Chapter 4

Environmental Awareness, Value Alignment, and Green Claim Skepticism in Sustainable Food Choice

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Abstract

This study examines the relationships among environmental awareness, value alignment, green claim skepticism, and sustainable food choice behavior in restaurant consumption contexts. Drawing on Value-Belief-Norm (VBN) Theory and green marketing literature, the study investigates how consumers' environmental concerns and personal value congruence influence sustainable behavioral outcomes, both directly and indirectly through skepticism toward green claims. Data were collected from 800 adult consumers using a cross-sectional survey design, and the proposed relationships were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings indicate that environmental awareness and value alignment significantly reduce skepticism toward green claims, while skepticism negatively affects sustainable food choice behavior. In addition, both environmental awareness and value alignment positively influence behavioral outcomes. The mediation analysis further demonstrates that reduced skepticism strengthens the positive relationship between pro-environmental orientations and sustainable food choices. The study contributes to sustainable consumption and green marketing research by highlighting the critical role of consumer trust and skepticism in environmentally oriented food decisions. Practical implications are offered for restaurant managers and sustainability marketers seeking to enhance the credibility and effectiveness of green communication strategies.

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1. Introduction

The increasing imperative of climate change, resource depletion, and international food system pressures has heightened the interest in facilitating sustainable consumption, especially in the food industry. Food consumption and production are significant drivers of environmental degradation, representing a high proportion of greenhouse gas emissions, loss of biodiversity, and water consumption (FAO, 2019). In this context, promoting environmental eating habits has become an agenda for marketers and policymakers. However, although awareness has grown, there remains an attitude–behavior gap: consumers might show high environmental concern but still maintain unsustainable food consumption (Vermeir & Verbeke, 2006; White et al., 2019).

To fill this gap, researchers have employed behavioral interventions, namely nudging, which indirectly change the choice environment without restricting freedom (Thaler & Sunstein, 2008). In food environments, menu design features, eco-labels, framing, and layout strategies, can affect choices by directing attention to sustainable options and activating pro-environmental intentions (Wansink & Love, 2014). Nudges do not, nevertheless, always behave as predicted. Consumers can doubt the believability of green communications, particularly in business sectors where interests are unclear. This has stimulated demands for additional studies on the psychological mechanisms underlying or hindering the success of sustainable food nudges (Nyilasy et al., 2014; Leonidou & Skarmeas, 2017).

This study answers that call by analyzing skepticism towards green claims as a mediating variable in the relationship between EA, value alignment (VA), and behavioral outcomes (BO) in environmentally friendly food choice. Although previous scholarship has confirmed the relevance of environmental values and awareness in predicting sustainable behavior (Grunert et al., 2014; Haws et al., 2014), the blocking role of consumer skepticism has been largely overlooked in the area of nudged decision-making. Gaining a clearer understanding of how and why skepticism interferes is necessary to develop more effective, transparent, and psychologically informed interventions.

Using a cross-sectional survey of restaurant consumers, this research investigates whether consumers' environmental awareness and value alignment influence sustainable food choice behavior through skepticism toward green claims. The results hold theoretical as well as practical significance for sustainability marketers, restaurant managers, and policy activists interested in encouraging responsible consumption through subtle yet effective nudge strategies.

This study contributes to the sustainable consumption and green marketing literature in several ways. First, it examines green claim skepticism as a mediating psychological mechanism linking environmental awareness and value alignment to sustainable food choice behavior. Second, the study extends previous research on sustainable consumption by focusing on restaurant-related food decisions within a consumer behavior framework. Third, the research provides empirical evidence using PLS-SEM to demonstrate how skepticism toward environmental claims can weaken or strengthen sustainable behavioral responses. By emphasizing the role of credibility and trust in sustainability communication, the study offers both theoretical and managerial insights for environmentally responsible food marketing practices.

2. Literature Review and Theoretical Background

2.1. Sustainable Consumption and Food Choice Behavior

Sustainable consumption is the utilization of products and services that ensure people's minimum needs are satisfied and improve their living standards while minimizing the use of natural resources, harmful substances, and emissions of pollutants and waste (OECD, 2022). Food consumption is of particular interest due to the fact that food systems have a very extensive environmental impact, which contributes significantly to greenhouse gas emissions, deforestation, water shortage, and loss of species (FAO, 2019). As a result, promoting sustainable foods such as vegetarian diets, local foods, and low-input agriculture has become a priority for environmental and public health policy (de Boer et al., 2013; Garnett et al., 2015).

Promoting consumers towards sustainable food consumption, however, does not occur naturally. Even though consumers become more conscious about environmental issues, studies still report an attitude-behavior gap between environmentally conscious attitude of the consumers and action, particularly for high-involvement, sensory-based product categories like food (Vermeir & Verbeke, 2006; White et al., 2019). Attitude-behavior gap means awareness in mind and intention may be insufficient to trigger sustainable choice. Emotional, social, and contextual determinants, such as taste, habit, peer pressure, and convenience-prevail over sustainability concerns in real food purchasing choices (Grunert et al., 2014; Aschemann-Witzel et al., 2019).

