Price Sensitivity and the Influence of Green Knowledge on Consumer Attitude and Purchase Intention in the Context of Sustainable Goods

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Abstract

Background and Objective - Legislators and organizations trying to encourage sustainable consumption as a result of evolving consumer tastes and economical limitations need to recognize how these issues interact. This study aimed to assess the relationship among price sensitivity (PS), green knowledge (GRK), female consumers attitude (CA), and purchase intention (PI) for sustainable goods. Methodology - Using a questionnaire of 250 female consumers, this study examines hypotheses related to the factors using the Structural Equation Modeling-Partial Least Squares (SEM-PLS) methodology. Results - The connection among GRK and CA for sustainable goods is moderated by PS, with greater GRK increasing PI. Nevertheless, PS affects the desire of customers to pay charges. Conclusion - In an atmosphere of competition, this study emphasizes the influence of price strategies and awareness among female consumers while highlighting the significance of PS and GRK in encouraging sustainable consumption patterns.

Keywords: Sustainable goods, female consumers, price sensitivity (PS), green knowledge (GRK), consumer attitude (CA), purchase intention (PI).

1. Introduction

Recently, sustainable goods have gained popularity due to their recyclable nature, low carbon dioxide emissions, and ecologically friendly production methods [1]. Many businesses prioritize green products because of their potential advantages for the natural world. Risky and unchecked levels of worldwide consumption result in serious environmental sustainability issues, including waste production, contamination of the air, water, and land, and global warming. This changes customers' typical purchasing habits in favor of a sustainable environment [2]. A green customer habit has therefore emerged as a new paradigm of marketing order for marketers and researchers in the field of modern consumer study. Due to shifting consumer perceptions that green products are dependable, safe, and identifiable, demand for green products appears to be outpacing supply [3]. The market for such goods is not reaching expectations, despite the fact that consumers have

grown more environmentally conscientious when making purchases and have a greater awareness of environmental concerns [4]. Green consumption habits have been shown in research to include buying green items, apparel, food, living a green lifestyle, and even traveling green. Despite their favorable attitudes toward green consumption, customers cannot always aim to buy green items; instead, they behave as though they are making genuine purchases [5]. To put it another way, the green state is yet in the commitment phase. The discrepancy between opinions and intentions to buy green products has confused policymakers and farmers that invest in sustainable agriculture [6]. This study looked at how price sensitivity, perceived risk, and attitudes toward green products affected consumers' decisions to make green purchases. In actuality, figuring out these causes can help with the creation of corporate plans and policies, encouraging green consumption. The current integrative standard is based on the perception of approach performance [7]. The manner in which consumers are acting while making purchase of environmentally aware products has drawn more concentration, representing an important shift in societal values and consciousness of the situation. Understanding customer's perceptions and morals for sustainability in their choice require a considerate of buying intention, a critical aspect of customer choice making. This concept encapsulate customers desire and gameness to buy foodstuffs that uphold moral production practices, lessen their adverse ecological penalty, and align with their own environmentally friendly principles [8]. A compound ecosystem wherein customer decision are more intertwined with sustainability consideration is produced by variables impacting purchase intention, ranging from perceived product quality and cost to ecological certificates and brand authorization [9]. Customer indispensability is gradually becoming a preferable attribute when making a purchase; therefore, understanding the shifts in the intentions to purchase is vital to support sustainable behaviours and enrich corporate ecological objectives [10]. The rationale of the study is to examine the correlation between the selected factors that include the female consumer perception, their sensitivity towards prices, green awareness, and their green purchase motivation. The analysis of how these factors affect customer decision making and customer behaviour strength offer guidelines for improving environmentally sound expenditure, irrespective of the status of market conditions.

Contributions of this study

- This study's objective was to evaluate the relationship among the attitudes (CA), purchase intentions (PI), price sensitivity (PS), and green knowledge (GRK) of female consumers regarding products that are environmentally friendly.
- This study uses the SEM-PLS approach to investigate aspects linked to the hypotheses based on a questionnaire completed by 250 female customers.
- Greater GRK increases PI in the relationship between GRK and CA for sustainable commodities, which is regulated by PS.

