Journal of Agricultural Socio-Economics (JASE)
eISSN 2745-6897 | pISSN 2745-6889
Volume 7 Issue 1 (2026) Page 168-186
DOI: http://dx.doi.org/10.33474/jase.v7i1.25270
Submit: 15-04-2026 | Accepted: 31-05-2026 | Publish: 30-06-2026

Applying the Stimulus–Organism–Response Model to Social Media-Driven Organic Vegetable Consumption Among Housewives in Malang City

Fithana Silma Ridani[1*], Mofit Jamroni[2], Rizka Amalia[2]
[1] Master of Sociology, Faculty of Agriculture, Universitas Brawijaya, Malang, Indonesia
[2]Department of Socio-Economics, Faculty of Agriculture, Universitas Brawijaya, Malang, Indonesia

*Corresponding author: fithana@student.ub.ac.id

Abstract. Sustainable food consumption has become increasingly important in promoting environmentally responsible household food choices, including organic vegetable consumption. Although social media is widely used to disseminate health and environmental information, few studies have examined how access to social media stimulates organic vegetable consumption by fostering environmental awareness among housewives in a local agribusiness context. This study fills this gap by applying the Stimulus–Organism–Response (SOR) model to explain participation in organic vegetable consumption among housewives in Malang City. A quantitative survey was conducted with 65 housewives who had purchased and consumed organic vegetables and actively used social media. Data were analyzed using Partial Least Squares–Structural Equation Modeling (PLS-SEM). The results show that social media access had a positive and significant effect on environmental awareness ($\beta = 0.826$; $p < 0.001$), environmental awareness significantly influenced organic vegetable consumption participation ($\beta = 0.520$; $p < 0.001$), and social media access directly affected consumption participation ($\beta = 0.430$; $p < 0.001$). Environmental awareness also mediated the relationship between social media access and participation in organic vegetable consumption. However, 60% of respondents purchased organic vegetables less than five times per month, indicating an awareness–behavior gap. These findings strengthen the SOR model's explanation of sustainable consumption behavior and highlight the strategic role of digital communication in the development of the organic vegetable market. The study suggests that organic farmers, retailers, and digital marketers should integrate consumer education, transparency in certification, and targeted social media campaigns to strengthen household participation in sustainable agribusiness.

Keywords: Green Consumption; Organic Food; SOR Model; PLS-SEM; Sustainable Agribusiness

INTRODUCTION

The increasing use of pesticides and synthetic chemicals in agricultural practices has contributed to the growing complexity of the food system, posing significant challenges to achieving sustainable food security, particularly in developing countries such as Indonesia (Alfiansyah et al., 2023). In addition, the excessive use of chemical inputs may reduce soil fertility and disrupt ecosystem balance, thereby threatening the sustainability of agricultural production systems. These issues have encouraged global initiatives, including the Sustainable Development Goals (SDGs), particularly SDG 12, which focuses on promoting responsible patterns of consumption and production (Gasper et al., 2019).

One key strategy to address sustainability challenges is to promote environmentally responsible consumption habits. This can be achieved through the adoption of green products, such as organic food, which is linked to reduced pesticide exposure and may encourage healthier eating patterns (Jiang et al., 2024; Salim et al., 2023; Syah et al., 2025). Additionally, consuming organic food supports environmentally sustainable production systems and helps ensure long-term food security. According to the Statistics on Organic Agriculture in Indonesia, organic vegetables are among the most popular organic products among Indonesian consumers, highlighting the growing potential of the organic food market in Indonesia (David & Alkausar, 2023). Organic vegetables are widely recognized for containing higher levels of essential nutrients, such as vitamins and antioxidants, which can boost the immune system and overall health. In the Malang Raya region, previous research on organic vegetables has focused on the production side, especially the technical efficiency of organic caisim farming in Batu City (Apolinaris et al., 2024). However, consumer involvement in organic vegetable consumption, particularly among household food decision-makers, remains less studied.

Malang City, East Java, has experienced a growing trend in healthy lifestyles, leading to increased demand for organic food (Zamrodah et al., 2023). Malang City has considerable potential for rapid information dissemination through social interaction and digital media (BPS-Statistics of Malang Municipality, 2026). Social media, in this context, plays an important role not only as an information source but also as an interactive communication channel that can shape environmental awareness and encourage green consumption-related responses (Bakti, 2024; Sun & Xing, 2022). Although access to information through social media continues to increase, participation in organic vegetable consumption in Malang City remains inconsistent despite the growing availability of organic products, expanding marketing channels, and rising consumer interest in healthy and sustainable food.

Although the trend of organic consumption is increasing, consumer participation remains influenced by several factors, particularly environmental awareness, health consciousness, customer value, and consumer attitudes toward sustainable green purchasing (Agrawal et al., 2023; Alkhawaldeh et al., 2025). Previous studies have examined green consumption behavior across different contexts, including the influence of policy and demographic characteristics (Borah et al., 2024; Dlamini & Mahowa, 2024; Shimul et al., 2022). However, previous studies have largely focused on general green consumption behavior and purchase intention. At the same time, limited research has examined how social media access influences organic vegetable consumption through environmental awareness among housewives in the local agribusiness context of Malang City. This issue is important because housewives are key decision-makers

in household food consumption and play a strategic role in supporting sustainable consumption practices.

Based on this gap, this study aims to examine the effect of social media access on participation in organic vegetable consumption, with environmental awareness as a mediating variable. This study applies environmental communication theory (Pezzullo & Cox, 2018) and the Stimulus–Organism–Response (SOR) model (Mehrabian & Russell, 1974). The novelty of this study lies in integrating social media access, environmental awareness, and participation in organic vegetable consumption within the SOR framework in the context of household food decision-making in Malang City. Unlike previous studies that mainly examined general green consumption or purchase intention, this study focuses on housewives as key decision-makers in household food decisions. It emphasizes consumption participation in a local organic vegetable agribusiness context. It is hypothesized that social media access has a positive effect on participation in organic vegetable consumption, both directly and indirectly through environmental awareness. The findings are expected to enrich the green consumption literature and to provide practical implications for digital communication strategies, consumer education, and the development of the sustainable organic vegetable market.