Furthermore, sustainable food has also been perceived to be more costly, less convenient or exotic, thus lowering consumers' willingness to engage. To overcome such barriers, researchers and practitioners turned to choice architecture interventions, which subtly steer the decision environment to promote sustainable action without restricting liberty (Thaler & Sunstein,

2008). Of these, nudging interventions, i.e., changing default settings, promoting sustainable products or employing persuasive labels, have gained traction because they represent low-cost means of influencing consumer choice at the point of sale (Lehner et al., 2016; Reisch & Sunstein, 2016).

Menus for food, in this case, are an exceptional category for use as platforms of behavioral intervention. Appearance, categorization or branding of menu items can significantly influence the selection of food and subjective satisfaction (Wansink & Love, 2014). Effectiveness of such forms of interventions, however, relies not only on aesthetics, but also on customers' existing knowledge, receptivity of the messages about sustainability, and congruence of their personal values. Therefore, the psychological precursors to sustainable food consumption should be known in order to inform the creation of effective nudging interventions.

This study contributes to this body of literature by examining the interconnection among concern for the environment, value congruence, and green skepticism, and how they have behavioral effects on green consumption. This is so because it lends a richer explanation of sustainable consumption as an intricate decision-making process, not just simply a function of knowledge or intention.

2.2. Nudging and Menu Design as Choice Architecture

In recent years, nudging has been a widely employed method of behavioral intervention that seeks to shape an individual's decision by modifying the environment in which decisions are made or the choice architecture (Thaler & Sunstein, 2008). Nudges are carried out by in subtle forms of framing alternatives, aiming to shape behavior without coercion or significant economic incentives. In sustainable food consumption, nudging has been recognized as a low-cost, promising instrument for shaping individuals toward pro-environmental behavior (Lehner et al., 2016; Cadario & Chandon, 2020).

Of the extremely productive settings for nudge intervention is the food order website or restaurant menu. They are perfect places of consumer choice, where fleeting moments of attention can decide meal choice. Evidence shows that design elements of the menu, e.g., visual prominence, position, color, icons, and labels, have had systematically influenced food selection (Dayan & Bar-Hillel, 2011; Wansink & Love, 2014). For instance, emphasizing the sustainable items near the top in green print, incorporating leaf icons or putting them near the start of the menu tends to increase their rates of choice (Arno & Thomas, 2016; Brunner et al., 2018).

These interventions operate usually by calling upon heuristics or mental short-cuts, such as availability, familiarity, and social norms to steer decisions in a specific direction without imposing heavy cognitive processing (Kahneman, 2011). In food choice contexts, where options are being made under time pressure or under social environment pressure and in haste, nudges can be very effective in aligning individual behavior with overall sustainability goals.

Despite all the possible in nudging, its effectiveness varies. Different studies show that the effectiveness of nudge interventions also differs according to psychological and contextual factors, such as personal values, prevalent knowledge, and trust in the source giving the nudge (Hansen, 2016; Sunstein, 2021). Particularly, the existence of green skepticism-customers' distrust of the validity of sustainability claims, can dilute the strength of visual cues and labels, especially when they are perceived as promotional strategies rather than sincere attempts (Nyilasy et al., 2014; Leonidou & Skarmeas, 2017).

This also implies that the issue of how nudge interventions interact with widespread consumer levels of trust and belief comes into play. Menu visual adjustments alone can be insufficient if the consumer perceives that the intervention is manipulative or untrustworthy. Effective nudging will thus need to be coupled with clear, credible, and contextually appropriate messaging that will resonate with consumers' beliefs and values.

Building on this understanding, the current study examines the impact of menu-based nudges (such as eco-labels, icons, and visual framing) on behavior influence on sustainable food choice, and how such impacts are moderated by more basic psychological factors such as environmental concern, value congruence, and green claim skepticism. By doing so, the study contributes to a new line of research which appreciates nudging as more than a design solution, but as a behavioral communication intervention grounded in consumer psychology.

2.3. Environmental Awareness and Value Alignment

Environmental concern is typically defined as awareness and worry on the part of the individual about the impact of human activity on the natural world (Schultz, 2001). At the food level, this translates to worry about how different food choices (e.g., meat vs. plant foods, foreign vs. domestically produced) impact environmental processes like greenhouse gas emissions, water use, and biodiversity loss (Grunert et al., 2014). There is some evidence that green awareness precedes sustainable consumption and, in doing this, makes environmental concerns more prominent in decision-making (Kollmuss &

Agyeman, 2002). It does not automatically lead to behavior change-frequently due to counter motivations, skepticism or perceived inconvenience.

