

How Green is your Choice When Skepticism Clouds your Judgement? An Empirical Study on Perception, Emotion, and Purchase Likelihood

Simran Babu^{1*}

^{1*}Research Scholar for Ph.D., Department of Business Administration, Sambalpur University, Odisha, India *
Corresponding author: Simran Babu

Abstract

Despite the growing popularity of green products, skepticism continues to cloud customers judgement. This study investigates how perception and emotion of customers influence their likelihood to shop green products, under the shadow of skepticism. An empirical investigation was conducted drawing on data from 429 individuals via a structured questionnaire that was administered through stratified sampling. Structural equation modeling (SEM) was employed to examine the direct, indirect, and moderating effects within the proposed framework. SEM precedes with confirmation of two measurement model through confirmatory factor analysis (CFA). Major results reveal that the customers' perception of green products influence their purchasing likelihood, both directly and indirectly, with emotion acting as a mediator in the indirect effect. Notably, skepticism significantly moderates both direct and indirect paths. This research work provides novel idea of "bubbling likelihood principle", a new theory based on the empirical evidences. The disrupting nature of skepticism in sustainable decision-making of customers refers to another novelty of this study. Implications suggests that marketers should prioritize clarity, credibility and emotional authenticity in marketing communications to ensure that customers can make informed and confident green choices while purchasing eco-friendly products even if their judgement is clouded by doubt.

Keywords: Perception, Emotion, Purchase-likelihood, Skepticism, Green-products

1. Introduction

The growing urgency of environmental degradation, resource scarcity, and climate change has reshaped global consumption patterns, positioning consumers as key actors in promoting sustainability through their purchasing behaviour. "Green" consumption has evolved from a lifestyle preference into a moral and social statement promoting businesses to adopt eco-friendly production, ethical branding, and transparent communication. However, while many consumers express willingness to support sustainable brands, others remain doubtful due to the rising incidence of greenwashing, the deceptive portrayal of products as environmentally friendly which has eroded trust and heightened skepticism. Understanding how customers form perceptions & emotionally react to such ecological claims is therefore vital to enhancing marketing effectiveness and fostering genuine sustainable behaviour.

Customers' perception towards greenness often leans positive, especially among the early-age cohort that values sustainability and eco-friendly practices. Numerous consumers see eco-conscious marketing as an alignment of their personal beliefs with buying behavior, often linking it with ethical consumption, health benefits, & a minimized carbon footprint (Kumar et al., 2023). Where specifically, when self-enhancement values are prioritized, pride leads to greater sustainable behavior and intentions; whereas when self-transcendence values are prioritized, awe promotes higher sustainable behavior and intentions. Notably, this relationship is driven by an increase in self-efficacy (Yan, Keh and Murray, 2024). Further, people with high environmental concern primarily experienced eco-guilt, while those with low environmental concern experienced eco-shame, and under certain conditions, both eco-guilt and eco-shame can promote pro-environmental behaviors (Nielsen et al., 2024).

However, green skepticism reduces customers' ecological knowledge & concern, which in turn adversely affects their purchase intentions for green products (Goh and Balaji, 2016). Further skepticism is influenced by a number of factors like by country (Silva et al., 2020), industry, customer demographics (Farooq and Wicaksono,

2021). However, studies have also indicated that environmental skepticism has no negative impact on GPI (Tetreanova et al., 2025). Other research-work have concluded that environmental skepticism has a positive effect on GPI (Silva et al., 2020). This gap also aligns with the findings of Zhang, Zhang, and Li (2025) that, core green attributes can increase risk perception, whereas self-affirmation enables consumers to resolve doubts and sustain brand advocacy.

1.1 Research gap and problem statement

Despite, growing attention to consumer attitudes toward green products, the literatures remain divided on how skepticism interacts with perception and emotion to influence green purchase likelihood. Prior studies have examined green perceptions and emotions independently, but limited research has explored their interdependent role in shaping consumer behaviour under varying degrees of skepticism. Additionally, there is insufficient empirical clarity on whether skepticism universally inhibits green purchasing or whether under certain psychological factors, it may paradoxically enhance it. Accordingly, this research addresses the contradictory dynamics of skepticism surrounding customers' perception and emotion regarding green products. In response, following research problem is crafted.

The influence of customer skepticism on green product choices remains a practical challenge for marketers and sustainability advocates. The real-world problem lies in understanding how skepticism shapes customers' perception and emotion, thereby affecting purchase likelihood.

1.2 Research Objectives

- (1) To conceptualize and operationalize the constructs of perception of green products and emotion towards green products.
- (2) To evaluate the relationship between customers' perception of green products, emotion towards green products, and their purchase likelihood of green products.
- (3) To examine the role of skepticism within the relationship of customers' perception of green products, emotion towards green products, and their purchase likelihood of green products.

2. Rationale of the study

In applied research, a well-defined problem statement always provides an unambiguous roadmap for the research process. With consumers becoming increasingly environmentally conscious, green consumption and pro-environmental behavior in society are gaining momentum, where habits are the key determinants of consumer behavior. It is thus important to study simultaneously both trending dimensions like green-perception (customers' perception of products with green features) and customers' emotion towards green products, which together build customers' likelihood to purchase the green-products. Furthermore, it is imperative to clarify the role of "customers' skepticism towards green products" within the above-mentioned structural relationships, which advances the rationale of this study. The primary objective is to assess the interrelationships among theoretical constructs such as perception, emotion, and likelihood having the rationale of theoretical background using structural equation modeling (SEM), a method well-suited for modeling complex constructs (Hair et al., 2021). As some significant studies previously have used SEM in the green marketing context, which is suitable for our study as well. Grounded in prior green marketing literature, this research adds to the field by integrating the often-overlooked the customers' likelihood of purchasing the green products. Since, modern purchase & consumption activities generally occur with the apprehensions of cost and risk that fosters customers' skepticism. So, it is reasonable to test the moderating effect of customers' skepticism. Thus, the current study has considered the above-mentioned moderating effect with more holistic understanding within this structural relationship, which strengthen the novelty of this research-work. Novelty of this study is brightened by developing a new theory, called as "bubbling likelihood principle", which justify this study's rationality in total.

3. Literature Review

3.1 Customers' perception of green products leads to their purchase likelihood of green products

Customers prefer eco-conscious goods that reflect concerns for the environment, encircling three dimensions that are environmental friendliness, ecological efficiency, & sustainable lifestyle wherein the latter substantially forms their perceptions (Christopher et al., 2023). These sustainability-related perceptions among customers are intricately linked to their social identities and environmental consciousness, indicating that both social values and individual factors shape their perceptions of environmentally friendly products (Elgammal et al., 2024). Further, customers who have higher academic qualifications and monthly income are more inclined to shop ecological products where cost-effective pricing, satisfactory quality of standards and value for money are positively impacting their buying intent of such products (Mahesh, 2013). Moreover, customers display more prosocial tendencies by not reacting or criticizing the failed eco-conscious goods, because it could undermine the success of an otherwise socially and beneficial product (Tezer et al., 2023). This suggests that the perception of ecologically conscious values is positively interrelated to the interest in buying eco-sensitive goods (Dhewi et al., 2018). Notably these trends are more prominent among millennials, who increasingly prefer brands that integrate purpose with sustainable values (White et al., 2019).

H1: Customers' green perception is significantly and positively influencing their purchase likelihood of green products.

