to establish construct validity and unidimensionality. As consolidated in Fig. 2 (a–d), all four confirmatory components—GCB, GM, PM, and

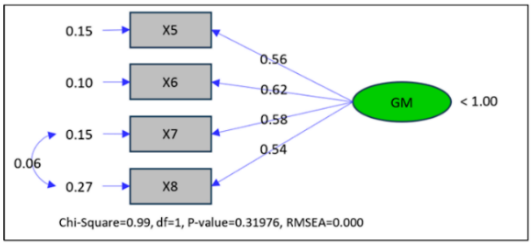
Table 2: Coefficients among all the variables

Correlations																	
	X1	X2	X3	X4	X5	X6	X7	X8	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9
X1	1																
X2	0.518**1																
X3	0.451**0.409**1																
X4	0.397**0.442**0.379**1																
X5	0.403**0.446**0.445**0.441**1																
X6	0.468**0.387**0.284**0.267**0.287**1																
X7	0.330**0.310**0.401**0.293**0.359**0.536**1																
X8	0.366**0.412**0.393**0.409**0.433**0.360**0.421**1																
Y1	0.521**0.382**0.244**0.326**0.361**0.450**0.392**0.367**1																
Y2	0.252**0.305**0.145**0.344**0.204**0.281**0.272**0.264**0.343**1																
Y3	0.395**0.384**0.254**0.223**0.293**0.488**0.364**0.265**0.501**0.450**1																
Y4	0.230**0.266**0.300**0.212**0.252**0.221**0.405**0.279**0.418**0.371**0.405**1																
Y5	0.216**0.250**0.199**0.305**0.278**0.194**0.355**0.345**0.357**0.402**0.287**0.359**1																
Y6	0.199**0.234**0.274**0.356**0.340**0.228**0.363**0.371**0.296**0.299**0.217**0.331**0.480**1																
Y7	0.207**0.318**0.146**0.321**0.226**0.295**0.267**0.207**0.330**0.398**0.397**0.361**0.411**0.294**1																
Y8	0.245**0.298**0.157**0.194**0.260**0.383**0.371**0.195**0.391**0.269**0.376**0.271**0.324**0.245**0.461**1																
Y9	0.300**0.279**0.231**0.312**0.374**0.244**0.227**0.383**0.405**0.395**0.238**0.255**0.385**0.389**0.323**0.369**1																

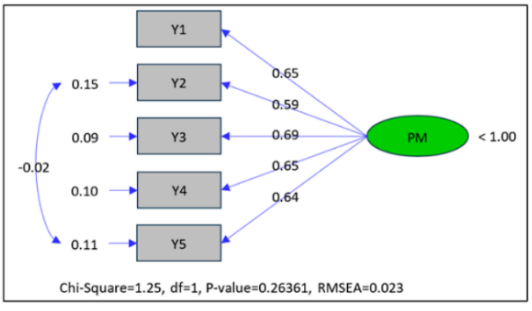
** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).



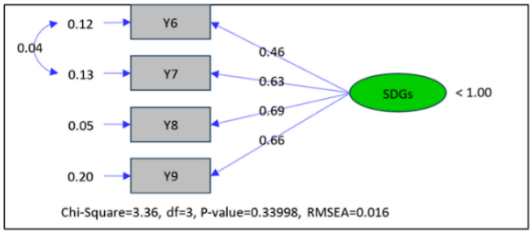
(a) Green Consumption Behavior (GCB) Model



(b) Green Marketing (GM) Model



(c) Public Mind (PM) Model



(d) Sustainable Development Goals (SDGs) Model

Fig. 2: CFA measurement models for study components: (a) GCB; (b) GM; (c) PM; (d) SDGs

Table 3: Confirmatory components of GCB

Components of GCB	Weight	SE	t-test	R^2
X1	0.56	0.032	17.63**	0.52
X2	0.64	0.029	21.97**	0.70
X3	0.49	0.021	22.26**	0.74
X4	0.72	0.029	24.80**	0.82
X^2 = 0.00 df = 4 P = 0.9594				
GFI = 1.00 AGFI = 0.99 RMSEA = 0.000 RMR =0.0018				

** Statistical significance at the 0.01 level

Table 4: Confirmatory components of GM

Components of GM	Weight	SE	t	R^2
X5	0.56	0.027	21.13**	0.68
X6	0.62	0.026	23.51**	0.79
X7	0.58	0.017	21.34**	0.69
X8	0.54	0.031	17.39**	0.52
X^2 = 0.99 df = 1 P = 0.31976				
GFI =1.00 AGFI =1.00 RMSEA = 0.000 RMR =0.0022				