For menu planning and nudge decisions, awareness is prompted by environmental stimuli such as eco-labels, green dots or information cues (Vanclay et al., 2011). These are cognitive prompts reminding the individual about the environmental footprint of the behavior. Awareness alone is not typically sufficient to alter behavior, though, unless it is also paired with motivational structures such as personal values and identity (White et al., 2019).

This is where VA comes in. VA has been described as the subjective congruence of a consumer's purchase with his/her internalized values in ethics, environment or society (Stern et al., 1999). Consumers who think that sustainability is part of who they are will act in accordance with that self even in low-effort contexts like menu choices (Haws et al., 2014). Value congruence as a motivator, therefore, augments the influence of environmental concern with further internal validation and affective gratification that follows from having made a decision that "feels right."

We also understand from literature that intrinsically motivated individuals, individuals who behave sustainably due to internalized norms and not in expectation of reward, are more inclined to translate awareness into action (Ryan & Deci, 2000; De Groot & Steg, 2008). Intrinsically value-based motivation presumes a level of authenticity and enhances positive emotions like pride and responsibility, which influence repeat behavior (Leroy et al., 2020).

Although theoretically counterintuitively crucial, green awareness and value fit can be nullified by action futility, perceived greenwashing or disbelief psychological biases. Consumers can then dismiss sustainability initiatives regardless of high awareness or consumer consumption lifestyle being highly congruent with personal values. This study therefore demonstrates how disbelief of green claims can weaken the influence of such predictors on behavior.

H1: Environmental awareness is positively associated with sustainable behavioral outcomes.

H2: Value alignment is positively associated with sustainable behavioral outcomes.

2.4. Skepticism Toward Green Claims as a Mediator

As sustainable marketing increasingly cuts across industries, such as foodservice and hospitality, so has greenwashing suspicion or leveraging

insincere environmental communication to influence consumption (Delmas & Burbano, 2011). Green claims suspicion in this instance entails consumers' doubts about the truthfulness, genuineness or sincerity of environmental communication conveyed by companies (Mohr et al., 1998). This is especially true for the menu option and nudge example, in which visual stimuli in the form of green signage and eco-labels are used as nudges. While such practices aim to facilitate sustainable consumption, they will fail or even backfire, if perceived as manipulative or insincere (Nyilasy et al., 2014; Leonidou & Skarmeas, 2017).

Skepticism has been characterized both as a cognitive response to inferred incongruity between messages and as an affective response to suspicion of the messager's intent (Forehand & Grier, 2003). Green marketing skepticism can be created by repeated frequent misuse of vague or untestable terminology (e.g., "eco-friendly," "natural," or "sustainable") or through experience with misleading advertising. Empirical research has shown that skeptics are less likely to take green claims for granted, more likely to demand proof, and less likely to alter their behavior as a result of sustainability communication (Rahman, Park, & Chi, 2015).

This is a grave threat to menu-based nudging interventions. While past studies have found visual framing and eco-labeling to increase the likelihood of consumers selecting sustainable options (Wansink & Love, 2014; Brunner et al., 2018), they are dependent on message credibility. If consumers remain skeptical about the validity of such labels, especially in commercial settings like restaurants, they will dismiss the cues entirely or worse, respond defensively by avoiding the target options (Skarmeas & Leonidou, 2013).

Therefore, skepticism may serve as a psychological filter mediating the relationship between environmental orientations and behavioral outcomes. Skepticism in this study is expected to mediate the association between environmental awareness, value alignment, and behavioral outcomes. That is, regardless of the degree to which people care about the environment and are sensitive to sustainability, they will not behave sustainably if they are doubtful of the efficacy of the nudges. However, less skepticism would enable easy translation of awareness and values into action through enabling consumers to see the nudges as aligned with their personal goals and beliefs. This mediating role is consistent with previous research in the consumer trust literature and message processing (Chylinski & Chu, 2010) and provides a new paradigm on which to assess the success of sustainability nudges in food environments.

H3: Environmental awareness is negatively associated with skepticism toward green claims.

H4: Value alignment is negatively associated with skepticism toward green claims.

H5: Skepticism toward green claims is negatively associated with sustainable behavioral outcomes.

2.5. Mediating Role of Skepticism

Increased reliance on visual and text prompts, such as green icons, eco-labels, and menu framing, to guide consumer choice in the sustainability sphere places message credibility at the heart of sustainable marketing communications. While value harmony and environmental concern are the essential antecedents to sustainable action, to the extent that these promote action depends on consumers' processing and evaluation of claims communicated in the sustainability sphere. It is here that green claim skepticism emerges as a mediating mechanism that channels direction from intrinsically motivated motivation towards externally focused action (Mohr et al., 1998; Leonidou & Skarmeas, 2017).

