

The Impact of Green Marketing Practices on Sustainable Consumer Buying Behavior: A Quantitative Cross-Sectional Analysis

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Abstract: This study investigates the influence of green marketing practices on sustainable consumer buying behaviour through a quantitative cross-sectional design. We collected primary data from 1,184 consumers across 12 metropolitan and semi-urban cities using stratified random sampling, with structured questionnaires and online surveys. The research examined six key dimensions: eco-friendly advertising, environmental awareness, green branding, product eco-labeling, corporate environmental responsibility, and consumer perceptions. Multiple linear regression revealed that environmental awareness (standardized $\beta = 0.45$, $p < 0.001$), green brand trust ($\beta = 0.40$, $p < 0.001$), green advertising ($\beta = 0.35$, $p < 0.001$), and eco-label recognition ($\beta = 0.29$, $p = 0.002$) were significant predictors of sustainable buying behaviour, with the model explaining 74.3% of the variance ($R^2 = 0.743$). Pearson correlation analysis demonstrated a strong positive relationship between green marketing practices and sustainable consumer buying behaviour ($r = 0.82$, $p < 0.001$). Structural Equation Modeling confirmed good model fit (CFI = 0.97, RMSEA = 0.044). Furthermore, consumers with high green marketing awareness exhibited 28.7% higher sustainable purchase intention and 26.4% greater green product adoption compared to low-awareness consumers. The novelty of this research lies in its comprehensive integration of multiple green marketing dimensions and the identification of environmental awareness and brand trust as key mediators. These findings confirm that authentic and transparent green marketing strategies significantly foster customer trust, purchase intentions, and loyalty. Therefore, organizations can leverage these insights to align their marketing efforts with long-term sustainable development goals, thereby contributing to both environmental conservation and business growth.

Keywords: Green Marketing, Sustainable Consumer Buying Behaviour, Environmental Sustainability, Consumer Behavior, Cross-Sectional Analysis

Introduction

The world's development of the world trade and consumer use is revolutionized by all the various pressures it faces of 21st century including climate change, depletion of resources and loss of biodiversity. To address this challenge, a vast proportion of customers have already made sustainability a part of their purchasing and this is where businesses are urged to consider sustainability issues in their business practices (Sharma, 2021). This has led the development of the green marketing concept, through various activities that can encourage and motivate exchanges that would satisfy human needs while minimizing negative environmental impacts (Boztepe, 2012). However, all these green practices rely on a multidimensional landscape including consumer awareness, trust and authenticity of corporations' statements about its environmental practices (FuiYeng & Yazdanifard, 2015).

There has been much heterogeneity in the general market, especially between metro and semi-urban districts, where these practices are conducted. In these cases, metropolitan areas may feel more at risk of green marketing campaigns and have a deeper interest in sustainable products owing to the presence of a well-developed infrastructure and high population density (Pillai et al. 2026). However, attitudes of consumers residing in semi-urban areas would differ from urban areas due to variations in several parameters like climate, knowledge about environment, price sensitivity and availability of eco labeled products (Subramaniam & Mohanapriya, 2026). Understanding such differences in context is significant for creating green marketing strategies that fit the sustainable use of various market segments at the demographic and socioeconomic levels (Girish, 2026).

Although numerous articles around green marketing and consumer behavior have been published, there is still a great lack of in-depth, quantitative research that thoroughly explores how various green marketing dimensions interact to affect sustainable buying behaviour in different and varied urban and semi-urban environments. Most of the studies conducted on the theme analyse one aspect rather than the other. For instance, consideration will only be paid to eco labelling or only green advertising but not both will get featured where integrated impact analysis will be showcased (Juwaheer et al, 2012). But, the transition dynamics between environmental awareness and brand's trust in this relationship have been little explored, with only one well-constructed and solid analytical structure (García-Salirrosas & Rondon-Eusebio, 2022). To solve these shortcomings, a cross-sectional holistic analysis is conducted in this research which simultaneously takes the effects of eco-friendly marketing: environment consciousness, green advertising, green branding, product eco-labeling, corporate environment responsibility and the consumer perception into sustainable buying behaviour.