METHODS

Research Design

This study employed a quantitative, survey-based approach, as it is appropriate for examining relationships among variables using data collected directly from respondents. The study was conducted in Malang City with respondents consisting of housewives who had purchased and consumed organic vegetables at least twice in the last three months. It actively used social media, defined as accessing platforms such as WhatsApp, Instagram, TikTok, Facebook, or YouTube for at least 1 hour per day to obtain information on food, health, or environmental issues.

Sampling Techniques

The sample size was determined using power analysis based on Cohen's (1992) guidelines and the PLS-SEM sample size recommendation proposed by Hair et al. (2017), considering the maximum number of predictors pointing to an endogenous construct in the structural model. A minimum sample of 59 respondents was required at the 5% significance level, with a minimum expected R^2 of 0.25. To improve estimation stability and reduce the risk of incomplete responses, the sample size was increased by approximately 10%, resulting in 65 respondents.

Respondents were recruited through purposive sampling, with questionnaires distributed online and offline to housewives in Malang City who met the established criteria. To enhance validity and reliability and reduce sampling error, the sample size was increased by 10%, resulting in a total of 65 respondents. This number is considered sufficient for PLS-SEM analysis because it meets the minimum sample requirement based on the indicator-to-sample ratio and the structural model complexity. However, a relatively small purposive sample may limit the generalizability of the findings to broader populations.

Measurement and Variables

Data were collected using a structured questionnaire designed specifically for this study by operationalizing the Stimulus–Organism–Response (SOR) model, environmental communication theory, and relevant literature on green consumption behavior into measurable indicators. The questionnaire was used to measure three reflective latent constructs in the research model: Social Media Access, Environmental Awareness, and Consumption Participation. All items were measured using a four-point Likert scale, ranging from 1 = strongly disagree to 4 = strongly agree. The use of a four-point scale was intended to encourage respondents to provide a clear tendency of agreement or disagreement without a neutral option.

Social Media Access (X) was positioned as the exogenous variable and represented the stimulus component in the SOR model. This variable was measured using four indicators: context, communication, collaboration, and connection, which captured the clarity of organic vegetable information on social media, information exchange, involvement in sharing or discussing content, and user relationships with organic vegetable information. Environmental Awareness (Z) was positioned as the mediating variable and represented the organism component. It was measured using three indicators: knowledge, attitude, and behavior related to environmental issues and organic vegetable consumption. Consumption Participation (Y) was positioned as the endogenous variable and represented the response component. This variable was measured using four indicators: decision-making, implementation, benefit utilization, and evaluation of organic vegetable consumption.

Because the questionnaire was developed for this study, the measurement quality was evaluated empirically through the PLS-SEM measurement model. Convergent validity was assessed using loading factor values and Average Variance Extracted (AVE), discriminant validity was assessed using cross-loading values and the Fornell–Larcker criterion, and reliability was assessed using composite reliability and Cronbach's alpha. The operational definitions, indicators, and measurement scales of each variable are presented in Table 1.

Table 1. Operational Definition of Research Variables

Variable	Code	Indicators	Measurement Scale
Social Media Access (X)	Stimulus / Exogenous variable	1. Context (clarity of organic vegetable information on social media) 2. Communication (exchange of information about organic vegetables) 3. Collaboration (involvement in sharing or discussing content) 4. Connection (relationships between users and organic vegetable information)	Four-point Likert scale: 1 = strongly disagree to 4 = strongly agree
Environmental Awareness (Z)	Organism / Mediating variable	1. Knowledge (understanding of environmental issues and organic vegetables) 2. Attitude (concern for environmental sustainability) 3. Behavior (actions that support environmentally friendly consumption)	Four-point Likert scale: 1 = strongly disagree to 4 = strongly agree
Consumption Participation (Y)	Response / Endogenous variable	1. Decision-making (choosing to consume organic vegetables) 2. Implementation (actual participation in consuming organic vegetables) 3. Benefit utilization (perceived benefits from consuming organic vegetables) 4. Evaluation (assessing satisfaction and consumption experience)	Four-point Likert scale: 1 = strongly disagree to 4 = strongly agree

Source: Primary data (Questionnaire), 2026

Data Analysis

The data were analyzed using Partial Least Squares–Structural Equation Modeling (PLS-SEM) with WarpPLS 8.0. PLS-SEM was selected because this study aimed to examine predictive relationships among latent variables, involved a relatively small purposive sample, and tested a mediation model in which environmental awareness served as the mediating variable between social media access and consumption participation. The model consisted of three reflective latent constructs: Social Media Access (X), Environmental Awareness (Z), and Consumption Participation (Y). Social Media Access was positioned as the exogenous variable and represented the stimulus component in the Stimulus–Organism–Response (SOR) model.

Environmental Awareness was positioned as the mediating variable and represented the organism component, while Consumption Participation was positioned as the endogenous variable and represented the response component.

The structural model tested three direct relationships: Social Media Access (X) → Environmental Awareness (Z), Environmental Awareness (Z) → Consumption Participation (Y), and Social Media Access (X) → Consumption Participation (Y). In addition, the indirect relationship Social Media Access (X) → Environmental Awareness (Z) → Consumption Participation (Y) was tested to examine the mediating role of environmental awareness.

The PLS-SEM analysis was conducted in two stages: measurement model evaluation and structural model evaluation. The measurement model was assessed using convergent validity, discriminant validity, and reliability. Convergent validity was evaluated based on loading factor values and Average Variance Extracted (AVE), while discriminant validity was assessed using cross-loading values and the Fornell–Larcker criterion. Reliability was evaluated using composite reliability and Cronbach's alpha. The structural model was evaluated by examining path coefficients, R-squared values, effect sizes, collinearity indicators, and model fit indices. Hypothesis testing was conducted based on the significance of the path coefficients; p-values below 0.05 indicated statistical significance. The mediation effect was examined by testing the significance of the indirect effect using the bootstrapping procedure in WarpPLS 8.0.

RESULT AND DISCUSSION

Most respondents were in the productive age group of 26–35 years, indicating that this segment has an important role in household food consumption decisions and is relatively responsive to health and sustainability-related information. Previous studies have shown that demographic factors, including age, education, and income, influence consumers' organic food buying behavior (Gundala & Singh, 2021). The respondents were also predominantly college graduates, accounting for 46 respondents (70.8% of the sample). This educational profile suggests that most respondents had sufficient cognitive capacity to understand information related to environmental issues, food safety, and organic vegetable consumption. Consumer knowledge and awareness have been identified as important factors shaping attitudes and willingness to consume organic food (Eyinade et al., 2021).