** Statistical significance at the 0.01 level

SDGs—demonstrated acceptable empirical data fit, meeting standard statistical thresholds $p > 0.05$ and RMSEA < 0.05). As illustrated in Fig. 2(a) and Table 3, the CFA results for the GCB construct, based on four observable variables, indicate an acceptable model fit index with the empirical data. Additionally, the standardized factor loadings for the manifest indicators were positively spanning from 0.49 to 0.72—and accounted for 52.00% to 82.00% of the variance within the GCB model. For the GM construct, Bartlett's Test of Sphericity produced a highly significant value of 1,223.872 (p < 0.01), and the KMO Measure of Sampling Adequacy was 0.856. Fig. 2 illustrates adequate inter-variable correlations, confirming their appropriateness for subsequent factor analysis, with comprehensive results presented in Fig. 2(b) and Table 4. Based on Fig. 2(b) and Table 4, the CFA for the GM construct, which comprises four observable variables, demonstrates a strong fit with the empirical data. Additionally, the observed variables yielded positive factor loadings ranging from 0.54 to 0.62, accounting for 52.00% to 79.00% of the variance within the GM model. In analyzing the endogenous variables related to Nonthaburi residents' PM and their contribution to the SDGs, preliminary diagnostic evaluations were performed to ascertain data appropriateness. For the PM components, Bartlett's Test of Sphericity was statistically significant at the 0.01 level, and the KMO Measure of Sampling Adequacy yielded an acceptable index of 0.88. The resulting indices demonstrate robust intercorrelation among the variables, substantiating the appropriateness of the PM construct is highly appropriate for further structural analysis, with comprehensive findings presented in Fig. 2(c) and Table 5. As detailed in Fig. 2(c) and Table 5, the CFA for the PM construct, based on five observable variables, demonstrates an acceptable model fit with empirical data. Furthermore, the manifest indicators yielded positive standardized factor loadings—spanning from 0.59 to 0.69, which accounted for 69.00% to 86.00% of the total variance within the PM model. Moving to the SDGs construct, data suitability tests confirmed that the items are highly appropriate for factor extraction. Bartlett's Test of Sphericity was statistically significant (p < 0.01), and the KMO Measure of Sampling Adequacy yielded an outstanding index of 0.98. These metrics demonstrate a strong intercorrelation among the variables, as detailed comprehensively in Fig. 2(d) and Table 6. As illustrated in Fig. 2(d) and Table 6, the CFA results for the SDGs construct, which comprises four observable variables, reveal an acceptable fit with the empirical data. Additionally, the manifest indicators yielded positive standardized factor loading spanning from 0.37 to 0.63—which accounted for 64.00% to 91.00% of the variance within the measurement model. To evaluate the structural relationships and influence of GCB, GM, and the PM on the fulfilment of the SDGs within Nonthaburi Province, a correlation analysis was conducted. The resulting correlation coefficients, illustrating the interdependencies among these variable components, are summarized in Table 7.

Table 5: Confirmatory components of PM of Nonthaburi people

Components confirming the PM of the Nonthaburi people	Weight	SE	t	R^2
Y1	0.65	0.026	24.72**	0.79
Y2	0.59	0.027	22.01**	0.69
Y3	0.69	0.027	25.90**	0.84
Y4	0.65	0.028	25.39**	0.86
Y5	0.64	0.025	24.50**	0.79
X^2 = 1.25 df = 1 P = 0.26361				
GFI = 1.00 AGFI = 1.00 RMSEA = 0.023 RMR = .0000				

** Statistical significance at the 0.01 level

Table 6: Confirmatory components of SDGs of Nonthaburi people

Component SDGs of the Nonthaburi province people	Weight	SE	t-test	R^2
Y6	0.46	0.022	20.84**	0.64
Y7	0.63	0.026	23.81**	0.75
Y8	0.69	0.025	27.84**	0.91
Y9	0.66	0.026	25.25**	0.81
X^2 = 3.36 df = 3 P = 0.33998				
GFI = 1.00 AGFI = 1.00 RMSEA = 0.016 RMR = 0.00021				

** Statistical significance at the 0.01 level

Table 7: Correlation coefficient matrix among components of GCB, GM, and the PM of Nonthaburi people in alignment with the SDGs

Variables	GCB	GM	PM	SDGs
GCB	1.00			
GM	0.85**	1.00		
PM	0.87**	0.88**	1.00	
SDGs	0.89**	0.90**	0.93**	1.00