3.2 Customers' perception of green products forms their emotion towards green products

Customers perceived eco-conscious products as high quality, with most expressing satisfaction and showing loyalty towards such products (Fabian, 2023). Supporting this Lamichhane (2022) found that, customers' feel green products as healthy, safe, eco-friendly and they mostly buy such products. While the majority of customers were keen to pay extra for eco-conscious products and opt them when priced equally as non-green alternatives, as they were satisfied with the quality of such products and recognized its harmless nature. However, the unavailability of eco-friendly products serves as a point of dissatisfaction (Lamichhane, 2022). Further, the majority of customers preferred positive emotions rather than negative ones when making shopping decision about ecologically sustainable goods where joy, pride, sympathy were most triggered emotions concerning green products (Kolling et al., 2020), which derives from the emotional motivation stages of customers include feeling good (positive emotions and benefits related to personal health and well-being), feeling moral (a sense of morality and altruistic concerns for human, animal, and environmental welfare), and feeling powerful (viewing ethical consumerism as a way to enhance one's power and social status) (Hain, 2017). Moreover, pro-environmental behavior is often influenced by what others are doing that means their anticipated emotions associated with sustainable or non-sustainable behavior are strongly influenced by the actions of one's peers (Power et al., 2017).

H2: Customers' green perception is significantly and positively influencing their emotion towards green products.

3.3 Customers' emotion for green products leads to their purchase likelihood of green products

Social, emotional, and epistemic values substantially improve buyers' perception of green brand trust and innovativeness (Baah et al., 2025). Where, emotional value surpasses as the most influential value-predictor, followed by functional, conditional, and epistemic value. Further, the effect of conditional value becomes more eminent among the customers, those from upper socio-economic strata (Liew and Karia, 2024). This emotional resonance becomes more prominent when, customers are aware of green practices of retailers as it exhibits higher emotional value perception compared to other values, and these emotional and functional values influence buying intents at eco-friendly retailers (Suttikun et al., 2024). Despite these trends, young people and those who don't feel strongly about the advantages of eco-sensitive products, or who value familiarity over sustainability, are less likely to actually purchase eco-conscious products even if they say they want to (de Sio et al., 2024), reflecting a gap between preference and action. However, guilt is a crucial emotional trigger that encouraged people to shop eco-friendly products, by discouraging customers from engaging in or acting in unsustainable ways whereas, the feeling of pride did not seem to influence their intention to shop eco-conscious goods (Beserra De Lima et al., 2019).

H3: Customers' emotion towards green products are significantly and positively influencing their purchase likelihood of green products.

3.4 The interplay between customers' perception, emotion, and purchase likelihood in the context of green product choices

Customers link eco-conscious goods to five dimensions that are health, environment, costs, & welfare of animals; and show essentially egoistic motivations concerning quality of product and health (Nguyen and Dekhili, 2019) where, eco-conscious self-identity, subjective norm, attitude, perceived behavioural control, moral duty & their keenness to be eco-friendly are the factors of intention to shop eco-friendly offerings (Arli et al., 2018). Beyond that, the perceived arousal, pleasure, & dominance all have a significant impact on the beneficial effect of eco-conscious product elements on buying intention (Yu et al., 2024). However, customers also perceive that eco-friendly products are expensive and feel that there is limited information (Lima et al., 2024) and lack confidence towards green certifications, claims & retailers (Nguyen and Dekhili, 2019). Yet, they are willing to pay premium for eco-friendly offerings and services driven by emotions such as guilt & pride (Elsantil and Hamza, 2019) and by placing importance on environmental sustainability which ultimately shows a rise in adoption of environmentally friendly offerings (Pravin, 2024). Moreover, customers' digital readiness, combined with their ecological sensibility, may also shape their likelihood of purchasing products with green traits (Palmieri, Boccia and Covino, 2024).

H4: Emotion towards green products significantly mediates the effect of customers' green perception on their purchase likelihood.

3.5 The role of skepticism within the relationship of customers' perception, emotion, and purchase likelihood of green products

Customers prefer eco-conscious goods due to several values like emotional, conditional, social, price, & epistemic (Shamsi and Abad, 2024) where ecological concern, knowledge and behaviour of conservation are positively associated to shopping intention of eco-friendly products (Malik and Qazi, 2017). Further, customers specifically female, individuals with greater academic qualifications and in better financial situations accept high costs for offerings that do not cause ecological harm (Kreczmańska-Gigol and Gigol, 2022). This suggests that only price value directly affects the keenness to pay extra. However, once committed, customers are keen to pay extra, yet this commitment can be disrupted by skepticism (Shamsi and Abad, 2024). This is because, green skepticism diminishes customers' ecological concern & knowledge, which subsequently have an adverse impact on their buying intention for products with green features (Goh and Balaji, 2016). Moreover, skepticism of customers regarding ecological claims moderates the association between ecological knowledge & eco-conscious buying intention, whereas, it does not have a substantial moderating effect on the relationship between ecological concern and intention to purchase, nor does it moderate the association between conservation behavior and eco-friendly buying intention (Malik and Qazi, 2017).

H5: Skepticism moderates the effect of customers' green perception on their purchase likelihood; on emotion towards green products; and moderates the effect of emotion towards green products on purchase likelihood.

4. Study's Framework on theoretical background

James-Lange theory of emotion that later on explained by Cannon (1927) provides the inference that mind of an individual interprets the bodily arousals (sensations) towards a stimulus, which ultimately leads to the concerned individual's emotional experience. So, this conceptualized that perception (interpretation by mind) of individual (customers in this study) is leading to customers' emotion.

On the other hand, likelihood principle of Hermann von Helmholtz that later on explained by Gregory (2007) posits that interpretations under perception of an individual corresponds to most likely event (purchase likelihood in this study) in the factual world, because brain interpret something based on the estimation of likelihood, not randomly. So, this study conceptualized that perception can arouse the purchase likelihood.

There can be logical inference from the above two discussions that “customer-emotion” can lead to their “purchase likelihood”. In the above contexts, the following theoretical framework is proposed along with 5 major hypotheses.

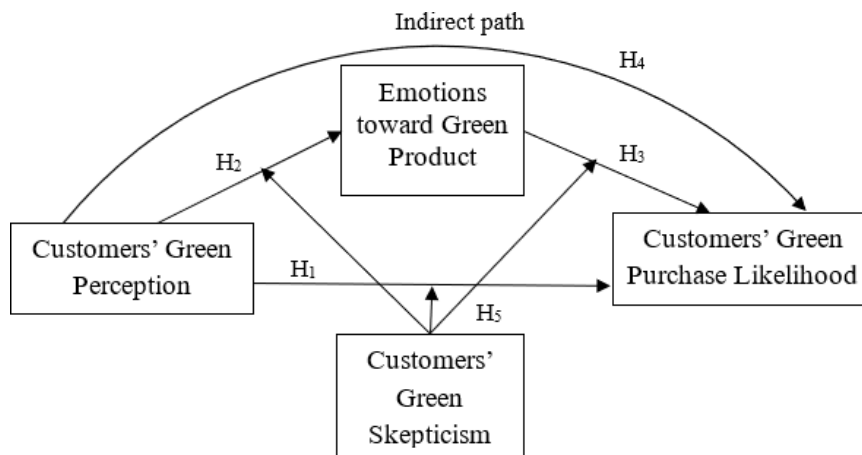


Figure 1: Theoretical framework & Hypotheses

5. Research Methodology & Design

The research-work is structured around an experimental research design to investigate cause-effect relationships among customers’ perception, emotion, skepticism, and purchase likelihood of green products. The purchase likelihood of customers is assessed within the framework of product greenness and environmental sustainability. A structured questionnaire was distributed to a sample of 412 individual buyers along a five-point Likert scale, to capture responses. This survey instrument (questionnaire) comprises a total of 35 items, of which 12 items pertaining to customers’ perception of green products; 9 items pertaining to emotion towards green products; 3 items pertaining to customers’ skepticism; 4 items pertaining to purchase likelihood, and 7 items covering demographic characteristics of shoppers. A stratified sampling technique was applied, with four distinct geographic regions serving as individual strata.