The income distribution indicates that most respondents were middle-income, with 37 respondents (56.9%) earning IDR 3,000,000–IDR 5,000,000 per month. This condition suggests that respondents had greater economic capacity to access organic vegetables, although price considerations may still affect the consistency of their purchase behavior. The relatively

low frequency of organic vegetable purchases, where 60% of respondents purchased organic vegetables less than five times per month, indicates an awareness–behavior gap. This finding suggests that environmental awareness and positive attitudes toward organic food do not always translate into regular consumption, as actual behavior may still be constrained by price, accessibility, product availability, trust, and household food budgeting considerations (Liu et al., 2024).

Table 2. Socio-demographic Profile of Respondents

Demographic Characteristic	Type	Frequency (n=65)	Percentage (%)
Age	26-35	33	50.8
	36-45	21	32.3
	46-55	10	15.4
	Over 56	1	1.5
Education	Junior school graduate or equivalent	1	1.5
	High school graduate or equivalent	11	16.9
	Diploma	1	1.5
	College graduate (four-year program)	46	70.8
	Graduate degree	6	9.2
Income	< IDR 3.000.000	25	38.5
	IDR 3.000.000 – IDR 5.000.000	37	56.9
	> IDR 5.000.000	3	4.6
Organic Vegetable Shopping Frequency	Less than 5 times/month	39	60
	5-10 times/month	17	26.2
	More than 10 times/month	9	13.8
Primary Status in the Household	Housewife (Working)	47	72.3
	Housewife (Not Working)	17	26.2
	Mother and Head of Household (Single Parents)	1	1.5

Source: Primary data (2026)

In addition to socio-demographic characteristics, respondents' daily social media use was examined, as social media access serves as the stimulus variable in the SOR model. The intensity and platform of social media use are important because they reflect the extent to which respondents are exposed to information, interaction, and promotional messages related to healthy and environmentally friendly food choices. Different platforms may also offer different communication functions, ranging from interpersonal information exchange via WhatsApp to visual promotion and lifestyle content on Instagram and TikTok. Therefore, mapping the frequency of social media use is necessary to identify which digital channels have the greatest potential to shape environmental awareness and participation in organic vegetable consumption among housewives. The analysis covered six social media platforms, namely Instagram,

Facebook, TikTok, WhatsApp, YouTube, and Twitter, across five duration categories: never, less than 1 hour/day, 1–3 hours/day, 4–6 hours/day, and more than 6 hours/day. The distribution of respondents' daily social media usage is presented in Figure 1.

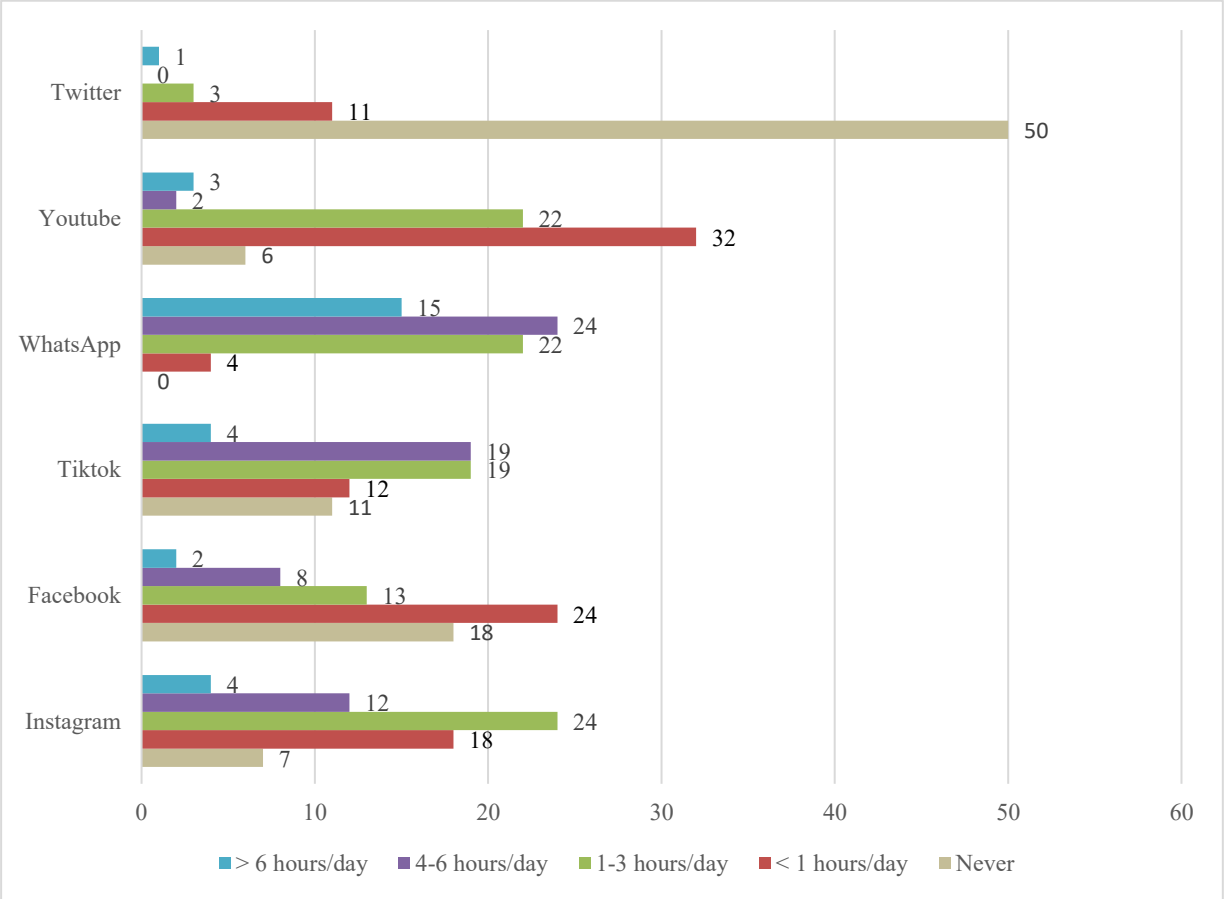

Figure 1. Daily Social Media Usage Frequency of Respondents
Source: Primary data (2026)

As shown in Figure 1, WhatsApp was the most intensively used platform among respondents, followed by Instagram and TikTok. WhatsApp had the highest number of respondents in the 4–6 hours/day and >6 hours/day categories, while Instagram and TikTok were mostly used within the 1–3 hours/day and 4–6 hours/day categories. In contrast, Twitter was the least used platform, with 50 respondents reporting that they never used it. This result is consistent with Isanani et al. (2025), who emphasized that social media can function as a communication space that shapes environmental awareness through information exchange and interaction within digital communities.