2. Related works

Author [11] examined how environmental responsibility impacts green consumption through the use of environmental concern and price sensitivity moderation as mediators. The empirical

findings show that being environmentally conscious can increase green purchases and raise environmental awareness. Study [12] investigated how the enlarged Theory of Planned Behavior (TPB) model can be used to forecast the intention of educated millennial in India to buy eco-friendly clothing by considering additional traits including collectivism, culture orientation, ecological awareness, and PS. Examining the association among consciousness of the surroundings and intentions to make green purchases while controlling for price sensitivity, was the paper's main goal [13]. Within the framework of United Arab Emirates (UAE) customers, the study intended to explore the relationship between both objective and subjective environmental knowledge and the desire to purchase environmentally friendly goods, as well as whether the desire to purchase green products impacts actual choices to acquire green products [14]. Study [15] investigated the connections between price awareness, product knowledge, personal standards, perceived behavioral control, social media marketing, perceived consumer effectiveness (PCE), and customers' attitudes toward and inclinations to buy environmentally friendly goods. To create the research model, the study used a quantitative research methodology. To validate the results using SmartPLS 3.0 software, PLS-SEM was employed [16]. To determine how consumer attitudes and purchase intentions toward eco-friendly items are influenced, the study would assess hedonistic and utilitarian motivators. Formulating the study model and testing the impact and validity of the constructs involved a logical and quantitative methodology [17]. The moderating effects of plans to recycle and environmental awareness on green purchasing behavior (GPB) [18] in a developing economy were investigated in the paper. The key determinants affecting green purchasing were, but are not limited to, behavior inspiration, behavior intents, residence characteristics, social norms, behavior ability, and institutional and technical environment. It was demonstrated by a grounded theory used in a qualitative inquiry [19]. The majority of prior study has employed the TRA (Theory of Reasoned Action) and TPB (Theory of Planned Behavior models) [20] to investigate the attitude-behavior gap that consumers have while making green purchases. Consumers are demanding that items be packed in an environmentally friendly manner as their concern for the environment grows. The awareness pushes businesses to create environmentally friendly products, but it also encouraged academics and practitioners to comprehend how consumers make environmentally responsible purchasing decisions [21]. The study suggested an analytical structure for research that is based on the notions of rational action and planned behavior. The assumptions were tested by SPSS experimentation. The findings show a strong positive association between actions and green purchasing habits [22].

3. Hypotheses Development

H1: GRK and CA GRK promote client perception toward sustainable crop in a constructive way.

Motivation: Consumers who are more knowledgeable about sustainability and environmentally friendly events are more disposed to see items that are sustainable favourably, since they are aware of their compensation.

H2: CA and PI The desire to purchase ecologically friendly items is positively impacted by CA.

Motivation: A person's attitude towards sustainability goods influences their likelihood of planning to purchase them, according to the perspective-intention-behavior theory of CA.

H3: PS and CA GRK and consumer attitude are inversely correlated when price sensitivity is taken into consideration.

Motivation: Even if one has a lot of information about the environment, consumers who are extremely price sensitive cannot feel the same way about sustainable items because of their increased costs.

H4: PS and PI PS negatively influences purchase intention for sustainable goods.

Motivation: Consumers with high price sensitivity are less likely to intend to purchase sustainable goods if they perceive these goods as more expensive compared to conventional alternatives.

H5: Moderating Role of PS The connection between green knowledge and intent to buy is moderated by PS.

Motivation: The effect of GRK on PI is weaker among consumers with high price sensitivity, as the cost factor can deter even knowledgeable consumers from purchasing sustainable goods.

3.1.Materials and Methods

The technique is an empirical method to examine the impact of environmentally friendly data on customers' attitudes and purchase intentions about sustainable products. A representative sample of customers will be given a consistent questionnaire to gather data on the sensitivity of prices, views on foods that are sustainable, levels of environmental awareness, and purchasing plans. Likert scale questions will be included in the questionnaire to assess these qualities. The gathered information will be systematically evaluated via a variety of failure study to determine the relationship between customer attitude (CA), price sensitivity (PS), purchase intentions (PI), and green knowledge (GK). The results' validity will be ensured by taking demographic variables into account.

3.2. Data collection

A normal survey was dispersed to a sample of 250 female clients to gather data for this study. The main objectives of the questionnaire were to gather data on respondents' PS, GRK, CA toward environmentally friendly goods, and PI for these items. Likert scale questions were included in the survey to measure participant concord or difference with the explanation made about these qualities. To be able to provide a representative sample of all demographics, this survey was spread both offline and online. The SEM-PLS technique was used to the closing data set to explore possible correlation amongst the variables incorporated in the model. Table 1 shows the demographic table.