Data analysis starts with scale reliability testing. Then the analysis is followed with “structural equation modelling (SEM)”. Ahead of structural model assessment, both the measurement models that are customers’ perception of green products with two constructs and emotion towards green products comprising three constructs, are assessed using “confirmatory factor analysis (CFA)” to ensure that these constructs can be measured using the indicators derived from the review of literature. Thus, the “second-order CFA” is applied. Following that, the moderator customers’ skepticism is examined within this structural relationship. Hence, the current study aimed to test “Hayes model-59”. The analyses of data were carried out using software like SPSS 27.0, AMOS 24.0, Process-Macro, and Mendeley desktop for referencing & citations.

6. Data Analysis and Results

6.1 Reliability of the measurement scale

The scale of this study exhibits excellent internal reliability, reflected by Cronbach’s alpha of 0.890 computed from 28 measurement items, excluding 6 demographic variables. Thus, according to George and Mallery (2006),

the structured questionnaire achieves ‘excellent’ reliability, with a mean score of 103.75 & a standard deviation of 15.210.

6.2 Profile of the study’s sample

The sample consists of nearly 54% males & 46% females. The sample’s age distribution shows that the majority, around 65%, are young customers (up to the age 30), while middle-aged customers (up to age 50) comprise 32%, and the older generation (above 50 years) makes up only 3% and the marital status, shows, around 65%, are unmarried, the married individuals constitute 34%, while the separated individuals constitute 1%.

Among the sample, participants having an education qualification of below intermediate level are 1%, intermediate level are only 3%, undergraduate level 20%, post-graduate level 47%, and nearly 29% of respondents carry a qualification higher than post-graduate level, where the employment status of the participants is nearly 14% in government organizations, 48% in private organization, 5% with own businesses, students with earning are nearly 10%, professionals like CA,CMA, CPA, advocate are 2% and participants with other types of employment are 21%. The income distribution of the sample illustrates that the lower-income category (< 30,000 INR) is approximately 47%, the middle-income category (< 60,000 INR) is 27%, and the higher-income category (> 60,000 INR) is 26%.

6.3 First Measurement Model: Customers’ Green Perception (CGrP)

The first measurement model is tested through CFA that constitutes two constructs “AwGP (Awareness of Green Products)” & “AsGP (Assurance of Green Products)” comprising nine and three indicators correspondingly.

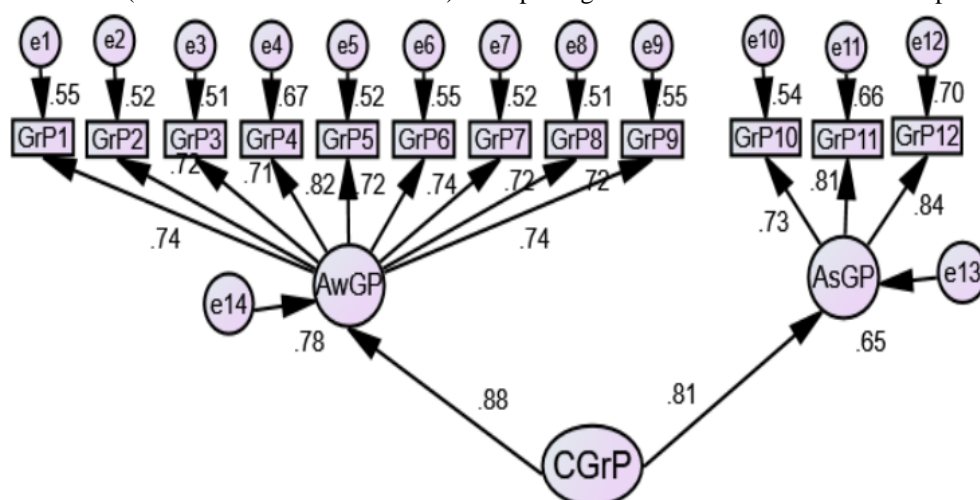


Figure 2: Measurement model of CGrP

Model-fitting of CGrP is acceptable with its statistical inferences that fit-indices are crossing (or fall below) the recommended values, where values (.971, .964, .971, .950, .953) of IFI, TLI, CFI, GFI, & NFI are higher than .95 (Hair et al., 2013; Hu and Bentler, 1999); value (.941) of RFI is more than .9 (Hu and Bentler, 1998). Further, according to Schreiber et al., (2006) CMIN/DF value (2.533) is below 3; and RMSEA value (.060) is below .06 and .08. Based on the recommendation of value Hu and Bentler (1999), RMR (.035) is below .08.

6.4 Second Measurement Model: Emotion towards Green Products (EGP)

This measurement model is also tested by CFA with three constructs such as PP (Perceived Pleasure); PA (Perceptual Arousal); and PD (Perceptual Domination), each carrying three indicators.

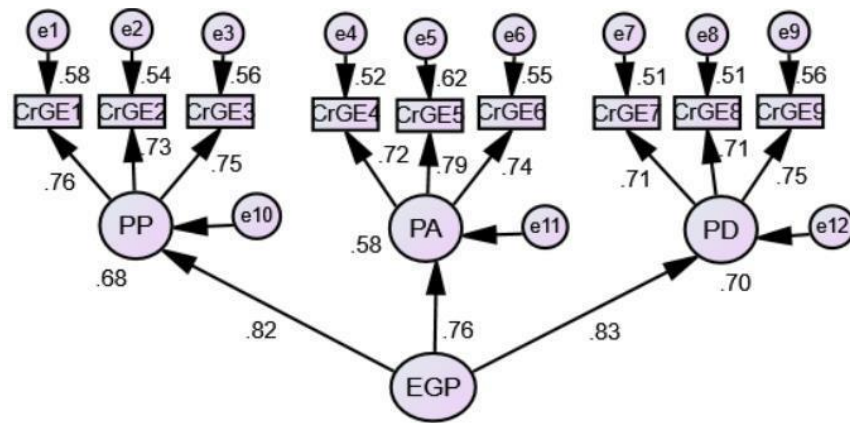


Figure 3: Measurement model of EGP

According to the recommended threshold values of Hair et al. (2013) and Hu and Bentler (1999) the fit indices of IFI, TLI, CFI, GFI, & NFI are higher than .95 where values are .968, .952, .968, .963, .952; Value (.928) of RFI is higher than .9 (Hu and Bentler, 1998). So, the statistical inferences says that model-fitting of EGP (emotion towards green products) is acceptable. Further, according to Schreiber et al., (2006) CMIN/DF value (2.939) is below 3; and RMSEA value (.067) is below .06 and .08. Based on the recommendation of value Hu and Bentler (1999), RMR (.043) is below .08.

6.5 Assessment of Construct Reliability & Convergent Validity (CGrP & EGP)

All the constructs (AwGP & AsGP; PP, PA, & PD) of the two measurement models are assessed for “reliability and convergent validity” according to the recommendations of Straub et al. (2004) and outcomes are presented in table-1.