The first study is directed towards understanding the nature of this relationship among these green marketing dimensions, and the overall impact of these factors on sustainable consumer purchasing behaviours, considering the mediating role of moral awareness of the environment and green brand trust. These green marketing practices are hypothesized to be important positive predictors of consumer sustainable behaviour, and that their effect would be partially mediated by the level of environmental awareness and the trust in green brands of the consumer. This research is worthy of importance because it can give real world ramifications to organizations having their gaze on conceptualizing an authentic and transparent green marketing. The study's results might allow companies to improve client trust, encourage buy-in, and build loyalty in the long run, fostering commercial success and contributing to sustainable growth (Basnet et al., 2024).

To ground our hypotheses the relevant literature is summarized in Section 2, focusing on the concept of green marketing, and its impact on consumer behaviour. Section 3 explains the quantitative cross-sectional method which was used, its sampling strategy and data collection instruments, as well as the

analysis techniques used. This section presents the results of the statistical analysis (descriptive, regression analysis and structural equation modeling) in form of empirical results. The implications of this above findings are discussed against the backdrop of the current theory and practice in Section 5 and the contributions of the various aspects were synthesized and a direction for future research outlined in Section 6.

Literature Review

In the last 30 years, the concept of green marketing has undergone so many fundamental aspects that it's now more than a marketing niche subject; its implementation is part of the business strategy. Thus, though green marketing products with low environmental costs were the primary focus in the initial definitions, the academic literature perceives it as an overall strategy which entails product design, packaging, labelling, marketing communications and advertisement that promote environmental sustainability (Sharma, 2021). This trend is not only part of a social transformation towards sustainable development but also involves business entities being increasingly responsible for the environmental footprint in which they operate and expected to positively impact the ecological conservation.

A considerable amount of the research on the relationship between the different green marketing programs and consumers' actions exists. The information gap between producers and consumers will be reduced, and will enable them to make informed purchases, for example through the effort of eco-labelling, which is the only method to offer a credible third-party certification of environmental claims (FuiYeng & Yazdanifard, 2015). Earlier works show that consumers who are familiar and confident about eco-insignificant would buy the environment friendly products particularly among those, who are concerned with the environment (Pillai et al., 2026). Similarly, the influence of green advertising on consumer perceptions has been matched with its influence on consumers' intention to purchase as well, and this influence has been shown to be partially moderated by the perceived authenticity of green advertising message and the perceived credibility of the green advertising source (Mohanapriya & Subramaniam, 2026).

One of the most important aspects of the spread of the conceptualization of sustainable consumer behaviour is the issue of being environmentally conscious. Those who are knowledgeable about the environment and concern towards the environment are more influenced towards having preferences and favoring the approaches of green product and are more open towards green marketing messages (Girish, 2026). Being "aware" is something we are not born with, but it is things we learn, see and read in the news, or through experience. From the studies there is an indication between role of environmental awareness of environment friendly marketing initiatives and actual purchase decision, it means that marketing initiative should work first to raise consumer's environmental awareness and concern that market initiatives should be environment-friendly (Juwaheer et al., 2012).

Another important mediator between green marketing and consumers' actions is brand trust. One of the issues consumers may encounter when evaluating the endorsement of environmental claims is when it isn't accurate, often referred to as "greenwashing" (García-Salirrosas & Rondon-Eusebio, 2022). This therefore creates consumer trust in the brand, which results in purchase intention, brand loyalty and even one's capacity to pay more for the brand (Basnet et al., 2024). However, a negative perception of greenwashing can lead to substantial harm of the brand image and consumers' trust if the green marketing communication is not transparent or accountable.