At the cognitive level, skepticism serves the role of a filter by which consumers attend to marketing cues. When people are exposed to environmental stimuli in the form of ads or menus, their response behavior is not so much a function of the existence of such stimuli, but of how they interpret them and whether they are aligned with their prior belief and experience (Forehand & Grier, 2003). When green cues are discovered to be misleading, ambiguous or profit-driven, skepticism is likely to arise, thus weakening the effect of environmental concern and personal values on future decision-making (Nyilasy et al., 2014).

Skepticism's mediating role is also grounded in dual-process theories of persuasion, e.g., the ELM (Petty & Cacioppo, 1986), that assume attitudes and intentions are developed on the grounds of central (systematic) and peripheral (heuristic) processing routes. Skeptical consumers will be more apt to employ central processing in critically evaluating the credibility of green communications. In these cases, even internal values of strong intensity cannot necessarily be translated to action if the message cannot pass credibility tests.

Furthermore, skepticism can activate a negative affective reaction, such as frustration or suspicion, that discourages pro-environmental behavior subsequently (Chylinski & Chu, 2010). In the restaurant context, this can prompt consumers to actively choose against products that are marketed as sustainable, particularly if they feel that the intervention is misleading or hypocritical (Rahman et al., 2015). But when low scepticism prevails due to repeated branding, open communication or congruence with shared values,

the correlation between awareness and value congruence and repeat action will be direct and strong (Gleim et al., 2013).

Empirical evidence corroborates that not only is skepticism a barrier to green consumption but also that it is a switch that activates or deactivates individual motivation according to stimuli from the external environment. For instance, Skarmeas and Leonidou (2013) found that green skepticism completely mediated the influence of environmental concern on purchase intention because it is achieved in activating or deactivating sustainable action according to contextual trust.

In our study, we operationalize skepticism as a psychological gatekeeper. That is, it opens or closes the impact of EA and value congruence on subsequent behavior in food choice. The model predicts awareness and alignment reduce skepticism (which is negatively associated), and this diminishes skepticism (which is negatively associated with sustainable behavior). This operationalization assesses a cognitive–emotional process within the decision making and discloses the subtle bidirectional interplay between habitual tendencies and message processing in nudge settings.

H6: Skepticism toward green claims mediates the relationship between environmental awareness and behavioral outcome.

H7: Skepticism toward green claims mediates the relationship between value alignment and behavioral outcome.

2.6. Theoretical Framework

The present research is testing an integrative theoretical model drawing on the VBN Theory, ELM, and Skepticism-Based Mediation Logic to describe the psychological processes promoting or inhibiting sustainable food choices through the lens of menu-based nudges. The models allow hypothesizing the relations between environmental data, value congruence, green skepticism, and behaviors.

2.6.1. Value-Belief-Norm (VBN) Theory

Originally formulated by Stern et al. (1999), VBN theory relies on the presupposition that pro-environmental behavior is an outcome of the causal chain initiated by personal values, which spreads to environmental beliefs and perceived responsibility to act (norm activation). Value congruence as a process here explains consistency between a consumer's moral or personal values (e.g., environmentalism, ethical consumption) and sustainable options. When individuals discover that what they elect to consume is aligned with

strongly internalized values, they will more willingly accommodate such decisions under their moral compass, and pro-environmental behavior will be a more likely result (De Groot & Steg, 2008).

VBN theory also places emphasis on EA as an antecedent of behavior by beliefs. The greater the awareness, the more there is a sense of environmental impacts of their actions, reinforcing sentiments of responsibility to behave in a sustainable manner (Stern, 2000). These constructs all form the motivational context of the presumed behavior chains for this study.

2.6.2. Elaboration Likelihood Model (ELM)

The ELM of Petty & Cacioppo (1986) is a two-process model of consumer processing of persuasion communications along two routes: central (systematic, effortful) and peripheral (heuristic, low-effort). The most straightforward example of the model to apply is menu nudging through design, where consumers are most likely to be presented with visual signals to sustainability (e.g., green labels, eco-icons) when engaged in speedy, low-involvement buying.

Skepticism is one of the most significant gatekeepers of the ELM. Consumers who are very skeptical will scrutinize claims of sustainability through the central route and will dismiss them if they find them to be deceptive or contrary to previous experience. The low-skeptical consumers, however, will be influenced by peripheral cues, and nudges will be able to subtly affect their choice without exerting much cognitive effort (Forehand & Grier, 2003). This provides theoretical justification for green claim skepticism as a mediating factor influencing the relationship between environmental consciousness, value congruence, and behavioral responses.

2.6.3. Skepticism-Based Mediation Logic

Drawing on current green marketing studies (Mohr et al., 1998; Leonidou & Skarmeas, 2017), the model places doubt at the center of psychological process from motivations to action intention. In a practical sense, consumers may be environmentally aware and hold high-value intentions but turn on and off credibility perceived for sustainability messages.