Table-1: Assessment of Construct Reliability & Convergent Validity of CGrP & EGP				Emotion towards Green Products (EGP)			
Customers' Green Perception (CGrP)				Emotion towards Green Products (EGP)			
Construct on indicators	β	"t"	α & CR	Construct on indicators	B	"t"	α & CR
AwGP				PP			
GrP1	.742	---	.915 & .915	CrGE1	.763	---	.790 & .791
GrP2	.723	15.182*		CrGE2	.732	13.551*	
GrP3	.713	14.738*		CrGE3	.746	13.790*	
GrP4	.820	17.169*		PA			
GrP5	.720	14.841*		CrGE4	.718	---	.792 & .791
GrP6	.743	15.248*		CrGE5	.789	13.445*	
GrP7	.719	14.778*		CrGE6	.743	12.636*	
GrP8	.717	14.784*		PD			
GrP9	.741	15.385*		CrGE7	.714	---	.768 & .769
AsGP				CrGE8	.714	12.010*	
GrP10	.732	---	.833	CrGE9	.748	12.793*	
Grp11	.815	15.117*	&	EGP (2 nd order construct)			
GrP12	.835	15.551*	.837				
CGrP (2 nd order construct)							
AwGP	.881	---	.923	PP	.823	8.925*	.860 & .848
AsGP	.807	---	&	PA	.761	8.304*	
				NA	PD	.835	

<p>“t” – critical ration (CR); β – “Standardized regression weight”; α – “Cronbach’s Alpha”; AwGP: Awareness of Green Products; AsGP: Assurance of Green Products; PP: Perceived Pleasure; PA: Perceptual Arousal; PD: Perceptual Domination; *Significant at 1% level of significance; ---pre-defined regression weight as 1</p>
<p>Source: Authors’ compiling from analyses</p>

According to the recommendations of Hair et al. (2013) the values of „Cronbach’s alpha“ and „composite reliability (CR)“ for all the constructs crosses the threshold level of 0.7 which shows acceptable reliability for both measurement models. Concurrently, according to Henseler et al. (2009) convergent validity for these two measurement models with the lowest factor-loadings that are .713 & .732; .732, .718 & .714 for both the constructs (AwGP & AsGP; PP, PA, & PD) of CGrP & EGP respectively is also crossing the threshold value of 0.7 which signifies acceptable convergent validity; and further based on recommendations of Bagozzi and Yi (1988), all average variance extracted values are crossing the threshold of 0.5. Moreover, significant, 't' for every indicator at 1% level of significance proves the precision of the model composition (table 1).

6.6 Discriminant validity of both measurement models (EGP & CGrP)

Five constructs of both measurement models are tested for discriminant validity, and outcomes are systematically offered in table-2.

Table 2: Discriminant validity of constructs of EGP									
Constructs	Mean	SD	AVE	MSV	ASV	Max R(H)	PP	PA	PD
PP (Perceived Pleasure)	11.25	3.587	.558	.472	.433	.792	.747		
PA (Perceptual Arousal)	11.43	3.311	.563	.403	.398	.798	.627	.751	
PD (Perceptual Domination)	11.34	3.276	.526	.472	.438	.770	.687	.635	.726
Discriminant Validity of constructs of CGrP									
AwGP	33.31	8.855	.545	Values (0.738 & 0.795) of square root of AVE are greater than the value (0.710) of inter-construct co-relationship.					
AsGP	11.26	3.027	.632						
SD: Standard Deviation, AVE: Average Variance Extracted; MSV: Maximum Shared Variance; ASV: Average Shared Variance; AwGP: Awareness of Green Products; AsGP: Assurance of Green Products; *Inter-construct co-relationship is significant at 1% level of significance.									
Source: Compilation from data analyses									

Discriminant validity of every construct is justified as the square root of AVE (diagonal values in bold) for every construct (table 2) customers’ green perception & emotion towards green products carry a higher value than the respective inter-construct co-relationships; and values of MSV and average shared variance are less than respective values of AVE based on the recommendations of Fornell and Larcker (1981). In addition, for all the constructs the values of maximal reliability & Max R(H) are more than 0.7 (Nunnally, 1978). Desired statistical nature of all constructs is reflected from their mean and standard deviation (SD).

6.7 Structural model assessment

According to Anderson and Gerbing (1988) two-step approach, the structural model (figure 3) is assessed by the “SEM (Structural Equation Modelling)” technique after assessing the two measurement models. The structural model carries 12 indicators of CGrP, 9 indicators of EGP, & 4 indicators of CGPL.

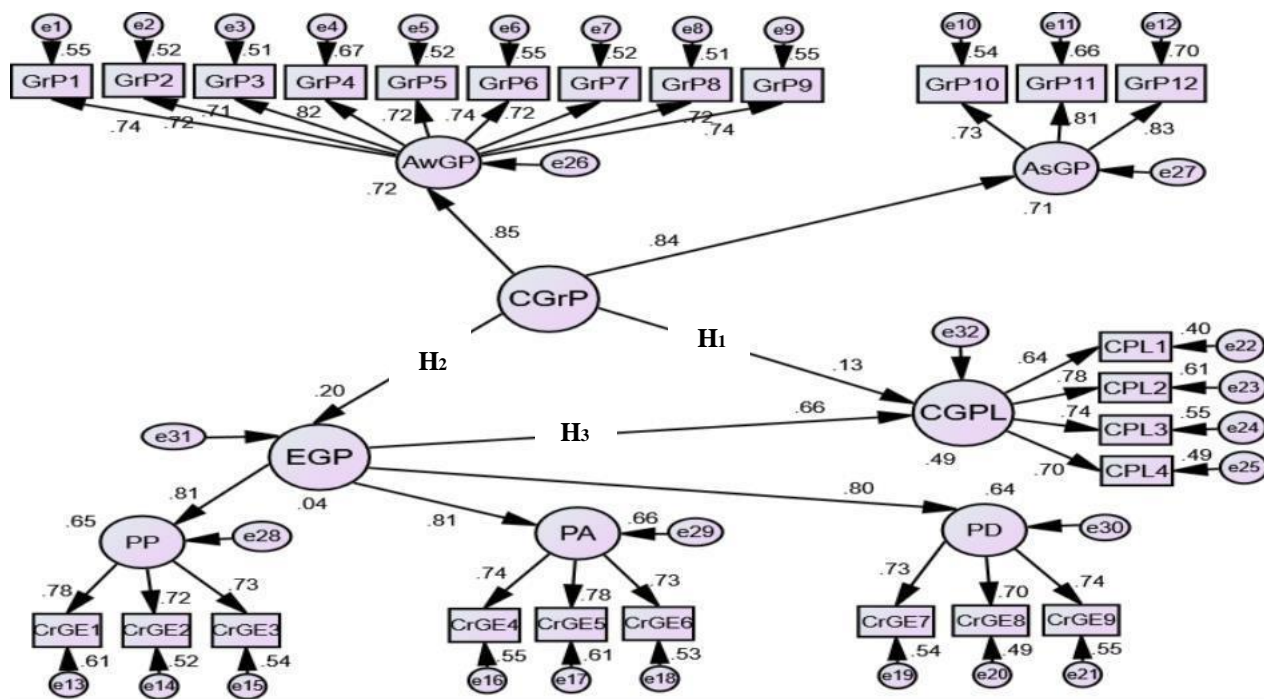


Figure 4: Structural model of perception-emotion-likelihood

According to Hair et al. (2013) and Hu and Bentler (1999) the IFI & CFI values (.953 & .952) are more than .95 and according to Hu and Bentler (1998) the TLI, NFI, GFI values (.946, .905, & .912) are more than .9. Further based on the recommendations of Schreiber et al. (2006), CMIN/DF value (1.899) is below 3 and RMR value (.049) is below .08. Also, according to Hu and Bentler, (1999) RMSEA value (.050) is below .06. So, from this it is identified that the structural model is adequately fitting to the data and concept as all major fit-indices are successfully meeting the threshold values. Thus, three major hypotheses (H₁, H₂, & H₃) are tested through the above structural model and results are explained in the table 3. Standardized regression weights shown in the model (figure-3) justifies their effects as being significant for the hypotheses.