Table 1: An explanation of the demographic information

Variable	Category	Frequency (n=250)	Percentage (%)
Age	18-24 years	70	28
	25-34 years	80	32
	35-44 years	60	24
	45+ years	40	16
Education Level	High School	60	24
	Bachelor's Degree		56
	Master's Degree	50	20
Employment Status	Employed	160	64
	Unemployed	30	12
	Student	40	16
	Other	20	8
Marital Status	Single	110	44
	Married	140	56
Environmental Concern	Low	30	12
	Moderate	100	40
	High	120	48
Purchase Frequency	Rarely	50	20
	Occasionally	120	48
	Frequently	80	32
Region	Urban	150	60
	Rural	100	40

3.3. Conceptual framework

The conceptual framework of this study is designed to explore the relationship between PS, GRK, CA and PI for sustainability in the context of female consumers. The framework emphasizes that green knowledge influences consumers' sustainability attitudes in a positive way, which in turn has a positive effect on purchases. However, this relationship is moderated by price sensitivity, suggesting that higher prices of durable goods may deter even informed consumers. Apart from this, the chart shows that price perceived directly affects consumer behavior and purchase intentions negatively. This comprehensive approach aims to provide a deeper understanding of how these factors interact and affect sustainability, providing valuable insights for policymakers, organizations and businesses to set measures encouraging sustainable use in all competitive market conditions. The study uses the SEM-PLS method to confirm these relationships and hypotheses, and provides a robust model for understanding the dynamics of consumer green behavior. Figure 1 illustrates the conceptual framework.

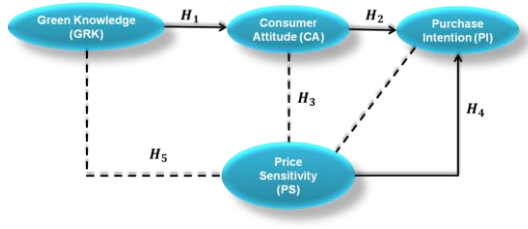

Figure 1: Conceptual framework

3.4. Measures

Many instruments for measurement that were developed from scales that were already in use in previous research were used to measure the study's elements. The wording of these items was modified somewhat to make them more appropriate for the research. Table 2 lists the components and their placement.

Table 2: Instruments

Construct	Item	Coding
Green Knowledge (GRK)	Knowledge about environmental impact of products	GRK1
	Understanding of eco-friendly certifications	GRK2
	Awareness of sustainable manufacturing practices	GRK3
	Familiarity with renewable resources used in products	GRK4
	Awareness of carbon footprint of products	GRK5
Consumer Attitude (CA)	Positive feelings towards purchasing sustainable goods	CA1
	Willingness to spend more on things that are better for the natural world	CA2
	Interest in learning more about sustainable lifestyles	CA3
Purchase Intension (PI)	Intention to buy eco-friendly products in the next month	PI1
	Plan to increase purchases of green products in the future	PI2
	Willingness to recommend sustainable brands to others	PI3
	Consideration of environmental impact when making purchasing decisions	PI4
Price Sensitivity (PS)	Sensitivity to price changes when buying sustainable products	PS1
	Comparison of prices between eco-friendly and conventional products	PS2
	Reaction to price discounts on green products	PS3
	Willingness to pay a premium for sustainable alternatives	PS4
	Budget constraints affecting choice of sustainable options	PS5

GRK expresses how conscious and knowledgeable customers are about environmental concerns, eco-friendly certifications, sustainable production methods, renewable resources, and the carbon footprints of the things they purchase. Positive emotions, a sense of personal accountability, a willingness to pay a premium, brand preferences, and an interest in sustainable living are all components of CA. PI reveals the propensity to buy environmentally friendly goods, the desire for sustainable solutions, the intention to increase the number of environmentally friendly purchases, the support of sustainable companies, and the decision-making process's awareness of the effects on the environment. PS shows how sensitive customers are to price fluctuations, how eager they are to pay extra for sustainability, how much they are willing to pay for eco-friendly versus conventional items, how they respond to price reductions, and how budgetary restrictions affect people's capacity to make sustainable decisions. Comprehending these characteristics is crucial in formulating efficacious tactics to encourage sustainable purchasing practices among customers.