Corporate environmental responsibility (CER) is not just about individual marketing efforts, it is a part of the whole organizational approach towards sustainability. Consumers are more likely to view the

companies that do not only think about the environment in their working but when they involve stakeholders and incorporate it in working out their Supply Chain as genuine (Kuria, 2024). Empirical studies have shown that the CER can have a positive effect on the customers' attitudes and behaviours, which is more likely to happen if the customer knows the company's environment related programmes and if they believe these programmes are relevant, rather than symbolic, to the consumer (Maheshwari, 2014).

Although many factors have been investigated in green marketing, few studies have focused on multiple dimensions, simultaneously. Previous research reported concentrates on determinants in an act of purchase specifically on how eco-labelling affects purchase intention internally or external effects of 'green advertising' on brand perception (Boztepe, 2012). This disassociative approach is restricting the knowledge of how the dimensions are interdependent and how those dimensions affect sustainable consumer behaviour. Furthermore, few research studies have investigated the environmental awareness and the brand trust as mediator variables at the same time, leaving the lack of knowledge about interaction between these psychological mediators in the green marketing ecosystem.

The present research aims to address these gaps by adopting a broader green marketing model that comprises six dimensions of the green marketing (eco-friendly advertising, environmental awareness, green branding, product eco-labeling, corporate environmental responsibility and consumer perceptions) and examine the interaction effect of these six dimensions with regards to sustainable consumer buying behaviour. The study is done in large scale quantitative and cross-sectional design at different urban and semi-urban communities which adds more strength and generalizability so as to gain a more comprehensive understanding on how green marketing practices can be able to impact sustainable consumption and thus this study is strengthened and enhanced in this way. The proposed theory is further expanded with building blocks of environmental awareness and green brand trust by extending the logical possibilities and providing further insights into the processes and psychology of consumer behavior and reactions to green marketing. Such a holistic analysis is more comprehensive than previous studies – mostly focused on bivariate or single-mediator analysis approaches – and offers more granularity to forming efficient green marketing strategies.

Methodology

Sampling strategy and research designs.

In the study, the quantitative approach and cross sectional design was used to examine the effect of Green marketing practices on the sustainable consumer behaviour. The use of cross-sectional approach was chosen as this would provide the opportunity to examine relationships between the dimensions of green marketing and consumers' behaviour without the problem of time-related changes (Sharma, 2021). The study was carried out across 12 metropolitan and semi-urban cities which were selected to capture the diversity in consumer exposure to the green marketing practices and consumer green awareness that exist between the densely populated urban areas and less developed semi-urban areas (Pillai et al., 2026).

1200 consumers, age 18 years and above, were sampled stratified randomly. Stratification has been taken into consideration by selecting the stratification variables as Age, Gender, Educational Qualification, Monthly income and geographic location (Metropolitan versus Semi Urban) so that the sample will be representative of the consumer population of the country with reference to these stratification variables. However, this sampling method was very significant as the result would not be

generalizable to the target group who is subjected to the green marketing perception in their daily life as it had less selection bias (Mohanapriya and Subramaniam, 2026).

Data collection instruments and variables

The major tool deployed to collect the main data was questionnaires and online survey questionnaires in order to collect all possible set of variables related to green marketing and consumer behaviour. The questionnaire has been extracted from those used in previous study and pre-tested with the sample of 50 consumers to test clarity, reliability and validity of the questionnaire prior to administering the questionnaire to consumers for the full scale administration of the questionnaire. Demographic variables were age, gender, educational qualification and monthly income, psychographic and behavioural ones were environmental awareness, green knowledge product, eco-labelling recognition, green advertising exposure, perception of brand image, corporate responsibility to the environment, price sensitivity, purchase intention, sustainable behaviour, and customer loyalty. In order to build construct and internal consistency, more than one item was used for each of the constructs, which all were answered on a Likert scale ranging from strongly disagree (1) to strongly agree (5).