Table 3: Results of testing of structural model & major hypotheses				
Major hypotheses in the structural model	B	S.E.	"t"	Results of hypotheses
Customers' green perception is significantly & positively influencing their purchase likelihood. (H ₁ : CGPL ← CGrP)	.126	.072	2.058	Supported at 5% level of significance
Customers' green perception is significantly & positively influencing their emotion towards green products. (H ₂ : EGP ← CGrP)	.204	.078	2.263	Supported at 5% level of significance
Customers' emotion towards green products is significantly & positively influencing their purchase likelihood. (H ₃ : CGPL ← EGP)	.664	.092	8.574	Supported at 1% level of significance
CGrP: Customers' Green Perception; EGP: Emotion towards Green Products; CGPL: Customers' Green Purchase likelihood; β- "Standardised Regression Weight"; "t- Critical Ratio"; S.E.- "Standard Error"				
Source: Authors' compilation from analysis				

Table-3 reflects that three major hypotheses are supported. That means customers' green perception put significant positive effects (nearly 13% & 20%) on their purchase likelihood & on their emotion towards green

products. And, emotion towards green products also carries a significant positive (nearly 65%) effect on their purchase likelihood. Three hypotheses being supported is logically supporting the 4th hypothesis (H₄) that the indirect effect (through the mediating effect of emotion towards green products) of customers’ green perception on purchase likelihood is significant.

6.8 Moderating effect of Skepticism

According to the model-59 of Hayes (2018), the moderating effect of customers’ skepticism is evaluated through Process-Macro of SPSS, which also tests the 5th hypothesis (H₅). The statistics and their inferences are reflected in table 4.

Table 4: Significance of moderating effect of customers’ skepticism for green products

Sl. No.	Model summary	R	R-square	MSE	F	DF1	DF2
1	EGP as target variable	.5426	.2944	.2632	59.0985*	3.0000	425.0000
2	CGPL as target variable	.8184	.6698	.1842	171.6202*	5.0000	423.0000
3	Statistical properties of the model	Coefficient		SE	t	LLCI	ULCI
4	Constant	-1.1723		.3509	-3.3411**	-1.8620	-.4826
5	CGrP	.4028		.1059	3.8037**	.1946	.6109
6	EGP	1.0032		.0879	11.4064*	.8303	1.1761
7	CGSM	.4115		.1020	4.0322**	.2109	.6121
8	Int_1= CGrP x CGSM (EGP as outcome variable)	-.0684		.0322	-2.1226**	-.1318	-.0051
9	Int_1= CGrP x CGSM (CGPL as outcome variable)	-.0569		.0281	-2.0234**	-.1122	-.0016
10	Int_2= EGP x CGSM (CGPL as outcome variable)	-.0514		.0250	-2.0569**	-.1005	-.0023

CGrP: Customers’ Green Perception; CGPL: Customers’ Green Purchase Likelihood; EGP: Emotion towards Green Product; CGSM: Customers’ Green Skepticism; MSE: Mean Squared Error, DF: Degree of Freedom, SE: Standard error, LLCI: lower-level confidence interval, ULCI: upper-level confidence interval, Level of all confidence intervals is 95.0000, No. of bootstrap samples is 5,000; **significant at 0.005; *significant at 0.001

Source: Compiled from moderation analyses

Table-4 reflects that all “t” values are significant at 5% level of significance (p < 0.05) and values of both LLCI & ULCI are either positive or negative for customers’ green skepticism (CGSM). So, it is inferred that CGSM is moderating significantly the effect of customers’ green perception on purchase likelihood and on their emotion towards green products; also, moderate significant the effect of emotion towards green products on their purchase likelihood.

Table 5: Effect of CGrP on CGPL, moderated by customers’ skepticism

Sl. No.	Levels of Moderator	Effect	SE	t	LLCI	ULCI
1	Conditional direct effects (Skepticism - 1, 4, 5)	.3079	.0650	4.7335*	.1800	.4357
2		.1750	.0430	4.0738**	.0906	.2595
3		.1181	.0588	2.0065**	.0024	.2338
4	Conditional indirect effects (Skepticism - 1, 4, 5); Customers’ emotion for green product– Mediator	Effect	BootSE		BootLLCI	BootULCI
5		.4276	.0797		.2784	.5930
6		.2443	.0427		.1613	.3345
		.1775	.0528		.0775	.2855

CGrP: Customers' Green Perception; CGPL: Customers' Green Purchase Likelihood; SE: Standard error, LLCI: lower-level confidence interval, ULCI: upper-level confidence interval, Level of confidence for all confidence intervals is 95.0000, No. of bootstrap samples is 5,000; *significant at 0.001; **significant at 0.005

Source: Compiled from moderation analyses

Table-5 reflects that there is no possible appearance of “zero” between LLCI (lower level of confidence interval) and ULCI (upper levels of confidence interval) at 95% confidence interval, and bootstrap samples of 5000. So, the moderated (conditional) direct effect is significant, where customers' skepticism is moderating the direct-effect of customers' green perception on their purchase likelihood of green products. Along all the levels, the moderation effect-size is significant as the “t” statistics are significant in one case at 1% level of significance ($p < 0.001$) and in two cases at 5% level of significance ($p < 0.05$).

Further, moderated (conditional) indirect effects are significant, where customers' skepticism is moderating the indirect (through the mediating effect of emotion towards green products) effect of customers' green perception on their purchase likelihood of green products of the organized retailers as zero is not appearing Boot-LLCI and Boot-ULCI with 95% confidence interval, and bootstrap samples of 5000. All the values of LLCI and ULCI are positive and the moderation effect-size for all the levels of the moderator is < 0.05 . Hence, hypothesis, H_5 is said to be supported.

6.9 Testing of common method bias

Based on the suggestion of Harman (1967), this study examined the common method bias through one-factor testing, where it is observed that the said single component whether account for more than 50 % of the total variance of study's data. Under principal component analysis along with unrotated pre-fixed single factor, this study shows that all 28 variables including 3 moderating variables of the study account for 26% (Total percentage of factor loading extracted = 25.824) of the variance. So, the biases in measuring-technique are negligible.

7. Discussion

Customers' green perception significantly shapes both their emotional responses and purchase likelihood for green products. This supports prior research emphasizing that favourable environmental perceptions are a key antecedent to pro-environmental behaviour (Kumar et al., 2023). Further, the empirical analysis shows that green perception exerts a stronger influence on emotion than purchase likelihood indicates that perception may not alone drive action but does so more powerfully when translated through emotions. This aligns with Nielsen et al. (2024), who highlighted the role of eco-guilt and eco-shame as affective triggers of green behaviour. The strong effect of emotion (65%) on purchase likelihood underscores the affective ground for green consumer behaviour. This is in sync with the outcomes of Yan, Keh and Murray (2024) and Beserra De Lima et al. (2019), that emotion such as pride, awe or guilt appears to bridge the gap between perception and action, reinforcing existing theoretical perspectives and that emotion functions as behavioural motivators within sustainable-decision making. In this way, the study empirically substantiates the mediating role of emotion between perception and likelihood, extending previous conceptual work that often examined these dimensions in isolation.