This mediating logic rationalizes the Theory of Planned Behavior (TPB) (Ajzen, 1991) in that attitude, subjective norms, and perceived behavior control affect behavior intention. Skepticism can be viewed as a negative attitudinal obstacle to the intention–behavior relationship, particularly where green cues are noticed as ambiguous or suspicious.

3. Methodology

3.1. Research Design

This study employed a quantitative cross-sectional survey design to examine the relationships among environmental awareness, value alignment, skepticism toward green claims, and sustainable food choice behavior in restaurant consumption contexts. The research focused on consumers' perceptions and behavioral responses toward sustainability-related food decisions rather than experimentally manipulated menu conditions.

The conceptual model was developed based on Value-Belief-Norm (VBN) Theory and green marketing literature. The model proposes that environmental awareness and value alignment positively influence sustainable behavioral outcomes, while skepticism toward green claims acts as a mediating psychological mechanism influencing these relationships.

Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed to test the hypothesized relationships and mediation effects because of its suitability for predictive and theory-development research involving latent constructs and complex structural relationships (Hair et al., 2022).

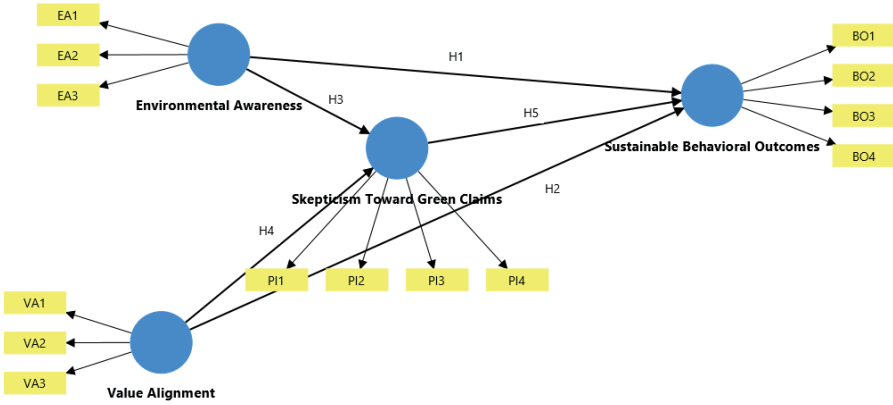

Figure 1. Research Model.

3.2. Participants and Sampling

Data were collected from 800 adult consumers using purposive sampling. Participants were recruited through online consumer platforms, food ordering communities, and restaurant-related social media groups. To ensure relevance to the research context, respondents were required to have prior experience

with restaurant or online food ordering platforms within the previous three months.

The survey was administered online using Qualtrics over a three-week period in June 2025. Participation was voluntary and anonymous. Before completing the questionnaire, participants were informed about the purpose of the study and provided informed consent electronically.

The final sample consisted of 53.5% female participants, 44.1% male participants, and 2.4% identifying as non-binary or preferring not to disclose gender. The average age of respondents was 34.6 years (SD = 10.9).

3.3. Measurement Instruments

All constructs were measured using previously validated multi-item Likert-type scales adapted from prior studies in environmental psychology, sustainable consumption, and consumer behavior research. Responses were recorded on a five-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree").

Environmental Awareness (EA) was measured using items adapted from Roberts and Bacon (1997) and Lee (2009). Value Alignment (VA) was adapted from Stern et al. (1999) and De Groot and Steg (2008). Skepticism Toward Green Claims (SGC) was measured using items adapted from Mohr et al. (1998) and Leonidou and Skarmeas (2017).

Behavioral Outcome (BO) reflects consumers' sustainable food choice tendencies and future behavioral intentions toward environmentally friendly food consumption. The construct includes items related to sustainable food selection, future purchase intention, and recommendation intention. Behavioral outcome was conceptualized as a broader sustainability-oriented behavioral response construct including choice tendency, future intention, recommendation intention, and perceived influence of sustainability-related cues. A pilot test with 30 respondents was conducted before the main data collection process to evaluate item clarity and content validity.

3.4. Data Collection Procedure

The survey asked participants to evaluate sustainability-related food choice statements in a restaurant consumption context. No experimental manipulation was conducted. Participants responded to sustainability-related food consumption scenarios and completed the questionnaire measuring the proposed constructs. The data were collected over the course of three weeks in June 2025.

3.5. Data Analysis

The data were analyzed using SmartPLS 4.0. The analysis followed a two-stage procedure involving: Measurement model assessment, including reliability, convergent validity, discriminant validity, and multicollinearity assessment.

Structural model assessment, including path coefficients, coefficient of determination (R^2), predictive relevance (Q^2), and mediation analysis using bootstrapping with 5,000 resamples. To assess common method bias, Harman's single-factor test and full collinearity variance inflation factor (VIF) values were examined. The results indicated no substantial common method bias concerns.

