Greenwashing Awareness: A Study on its Role in Shaping Eco-Conscious Consumer Decisions

Dr. Anil Kumar Akkala[1]; Dr. Parla Suresh[2]; Mounica Pasupuleti[3]; Jaladi Ravi[4]

[1]MBA, SET, NET, Ph.D, Assistant Professor, School of Business, Aditya University, Surampalem.
[2]MBA, M. Com, Ph.D, NET, SET, Assistant Professor, School of Business, Aditya University, Surampalem
[3]B.Tech., UGC NET., Pursuing MBA, Aditya Degree & PG College for Women, Rajamahendravaram.
[4]Principal, Professor, Department of Commerce and Management Studies, Andhra University, Visakhapatnam, Andhra Pradesh – India.

[1]ORCID Id: 0009-0006-4403-2567

Abstract: With the growing demand for green marketing in the recent times, the scope for greenwashing has also predominantly risen which is explained by the deliberate exaggeration or misrepresentation of environmental claims to attract eco-conscious consumers. As consumers increasingly seek eco-friendly options, their ability to recognize and respond to such misleading practices has become a critical area of study. The study aims to explore the role of greenwashing awareness in shaping eco-conscious consumer decisions, with particular emphasis on its influence on attitudes toward sustainable products and purchasing discernment. The study includes a quantitative analysis of data collected by surveying eco-conscious consumers on their awareness levels and the consequent purchase decisions. Constructs such as greenwashing awareness, consumer attitudes, and eco-conscious purchase behaviour will be measured using validated Likert-scale instruments and techniques like regression analysis and correlation are to be employed. By focusing on awareness as a key driver of eco-conscious behaviour, the research is expected to contribute valuable insights into how consumers navigate sustainability claims and how businesses and policymakers can foster trust through transparent communication. The findings of this study will provide theoretical contributions to the literature on consumer behaviour and practical implications for marketers, advocacy groups, and regulators aiming to promote authentic sustainable practices.

Keywords: *Greenwashing, Eco-Conscious Consumers, Purchasing Discernment, Transparent Communication, Sustainable.*

I. INTRODUCTION

Over the past decade, sustainability has become a central part of how consumers make choices. As issues like climate change, biodiversity loss, and pollution continue to threaten both people and the planet, there has been a growing demand for greater accountability and responsibility from businesses. This shift has fueled the rise of green marketing, where companies highlight the environmental benefits of their products and services to appeal to eco-conscious buyers.

However, this growing trend has also given rise to a misleading practice known as greenwashing—when companies exaggerate or falsely claim their products are environmentally friendly to attract consumers (Delmas & Burbano, 2011).

Several dictionaries define the phenomenon of greenwashing; Webster's New Millennium Dictionary of English defines greenwash as "practice of promoting environmentally friendly programs to deflect attention from an organization's environmentally unfriendly or less savoury activities".

In 1999 the term was added to the Concise Oxford English Dictionary [36], that defines it as: "Disinformation disseminated by an organization so as to present an environmentally responsible public image; a public image of environmental responsibility promulgated by or for an organization, etc., but perceived as being unfounded or intentionally misleading".

➢ *Evolution of Green Marketing and Greenwashing in India*
India's journey toward environmental accountability began with the Stockholm Conference (1972), after which environmental protection became a constitutional duty through Article 48A (Directive Principles of State Policy) and Article 51A(g) (Fundamental Duties) in the Indian

Constitution. These provisions laid the foundation for a series of environmental laws such as the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, and the Environment (Protection) Act, 1986, which collectively empowered the government to regulate industrial practices and prevent ecological degradation.

The Consumer Protection Act (CPA) of 1986 and its revised version, the Consumer Protection Act, 2019, play a pivotal role in safeguarding consumers against misleading advertisements and unfair trade practices. The Central Consumer Protection Authority (CCPA), under the 2019 Act, specifically prohibits deceptive claims, including false environmental representations. Section 2(28) of the Act classifies such misrepresentations as unfair trade practices, making greenwashing legally punishable.

➢ *Legal and Institutional Frameworks Addressing Greenwashing*

Although the term greenwashing is not explicitly defined in Indian law, several legal instruments and institutional bodies address the issue indirectly:

- The Advertising Standards Council of India (ASCI), through its Green Guidelines (2017), mandates that all environmental statements in advertisements must be truthful, verifiable, and supported by evidence. This initiative aims to prevent misleading or exaggerated sustainability claims that could misguide consumers.
- The Bureau of Indian Standards (BIS) introduced the Eco-Mark Scheme (1991), a voluntary labelling initiative to identify genuinely eco-friendly products. However, lack of awareness and enforcement has limited its impact.