Secondary data were obtained from Sustainability reports from big corporations, peer reviewed environmental marketing publications and governmental reports on consumer behaviour, environmental policy and trends. These secondary sources are used for the purpose of providing a context for the main findings and for test of the measurement instruments and check them against the existing literature (Juwaheer et al., 2012).

Data Preprocessing and Quality Assurance

Once data is collected, the raw data was then preprocessed with a comprehensive data preprocessing pipeline to ensure data quality and robustness for examine the data. Data loss was first addressed by identifying incomplete responses and discarding them to arrive at a final valid sample of 1184 responses (with a 98.7% of the items being returned as valid). For continuous data, median data was used while, for categorical data, mode, and a conservative method to avoid introducing unnecessary bias in differences for mean data was used (García-Salirrosas & Rondon-Eusebio, 2022). In order to get consistent response, data coding and validation was done and the technique used was Interquartile Range (IQR), data that are below and ranges would be highlighted for further review. Outliers were identified and any data entry errors found and addressed by winsorizing to the values that were closest possible to the nonoutlier data.

Each of the continuous variables were put through a Min–Max normalization process in order to rescale them into a uniform scale ranging from 0 to 1 for ease in comparison between constructs measured in different scales. TGF was used as the normalization formula: , with being the max value of the variable, and being the min value of the variable. The reliability of each multi-scaled construct was determined by Cronbach's Alpha with a value of less than .7 representing poor reliability. They were all supported by this criterion and varied from 0.78 (Price sensitivity) to 0.92 (Environmental awareness) indicating the reliability of the constructs' measurement instruments (Basnet et al., 2024).

Statistical Analysis and Evaluation Indicators

The research was conducted using a multi-method research approach to comprehensively describe all relationships between green marketing and the sustainable consumer buying behaviour. Additionally, descriptive statistics (mean, SD, frequency and count percentages) are computed to provide an overview of distribution of main variables and describe the sample. Pearson's correlation is used to investigate

the strength and direction of relationships between the dimension of green marketing with the dependent variables (Kuria, 2024).

Using multiple linear regression, we were able to determine significant predictors of sustainable buying behaviour, which was specified as:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \epsilon$$

where is the Sustainable Consumer Buying Behaviour Index, through is the six green marketing dimensions (eco-friendly advertising, environmental awareness, green branding, product eco-labeling, corporate environmental responsibility and consumer perceptions) respectively, is the intercept, through is the regression coefficients, and is the error term. The tests used for the group differences in the mean scores on sustainable buying behaviour, compared to other variables (e.g. metropolitan versus semi-urban consumers, among the income groups) included one-way ANOVA.

The hypothesized as a mediator is tested by using Amos software and an analysis technique called Structural Equation Modeling (SEM). AMOS software is used to test the hypothesized as a mediator in the study. The two mediators—towards the direct connections between the dimensions of green marketing and sustainable buying behaviour—were both retained in the SEM model. The models were analysed by examining the following indexes: chi square (χ^2) to degree of freedom (df) ratio (χ^2/df), Comparative Fit Index (CFI), Tucker–Lewis Index (TLI) and Root Mean Square Error of Approximation (RMSEA). Negarenko et al. (2014) clarified Maheshwari's (2014) earlier model fits parameters as acceptable model fits of and CFI and RMSEA. Before conducting SEM, Confirmatory Factor Analysis (CFA) was conducted to validate the factor structure of measurement model to verify that the observed variables are valid representations of the latent constructs.

The main evaluations were in summary using some composite evaluation indices. The final results (Green Marketing Practices Index) are just an average of all four of the benefits linked to advertising with a green twist, an environmentally friendly brand, product eco-labeling and corporate environmental responsibility after normalizing each of these results. Normed customer loyalty (repurchase) and sustainable buying behaviour and purchase intention scores were used to build the Sustainable Consumer Buying Behaviour Index. Each of the indices – the Environmental Awareness Score, Green Brand Trust Index, Purchase Intention Index, Customer Loyalty Index and Eco-label Awareness Index – were calculated as an average of items that each comprised of. All data were analyzed according = 0.05 in all hypothesis tests and with the AMOS software, SPSS 29 software, R version 4.3 and MS Excel software.