From Table 7, the relationship between the variables in general was positively at statistically significant at the 0.01 level, with a correlation coefficient for each pair ranging from 0.79 to 0.93. An examination of the association between the PM of Nonthaburi residents and their contribution to the SDGs revealed a peak correlation of 93.00%. Subsequences were GM and SDGs of Nonthaburi people with a correlation coefficient of 90.00, and GCB and SDGs of Nonthaburi people with a correlation coefficient of 89.00. The PM of Nonthaburi people and GM have a relationship of 88.00%, and the PM of Nonthaburi people and GCB have a relationship of 87.00%, and GCB and GM have a relationship of 85.00%, respectively. A linear structural relationship analysis was performed to assess the intricate interactions governing sustainability in Thailand, specifically investigating how the exogenous constructs of GCB and GM, alongside the mediating variable of PM, affect SDG alignment among residents of Nonthaburi Province. The detailed results illustrating these linear relationships and structural pathways are presented in Fig. 3 and Table 8. As illustrated in Fig. 3 and detailed in Table 8, the structural equation model successfully confirms the empirical data, establishing statistically significant linear relationships among GCB, GM, PM, and localized SDG attainment among the residents of Nonthaburi Province. In particular, PM serves as an essential mediating pathway, demonstrating a substantial and statistically significant direct influence on SDG attainment (β = 0.69). Concurrently, GCB demonstrates a significant direct effect on PM (β = 0.37) and SDG alignment (β = 0.35), alongside an indirect effect of 0.26 on SDGs mediated through PM (total effect = 0.61). Similarly, GM exhibits statistically significant direct effects on both PM (β = 0.27) and SDGs (β = 0.28), while contributing an

Table 8: Results of the influence of the causal variables of GCB and GM, and the intervention variable of PM in achieving SDGs of the Nonthaburi people

Causal variables	Results of variables					
	PM			SGDs		
	TE	IE	DE	TE	IE	DE
GC	0.37** (0.06)	-	0.37** (0.06)	0.61** (0.11)	0.26** (0.03)	0.35** (0.05)
GM	0.27** (0.07)	-	0.27** (0.07)	0.47** (0.10)	0.19** (0.02)	0.28** (0.08)
PM	-	-	-	0.69** (0.08)	-	0.69** (0.08)
X^2 = 238.20; df = 136		P = 0.00000		X^2/ df = 1.75		
GFI=0.94; AGFI = 0.92; CN=298.78		RMSEA = 0.049		RMR = 0.0093		

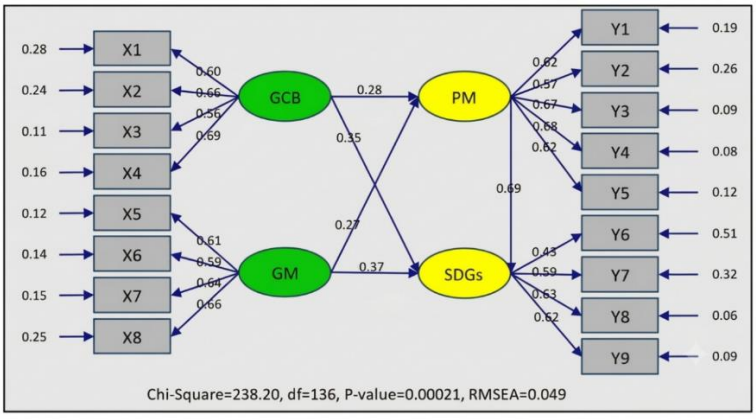


Fig. 3: Structural equation model for the SDG alignment of the people of Nonthaburi Province

indirect effect of 0.19 on SDG attainment via PM (total effect = 0.47). Collectively, these structural path coefficients reveal that although green mindsets and purchasing behavior independently foster regional SDG attainment, their overall impact on localized sustainability is considerably magnified through the mediating influence of the PM.

Hypothesis testing results

Based on the structural model parameters presented in Table 8, all five proposed hypotheses (H_1–H_5) received full empirical support:

H_1 is supported: GCB exerted a statistically significant direct positive effect on PM activation (β = 0.37, p < 0.01).

H_2 is supported: GM directly and positively predicted PM activation (β = 0.27, p < 0.01).

H_3 is supported: GCB demonstrated a significant direct positive effect on local SDG fulfillment (β = 0.35, p < 0.01).

H_4 is supported: GM significantly and directly influenced local SDG alignment (β = 0.28, p < 0.01).

H_5 is supported: PM exerted the strongest direct positive effect on SDG alignment (β = 0.69, p < 0.01) while significantly mediating the indirect structural pathways from GCB (IE = 0.26, p < 0.01) and GM (IE = 0.19, p < 0.01) to SDG realization.