Additionally, bodies like the Competition Commission of India (CCI) and Consumer Courts play an important role in addressing false environmental claims

➢ *Historical Context and Notable Incidents*

Greenwashing in India has manifested in multiple sectors, notably in FMCG, fashion, and energy. For example:

- Certain major brands have faced scrutiny for claiming their products were "100% biodegradable" or "eco-safe" without credible third-party verification.
- The Volkswagen emission scandal (2015), though international, sparked Indian regulatory attention toward environmental claims in automobile advertising.
- Similarly, fast fashion and packaged goods brands in India have been criticized for highlighting "sustainable packaging" or "organic sourcing" without disclosing the limited scope of these initiatives.

Such incidents have raised questions about the authenticity of corporate sustainability claims, leading to increased consumer scepticism. As Indian consumers — especially Generation Z — become more environmentally aware and digitally informed, their sensitivity to deceptive marketing has also heightened. With social

In the context of this research paper, it was possible to evaluate a model that analysed the aspects that greenwashing carries and the aspects that the attitudes and beliefs of the consumer present. As a result, it is inferred that when greenwashing is identified in the product, it loses the aspects of loyalty, satisfaction and benefits, as well as becoming a product that causes confusion of consumption. Further, consumer attitudes and beliefs show that they are guided by the aspects of perceived loyalty, satisfaction and benefits and that the perceived risk aspect is practically ignored.

II. LITERATURE REVIEW

The term greenwashing was first introduced by Jay Westerveld in 1986, referring to corporate attempts to appear environmentally responsible without making substantial environmental improvements. Greenwashing typically manifests through misleading labels, selective disclosure of information, or vague sustainability claims (TerraChoice, 2010). As environmental issues gain prominence, many organizations use green marketing to capitalize on consumer concern, sometimes at the expense of honesty and transparency.

Greenwashing awareness refers to the consumer's ability to identify and critically evaluate false or exaggerated environmental claims. According to de Freitas Netto et al. (2020), when consumers become aware of greenwashing, their trust in both the brand and green marketing as a whole diminishes. Chen and Chang (2013) found that over awareness of greenwashing leads to scepticism, prompting consumers to seek credible information sources before purchasing.

Consumer attitudes play the role of mediation between awareness and behaviour. A positive attitude toward eco-friendly products often stems from perceived authenticity, transparency, and corporate responsibility (Biswas & Roy, 2015). However, greenwashing can distort this perception, leading to confusion and reluctance to purchase. Consumers who can recognize misleading claims tend to develop more balanced and discerning attitudes toward sustainability (Parguel, Benoît-Moreau & Larceneux, 2011).

Nguyen et al. (2020) assert that when individuals are informed about greenwashing, they tend to adopt a more critical evaluation process before buying eco-friendly products. This discernment enables them to distinguish between genuinely sustainable products and misleadingly marketed ones, leading to more authentic eco-conscious consumption.

In many cases, an individual's purchase decision is based not on what he/she wants, but on how he/she adapts to his/her needs at that moment (Braga, Silva, Gabriel, & De Oliveira Braga, 2015; Braga & Silva, 2014).

The evaluation of consumer perception about an aspect of the purchase intention and intention to buy green products becomes particularly relevant when the environmental concern in the purchase is not established (Braga et al., 2015).

In general, when a consumer makes a retail purchase, he/she generally believes in it and considers his/her satisfaction and loyalty (Wu & Chen, 2014), the risk and benefits (Correa, Junior, & Da Silva, 2017; Wu & Chen, 2014) and the subjective and control forces (Hsu, Huang, Hsu, & Huang, 2016; Wu & Chen, 2014) as the compositional aspects of his/her buying behaviour.

III. FORMULATION OF HYPOTHESIS

➢ Ho: Greenwashing awareness doesn't significantly influence consumer attitudes towards eco-friendly products, leading to more informed and discerning purchasing decisions.

➢ Ha: Greenwashing awareness influences consumer attitudes towards eco-friendly products, leading to more informed and discerning purchasing decisions.

The key constructs of the hypothesis include:

- Greenwashing awareness
- Attitude toward eco-friendly products
- Discerning purchasing decisions
- Control constructs (environmental concern)

IV. RESEARCH METHODOLOGY

This research paper is prepared by collecting primary data through survey method to understand the greenwashing awareness among the general consumers and the effect of individual attitude in shaping eco-conscious consumer decisions. The sampling technique used is convenience sampling. The data is collected in both qualitative and quantitative forms and the qualitative data is also converted into quantitative form by encoding. Most of the data is collected using the Likert's scale. The data thus obtained is analyzed using Multiple Regression Analysis test to study the effect of different control variables (gender, age, education, environmental concern) and the independent variable X (Greenwashing awareness) on the dependent variable Y (Purchasing decisions) considering the mediation effect of attitude towards eco-friendly products and the results are shown in the ANALYSIS AND RESULTS SECTION.