Results

The gathered data is analyzed and an extensive analysis of the consumers' Green marketing practices and SCP has been achieved. These detailed analyses of the study hypotheses and research questions will be discussed below, they are descriptive, correlational and regression and structural equation modeling.

Participant Characteristics

After weeding out the data as per the detailed data preprocessing methodology described, the total number of valid responses analysed for the detailed study result was 98.7% of the initial sample (1,184 responses). Table 1, which was about the demography of the sample, indicated a balanced gender distribution both with 0.51 females and 0.49 males. The near-equal representation will facilitate the comparison of green marketing awareness and green purchasing attitude for possible gender differences

as previous studies have shown that females have a slightly higher awareness of green marketing issues and green purchasing intention for green products (Sharma, 2021).

Table 1. Demographic characteristics of the study sample (N = 1,184).

Characteristic	Percentage
Male	48.9%
Female	51.1%
Urban consumers	66.8%
Semi-urban consumers	33.2%
University graduates	63.4%

The distribution of the sample geographically showed that 66.8% of the sample were urban consumers, and 33.2% of them were semi-urban consumers. Comparative analysis will be possible, as evident in the stratification of sampling design which included sampling both metros and semi-urban cities to represent both or to represent the comparison. It's found that, for many emerging nations, the size of urban population as well as their ease at accessing retailing marketplaces with green product offerings are bigger (Pillai et al. 2026), thus rendering the higher percentage of urban consumers. A unique advantage of this study is the large semi-urban subsample (33.2%) included in the survey which enabled the analysis of possible differences in the green marketing exposure and sustainable consumption between the two consumer environments.

The mean education level in the sample was fairly high, as 63.4% of them reached a university level of education. This result is also related to the idea that environmental consciousness and motivation to engage in pro-environmental behavior is generally linked to higher education levels (Girish, 2026). The relatively high percentage of consumers with education in the sample could be attributed to the method of sampling, which included recruiting consumers who could appreciate the privacy questions of the survey and offer educated responses to green marketing practices. It also suggests, however, that responses are more likely to be characteristic of those consumers that are college-educated, and care should be taken to extrapolate those responses to consumers with less formal education.

Balanced age distribution, including both sexes, both urban and semi-urban populations, high level of university education and a broad representation from all parts of the community provides a fair sample base for the subsequent analyses. This composition allows an interesting comparison to the several classes of main subgroups and reduces the biased relationships between GMP and sustainable consumer behaviour, due to homogeneous classes of sample elements, while retaining a high validity of the study. The next sections will assist the analysis of the degree of awareness participants have of green marketing, and the statistical relationships between the different green marketing dimensions and sustainable buying behaviour.

Green Marketing Awareness

The study revealed that the level of knowledge and appreciation of the sampled consumers towards green marketing is high, indicating low level of base knowledge and involvement in environmental issues in market. In particular, it was found that 82.6% of the respondents acknowledged green marketing campaigns indicating that green marketing promotion has successfully penetrated the various rural/semicity settings included in this study. This is reflected in the growing visibility of

environmentally related messages in commercial and corporate communications as evidenced in earlier research on consumers' exposure to green marketing efforts (Sharma 2021).

Moreover, 79.4% of the respondents acknowledge the environment in the decision making process when buying a product. The result show a new trend in consumers' priorities, in which ecologic aspect has been put together on the other priorities, such as price and convenience, in the purchase process. The findings presented in this study indicates that a high percentage of consumers also perform pre-purchase environmental deliberation which means that green marketing activities are not just to raise awareness, but rather it impacts on consumer's pre-purchase processes (Boztepe, 2012).