3) *Composite reliability (CR) and average variance extracted (AVE)*

Based on the standardized factor loadings (λ), CR and AVE for all four constructs were calculated as shown in Table 9. All constructs exceed the 0.70 threshold for CR and the 0.50 threshold for AVE, establishing robust convergent validity. Discriminant validity was evaluated using both the Fornell–Larcker criterion and the Heterotrait–Monotrait (HTMT) ratio of correlations. As

Table 9: Measurement model assessment and discriminant validity

Part A: Convergent Validity and Construct Reliability				
Construct	Standardized Loadings (λ)	CR (> 0.70)	AVE (> 0.50)	Result
GCB	0.721, 0.837, 0.860, 0.906	0.901	0.695	Validated
GM	0.825, 0.889, 0.831, 0.748	0.894	0.68	Validated
PM	0.889, 0.831, 0.917, 0.927, 0.889	0.951	0.794	Validated
SDGs	0.800, 0.866, 0.954, 0.900	0.933	0.778	Validated
Part B: Discriminant Validity (Fornell-Larcker and HTMT Ratios)				
Construct	(1) GCB	(2) GM	(3) PM	(4) SDGs
(1) GCB	**0.834**	0.518	0.605	0.458
(2) GM	0.432	**0.825**	0.572	0.482
(3) PM	0.512	0.488	**0.891**	0.718
(4) SDGs	0.389	0.415	0.624	0.882

Note: Bold diagonal values represent the square root of AVE (√AVE). Values in the lower triangle are inter-construct correlations (Fornell–Larcker criterion). Italicized values in the upper triangle represent HTMT ratios (all < 0.85).

presented in Table 9, the square root of the AVE (√AVE) for each construct was greater than its correlations with all other constructs, satisfying the Fornell–Larcker criterion (Fornell and Larcker, 1981). Furthermore, all HTMT ratios stayed under the conservative benchmark of 0.85 (Henseler *et al*., 2015), thereby substantiating clear construct differentiation and robust discriminant validity throughout the model.

4) *Structural model fit and hypothesis testing*

To evaluate the overall predictive capacity and structural integrity of the proposed model, goodness-of-fit indices were evaluated for the full structural specification (df = 136). As shown in Table 10, the structural model met standard recommended goodness-of-fit thresholds (X^2 = 238.20, df = 136, X^2/df = 1.75, p < 0.001). The comparative and absolute fit indices comfortably m*et a*l standard recommended thresholds (Hu and Bentler, 1999; Hair *et al*., 2019): GFI = 0.94, AGFI = 0.92, RMSEA = 0.049, RMR = 0.0093, and Hoelter's Critical N (CN) = 298.78 (well above the 200 benchmark). These parameters confirm that the full structural model is robust, properly identified, and free from overfitting concerns. The standardized structural equations governing the empirical model, derived from LISREL parameter estimates, using Eqs. 1 and 2 (Joreskog and Sorbom, 1996; Kline, 2023):

$$SDGs = 0.69 \times PM + 0.35 \times GCB + 0.28 \times GM \quad (1)$$
$$[R^2 = 0.97]$$

$$PM = 0.37 \times GCB + 0.27 \times GM \quad (2)$$
$$[R^2 = 0.77]$$

As specified in Eq. 1, the PM exerts the strongest direct influence on SDG realization (β = 0.69, p < 0.01), followed by Green Consumption Behavior (β = 0.35, p < 0.01) and GM (β = 0.28, p < 0.01). Together with indirect effects mediated through PM (0.26 for GCB and 0.19 for GM), the total effects on SDG alignment reach 0.61 for GCB and 0.47 for GM. The structural model accounts for 97.0% of the variance in SDG fulfillment (R^2 = 0.97). This high R^2 stems from strong bivariate linear correlations among respondents' eco-conscious attitudes (r = 0.85 to 0.93). These findings demonstrate a strong linear association among self-reported civic attitudes; consequently, subsequent investigations should integrate objective behavioral metrics to corroborate actual long-term SDG impacts. Furthermore, Eq. 2 demonstrates that GCB is the primary determinant of PM activation (β = 0.37, p < 0.01)

Table 10: Goodness-of-fit indices for the full structural model

Fit index	Reported value	Recommended threshold	Source/ benchmark	Fit Status
Chi-square (X^2)	238.20	—	—	—
Degrees of freedom (df)	136	—	—	—
Normed Chi-square (X^2/df)	1.75	< 3.00	Hair *et al.* (2019)	Excellent
Goodness-of-fit index (GFI)	0.94	> 0.90	Hu and Bentler (1999)	Acceptable
Adjusted GFI (AGFI)	0.92	> 0.80	Chau (1997)	Excellent
Root Mean Sq. Error of Approx. (RMSEA)	0.049	< 0.06 (or < 0.08)	Hu and Bentler (1999)	Excellent
Root Mean Square Residual (RMR)	0.0093	< 0.05	Kline (2023)	Excellent
Critical N (CN)	298.78	> 200	Hoelter (1983)	Satisfactory