Partial Least Squares-Structural Equation Modeling Result

The PLS-SEM analysis was conducted in two stages: measurement model evaluation and structural model evaluation, following the recommended procedures for variance-based SEM (Hair et al., 2017). The measurement model assessment examined the validity and reliability of

the reflective constructs. In contrast, the structural model assessment evaluated the direct and indirect relationships among Social Media Access, Environmental Awareness, and Consumption Participation. In accordance with the Stimulus–Organism–Response (SOR) framework, Social Media Access was specified as the stimulus, Environmental Awareness as the organism and mediating variable, and Consumption Participation as the response. The results of both the measurement and structural model evaluations are presented in the following sections.

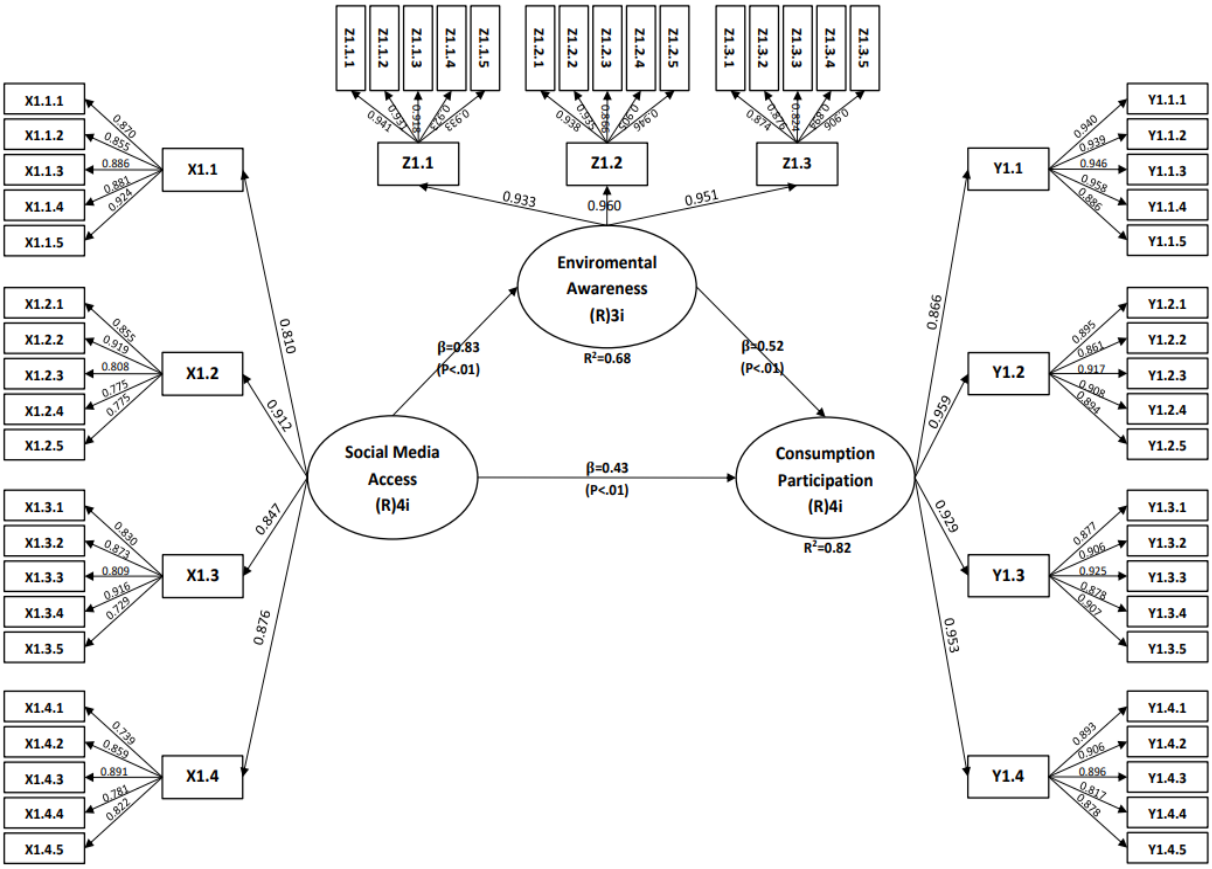

Figure 2. PLS-SEM Estimation Results of the SOR Model
Source: Data processed by WarpPLS 8.0 (2026)

Figure 2 presents the PLS-SEM estimation results generated using WarpPLS 8.0. The figure provides a visual overview of the empirical relationships among the three reflective latent constructs in the SOR model, including the direct path from Social Media Access to Environmental Awareness, the direct path from Environmental Awareness to Consumption Participation, and the direct path from Social Media Access to Consumption Participation. The figure is intended to support the presentation of the PLS-SEM results. At the same time, the

detailed values for validity, reliability, model fit, and hypothesis testing are reported in the following tables.

As shown in Figure 2, the estimated model indicates that Social Media Access is directly associated with Environmental Awareness and Consumption Participation. At the same time, Environmental Awareness is also directly associated with Consumption Participation. This pattern supports the proposed SOR structure, in which Environmental Awareness functions as the mediating variable linking social media exposure to participation in organic vegetable consumption. The following subsections provide a more detailed evaluation of the measurement model and structural model.

Measurement Model Analysis (Outer Model)

The measurement model was evaluated to assess the validity and reliability of the reflective constructs. Convergent validity was examined using loading factor values and Average Variance Extracted (AVE), while construct reliability was assessed using composite reliability and Cronbach's alpha. These criteria are commonly used in PLS-SEM reporting to ensure that indicators adequately represent their respective latent constructs (Hair & Alamer, 2022; Sarstedt et al., 2022; Solimun et al., 2017).