Further, the green skepticism attenuates both direct and indirect relationships reveals that even strong favourable perceptions and emotions can be undermined when customers doubt the authenticity of green claims. This partially, contradicts earlier evidence suggesting that skepticism does not necessarily deter green purchase likelihood (Tetrevova et al., 2025) and offers a more context-sensitive understanding consistent with Silva et al. (2020). These insights suggests that skepticism operates as a psychological filter, influencing how perceptual and emotional evaluations are translated into behaviour.

Overall, this study contributes to the growing recognition that emotional and perception mechanisms jointly determine the effectiveness of green product purchase. The interplay among perception, emotion, skepticism and

likelihood thus offers a more integrated perspective on sustainable consumer behaviour than what has previously been reported.

8. Findings

The empirical analysis confirms that customers' green perception plays a crucial role in shaping both emotion and purchase likelihood of customers towards green products. As the measurement models demonstrated strong psychometric properties with high reliability and validity, it affirms the robustness of the constructs (customers' green perception and emotion towards green products) used to capture sustainable consumer behaviour.

The proposed relationships among perception, emotion and purchase likelihood are empirically supported. The customers' green perception is positively and significantly influencing their purchase likelihood as well as their emotion towards green products. Notably, the emotion towards green products significantly and positively influencing customers' purchase likelihood emerged as a substantial determinant. From these empirical findings it is inferred that, emotion towards green products serves as a powerful driver for purchase likelihood mediating the effect of customers' green perception. Additionally, this inference is supported by mediation analysis which revealed that emotion acts as a significant and positive mediator between customers' green perception and their purchase likelihood. This underscores that emotion not only directly enhances purchase likelihood but also strengthens the indirect impact of green perception on purchase likelihood, amplifying the overall effect within the model.

Furthermore, moderation analysis reveals that green skepticism plays a significant role in shaping these relationships, attenuating both direct and indirect pathways within the model. These results indicate that customer skepticism can meaningfully alter how green perceptions are translated into emotional and behavioral outcomes. Overall, these findings highlight the necessity of leveraging emotion in between perception and purchase likelihood to counteract skepticism and strengthen the effectiveness of green marketing strategies.

8.1 Bubbling likelihood principle

Likelihood principle of Hermann von Helmholtz can be modified or redefined by providing an emotion-context. Helmholtz's likelihood principle says that mind (brain) of individual makes the interpretation of sensation to recognize stimulus (any object or event) by inferring most likely cause(s) of that event or object. This phenomenon occurs unconsciously. So, perception refers to the unconscious inference of high probable circumstances or events.

We postulate on the empirical outcomes of this study that the above-mentioned unconscious inference is forming an emotion-context, where those selective event(s) exist. That selective event appears to have high probability for the concerned individual for subsequent inferences because of the emotion-context. Hence, most likelihood of the concerned event continues for a comparatively longer future. Our postulation is further backed by James-Lange theory of emotion, which says that individual feel the emotion as a consequence of sensing the physiological change(s). So, emotion-context makes some specific event most likelihood (keep that event distinct from other events), which is built by unconscious inference.

Emotion-context bubbles (splashing and rippling) the event or object distinct to be inferred in the similar manners for a longer future. We call it as "bubbling likelihood principle". So, the unconscious inference does not stop for that stimulus, rather continues on the emotion-context, which modifies the Helmholtz's likelihood principle. This phenomenon is important to be understood by the commercial organization in the competitive age.

9. Implications

This study enhances the understanding of sustainable consumer behaviour by empirically validating the interaction between perception, emotion and likelihood. The direct effect of customers' green perception on purchase likelihood is modest, while the indirect effect via emotion is much stronger. This infers that green perception alone is not enough, the emotions are the key to unlocking behavioural change that is to enhance the likelihood of purchasing green products. Therefore, the marketers must move towards experiential marketing in

the green domain. Further, this study underscores the pivotal role of emotion towards green product in translating customers' green perception to purchase likelihood. For marketers, this suggests a strategic pivot toward emotional storytelling that evokes pride, empathy, ethical satisfaction rather than only providing information. So, the marketers should integrate their focus on information with emotion in order to translate the customers' perception to high probable behavioural outcomes, the purchase likelihood. The "bubbling likelihood principle", a new theory developed by this study refers that purchase likelihood can be aroused and stronger for a comparatively longer future, if the favourable customers' perception will be allowed to flourish on their emotion towards. By this way, concerned organization can protect their product from the piercing of competing product to the mind of target customers. It is important to note here the empirical results of the study that only forming favourable perception is not sufficient (less potentiality) for the purchase likelihood Helmholtz's likelihood principle. Rather the perception should be allowed to be flourished on the ground of customers' emotion, which not only arouse the purchase likelihood, but also make this likelihood stronger for a comparative longer future.

The moderation role of skepticism refers that brands must also proactively address skepticism of customers through certifications, transparent and clear communications and verifiable claims to help build trust and credibility. Moreover, customers with high skepticism may still positively respond if emotional trust is established. So, strategies such as, the firms may integrate QR codes with the green features in their product packaging, which will be helpful for customers to view the green certifications and to verify the claims about the product being green. They may also add badges in the packaging to help customer understand how much environment friendly the product is, will counteract their skepticism.

Further for theoretical implications, this study extends existing theories of sustainable consumer behaviour by integrating perceptual, emotional and behavioural dimensions within a unified framework. Prior studies emphasized that customers' perceptions of eco-efficiency and sustainable lifestyles, along with social and individual factors shape their buying intent (Mahesh, 2013; Christopher et al., 2023; Elgammal et al., 2024), while emotion such as pride, guilt, and empathy influence green buying (Hain, 2017; Kolling et al., 2020; Beserra de Lima et al., 2019). This research advances these models by demonstrating that emotion mediates the effect of perception on purchase likelihood. Moreover, it refines skepticism by evidencing how it moderates both perceptual and emotional pathways. Collectively, this study contributes to existing literatures by unifying perceptual, emotional and behavioural constructs under a dynamic framework, offering a richer theoretical lens for sustainability and future consumer behaviour research.

From a societal viewpoint, public campaigns and policy initiatives should harness positive emotion towards green products to aware customers and foster eco-consciousness among them to counteract skepticism and enhance purchase likelihood. Further, policymakers must make policies that mandate clear labelling, independent certifications, and open disclosure that can enhance emotional trust, and encourage sustainable choices.

10. Conclusion along with novelty

This study offers a nuanced understanding of sustainable consumer behaviour by examining the interrelationships among customers' green perception, emotion towards green products, and customers' green purchase likelihood, while addressing the moderating role of customers' green skepticism, which represents the novelty of this research-work. The findings reveal that customers' green perception is influencing their purchase likelihood and emotion towards green products, which in turn also develop the purchase likelihood. So, the study offers a novel contribution by integrating the effects of green perception, and emotion to examine their collective effect on purchase likelihood. This fact gives rise to a new theory called as "bubbling likelihood principle" that talks about the arousal and continued purchase likelihood on the emotion-context being built by the favourable perception, which is the alluring novelty of this study.

Unlike previous research that often isolates these variables, this research-work adopts a comprehensive lens to explore their synergistic interactions, which is an area previously underexplored. The insights from this research-work holds practical relevance for both marketers as well as policymakers seeking to foster green and sustainable consumer behaviour. Further, the skepticism of customers has significant moderating effect.