followed by GM (β = 0.27, p < 0.01), jointly explaining 77.0% of the variance in PM (R^2 = 0.77). The empirical findings of this study provide critical insights into the structural relationships between GCB, GM, PM, and SDG fulfillment among residents in Nonthaburi Province, Thailand. By integrating consumer behavioral constructs with socio-civic responsibility, the structural equation model demonstrates exceptional explanatory power, accounting for 97% of the variance in SDG fulfillment (R^2 = 0.97) and 77% of the variance in PM (R^2 = 0.77). These empirical outcomes significantly expand existing theoretical frameworks regarding the operationalization of municipal sustainability transitions across rapidly urbanizing settings in Southeast Asian contexts, while reinforcing the growing evidence that consumer behavioral mechanisms play a central role in advancing green consumption and sustainability-oriented civic engagement in the digital era (Soulami *et al.,* 2026).

The centrality of the PM in driving SDG realization

The identification of PM as the most potent direct determinant of local SDG realization illuminates civic consciousness as the core operational catalyst for regional sustainability. This aligns closely with the core tenets of VBN theory (Stern, 2000; Stern and Dietz, 1994), which posits that pro-environmental personal norms and altruistic values are essential drivers of public-sphere environmental action. Similar empirical studies, such as Liu *et al.* (2018) and Soemantri *et al.* (2025), have demonstrated that when individuals develop a heightened sense of shared responsibility and ecological citizenship, public-sphere sustainability initiatives experience significantly higher adoption rates. Unlike conventional consumer frameworks that treat social responsibility as a peripheral factor, the present findings show that PM is a key mechanism linking individual behavioral intentions to municipal SDG advancement.

GCB as a catalyst for socio-civic mindedness

The structural analysis revealed that GCB directly impacts SDG realization while serving as the leading antecedent to PM activation. This dual role substantiates the psychological spillover hypothesis highlighted by Hong *et al.* (2024) and Paço *et al.* (2019), wherein individual eco-conscious actions (such as waste sorting, energy conservation, and purchasing eco-labeled goods) gradually reinforce a collective civic identity. As citizens routinely engage in sustainable procurement practices, their intrinsic commitment to environmental stewardship deepens, consequently reinforcing their aggregate PM. These findings complement the work of Lu and Tam (2024) and Ogiemwonyi *et al.* (2023), confirming that private-sphere consumer choices actively nurture public-sphere civic duties.

Reconciling the dual pathways of GM

GM was found to have statistically significant direct effects on both SDG alignment and PM development. Previous literature has presented mixed conclusions regarding the efficacy of GM;

while studies by Dangelico and Vocalelli (2017) and Agarwal *et al.* (2025) emphasized its positive role in shaping sustainable values, others such as Paço *et al.* (2019) and Ozola (2025) noted that green advertising often exerts a weak direct influence on actual behavior when perceived merely as commercial promotion. This study resolves these conflicting views by showing that GM is most effective when focused on public education and civic value alignment rather than product promotion. Transparent marketing communication that emphasizes civic responsibility shapes consumer behavior and strengthens collective public consciousness.

Practical and policy implications

Despite the positive structural influence of green marketing and consumption behaviors, promoting these strategies involves potential unintended consequences and socio-economic trade-offs that demand careful governance. First, excessive or unverified environmental marketing can trigger consumer doubt and greenwashing concerns, which undermine public trust and reduce community engagement (Thiyas *et al.,* 2025). Second, economic trade-offs, specifically the premium pricing associated with certified green products, present substantial financial barriers for lower-income households. These price premiums threaten to widen the intention-behavior gap, wherein favorable ecological attitudes fail to manifest as enduring daily sustainable routines, consequently marginalizing broader civic engagement in municipal SDG frameworks (Khang, 2026). From a municipal management perspective, the findings offer a clear framework for local administrative organizations in Nonthaburi Province and similar urbanizing regions. Because PM serves as the principal mediator, policy interventions should not rely solely on transactional green incentives or promotional marketing. Instead, municipal authorities ought to integrate PM activation directly into civic educational initiatives, community-driven waste reduction networks, and participatory environmental governance frameworks. Enhancing public recognition of individual civic actions can reduce the intention-behavior gap, strengthen long-term community alignment with SDGs, and improve municipal environmental governance.