Table 3. Convergent Validity Test Result

Indicator	Loading Factor	AVE	Result
Context (X1.1)	0.810	0.743	Valid
Communication (X1.2)	0.912		Valid
Collaboration (X1.3)	0.847		Valid
Connection (X1.4)	0.876		Valid
Knowledge (Z1.1)	0.933	0.899	Valid
Attitude (Z1.2)	0.960		Valid
Behavior (Z1.3)	0.951		Valid
Decision-making (Y1.1)	0.866	0.860	Valid
Implementation (Y1.2)	0.959		Valid
Benefit utilization (Y1.3)	0.929		Valid
Evaluation (Y1.4)	0.953		Valid

Source: Data processed by WarpPLS 8.0 (2026)

Discriminant validity was evaluated using the Fornell–Larcker criterion, which compares the square root of the AVE with the correlations among latent constructs. This assessment is commonly used in PLS-SEM to ensure that each construct is empirically distinct from other constructs in the model (Hair & Alamer, 2022; Sarstedt et al., 2022; Sholihin & Ratmono, 2021). As presented in Table 4, the square root of AVE for each construct was higher than its correlations with other constructs. The square roots of the AVEs were 0.862 for Social Media Access, 0.948 for Environmental Awareness, and 0.928 for Consumption Participation. These

values exceeded the inter-construct correlations, indicating that all constructs met the criterion of discriminant validity. Although the correlation between Environmental Awareness and Consumption Participation was relatively high at 0.867, the Fornell–Larcker criterion still supported adequate discriminant validity because the square root of AVE for both constructs remained higher than their inter-construct correlation.

Table 4. Fornell–Larcker Criterion Results

	Social Media Access (X1)	Environmental Awareness (Z1)	Consumption Participation (Y1)
Social Media Access (X)	**0.862**		
Environmental Awareness (Z)	0.749	**0.948**	
Consumption Participation (Y)	0.827	0.867	**0.928**

Source: Data processed by WarpPLS 8.0 (2026)

The final assessment of the outer model involved reliability testing, evaluated using composite reliability and Cronbach's alpha. Composite reliability values above 0.70 and Cronbach's alpha values above 0.60 indicate adequate internal consistency in reflective measurement models (Hair & Alamer, 2022; Sarstedt et al., 2022; Solimun et al., 2017).

The findings indicate that all constructs exhibited composite reliability values greater than 0.70 and Cronbach's alpha values above 0.60. These results show that all variables in this study met the reliability criteria, demonstrating that the measurement instruments were internally consistent and dependable. The detailed reliability results are presented in Table 5.

Table 5. Reliability Test Result

Variable	Composite Reliability	Cronbach's Alpha	Result
Social Media Access (X)	0.920	0.884	Reliable
Environmental Awareness (Z)	0.964	0.944	Reliable
Consumption Participation (Y)	0.961	0.945	Reliable

Source: Data processed by WarpPLS 8.0 (2026)

Structural Model Analysis (Inner Model)

The structural model was evaluated to examine the predictive relationships among the latent constructs and to test the proposed hypotheses. The assessment included path coefficients, p-values, R-squared values, effect sizes, collinearity indicators, and model fit indices. The structural model tested three direct relationships and one indirect relationship, mediated by Environmental Awareness.

Table 6 presents the structural path and hypothesis testing results. All proposed hypotheses were supported, indicating that Social Media Access, Environmental Awareness, and Consumption Participation were significantly related within the SOR model. The hypothesis testing results show that access to social media positively and significantly

influences homemakers' environmental awareness (H_1 accepted; $\beta = 0.826$; $p < 0.001$). This finding suggests that social media is an important source of information for homemakers seeking knowledge about environmental issues, healthy food, and sustainable consumption. As managers of household consumption, exposure to environmental content through social media may enhance their understanding and concern regarding the environmental impacts of food consumption (Pezzullo & Cox, 2018; Sun & Xing, 2022).

Table 6. Structural Path and Hypothesis Testing Results

Hypothesis	Relationship	Effect Type	Coefficient / Effect	p-value	Decision
H1	Social Media Access (X) → Environmental Awareness (Z)	Direct effect	0.826	< 0.001	Accepted
H2	Environmental Awareness (Z) → Consumption Participation (Y)	Direct effect	0.520	< 0.001	Accepted
H3	Social Media Access (X) → Consumption Participation (Y)	Direct effect	0.430	< 0.001	Accepted
H4	Social Media Access (X) → Environmental Awareness (Z) → Consumption Participation (Y)	Indirect effect	0.430	< 0.001	Accepted

Source: Data processed by WarpPLS 8.0 (2026)

Moreover, Environmental Awareness positively influenced Consumption Participation (H_2 accepted; $\beta = 0.520$; $p < 0.001$). This result indicates that housewives with higher environmental awareness are more likely to select and consume organic vegetables as part of their efforts to support family health and environmental sustainability. This finding is consistent with previous studies indicating that environmental awareness plays a crucial role in shaping green consumption behavior, particularly in household food choices (Li & Shan, 2025).

The H_3 result indicates that Social Media Access had a direct positive effect on Consumption Participation ($\beta = 0.430$; $p < 0.001$). Social media can influence housewives' consumption preferences through recommendations, testimonials, educational content, and healthy lifestyle trends within online communities (Shihab et al., 2025). Furthermore, Environmental Awareness mediated the relationship between Social Media Access and Consumption Participation (H_4 accepted), indicating that organic vegetable consumption is influenced not only by the intensity of social media access but also by changes in environmental awareness among homemakers as primary household food decision-makers. This finding reinforces the Stimulus–Organism–Response (SOR) model in explaining sustainable consumption behavior based on social media communication (Mehrabian & Russell, 1974).

After the hypothesis testing results were interpreted, the explanatory power of the endogenous constructs was evaluated using R-squared and adjusted R-squared values. The

coefficient of determination was evaluated using R-squared and adjusted R-squared values to assess the explanatory power of the endogenous constructs (Hair et al., 2019; Hair & Alamer, 2022). As shown in Table 7, Environmental Awareness had an R-squared of 0.683 and an adjusted R-squared of 0.678, indicating that Social Media Access explained 68.3% of the variance in Environmental Awareness. Consumption Participation had an R-squared value of 0.817 and an adjusted R-squared value of 0.811, indicating that Social Media Access and Environmental Awareness jointly explained 81.7% of the variance in Consumption Participation. These values indicate strong explanatory power for the endogenous constructs.