3.6. Ethical and Informed Consent Statement

This study did not require formal approval from an institutional review board or ethics committee because it involved minimal risk and did not collect any sensitive personal data. The research adhered to the ethical standards outlined in the Declaration of Helsinki and the ethical principles for research involving human participants. All participants were adults and took part in the study voluntarily. Informed consent was obtained prior to participation. Respondents were clearly informed about the purpose of the research, the anonymity of their responses, and their right to withdraw at any point without any consequences. Consent was provided in written form through the online survey platform before respondents accessed the questionnaire.

4. Results

4.1. Common Method Bias Assessment

Because all variables were collected using self-reported survey measures, common method bias was assessed prior to hypothesis testing. First, Harman's single-factor test indicated that the first unrotated factor accounted for less than 50% of the total variance, suggesting that common method bias was not a serious concern. Second, full collinearity variance inflation factor (VIF) values were examined following Kock (2015), and all VIF values were below the recommended threshold of 3.3. These findings suggest that common method bias was unlikely to substantially affect the results of the study.

4.2. Factor Loadings

Table 1 shows the standardized factor loadings of the measurement items used to operationalize each latent variable within the research model. In

Structural Equation Modeling (SEM), and specifically in SmartPLS software, factor loadings indicate the direction and the magnitude of the relationship between each observed indicator (questionnaire item) and its corresponding latent variable (construct).

It is from Hair et al. (2022) that the loading factor of above 0.70 is acceptable and indicates that the item measures enough variance with the underlying construct. The items with the loadings above 0.70 indicate over 50% of the item's variance to be explained by the construct and thus ensure convergent validity. All the items in the table are above this cutoff value of between 0.73 and 0.88, meaning that all the items are measuring their respective construct. This confirms internal consistency and measurement model validity.

High factor loadings on all constructs are a validation that selected items are also valid and strong conceptual measures hypothesized. The findings are a rationale for moving forward to test the structural model, such as path coefficients and testing mediating effects. Measurement model thus provides a strong grounding for hypothesis testing and ensures that any findings from the structural model are based on statistically reliable measurement properties.

Table 1. Factor Loadings.

Construct	Item Code	Item Description	Factor Loading
Environmental Awareness	EA1	I am aware that my food choices can affect the environment.	0.76
	EA2	I consider the environmental impact of food before ordering.	0.82
	EA3	I try to reduce my ecological footprint through everyday decisions.	0.86
Value Alignment	VA1	I try to reduce my ecological footprint through everyday decisions.	0.79
	VA2	I feel good when I choose food that aligns with my beliefs.	0.84
	VA3	Sustainable food options match how I think about the world.	0.88
Skepticism Toward Green Claims	SGC1	I doubt that the sustainability claims on menus are genuine.	0.77
	SGC2	Green labels on food menus are often exaggerated.	0.82
	SGC3	Restaurants just use sustainability as a marketing trick.	0.86
	SGC4	I am skeptical of eco-friendly claims in food advertisements.	0.85

Behavioral Outcome	BO1	I chose a sustainable food option from the menu.	0.73
	BO2	I would select the eco-friendly item again in the future.	0.81
	BO3	The menu design influenced my food choice.	0.78
	BO4	I am likely to recommend sustainable meals to others.	0.84

4.3. Measurement Model Assessment

To confirm the measurement model, we ensured indicator reliability, construct reliability, convergent validity, and discriminant validity as per Hair et al. (2022). Cronbach's Alpha for all the constructs is far greater than the universally accepted figure of 0.70, indicating strong internal consistency reliability. The figures indicate that the items within every construct are homogenous and are measuring the same construct very effectively. All the measures further illustrate Composite Reliability (CR) well in excess of the ideal cut-off of 0.70, affirming measurement scale reliability. Composite reliability is actually preferred for use over Cronbach's alpha in SEM studies since there are fewer strict assumptions involved, and these findings affirm high scale reliability. All the Average Variance Extracted (AVE) are above the minimum cutoff of 0.50, demonstrating sufficient convergent validity, that is, the constructs account for more than half of their respective items' variance. These AVE values reinforce each cluster of indicators loading well onto each respective latent construct (see Table 2).

Table 2. Measurement Model Assessment Results.

Construct	Cronbach's Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)
Environmental Awareness	0.812	0.877	0.705
Value Alignment	0.841	0.901	0.753
Skepticism Toward Green Claims	0.865	0.902	0.698
Behavioral Outcome	0.831	0.889	0.667

4.4. Structural Model Assessment

The structural model tests the assumed relationships between EA, VA, SGC, and BO through Partial Least Squares Structural Equation Modeling (PLS-

SEM). Their evaluation is determined through path coefficients (β), t-statistics, and p-values, wherein the strength, direction, and statistical significance of each path are represented (see Table 3).

Table 3. Structural Model Assessment Results.