3.5. Data Analysis

This study's variables were all latent, meaning they are challenging to measure precisely and directly. Consequently, the only way to quantify these hidden variables indirectly would be to employ observable indicators. While traditional statistical methods are ill-suited to address these

latent variables, mathematical models of structural equations are capable of handling both hidden variables and their indicators simultaneously. A statistical method for determining the direction and degree of correlations among one or more variables is correlation analysis. To evaluate the study hypotheses and confirm that the results corresponded to the conceptual model, analysis of the data was carried out utilizing SPSS software. This study employed SEM-PLS to examine the relationships between PS, GRK, CA, and PI towards sustainable goods among a sample of 250 female consumers. SEM-PLS was chosen due to its suitability for exploring complex relationships with smaller sample sizes and non-normal data distributions.

4. Results

Investigation has shown that on durable materials, GRK has a beneficial influence on CA. This effect is amplified when PS is present, as this raises PI. Even if customers are more aware of green products, the willingness to pay for environmentally friendly products is severely impacted by a high perceived price.

4.1. Measurement model testing

Convergent validity, discriminant reliability, single dimension validity, and structural reliability were evaluated by CFA as the structure of the factors in this work is based on a theoretical basis and the measuring scale was created using previous, validated scales. Every indication met the suggested threshold, demonstrating how well the evaluation model suited the data. The dependability of the concept was evaluated using Cronbach's α values and composite reliability scores. As can be seen in Table 3, the composite reliability values varied from 0.83 to 0.89, while the Cronbach's α values all fell between 0.92 and 0.97. All of them were over the suggested threshold of 0.70, which provided evidence for the notion of dependability. Both discriminant and convergence validity techniques were used to examine the construct validity.

Table 3: Confirmatory factor analysis (CFA)

Construct	Item	Loading	Cronbach's **α**	Composite reliability	AVE
Green Knowledge (GRK)	GRK1	0.77***	0.87	0.92	0.76
	GRK2	0.79***			
	GRK3	0.83***			
	GRK4	0.78***			
	GRK5	0.82***			
Consumer Attitude (CA)	CA1	0.82***	0.85	0.95	0.75
	CA2	0.79***			
	CA3	0.83***			
Purchase Intension (PI)	PI1	0.84***	0.89	0.94	0.77
	PI2	0.88***			
	PI3	0.82***			
	PI4	0.85***			
Price Sensitivity (PS)	PS1	0.76***	0.83	0.97	0.78
	PS2	0.81***			
	PS3	0.86***			

	PS4	0.85***			
	PS5	0.83***			

Notes: ***p<0.001

4.2. Correlation Analysis

The reliability of convergence was evaluated using loadings of items and average variance extracted (AVE) values. Table 3 illustrates that the construct exhibited strong convergent validity, with the AVE values surpassing the optimal value of 0.50 and the item loadings exceeding the ideal value of 0.70. The construct displayed strong discriminant validity, as seen by Table 4, where all of the square roots of the AVEs were bigger than the relationships among the elements.

Table 4: The constructs' means, standard deviations, and correlations

Assemble	SD	Mean	Green Knowledge (GRK)	Consumer Attitude (CA)	Purchase Intention (PI)	Price Sensitivity (PS)
Green Knowledge (GRK)	0.60	3.40	1.00			
Consumer Attitude (CA)	0.72	3.78	0.83	1.00		
Purchase Intention (PI)	0.62	3.91	0.72**	0.60**	1.00	
Price Sensitivity (PS)	0.77	3.27	0.74**	0.56**	0.62**	1.00

Notes: AVEs are the italic variables **p<0.01

4.3. SEM Analysis

Table 5 provides a summary of the results of the hypothesis testing for relationships between the study's constructs. For every hypothesis that looked at a specific link, Table 5 provides the beta coefficient (Beta), standard deviation (STDEV), T-statistics (T Statistics), and p-values (p-). The direction and intensity of the correlations are shown by the beta coefficients (0.052 and 0.051). The statistical significance of both hypotheses is demonstrated by the T-statistics (2.408 and 2.349) and p-values (0.016 and 0.019), which are below the 0.05 threshold. This shows that, within the parameters of the study, the associations that were examined are statistically significant and have an effect.