Table 7. R-Squared and Adjusted R-Squared Values

Variable	R-squared	Adjust R-squared
Environmental Awareness (Z)	0.683	0.678
Consumption Participation (Y)	0.817	0.811

Source: Data processed by WarpPLS 8.0 (2026)

The coefficient of determination was evaluated using R-squared and adjusted R-squared values to assess the explanatory power of the endogenous constructs (Hair et al., 2019; Hair & Alamer, 2022). As shown in Table 7, Environmental Awareness had an R-squared of 0.683 and an adjusted R-squared of 0.678, indicating that Social Media Access explained 68.3% of the variance in Environmental Awareness. Consumption Participation had an R-squared value of 0.817 and an adjusted R-squared value of 0.811, indicating that Social Media Access and Environmental Awareness jointly explained 81.7% of the variance in Consumption Participation. These values indicate strong explanatory power for the endogenous constructs.

Effect sizes were assessed using f^2 to determine each predictor's contribution to the endogenous constructs. Common thresholds for interpreting f^2 are 0.02 for small effects, 0.15 for medium effects, and 0.35 for large effects (Cohen, 1988; Hair et al., 2019). As shown in Table 8, Social Media Access had a large effect on Environmental Awareness ($f^2 = 0.683$). Environmental Awareness also had a large effect on Consumption Participation ($f^2 = 0.451$), and Social Media Access had a large direct effect on Consumption Participation ($f^2 = 0.365$). These results indicate that the predictors made substantial contributions to explaining the endogenous variables in the model.

Table 8. Effect Size Result

Variable	Effect Size Value
Social Media Access (X) → Environmental Awareness (Z)	0.683
Environmental Awareness (Z) → Consumption Participation (Y)	0.451
Social Media Access (X) → Consumption Participation (Y)	0.365

Source: Data processed by WarpPLS 8.0 (2026)

The model fit assessment was conducted using the fit and quality indices generated by WarpPLS 8.0, including APC, ARS, AARS, AVIF, AFVIF, Tenenhaus GoF, SPR, RSCR, SSR, and NLBCDR (Kock, 2024; Solimun et al., 2017). As presented in Table 9, the Average Path Coefficient (APC), Average R-squared (ARS), and Average Adjusted R-squared (AARS) were significant at $p < 0.001$. The Average Block VIF (AVIF = 2.861) met the ideal criterion, while the Average Full Collinearity VIF (AFVIF = 4.313) remained within the acceptable threshold. Other fit and quality indices, including Tenenhaus GoF, SPR, RSCR, SSR, and NLBCDR, also met the recommended criteria. Overall, the structural model showed acceptable fit and adequate explanatory capacity.

Table 9. Goodness of Fit

Model Fit and Quality Indicate	Fit Criteria	Result
Average Path Coefficients (APC)	$p < 0.05$	0.592, $p < 0.001$
Average R-Squared (ARS)	$p < 0.05$	0.750, $p < 0.001$
Average Adjusted R-Squared (AARS)	$p < 0.05$	0.744, $p < 0.001$
Average Blok VIF (AVIF)	Acceptable if ≤ 5, ideally ≤ 3.3	2.861
Average Full Collinearity VIF (AFVIF)	Acceptable if ≤ 5, ideally ≤ 3.3	4.313
Tenenhaus GoF (TGoF)	Small ≥ 0.1, moderate ≥ 0.25, large ≥ 0.36	0.791
Sympson's Paradox Ratio (SPR)	Acceptable if ≥ 0.7, ideally = 1	1.000
R-Squared Contribution Ratio (RSCR)	Acceptable if ≥ 0.9, ideally = 1	1.000
Statistical Suppression Ratio (SSR)	Acceptable if ≥ 0.7	1.000
Nonlinear Bivariate Causality Direction Ratio (NLBCDR)	Acceptable if ≥ 0.7	1.000

Source: Data processed by WarpPLS 8.0 (2026)

After confirming the adequacy of the structural model, the findings were further interpreted using the Stimulus–Organism–Response (SOR) framework to explain how access to social media encourages participation in organic vegetable consumption by fostering environmental awareness.

SOR-Based Interpretation of Organic Vegetable Consumption Participation

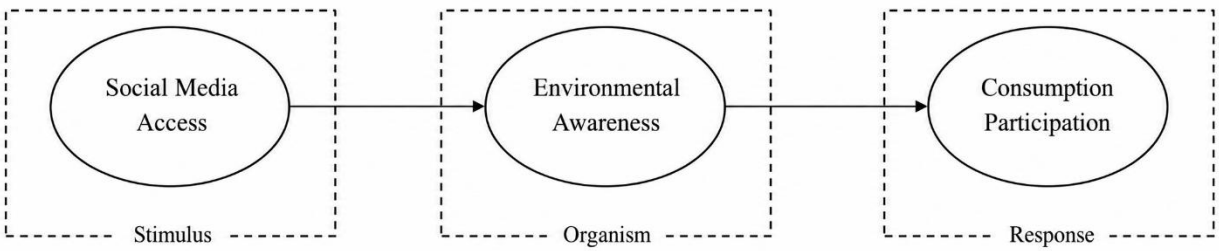

Figure 3. Figure 3. SOR Mechanism in Organic Vegetable Consumption Participation
Source: Data processed based on Mehrabian and Russell (1974)

Figure 3 summarizes the mechanism by which the SOR model explains participation in organic vegetable consumption in this study. Social media serves as a stimulus, providing individuals with information through various digital platforms. Exposure to content such as educational materials, promotional messages, and public discussions is an external factor that influences how individuals understand environmental issues and shape their consumption patterns (Sun & Xing, 2022). These stimuli are then processed within the individual, which, in this study, is represented by environmental awareness. At this stage, cognitive and affective processes occur, where individuals begin to understand the environmental impacts of consumption, recognize the importance of sustainable lifestyles, and develop positive attitudes toward environmentally friendly products. As noted by Liu et al. (2023), the organism reflects an internal decision-making process that mediates the relationship between external stimuli and behavioral responses, often involving emotional and perceptual factors.