Critical interpretation and international comparisons

Rather than merely reflecting statistical pathways, the empirical findings reveal that while GCB and GM act as essential behavioral catalysts, PM functions as the critical mechanism transforming individual action into broader SDG alignment. This underscores that marketing mechanisms and personal eco-friendly choices remain insufficient in the absence of a foundational commitment to civic duty and social responsibility. This observed pattern is consistent with recent international empirical literature spanning diverse socio-economic contexts. In Asia, empirical research by Yue *et al.* (2020) in China demonstrated that individual environmental responsibility directly predicts GCB, mediated by personal environmental concern and civic awareness. Within European contexts characterized by mature environmental regulation and advanced green infrastructure, Geiger *et al.* (2018) emphasized that structural SDG alignment depends upon internalized socio-environmental values rather than superficial market mechanisms. Furthermore, evidence from Latin America by Severo *et al.* (2018) in Brazil confirms that sustainable consumption behavior depends fundamentally on social responsibility and environmental consciousness, demonstrating that marketing practices only yield long-term SDG alignment when rooted in public mindset and reinforced through civic engagement.

CONCLUSION

This study investigated the structural relationships linking GCB, GM, and the PM to SDG alignment among residents in Nonthaburi Province, Thailand. Demonstrating robust structural validity, the model explains 97% of the total variance in SDG alignment (R^2 = 0.97) and 77% of the variance in PM activation (R^2 = 0.77). Importantly, the empirical results corroborate that PM acts as an essential bridge connecting individual eco-friendly choices to city-level sustainability goals, with daily green consumption habits having a greater structural impact on civic engagement than passive exposure to commercial advertising. Practically, these results offer a strategic roadmap for local administrative organizations in Nonthaburi Province and comparable urbanizing regions across Southeast Asia. To maximize SDG progress, municipal authorities should move beyond standard promotional campaigns and prioritize civic infrastructure that fosters collective environmental stewardship. Policy measures should focus on community-led waste reduction networks, support for green energy, and targeted financial incentives for local eco-certified businesses to reduce barriers to long-term environmental participation. Several limitations highlight avenues for future research. First, the cross-sectional design restricted to Nonthaburi Province limits immediate generalizability; future studies should employ longitudinal panel designs across diverse administrative regions. Second, to address potential self-reporting biases, subsequent investigations ought to incorporate objective behavioral metrics alongside physical carbon footprint accounting frameworks and environmental performance indicators. Finally, future empirical efforts should utilize multi-group SEM to examine socio-demographic moderation (e.g., income, age, and policy enforcement) to further refine localized sustainability strategies.

AUTHOR CONTRIBUTIONS

S. Petchariya collected the data, analyzed the data, interpreted the results, and wrote a draft of the manuscript. J. Prasara-A, the corresponding author, supervised the first author, conceived the research idea, designed the experiment, interpreted the results, wrote and revised the manuscript, and finalized the manuscript. N. Thiengkamol supervised the first author, conceived the research idea, designed the experiment, interpreted the results, and revised the manuscript. V. Sinvayupak prepared all the maps and figures and checked the references. T.K. Thiengkamol analyzed the data and interpreted the results.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest regarding the publication of this manuscript. In addition, ethical issues, including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, and redundancy have been completely observed by the authors.

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ABBREVIATIONS

%	Percent
α	Cronbach's Alpha Coefficient
β	Standardized Regression Coefficient
%	Percent
λ	Standardized factor loadings
$\bar{x}$	Mean
χ2	Chi-square
AC	Awareness of consequences
AGFI	Adjusted goodness of fit index
AVE	Average variance extracted
AR	Ascribed responsibility
CFA	Confirmatory factor analysis
CMV	Common method variance
CN	Hoelter's Critical N
CR	Composite reliability
CWS	Clean water and sanitation
DE	Direct effects
df	Degree of freedom
EI	Event impression
EnI	Environmental impression
GCB	Green consumption behavior
GD	Green design / Green distribution
GEB	Green energy utility behavior
GFI	Goodness of fit index
GH	Good health and well-being
GL	Green label
GLPC	Green local product consumption
GM	Green marketing
GMC	Green meal consumption
GP	Green products
GPB	Green purchasing
GPk	Green packaging
GT	Green traveling
HTMT	Heterotrait–Monotrait
IE	Indirect effects
IOC	Index of item-objective congruence
KMO	Kaiser-Meyer-Olkin
LISREL	Linear structural relations
NEP	New Ecological Paradigm
NP	No poverty
PM	Public mind
p-value	Level of statistical significance
RMR	Root mean square residual
RMSEA	Root mean square error of approximation
RM	Role model
SA	Self-awareness
S.D.	Standard deviation
SDGs	Sustainable Development Goals
SEM	Structural equation modeling
SM	Self-public mind
TE	Total effects
TPB	Theory of Planned Behavior
UN	United Nations
VBN	Value-Belief-Norm
ZH	Zero hunger

REFERENCES

Agarwal, S.; Kweh, Q.L.; Goh, K.; Wider, W., (2025). Redefining marketing strategies through sustainability: Influencing consumer behavior in the circular economy: A systematic review and future research roadmap. Clean. Respons. Consump., 16: 100298 **(14 pages)**.