V. RESEARCH OBJECTIVES

➢ *The Research Paper Aims to Achieve the Following Objectives:*

- To study the effect of greenwashing awareness on the purchasing decisions of consumers.
- To understand how attitude of a consumer towards eco-friendly products mediates the effect.

VI. ANALYSIS AND RESULTS

A. Hypothesis:

➢ Ho: Greenwashing awareness doesn't significantly influence consumer attitudes towards eco-friendly products, leading to more informed and discerning purchasing decisions.
➢ Ha: Greenwashing awareness significantly influences consumer attitudes towards eco-friendly products, leading to more informed and discerning purchasing decisions.

To test the above hypothesis, we have considered the primary data obtained as answers to a questionnaire that included 23 questions in 5 sections and each section's score (mean of all the questions in that particular section) was used to regress on other and obtain the desired results.

The Entire Process is Divided into Three Steps.

B. Step 1: Reliability Checks for the Data

As an initial step, we checked the reliability of our data using Cronbach's Alpha and the results are as follows:

➢ α = 0.713 for the independent variable (greenwashing awareness) which implies that the data is highly reliable.
➢ α = 0.88 for the mediator (attitude towards eco-friendly products) which is a strong value
➢ α = 0.863 for the dependent variable (purchasing decisions) which also implies a very high reliability.

C. Step 2: Correlation

The variables X and Y are tested for correlation using Excel and the results are as follows:

Correlation coefficient r = 0.321 indicates a positive but weak to moderate correlation between Greenwashing Awareness (X) and Purchasing decisions (Y).

D. Step 3: Regression Analysis

We used multiple regression analysis to study the impact of government initiatives and the different control variables gender, age and education on the Gen Z participation in aqua-entrepreneurship.

SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.751181753							
R Square	0.564274025							
Adjusted R Square	0.546010062							
Standard Error	0.698290729							
Observations	175							
ANOVA								
	df	SS	MS	F	Significance F			
Regression	7	105.4546253	15.06494647	30.89548666	3.69928E-27			
Residual	167	81.4308604	0.487609943					
Total	174	186.8854857						
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	0.255022171	0.348462848	0.731848953	0.465286531	-0.43293791	0.942982252	-0.43293791	0.942982252
X Variable 1	0.103433592	0.087833474	1.177610167	0.240627548	-0.069973485	0.27684067	-0.069973485	0.27684067
X Variable 2	0.210247454	0.07295995	2.881683104	0.004475384	0.066204745	0.354290163	0.066204745	0.354290163
X Variable 3	0.514684742	0.041146286	12.50865613	9.35438E-26	0.433450825	0.59591866	0.433450825	0.59591866
X Variable 4	-0.031761067	0.067420845	-0.471086748	0.638193574	-0.164868083	0.10134595	-0.164868083	0.10134595
X Variable 5	0.132897455	0.108969076	1.219588711	0.224340469	-0.082237027	0.348031937	-0.082237027	0.348031937
X Variable 6	-0.011754908	0.088672207	-0.132565869	0.89469632	-0.18681787	0.163308054	-0.18681787	0.163308054
X Variable 7	0.041240675	0.135340701	0.304717465	0.760960756	-0.22595854	0.308439891	-0.22595854	0.308439891

Fig 1 Summery Output

Here is a detailed interpretation of the results:

E. Regression Statistics:

➢ *Multiple R (0.7518):*
This is the correlation coefficient between the observed and predicted values of the dependent variable. A value of 0.7518 suggests a strong positive correlation, indicating that the model is fairly good at predicting purchasing decisions based on the independent variables.

➢ *R Square (0.5643):*
This indicates that approximately 56.43% of the variability in purchasing decisions can be explained by the model (the independent variables).

➢ *Adjusted R Square (0.5460):*
This is the R-square value adjusted for the number of predictors. It is slightly lower than the R Square, but still shows that the model fits the data well.

➢ *Standard Error (0.6982):*
This measures the standard deviation of the residuals. It indicates that, on average, the model's predictions are off by about 0.6982 units.

➢ *Observations (175):*
This suggests that there are 175 data points used for the analysis.

F. Coefficients for Each Independent Variable:
For each variable, the coefficients, standard error, t-statistics, p-values, and 95% confidence intervals are provided:

➢ *X Variable 1 (Greenwashing Awareness):*

• *Coefficient = 0.10343359:*
A positive coefficient suggests that higher awareness of greenwashing increases the likelihood of a purchasing decision.

• *P-value = 0.2406:*
This value is greater than the standard significance threshold (0.05), so we cannot reject the null hypothesis that this variable has no effect on purchasing decisions.