Notably high was the recognition of eco-label certifications, 74.8% of the people indicated that they were able to recognise eco-label certifications on products. This form of recognition is important, as it enables consumers to verify the information making environmental claims by manufacturers, thereby counteracting the information asymmetry that is often created when consumers are buying sustainably (FuiYeng & Yazdanifard, 2015). To point to these certificates indicates that consumers are not only informed about 'green marketing' but they are also provided with information to enable them to distinguish between 'true' and 'false' green marketing. 71.9% of the sample said the answer from them was trust in environmentally responsible brands. 이의 means more than half of the consumers trust companies for their dedication to sustainability. According to García-Salirrosas and Rondon-Eusebio (2022) the trust explained above is an important intermediary variable to highlight in the green marketing process between positive attitudes towards green product and purchase intention of green products, and green product loyalty. The relative level of brand trust is a sign that more consumers believe that what's done at the organisation (InL) is indeed a sustainability effort, and a reminder for the companies that wish they were believed to be investing in a real sustainability initiative. Finally, 69.5% would would pay a higher price for sustainable products. This is an intriguing finding as a major constraint associated with the lack of green consumption is taken to be price sensitivity (Mohanapriya et al., 2026). The "green product" is increasingly making an impact on the consumer market with more than 2/3 of the sample being willing to pay more for an eco-friendly product. Such high Willingness-to-Pay inspires companies to invest in Sustainable development and marketing of the products.

Overall, it can be concluded that the consumers are informed and tuned in to the key messages about green marketing. All the five indicators can be compared with their percentages and it is concluded that green marketing is well evolved from being a niche market to mainstream in consumer decision making. The level of knowledge is high, so there is fertile ground for the next analyses to interpret the correlation between these attitude- and knowledge-based elements and whether this is a reflection on actual sustainable behaviour of consumers.

Regression Analysis

To examine the factors that lead to sustainable buying behaviour, multiple linear regression model was used in this study where the Sustainable Consumer Buying Behaviour Index is the dependent variable while the six dimensions of green marketing serves as the independent variables. The overall regression analysis was statistically significant with a reasonable R-squared of 74.3% (, adjusted). The high explanatory ability indicated that the dimensions of grime cause that the choice of green marketing dimensions explains almost 75% of the variance in consumers' decisions to buy sustainably and thus have a high relevance in influencing consumers' consumption behaviour for sustainability.

Table 2 shows that the four predictors comprised four of the six which had a significant contribution to the model. The standardized regression coefficient for the variable, environmental awareness, indicated

that the variable sustainable buying behaviour received a positive regression coefficient that showed a raise of 0.45 in environmental awareness with each increase in sustainable buying behaviour with other variables kept at their mean level. This result further confirms that consumer knowledge and concern about the environment is the main determinant of consumers' green purchasing decisions, which mirrors a previous study in which environmental awareness was found as a key among the numerous customer antecedents that influence pro-environmental behaviour (Girish, 2026).

Table 2. Multiple linear regression results predicting sustainable consumer buying behaviour.

Predictor Variable	Standardized β	t-value	p-value
Environmental Awareness	0.45	18.23	< 0.001
Green Brand Trust	0.40	15.67	< 0.001
Green Advertising	0.35	13.41	< 0.001
Eco-label Recognition	0.29	3.12	0.002
Corporate Environmental Responsibility	0.08	1.45	0.147
Consumer Perceptions	0.05	0.98	0.327

The results show that the second most influential predictive factor in building the Green brand trust was consumer confidence in the authenticity of the corporate environment communication. The results align with the theory explaining how the role of trust can mediate green marketing, that is, when consumers have trust in the brands or are aware of their effective commitment to sustainability, they are more likely to take action around environmental issues, otherwise they might suspect that the company is going through the motions or greenwashing itself (García-Salirrosas & Rondon-Eusebio, 2022). Therefore, building and sustaining consumer trust is a key target of any green marketing program, as it has a strong impact.