The outcome of this internal process is reflected in the response, namely, consumption participation. This response is manifested in actual behavior, such as the selection and consumption of environmentally friendly products, including organic vegetables, as a form of contribution to environmental sustainability. The results of this study show that social media access does not directly influence consumption behavior but operates through enhancing environmental awareness as a mediating factor. In other words, greater exposure to high-intensity, high-quality information on social media leads to stronger environmental awareness, which, in turn, encourages greater engagement in sustainable consumption. In the agribusiness context, these findings indicate that social media can serve as an effective marketing and communication channel to increase consumer trust in organic vegetables by providing educational content, transparent product certification information, and promoting sustainable farming practices. Furthermore, stronger environmental awareness may support the development of wider distribution channels and encourage sustainable agribusiness growth by increasing consumer demand for certified organic products.

CONCLUSION

This study concludes that Social Media Access has a positive and significant effect on Environmental Awareness and Participation in Consumption among housewives in Malang City. Environmental Awareness also positively influences Consumption Participation and partially mediates the relationship between Social Media Access and organic vegetable

consumption participation. These findings indicate that social media not only functions as an information channel but also as a digital stimulus that strengthens environmental awareness and encourages household participation in sustainable food consumption.

The main contribution of this study lies in applying the Stimulus–Organism–Response (SOR) model to explain participation in organic vegetable consumption in a local agribusiness context. Unlike studies that mainly focus on general green consumption or purchase intention, this study emphasizes housewives as household decision-makers regarding food. It highlights the mediating role of Environmental Awareness in linking social media exposure to actual consumption participation. However, the relatively low frequency of organic vegetable purchases indicates that awareness does not automatically lead to regular consumption, suggesting the existence of an awareness–behavior gap.

The findings imply that efforts to promote organic vegetable consumption should go beyond awareness-raising activities. Organic farmers, retailers, digital marketers, and local governments need to strengthen consumer trust through transparent certification information, consistent product quality, accessible distribution channels, and educational social media campaigns. Digital communication strategies should combine product promotion with information on health benefits, environmental impacts, and sustainable farming practices to increase household participation in sustainable agribusiness.

This study is limited by its relatively small purposive sample of 65 housewives in Malang City, which may restrict the generalizability of the findings to other consumer groups and regions. Future studies are recommended to involve larger, more diverse samples, expand the study area, and incorporate additional variables, such as price perception, consumer trust, lifestyle, product availability, and certification credibility, to provide a more comprehensive explanation of organic vegetable consumption behavior.

Acknowledgments

This journal article was written by Fithana Silma Ridani, with gratitude to the Department of Agricultural Socioeconomics, Faculty of Agriculture, Brawijaya University, for the academic support and facilities provided throughout the research process. The author also extends gratitude to the organic vegetable consumers in Malang City who were willing to serve as respondents in this study, as well as for their cooperation and the valuable information provided. Thanks are also extended to all parties who provided technical assistance and constructive feedback, which contributed to the successful completion of this research and the manuscript.

Author Contribution

Fithana Silma Ridani, as Author 1, Mofit Jamroni, as Author 2, and Rizka Amalia, as Author 3, contributed to the study design and the conceptualization of the manuscript. Author 1 and Author 2 were responsible for data collection and data curation. Author 1 and Author 3 conducted the data analysis and interpreted the research findings. Author 1 and Author 3

prepared the initial draft and revised the manuscript. All authors have read and approved the final version of the manuscript and agreed to be accountable for all aspects of the work.

REFERENCES

Agrawal, M., Kalia, P., Nema, P., Zia, A., Kaur, K., & John, H. B. (2023). Evaluating the influence of government initiatives and social platforms on green practices of Gen Z: The mediating role of environmental awareness and consciousness. *Cleaner and Responsible Consumption, 8*, 100109. https://doi.org/10.1016/j.clrc.2023.100109

Alfiansyah, H., Ardikoesoema, N., & Samuel, J. (2023). Potensi degradasi lingkungan dampak eksistensi karbofuran di Indonesia [Potential environmental degradation due to the existence of carbofuran in Indonesia]. *Jurnal Bisnis Kehutanan dan Lingkungan, 1*(1), 66–87. https://doi.org/10.61511/jbkl.v1i1.2023.258

Alkhawaldeh, K., Suwan, R., & Qadri, M. (2025). The influence of customer value on sustainable green purchasing decision: The mediating role of customer attitudes and behavior. *OPSEARCH, 62*(2), 643–660. https://doi.org/10.1007/s12597-024-00822-9

Apolinaris, F., Sa'diyah, A. A., Wulandari, A., Suliana, G., & Lakmali, A. W. S. (2024). Technical efficiency of organic caisim farming using Data Envelopment Analysis (DEA). *Journal of Agricultural Socio-Economics (JASE), 5*(2), 66–75. https://doi.org/10.33474/jase.v5i2.21660

Bakti, I. (2024). Peran media sosial dalam meningkatkan kepedulian terhadap isu lingkungan [The role of social media in increasing concern for environmental issues]. *Indonesian Research Journal on Education, 4*(4), 3198–3205. https://doi.org/10.31004/irje.v4i4.1561

Borah, P. S., Dogbe, C. S. K., & Marwa, N. (2024). Generation Z's green purchase behavior: Do green consumer knowledge, consumer social responsibility, green advertising, and green consumer trust matter for sustainable development? *Business Strategy and the Environment, 33*(5), 4530–4546. https://doi.org/10.1002/bse.3714

BPS-Statistics Malang Municipality. (2026). *Malang Municipality in figures 2026*. https://malangkota.bps.go.id/en/publication/2026/02/27/ee38eae8c3d260cd84bbbc22/kota-malang-dalam-angka-2026.html

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates. https://doi.org/10.4324/9780203771587

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*(1), 155–159. https://doi.org/10.1037/0033-2909.112.1.155

David, W., & Alkausar, S. (2023). *Statistik pertanian organik Indonesia* [Statistics of organic agriculture in Indonesia] (Vol. 1, No. 1). Universitas Bakrie Press. https://repository.bakrie.ac.id/8918/1/Draft%20Buku%20SOI-Update%2014-1-2024.pdf

Dlamini, S., & Mahowa, V. (2024). Investigating factors that influence the purchase behavior of green cosmetic products. *Cleaner and Responsible Consumption, 13*, 100190. https://doi.org/10.1016/j.clrc.2024.100190

Eyinade, G. A., Mushunje, A., & Yusuf, S. F. G. (2021). The willingness to consume organic food: A review. *Food and Agricultural Immunology, 32*(1), 78–104. https://doi.org/10.1080/09540105.2021.1874885

Gasper, D., Shah, A., & Tankha, S. (2019). The framing of sustainable consumption and production in SDG 12. *Global Policy, 10*(S1), 83–95. https://doi.org/10.1111/1758-5899.12592

Gundala, R. R., & Singh, A. (2021). What motivates consumers to buy organic foods? Results of an empirical study in the United States. *PLOS ONE, 16*(9), e0257288. https://doi.org/10.1371/journal.pone.0257288

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)* (2nd ed.). SAGE Publications.