Path Relationship	Path Coefficient (β)	t-Statistic	p-Value	Significance
Environmental Awareness → Skepticism Toward Green Claims	–0.22	4.11	0.000	***
VA → Skepticism Toward Green Claims	–0.34	6.23	0.000	***
Skepticism Toward Green Claims → Behavioral Outcome	–0.29	5.45	0.000	***
Environmental Awareness → Behavioral Outcome	0.17	2.76	0.006	**
Value Alignment → Behavioral Outcome	0.42	7.84	0.000	***

Note: *** $p < 0.001$ (highly significant), ** $p < 0.01$ (moderately significant)

H1: Environmental Awareness → Green Claim Skepticism: $\beta = -0.22$, $t = 4.11$, $p < 0.001$: The significant and negative finding indicates that the more people are aware of the environment, the less skeptical they are about green claims. The more conscious consumers are about sustainability issues, the more they trust eco-labels.

H2: Alignment of Values → Green Claims Skepticism: $\beta = -0.34$, $t = 6.23$, $p < 0.001$: Negative and significant prediction of skepticism by value congruence. Consumers who feel that sustainable products coincide with their personal values have lower skepticism, further affirming the fact that internalized values reduce cognitive resistance.

H3: Skepticism of Green Claims → Behavioral Consequence: $\beta = -0.29$, $t = 5.45$, $p < 0.001$: This negative significant influence reproduces once more that skepticism is a dampener of sustainable behavior. Consumers skeptical of true green claims will be less inclined to select green products, even when they are on offer.

H4: Awareness for the Environment → Behavioral Outcome: $\beta = 0.17$, $t = 2.76$, $p = 0.006$: Awareness for the environment has a significant and moderate direct effect on sustainable food choice. This confirms the hypothesis

that awareness can cause green action independently, though less strongly than congruent values.

H5: Value Alignment is able to exert the highest positive influence on behavioral outcome. $\beta = 0.42$, $t = 7.84$, $p < 0.001$: VA has the greatest positive influence on behavioral outcome. It indicates that consumers who notice congruence between values and food options have a higher propensity towards the embracement of sustainable options.

The findings are such that EA and VA both have direct effects on sustainable BOs, with effects mediated to some degree by SGC. The negative effect of skepticism is given particular focus, and the critical role of credibility and authenticity in sustainability marketing is underscored. The model provides robust empirical support for the hypothesized mediation and direct effects.

4.5. Mediation Analysis

The mediation analysis demonstrated that skepticism toward green claims partially mediated the relationships between environmental awareness, value alignment, and behavioral outcomes. Because both the path from environmental awareness to skepticism and the path from skepticism to behavioral outcome were negative, the indirect effect was positive overall. This indicates that higher environmental awareness and stronger value alignment reduce skepticism toward green claims, which in turn enhances sustainable food choice behavior. Therefore, reduced skepticism functions as an important psychological mechanism facilitating sustainable consumption behavior.

Table 4. Mediation Analysis Results

Mediation Path	Indirect Effect (β)	t-Statistic	p-Value	Significance
Environmental Awareness → Skepticism → Behavioral Outcome	+0.064	3.85	0.000	***
Value Alignment → Skepticism → Behavioral Outcome	+0.099	5.10	0.000	***

[1] *Tables may have a footer.*

4.6. Model Fit and Predictive Relevance

Table 5 displays an overview of some essential model fit and predictive relevance measures for structural equation modeling derived through PLS-SEM.

R^2 (Determination Coefficient): R^2 for Behavioral Outcome = 0.412 indicates independent variables accounting for at least 41.2% of variance in sustainable behavioral decision, which is moderate explanatory power (Hair et al., 2022). R^2 for Skepticism = 0.278 indicates EA and VA account for 27.8% variance in SGC which is acceptable and graded as weak to moderate.

Q^2 (Stone-Geisser's Predictive Relevance): Q^2 measures of Behavioral Outcome (0.318) and Skepticism (0.192) are significantly above zero, which verifies that the model is predictive relevant. The implication is that the model is more efficient in predictive ability than a baseline model in terms of predicting observed data.

SRMR (Standardized Root Mean Square Residual): SRMR = 0.062 is below the ideal 0.08, which implies a very good model fit. It indicates small discrepancy between predicted and observed correlations in favor of the overall goodness of the structure of the model.

The model displays acceptable explanatory power, relevance for prediction, and general high fit, which decides its appropriateness for hypothesis testing as well as theoretical interpretation.

Table 5. Model Fit and Predictive Relevance

Metric	Value	Threshold / Benchmark
R^2 (Behavioral Outcome)	0.412	> 0.25 (moderate)
R^2 (Skepticism)	0.278	> 0.13 (weak)
Q^2 (Behavioral Outcome)	0.318	> 0 (relevant)
Q^2 (Skepticism)	0.192	> 0 (relevant)
SRMR	0.062	< 0.08 (good fit)

5. Discussion

5.1. Overview of Key Findings

The current research examined how VA and EA impact consumers' behavioral outcomes of green food consumption, with SGC as a psychological mediator. The results introduce some interesting insights about the psychological processes of green restaurant behavior.