Table 5: Direct connection outcomes

Hypotheses	Connection Choice	T Statistics	Beta	STDEV	p-	Decision
H1	GRK→ CA	6.494	0.324	0.06	0.000	Supported
H2	CA→ PI	6.613	0.347	0.053	0.000	Supported
H4	PS→ PI	3.426	0.224	0.065	0.001	Supported

Therefore, acceptance of H1 is required. The results provide more support for H2, since they demonstrate a favorable correlation between buyers' ATGB and their GPI for environmentally conscious products. The route coefficient supports the alternative hypothesis (H3), which states

that there is a positive association between EC and the GPI. These parameters' expected values are shown in Table 6.

Table 6: Moderation results

Hypotheses	Connection Choice	T Statistics	Beta	STDEV	p-	Decision
H3	CA→ PS	2.408	0.052	2.412	0.015	Supported
H5	GRK→ PS	2.349	0.051	2.355	0.018	Supported

Two of the three indirect association theories that were thoroughly investigated in light of the alert effect proved to be correct. According to H5, brand familiarity would strengthen the relationship between consumer perceptions about green products and purchase intent. The findings support this theory. According to Figure 2, consumers who are aware of green products see the value of protecting the planet more optimistically. Furthermore, as there is no mediation between purchase intent and acquaintance with green brands, H4 needs to be supported. These findings imply that PS has no discernible moderating influence on the connection among GRI and green business image.

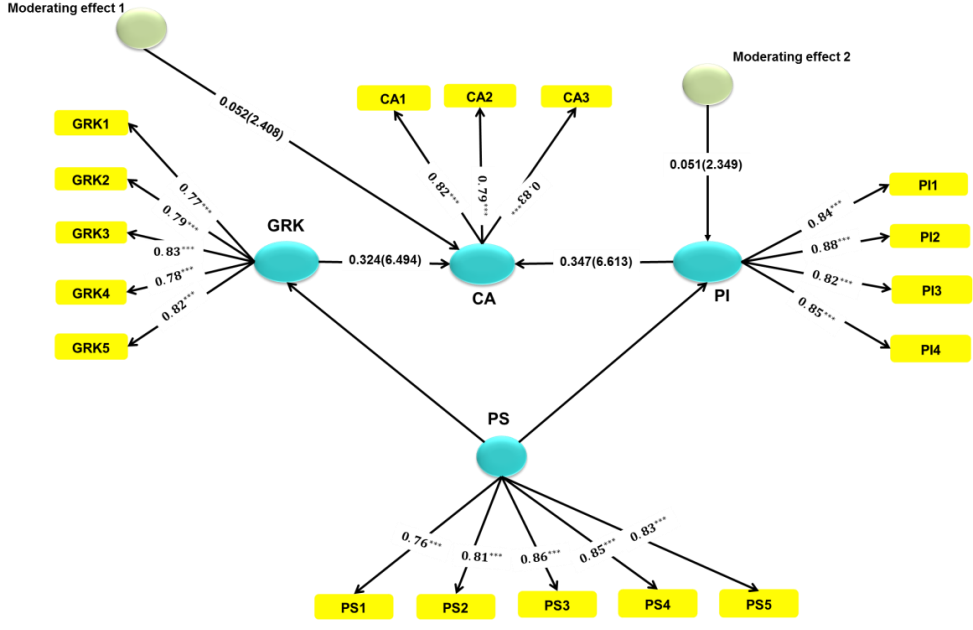

Figure 2: Modeling of moderating impact

5. Conclusion

Study provides robust evidence that both green knowledge and consumer attitude significantly influence purchase intention towards sustainable products among female consumers.

Furthermore, price sensitivity plays a crucial moderating role in these relationships, highlighting its impact on consumers' decisions to purchase environmentally friendly goods. These findings underscore the importance of enhancing consumer knowledge and fostering positive attitudes towards sustainability while also addressing price sensitivity barriers to effectively promote sustainable purchasing behaviours. Data for the research project were gathered utilizing a longitudinal technique at one specific point in time. Studies with a longitudinal design may offer more profound insights into the ways in which views and aspirations about environmentally conscious goods change over time. Explore advanced statistical techniques, beyond SEM-PLS, to further elucidate complex relationships and interactions among variables influencing sustainable consumption behaviours.

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