11. Limitations and Future research Paths

Despite offering valuable insights, this study does have certain limitations, which provide important avenues for future inquiry. The study acknowledges some limitations that open avenues for future investigation. Firstly, the sample was restricted to a specific geographical region, which may limit the generalizability of the findings. Future research works can enhance the external validity by drawing samples from wider geographical area. Secondly, the scope of this research work is confined to two main factors that are perception of green products and emotion towards green products, with skepticism considered as moderating variable. Even though these variables offer substantial explanatory power, future researchers could expand the model by integrating additional antecedents or precedents to deepen the understanding of customers environmentally friendly behaviour. Furthermore, the new theory, “bubbling likelihood principle” can be tested empirically by the future researchers.

Lastly, customer responses to green initiatives may vary across different industries such as automobile, banking, food etc. Therefore, future researchers can conduct comparative studies across different sectors which could generate more context-specific visions into green customers’ behaviour.

Acknowledgement

This research was funded by MRFP fund by OSHEC (Odisha State Higher Education Council), Odisha, India.

Disclosure statement

Simran Babu, is a Fellowship holder for PhD, under Mukhyamantri Research Fellowship program by OSHEC (Odisha State Higher Education Council), Odisha, India

References

- [1] Adil, M., Parthiban, E. S., Mahmoud, H. A., Wu, J., Sadiq, M., and Suhail, F. 2023. Consumers’ Reaction to Greenwashing in the Saudi Arabian Skincare Market: A Moderated Mediation Approach. *Sustainability*, **16**(4), 1652. <https://doi.org/10.3390/su16041652>
- [2] Anderson, J. C. and Gerbing, D. W. 1988. Structural equation modelling in practice: a review and recommended two-step approach. *Psychological Bulletin*, **103**(3), 411–423 [online] <https://doi.org/10.1037/0033-2909.103.3.411>
- [3] Arli, D., Tan, L. P., Tjiptono, F., and Yang, L. 2018. Exploring consumers’ purchase intention towards green products in an emerging market: The role of consumers’ perceived readiness. *International Journal of Consumer Studies*, **42**(4), 389–401. <https://doi.org/10.1111/ijcs.12432>
- [4] Baah, N. G., Kim, S. S., and Han, H. 2025. Building green brand equity through sustainable hospitality consumption value: The moderating impact of environmental identity and environmental activism. *Journal of Hospitality and Tourism Management*, **63**, 112–128. <https://doi.org/10.1016/j.jhtm.2025.03.015>
- [5] Bagozzi, R. P., and Yi, Y. 1998. On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, **16**, 74–94. <https://doi.org/10.1007/BF02723327>
- [6] Beserra De Lima, E., Salomé, C., Costa, R., Félix, G. R., and Rocha, G. 2019. Guilt and Pride Emotions and their Influence on the Intention of Purchasing Green Products. *Consumer Behaviour Review*, **3**(2). <https://doi.org/10.51359/2526-7884.2019.240028>
- [7] Cannon, W. B. 1927. The James-Lange theory of emotions: a critical examination and an alternative theory. *The American Journal of Psychology*, **39**, 106–124. <https://doi.org/10.2307/1415404>
- [8] Chauke, O. F., Tlapana, T., and Hawkins-Mofokeng, R. 2021. Adoption and consumption patterns of green products: An exploratory study amongst green consumers in Durban. *International Journal of*

- Research in Business and Social Science*, 10(7), 78–86. <https://doi.org/10.20525/ijrbs.v10i7.1358>
- [9] Christopher, D. S., Priya, B. M., and Priyadharshini, M. S. 2023. Green Products: A Consumer's Perception and Awareness. *The Online Journal of Distance Education and e-Learning*, 11(2), 2211-2221.
- [10] de Sio, S., Casu, G., Zamagni, A., and Gremigni, P. 2024. Product Characteristics and Emotions to Bridge the Intention-Behavior Gap in Green Food Purchasing. *Sustainability*, 16, 7297. <https://doi.org/10.3390/su16177297>
- [11] Dhewi, T. S., Adi Putra, I. W. J. S., and Wahyudi, H. D. 2018. The Influence of Green Perceived Value and Green Perceived Risk Perceptions on the Green Product Purchase Intention. *KnE Social Sciences*, 3(3), 411–425. <https://doi.org/10.18502/kss.v3i3.1899>
- [12] Dukeshire, S., Garbes, R., Kennedy, C., Boudreau, A., and Osborne, T. 2011. Beliefs, attitudes, and propensity to buy locally produced food. *Journal of Agriculture, Food Systems, and Community Development*, 1–11. <https://doi.org/10.5304/jafscd.2011.013.008>
- [13] Elgammal, I., Ghanem, M. and Al-Modaf, O. 2024. Sustainable Purchasing Behaviors in Generation Z: The Role of Social Identity and Behavioral Intentions in the Saudi Context. *Sustainability*, 16, 4478. <https://doi.org/10.3390/su16114478>
- [14] Elsantil, Y., and Hamza, E. A. 2019. The impact of self-conscious emotions on willingness to pay for sustainable products. *Humanities and Social Sciences Reviews*, 7(2), 77–90. <https://doi.org/10.18510/hssr.2019.729>
- [15] Faiban, D. R. B. 2023. Product Quality Perception, Customer Satisfaction, And Customer Loyalty On Green Products. *International Journal Of Research In Education Humanities And Commerce*, 04(04), 200–206. <https://doi.org/10.37602/ijrehc.2023.4418>
- [16] Farooq, Y., and Wicaksono, H. 2021. Advancing on the analysis of causes and consequences of green skepticism. *Journal of Cleaner Production*, 320, 128927. <https://doi.org/10.1016/j.jclepro.2021.128927>
- [17] Fornell, C., and Larcker, D. F. 1981. Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50. <https://doi.org/10.2307/3151312>
- [18] George, D., and Mallery, P. 2006. SPSS for Windows Step by Step: A Simple Guide and Reference. 13.0 update (6th ed.). *Pearson Education, Inc.*
- [19] Goh, S. K., and Balaji, M. 2016. Linking green skepticism to green purchase behavior. *Journal of Cleaner Production*, 131, 629-638. <https://doi.org/10.1016/j.jclepro.2016.04.122>
- [20] Gregory, R. L. 2007. Helmholtz's principle [Editorial]. *Perception*, 36(6), 795–796. <https://doi.org/10.1068/p3606ed>
- [21] Hain, M. 2017. How good products make you feel: The underlying emotions of ethical consumerism. *Maastricht University Journal of Sustainability Studies*, 73-81.
- [22] Hair, J. F., Black, W. C., Babin, B. J., and Anderson, R. E. 2013. *Multivariate Data Analysis*, Pearson Education Limited, London.
- [23] Harman, H. H. 1967. *Modern factor analysis* (2nd ed.). University of Chicago Press.
- [24] Hayes, A. F. 2018. *Introduction to Mediation, Moderation, and Conditional Process Analysis; A Regression-based Approach*. The Guilford Press, Guilford Publication, Inc., New York.
- [25] Henseler, J., Ringle, C. M., and Sinkovics, R. R. 2009. The use of partial least squares path modeling in international marketing. In *Sinkovics, R.R. and Ghauri, P.N. (Eds.): New Challenges to International Marketing* (Advances in International Marketing, Vol. 20), 277–319, Emerald Group Publishing Limited, Bingley [online] [https://doi.org/10.1108/S1474-7979\(2009\)0000020014](https://doi.org/10.1108/S1474-7979(2009)0000020014)
- [26] Hu, L. T., and Bentler, P. M. 1998. Fit indices in covariance structure modeling: sensitivity to under-parameterized model misspecification. *Psychological Methods*, 3(4), 424–453. <https://doi.org/10.1037/1082-989X.3.4.424>
- [27] Hu, L. T., and Bentler, P. M. 1999. Cut-off criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6, 1–55. <https://doi.org/10.1080/10705519909540118>