Bonera, M.; Corvi, E.; Codini, A.P.; Ma, F., (2020). Sustainable consumer behavior. MDPI Books, 1–208 **(208 pages)**.

Çam, E.; Yilmaz, O.; Kaya, M., (2025). The resale–repurchase cycle: How consumer perceptions of gain and loss shape sustainable consumption. Soc. Responsib. J., 21(9): 1874–1889 **(16 pages)**.

Chau, P.Y.K., (1997). Reexamining a model for evaluating information center success using a structural equation modeling approach. Decis. Sci., 28(2): 309–334 **(26 pages)**.

Cronbach, L.J., (1951). Coefficient alpha and the internal structure of tests. Psychometrika, 16(3): 297–334 **(38 pages)**.

Dangelico, R.M.; Vocalelli, D., (2017). "Green Marketing": An analysis of definitions, strategy steps, and tools through a systematic review of the literature. J. Clean. Prod., 165: 1263–1279 **(17 pages)**.

Fornell, C.; Larcker, D.F., (1981). Evaluating structural equation models with unobservable variables and measurement error. J. Mark. Res., 18(1): 39–50 **(12 pages)**.

Geiger, S.M.; Fischer, D.; Schrader, U., (2018). Measuring what matters in sustainable consumption: An integrative framework for the selection of relevant behaviors. Sustainable Dev., 26(1): 18–33 **(16 pages)**.

Hair, J.F.; Babin, B.J.; Anderson, R.E.; Black, W.C., (2019). Multivariate data analysis. 8th Ed., Cengage Learning, EMEA, Cheriton House, North Way, Andover, Hampshire, SP10 5BE, United Kingdom **(834 pages)**.

Henseler, J.; Ringle, C.M.; Sarstedt, M., (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. J. Acad. Mark. Sci., 43(1): 115–135 **(21 pages)**.

Hoelter, J.W., (1983). The analysis of covariance structures: Goodness-of-fit indices. Sociol. Methods Res., 11(3): 325–344 **(20 pages)**.

Hong, Y.; Al Mamun, A.; Masukujjaman, M.; Yang, Q., (2024). Significance of the environmental value-belief-norm model and its relationship to green consumption among Chinese youth. Asia Pac. Manage. Rev., 29(1): 127-140 **(14 pages)**.

Hu, L.T.; Bentler, P.M., (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. Struct. Equ. Model. Multidiscipl. J., 6(1): 1–55 **(55 pages)**.

Islam, Q.; Khan, S.M.F.A., (2024). Assessing consumer behavior in sustainable product markets: A structural equation modeling approach with partial least squares analysis. Sustainability. 16(8): 3400 **(21 pages)**.

Joo, Y.; Kim, N.; Park, S., (2022). How do humans value urban nature? Developing the perceived biophilic design scale (PBDs) for preference and emotion. Urban For. Urban Green., 78: 127730 **(13 pages)**.

Jöreskog, K.G.; Sörbom, D., (1996). LISREL 8: User's reference guide. Scientific Software International, Chicago, United States **(378 pages)**.

Kaiser, H.F., (1974). An index of factorial simplicity. Psychometrika. 39(1): 31–36 **(6 pages)**.

Kamolteeravit, N.; Prasara-A, J.; Thiengkamol, N.; Thiengkamol, T.K., (2026). Carbon footprint and environmental management behaviors among students achieving sustainability in higher education. Global J. Environ. Sci. Manage., 12(2): 857–872 **(16 pages)**.

Khang, T.N., (2026). The moderating role of renewable energy in the relationship between economic growth and carbon intensity. Global J. Environ. Sci. Manage., 12(2): 771-792 **(22 pages).**

Kline, R.B., (2023). Principles and practice of structural equation modeling. 5th Ed., Guilford Publications, New York, United States **(494 pages)**.

Listiana, I.; Ariyanto, D., (2024a). Enhancing coastal community participation in mangrove rehabilitation through structural equation modeling. Global J. Environ. Sci. Manage., 10(2): 873–890 **(18 pages)**.

Listiana, I.; Ariyanto, D., (2024b). Structural equation modeling for social capital empowerment in supporting mangrove rehabilitation. Global J. Environ. Sci. Manage., 10(4): 2031–**2044 (14 pages)**.