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review, 31*(1), 2–24. https://doi.org/10.1108/EBR-11-2018-0203

Hair, J., & Alamer, A. (2022). Partial least squares structural equation modeling (PLS-SEM) in second language and education research: Guidelines using an applied example. *Research Methods in Applied Linguistics, 1*(3), 100027. https://doi.org/10.1016/j.rmal.2022.100027

Isanani, F. A. N., Thohiriyah, N., Putri, A. A., Winri, R. M., Zordi, D. A., & Purwanto, H. E. (2025). Peran media sosial sebagai pranata sosial dalam pembentukan kesadaran lingkungan masyarakat: Kajian sosiologi komunikasi [The role of social media as a social institution in shaping public environmental awareness: A sociology of communication study]. *Jurnal Bincang Komunikasi, 3*(1), 32–38.

Jiang, B., Pang, J., Li, J., Mi, L., Ru, D., Feng, J., Li, X., Zhao, A., & Cai, L. (2024). The effects of organic food on human health: A systematic review and meta-analysis of population-based studies. *Nutrition Reviews, 82*(9), 1151–1175. https://doi.org/10.1093/nutrit/nuad124

Kock, N. (2024). *WarpPLS user manual: Version 8.0*. ScriptWarp Systems. https://scriptwarp.com/warppls/UserManual_v_8_0.pdf

Li, Y., & Shan, B. (2025). Exploring the role of health consciousness and environmental awareness in purchase intentions for green-packaged organic foods: An extended TPB model. *Frontiers in Nutrition, 12*, 1528016. https://doi.org/10.3389/fnut.2025.1528016

Liu, Y., Cai, L., Ma, F., & Wang, X. (2023). Revenge buying after the lockdown: Based on the SOR framework and TPB model. *Journal of Retailing and Consumer Services, 72*, 103263. https://doi.org/10.1016/j.jretconser.2023.103263

Liu, Y., Wang, P., Zhang, M., Chen, X., Li, K., & Qu, J. (2024). Bridging the intention–behavior gap in organic food consumption: Empirical evidence from China. *Foods, 13*(14), 2239. https://doi.org/10.3390/foods13142239

Mehrabian, A., & Russell, J. A. (1974). *An approach to environmental psychology*. MIT Press.

Pezzullo, P. C., & Cox, J. R. (2018). *Environmental communication and the public sphere* (5th ed.). SAGE Publications. https://studentebookhub.com/wp-content/uploads/2024/preview/9781544387031.pdf

Salim, B. A., Mutia, A., & Prasaja, A. S. (2023). Pengaruh supporting environmental protection dan green identification product terhadap keputusan pembelian green product pada mahasiswa [The effect of supporting environmental protection and green identification product on students' green product purchasing decisions]. *Dinamika: Jurnal Manajemen Sosial Ekonomi, 3*(2), 29–43. https://doi.org/10.51903/dinamika.v3i2.378

Sarstedt, M., Hair, J. F., Pick, M., Liengaard, B. D., Radomir, L., & Ringle, C. M. (2022). Progress in partial least squares structural equation modeling use in marketing research in the last decade. *Psychology & Marketing, 39*(5), 1035–1064. https://doi.org/10.1002/mar.21640

Shihab, M. S., Ikhsan, R. B., & Fakhrorazi, A. (2025). The power of social media: Exploring online member groups and psychological factors to support responsible consumption. *Digital Business, 5*(1), 100101. https://doi.org/10.1016/j.digbus.2024.100101

Shimul, A. S., Cheah, I., & Khan, B. B. (2022). Investigating female shoppers' attitude and purchase intention toward green cosmetics in South Africa. *Journal of Global Marketing, 35*(1), 37–56. https://doi.org/10.1080/08911762.2021.1934770

Sholihin, M., & Ratmono, D. (2021). *Analisis SEM-PLS dengan WarpPLS 7.0 untuk hubungan nonlinier dalam penelitian sosial dan bisnis* [SEM-PLS analysis with WarpPLS 7.0 for nonlinear relationships in social and business research]. Penerbit Andi. https://books.google.co.id/books?id=NbMWEAAAQBAJ&lpg=PR2&hl=id&pg=PA4#v=onepage&q&f=false

Solimun, Fernandes, A. A. R., & Nurjannah. (2017). *Metode statistika multivariat: Pemodelan persamaan struktural (SEM) pendekatan WarpPLS* [Multivariate statistical methods: Structural equation modeling (SEM) using the WarpPLS approach]. Universitas Brawijaya Press. https://books.google.co.id/books?id=GrRVDwAAQBAJ&lpg=PR4&hl=id&pg=PR4#v=onepage&q&f=false

Sun, Y., & Xing, J. (2022). The impact of social media information sharing on the green purchase intention among Generation Z. *Sustainability, 14*(11), 6879. https://doi.org/10.3390/su14116879

Syah, M. A., Sari, P. N., & Azizah, B. (2025). Kepedulian dan kesadaran konsumen mengonsumsi produk sayur/buah organik di pasar modern, Surabaya [Consumer concern and awareness in consuming organic vegetable/fruit products in modern markets, Surabaya]. *Jurnal Agrosains: Karya Kreatif dan Inovatif, 10*(1), 137–155. https://doi.org/10.31102/agrosains.2025.10.1.137-155

Zamrodah, Y., Sativa, R. D. O., & Moeis, E. M. (2023). Strategi pengembangan pemasaran beras organik di Vigur Organik Cemorokandang Malang [Marketing development strategy for organic rice at Vigur Organik Cemorokandang Malang]. *VIABEL: Jurnal Ilmiah Ilmu-Ilmu Pertanian, 17*(2), 73–80. https://doi.org/10.35457/viabel.v17i2.3343