- [28] Kolling, C., de Medeiros, J.F., Ribeiro, J.L.D., Onwezen, M., and Marcon, A. 2020. Emotions and the Purchase Decision Processes of Green Products: An Exploratory Study with Consumption Emotions Set Scale (CES). In: *Thomé, A.M.T., Barbastefano, R.G., Scavarda, L.F., dos Reis, J.C.G., Amorim, M.P.C. (eds) Industrial Engineering and Operations Management. IJCIEOM 2020*. Springer Proceedings in Mathematics & Statistics, 337. Springer, Cham. https://doi.org/10.1007/978-3-030-56920-4_46
- [29] Kreczmańska-Gigol, K., and Gigol, T. 2022. The Impact of Consumers' Green Skepticism on the Purchase of Energy-Efficient and Environmentally Friendly Products. *Energies*, 15(6), 2077. <https://doi.org/10.3390/en15062077>
- [30] Kumar, M. K., Maswood, Y., Palani, B., Sethumadhavan, R., Arun, M., and Singh, K. 2023. A Study on Perception and Preferences Towards Green Marketing, It's Influence on Consumer. *Journal of Informatics Education and Research*, 3(2).
- [31] Lamichhane, B. 2022. Customer Perception towards Green Products in Pokhara Valley. *Janapriya Journal of Interdisciplinary Studies*, 11(1), 1–15. <https://doi.org/10.3126/jjis.v11i1.51628>
- [32] Lavuri, R. 2022. Organic green purchasing: Moderation of environmental protection emotion and price sensitivity. *Journal of Cleaner Production*, 368, 133113. <https://doi.org/10.1016/j.jclepro.2022.133113>
- [33] Leonidou, C. N., and Skarmeas, D. 2017. Gray Shades of Green: Causes and Consequences of Green Skepticism. *Journal of Business Ethics*, 144, 401–415. <https://doi.org/10.1007/s10551-015-2829-4>
- [34] Liew, C. W. S., Ramayah, T., and Karia, N. 2025. Consumption value and context-specific attributes: the moderating effect of social class on Halal cosmetics purchase intention. *Asia-Pacific Journal of Business Administration*, 17(2), 447-468. <https://doi.org/10.1108/APJBA-04-2024-0177>
- [35] Lima, L. A. de O., Silva, J. M. S. da, Santos, A. de O., Marques, F. R. V., Leão, A. P. da S., Carvalho, M. da C. L., Estevam, S. M., and Ferreira, A. B. S. 2024. The Influence of Green Marketing on Consumer Purchase Intention: a Systematic Review. *Revista De Gestão Social E Ambiental*, 18(3), e05249. <https://doi.org/10.24857/rgsa.v18n3-084>
- [36] Mahesh, N. 2013. Consumer's Perceived value, Attitude and Purchase Intention of Green Products. *Management Insight*, 9.
- [37] Matthes, J., and Wonneberger, A. 2014. The Skeptical Green Consumer Revisited: Testing the Relationship Between Green Consumerism and Skepticism Toward Advertising. *Journal of Advertising*, 43(2), 115–127. <https://doi.org/10.1080/00913367.2013.834804>
- [38] Nguyen, P., and Dekhili, S. 2019. Sustainable development in Vietnam: An examination of consumers' perceptions of green products. *Business Strategy & Development*, 2(2), 127-136. <https://doi.org/10.1002/bsd2.48>
- [39] Nielsen, R. S., Gamborg, C., and Lund, T. B. 2024. Eco-guilt and eco-shame in everyday life: An exploratory study of the experiences, triggers, and reactions. *Frontiers in Sustainability*, 5, 1357656. <https://doi.org/10.3389/frsus.2024.1357656>
- [40] Nunnally, J. C. 1978. *Psychometric Theory* (2nd ed.). New York: McGraw-Hill.
- [41] Palmieri, N., Boccia, F., and Covino, D. 2024. Digital and Green Behaviour: An Exploratory Study on Italian Consumers. *Sustainability*, 16, 3459. <https://doi.org/10.3390/10.3390/su16083459>
- [42] Pravin, P. 2024 Consumer Perception Towards Green Products: Implications For Sustainable Marketing Strategies. *Educational Administration: Theory And Practice*, 30(6), 85 – 90. [https://doi.org/10.53555/kueyv30i6\(S\).5330](https://doi.org/10.53555/kueyv30i6(S).5330)
- [43] Power, N., Beattie, G., and McGuire, L. 2017. Mapping our underlying cognitions and emotions about good environmental behavior: Why we fail to act despite the best of intentions. In *Semiotica*, 2017(215), 193–224). De Gruyter Mouton. <https://doi.org/10.1515/sem-2016-0035>
- [44] Schreiber, J. B., Stage, F. K., King, J., Nora, A., and Barlow, E. A. 2006. Reporting Structural Equation Modeling and Confirmatory Factor Analysis Results: A Review. *The Journal of Educational Research*, 99(6), 323–337. <https://doi.org/10.3200/JOER.99.6.323-338>

- [45] Silva, M. E., de Sousa-Filho, J. M., Yamim, A. P., and Diógenes, A. P. 2020. Exploring nuances of green skepticism in different economies. *Marketing Intelligence & Planning*, 38(4), 449–463. <https://doi.org/10.1108/MIP-10-2018-0435>
- [46] Straub, D., Boudreau, M. C., and Gefen, D. 2004. Validation guidelines for IS positivist research. *Communications of the Association for Information Systems*, 13, 380–427 [online] <https://doi.org/10.17705/1CAIS.01324>
- [47] Suttikun, C., Mahasuweerachai, P., and Bicksler, W. H. 2024. Environmental messaging, corporate values, online engagement and purchase behavior: a study of green communications among eco-friendly coffee retailers. *Journal of Hospitality and Tourism Insights*. <https://doi.org/10.1108/JHTI-06-2024-0556>
- [48] Tetrevoval, L., Striteska, M. K., Kuba, O., Prakash, V., and Prokop, V. 2025. When Trust and Distrust Come Into Play: How Green Concern, Scepticism and Communication Affect Customers' Behaviour? *Business Strategy and the Environment*, 34(3), 3311-3337. <https://doi.org/10.1002/bse.4144>
- [49] Tezer, A., Philp, M., and Suri, A. 2023. The greenguard effect: When and why consumers react less negatively following green product failures. *Journal of the Academy of Marketing Science*. <https://doi.org/10.1007/s11747-023-00991-x>
- [50] White, K., Habib, R., and David J. Hardisty 2019. How to SHIFT Consumer Behaviors to be More Sustainable: A Literature Review and Guiding Framework. *Journal of Marketing*, 83(3), 22-49.
- [51] Yan, L., Keh, H.T. and Murray, K.B. 2024. Feeling the values: How pride and awe differentially enhance consumers' sustainable behavioral intentions. *Journal of the Academy Marketing Science*, 52, 75–96. <https://doi.org/10.1007/s11747-023-00928-4>
- [52] Yu, S., Zhong, Z., Zhu, Y., and Sun, J. 2024. Green Emotion: Incorporating Emotional Perception in Green Marketing to Increase Green Furniture Purchase Intentions. *Sustainability*, 16, 4935. <https://doi.org/10.3390/su16124935>
- [53] Zhang, Y., Zhang, Q., and Li, X. 2025. Addressing consumer skepticism: effects of post-purchase green attribute disclosure on consumer attitude change. *Humanities & Social Sciences Communications*, 12. <https://doi.org/10.1057/s41599-025-05556-7>