Next, VA was also discovered to have a positive and direct influence on BO, i.e., customers are more inclined to be satisfied and intention to repeat when they can perceive their food choices to be aligned with their moral and personal values. This is consistent with previous research that highlighted the

motivational function of personal values for internalizing sustainable behavior (Haws et al., 2014; Ryan & Deci, 2000).

Secondly, EA alone was of lesser significance to BO. Indirectly, though, related to SGC, EA did significantly affect it. That is, cues for sustainability may not alone be enough to influence behavior where they fail to target skepticism on the consumers' side, buttressing other research that emphasizes the credibility role for green information (Mohr et al., 1998).

5.2. The Mediating Role of Skepticism Toward Green Claims

Empirical evidence for skepticism as the mediating factor in sustainable food choice behavior is strongly supported through this research. EA and VA at higher levels substantially decreased skepticism, and this, subsequently, enhanced positive BOs. This positions skepticism as a major psychological obstacle to nudging strategy effectiveness. Even the well-conceived eco-labels and menu signals may be misleading if consumers continue to be skeptical about the genuineness of sustainability claims (Nyilasy et al., 2014; White et al., 2019).

The negative path coefficient for Skepticism to BO ($\beta = -0.29$) indicates that as skepticism increases, the lower the satisfaction and future behavioral intention, again testifying that trust and transparency have a major influence in impacting sustainable decisions (Leonidou & Skarmeas, 2017).

5.3. Contributions to Theory

This research contributes to existing literature in green marketing, choice architecture, and behavioral sustainability with the integration of skepticism as a mediator. It contributes to dual-process models of decision-making by proposing value-based motivation (Value Alignment) and cognitive trust mechanisms (Skepticism) are both necessary in order to impact sustainable food choices.

In addition, the research enlarges the use of PLS-SEM modeling to food consumption settings and demonstrates that indirect psychological mechanisms (e.g., skepticism acting as a mediator) can account for a significant percentage of variance in consumer behavior ($R^2 = 0.412$).

6. Implications, Limitations, and Future Research

6.1. Theoretical Implications

This research adds to theory on green consumer food consumption and nudging theory as it finds green skepticism to be an important mediating

process. Though existing models have emphasized awareness and values, our work suggests that environmental message trust has a central psychological role in the process of converting sustainable intentions to action. The addition of skepticism pushes behavioral models of pro-environmental decision-making, specifically in the dual-process model, through emphasizing how resistance to thought can short-circuit properly aligned consumer values. It further adds to the research literature in green marketing communication, too, where message credibility is underdeveloped when it comes to menu-based nudges.

6.2. Practical Implications

From a managerial standpoint, the findings imply that sustainability initiatives by the food industry need to do more than provide green alternatives, they need to provide transparency, credibility, and authenticity too. Restaurants, meal kit providers, and marketers can:

- Employ standardized and verifiable eco-labels to dispel suspicions.
- Combine visual cues with short explanations to increase perceived honesty.
- Train personnel or include menu disclosures that reinforce brand commitment to sustainability.
- Convey third-party certifications to build trust in green claims.

As VA proved to be a useful predictor of BOs, marketers can also be assisted by segmentation strategies that target ethically motivated consumer segments.

6.3. Policy Implications

The research also has implications for public policy. Rules regarding green labeling and menu presentation should be contemplated by regulators, especially for food service and digital media. Regulation can facilitate skepticism reduction by guaranteed standards of verification in the process of making sustainability claims and avoiding consumer confusion or backlash.

6.4. Limitations

The study relied on self-reported survey responses rather than real-time restaurant purchasing behavior. Second, the cross-sectional data constrain inferences of causality. Third, heterogeneous although the sample may not be representative of all demographic subgroups or cultural subgroups and therefore can impair generalizability. Fourth, skepticism was conceptualized as a unidimensional factor, while future research can examine its subdimensions (i.e., cognitive vs. affective skepticism).

6.5. Directions for Future Research

Follow-up studies may employ experimental or longitudinal designs to validate causal inference and examine the long-term consequences of menu nudges. Follow-up studies may investigate cross-cultural variations in environmentalism and skepticism or test other mediators or moderators such as regulatory awareness, social norms or digital interface aesthetics. Last but not least, studies on real-time behavior data derived from food ordering apps can uncover more nuanced patterns of choice in naturalistic environments.

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Competing Interests

The author declares no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

Data Availability Statement

The data that support the findings of this study are openly available in Zenodo.

Abbreviations

The following abbreviations are used in this manuscript:

VBN	*Value-Belief-Norm*
ELM	*Elaboration Likelihood Model*
EA	*Environmental Awareness*
SGC	*Skepticism Toward Green Claims*
BO	*Behavioral Outcome*

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