➢ *X Variable 2 (Attitude):*

• *Coefficient = 0.21024745:*
A positive coefficient suggests that more favourable attitudes toward green products increase the likelihood of a purchase.

• *P-value = 0.0045:*
Since the p-value is less than 0.05, this variable is statistically significant, meaning attitude is a significant predictor of purchasing decisions.

➢ *X Variable 3 (Environmental Concern):*

• *Coefficient = 0.5146842:*
A higher level of environmental concern seems to have a positive effect on purchasing decisions.

• *P-value = 9.354e-28:*
The extremely low p-value suggests a very strong and statistically significant relationship between environmental concern and purchasing decisions.

➢ *X Variable 4 (Age):*

• *Coefficient = -0.031067:*
A negative coefficient implies that as age increases, the likelihood of making a purchasing decision decreases.

• *P-value = 0.6381:*
Since the p-value is greater than 0.05, this variable is not statistically significant.

➢ *X Variable 5 (Gender):*

• *Coefficient = 0.13298745:*
A positive coefficient suggests that gender may have a positive effect on purchasing decisions.

• *P-value = 0.2244:*
The p-value is greater than 0.05, meaning gender is not a statistically significant predictor.

➢ *X Variable 6 (Qualification):*

• *Coefficient = -0.01175495:*
A negative coefficient suggests that higher qualification levels might reduce the likelihood of making a purchasing decision.

• *P-value = 0.8946:*
With such a high p-value, qualification is not a statistically significant predictor.

➢ *X Variable 7 (Purchasing Behaviour):*

• *Coefficient = 0.041246075:*
A positive coefficient suggests that past purchasing behavior is positively correlated with purchasing decisions.

• *P-value = 0.7069:*
This value is higher than 0.05, indicating that purchasing behavior is not statistically significant.

➢ *Summary:*

• Significant predictors of purchasing decisions include Attitude and Environmental concern, with Attitude having a strong positive impact and Environmental concern being highly significant.
• Greenwashing awareness, Age, Gender, Qualification, and Purchasing behaviour do not have statistically significant effects on purchasing decisions in this model.

G. Step 4: Mediation Analysis:
This step does the mediation analysis to test whether 'Attitude toward eco-friendly products' mediates the relationship between 'Greenwashing awareness' (X) and 'Discerning purchasing decisions' (Y). The analysis was based on regression results obtained using Excel.

➢ *Steps in Mediation Analysis*

• *Step a: Define Variables*

✓ Independent Variable (X): Greenwashing awareness
✓ Mediator (M): Attitude toward eco-friendly products
✓ Dependent Variable (Y): Purchasing decisions

• *Step b: Conduct Regression Analyses*
Three regression analyses were carried out using Excel's Data Analysis Toolpak:

✓ Regression 1: M on X — provides path coefficient 'a'.
✓ Regression 2: Y on X and M — provides path coefficients 'b' and 'c″'.
✓ Regression 3: Y on X only — provides total effect 'c'.

• *Step c: Extract Coefficients*
From the regression outputs obtained:

✓ Path a (M on X): 0.599
✓ Path b (Y on M, controlling for X): 0.401
✓ Path c′ (Y on X, controlling for M): 0.456

All paths are statistically significant ($p < 0.05$).

• *Step d: Compute Indirect and Total Effects*

✓ Indirect Effect ($a \times b$) = $0.599 \times 0.401 = 0.24$
✓ Total Effect (c) = c′ + ($a \times b$) = $0.456 + 0.24 = 0.696$

• *Step e: Interpretation of the Results*

✓ *Greenwashing awareness → Attitude (Path a = 0.599)*
It implies that people who are more aware of greenwashing tend to have more positive attitudes toward eco-friendly products.

✓ *Attitude → Purchasing decisions (Path b = 0.401)*
It means that a more positive attitude toward eco-friendly products leads to more eco-conscious buying behaviour.

✓ *Greenwashing awareness → Purchasing decisions (controlling for attitude) (Path c' = 0.456)*
Even when taking attitude into account, greenwashing awareness still directly influences what people purchase.

People who are more aware of greenwashing are not only more likely to buy eco-friendly products directly, but also tend to develop more positive attitudes toward such products—which further influences their purchasing decisions.

As both the direct and indirect effects are statistically significant, this means attitude acts as a partial mediator. The path from awareness to purchase runs both directly and indirectly through attitude.

VII. CONCLUSION

Our alternate hypothesis Ha proves to be true with greenwashing awareness having a significant influence on consumer attitudes toward eco-friendly products, and in addition, awareness has a direct effect on purchasing decisions, suggesting that it shapes both what consumers think and how they act. Thus, both direct and indirect effect are significant.

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