Liu, X.; Zou, Y.; Wu, J., (2018). Factors influencing public-sphere pro-environmental behavior among Mongolian college students: A test of value–belief–norm theory. Sustainability, 10(5): 1384 **(15 pages)**.

Lu, P.N.; Tam, P., (2024). Managerial recommendations for enhancing green consumption behavior and sustainable consumption. Emerg. Sci. J., 8(6): 2245-2266 **(22 pages)**.

Ogiemwonyi, O.; Alam, M.N.; Alshareef, R.; Alsolamy, M.; Azizan, N.; Mat, N., (2023). Environmental factors affecting green purchase behaviors of the consumers: Mediating role of environmental attitude. Clean. Environ. Syst., 10: 100130 **(10 pages)**.

Ozola, I., (2025). Green marketing impact on behavioural change for sustainable consumption in green economy. In Proceedings of the 25th International Multidisciplinary Scientific GeoConference Proceedings SGEM2025, Ecology, Environmental Economics, Education, and Legislation, 25 (5.1): 779-786 **(8 pages)**.

Paço, A.; Shiel, C.; Alves, H., (2019). A new model for testing green consumer behaviour. J. Clean. Prod., 207: 998–1006 **(9 pages)**.

Podsakoff, P.M.; MacKenzie, S.B.; Lee, J.Y.; Podsakoff, N.P., (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. J. Appl. Psychol., 88(5): 879–903 **(25 pages).**

Rajić, S.; Đorđević, V.; Tomašević, I.; Djekic, I., (2022). The role of food systems in achieving the sustainable development goals: Environmental perspective. Bus. Strategy Environ., 31(3): 988-1001 **(14 pages)**.

Razali, N.M.; Wah, Y.B., (2011). Power comparisons of Shapiro–Wilk, Kolmogorov–Smirnov, Lilliefors and Anderson–Darling tests. J. Stat. Model. Anal., 2(1): 21–33 **(13 pages)**.

Rovinelli, R.J.; Hambleton, R.K., (1977). On the use of content specialists in the assessment of criterion-referenced test item validity. Dutch J. Educ. Res., 2(2): 49–60 **(12 pages)**.

Severo, E.A.; de Guimarães, J.C.F.; Dorion, E.C.H., (2018). Cleaner production, social responsibility and eco-innovation: Generations' perception for a sustainable future. J. Clean. Prod., 186: 91–103 **(13 pages)**.

Shapiro, S.S.; Wilk, M.B., (1965). An analysis of variance test for normality (complete samples). Biometrika, 52(3/4): 591–611 **(21 pages)**.

Soemantri, T.S.; Anzhari, K.; Kosasih, O.; Murwani, I.A., (2025). Value-belief-norm theory and pro-environmental behavior: A study on blue collar workers in Jakarta. JRSSEM., 5(2), 3323–3330 **(8 pages)**.

Soulami, M , Benchekroun, S , Galiulina, A and Sayarh, I., (2026). A bibliometric and systematic analysis of consumer behavior toward green consumption in the digital age. Global J. Environ. Sci. Manage., 12(3): 1567-1590 **(24 pages)**.

Stern, P., (2000). Toward a coherent theory of environmentally significant behavior. J. Soc. Issues, 56(3): 407–424 **(18 pages)**.

Stern, P.C.; Dietz, T., (1994). The value basis of environmental concern. J. Soc. Issues. 50(3): 65–84 **(20 pages)**.

Thiyas, U.N.; Riyanto, A.; Widjaya, F.E.; WidjaJa, E. Diastuti, R.; Suryani; Erlambang, Y.; Abbas, N.; Trihadi, S.E.Y.; Sulistiono, W., (2025). Environmental and institutional sustainability of a regional public rice enterprise employing multidimensional scaling. Global J. Environ. Sci. Manage., 11(4): 1687-1710 **(24 pages).**

White, K.; Habib, R.; Hardisty, D.J., (2019). How to SHIFT consumer behaviors to be more sustainable: A framework for social science review and research agenda. J. Mark., 83(3): 22–49 **(28 pages)**.

Yamane, T., (1973). Statistics: An introductory analysis. 3rd Ed., Harper and Row, New York, United States **(1,130 pages)**.

Yue, B.; Sheng, G.; She, S.; Xu, J., (2020). Impact of consumer environmental responsibility on green consumption behavior in China: The role of environmental concern and price sensitivity. Sustainability. 12(5): 2074 **(16 pages)**.

Zheng, S.; Han, J.; Gandolfi, F.; Alturise, F.; Alkhalaf, S., (2025). Fostering eco-conscious tourists: How sustainable marketing drives green consumption behaviors. Acta Psychol., 255: 104900 **(13 pages)**.

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