Green advertising was another predictor, indicating that environmental postings in marketing messages have the direct influence on customers' decisions to buy green products. This result is in line with the past findings which reported the influence of green advertising, especially with messages deemed to be credible and relevant to the consumer's values (Boztepe 2012). The percentage of the significant coefficient for green advertising indicates that this could be an effective campaign for real customers to respond to environmental consciousness in their purchases.

Another strong predictor was the knowledge of eco-labels, highlighting the role of third-party certificates in informed consumers' choices. According to the positive relation of the two variables of perception of the eco-label and sustainable purchasing behavior, it may be inferred that the more eco-labels are recognized by consumers, the more likely they are to take sustainable purchasing actions; because of the positive link, recognizing the eco-label facilitates consumers' way of evaluating a green product (FuiYeng & Yazdanifard, 2015). This relatively low percentage compared to brand trust and responsiveness to the environment may be because the environmental sensitivity and brand trust are more broadly disseminated spheres, and are more effective and impressive.

But corporate environmental responsibility and perception were not statistically significant in the regression model. The non-significant effect of the corporate environmental responsibility on the evaluation of the overall environmental responsibility could be considered surprising, in the light of its theoretical value; it could be interpreted as an indication that perceived overall environmental responsibility of the company is less pressing than the effects of more direct factors like advertising

exposure and company product level certifications. The overall structure of the respondents' perceptions may also have been too general to explain some particular mechanisms (mediators) that explain sustainable consumers' purchase behaviour, or the difference in such perceptions may have been completely explained by the other more specific predicting variables in the model.

The regression model was also performed checking multicollinearity of the independent variables. All the variance inflation factors (VIF) of the variables lie below the maximum commonly accepted value of 10, indicating no problems with multicollinearity and the model's regression coefficients are easily interpreted. Value of Durbin Watts statistic was 1.89, which meant that there was no serial correlation (1.89) in the residuals that is significant, therefore the model is valid.

Overall, the regression results of the study confirmed the key finding of this study, the sustainable customer buying behaviour was significantly related to green marketing practices, which was supported by strong empirical evidence. Based on the results, the 4 key variables, namely environmental awareness, green brand trust, green advertising and eco label recognition are strong variables in determining sustainable consumption with the model value of 0.743. The results highlight the need to implement a broad green marketing strategy, whereby marketing actions aimed at raising consumers' awareness, trusts and awareness-raising in the form of credible information delivered via adverts and labels synergize to support sustainable consumers purchasing processes. The non-significant predictors were not directly influential in this model, however, could have indirectly important roles or act as a moderate between the previous variables, so need to be studied in the next research.

Correlation Analysis

To examine bivariate relationships between the important constructs, Pearson correlation was used. The results showed a high and positive correlation between the overall Green Marketing Practices Index with the Sustainable Consumer Buying Behaviour Index and the correlation was statistically significant. This is tenuous evidence that relates well to the conclusion that people exposed to and engaged with the Green Marketing projects do engage in sustainable purchasing behaviour more often than those who do not. This correlation coefficient is remarkable and is highly founded as more than 67% of the variance of this composite measure of the green marketing practice is explained by sustainable buying behaviour, which shows that the relationships between the sustainability construct, the buying behaviour construct and the green marketing practice constructs is high in the consumer decision making process (Sharma, 2021).

When additionally separately examining each item of green marketing, significant positive ties to the outcome concept were discovered. Environmental awareness, like the other values above, was positively correlated with behavioural variables associated with the concept of sustainable consumer behaviour and has clearly been identified as a central attitude influencing consumers' green buying. This is in line with the regression results found environmental awareness as the strongest predictor and is in line with theoretical dimensions that indicate that knowledge and concern about the environment are a prerequisites to pro-environmental actions (Girish, 2026). Similarly, green advertising exposure was found to have positive and significant association with sustainable buying behaviour, where being aware of green advertising leads to more green product purchase willingness, position the green advertising awareness to exert important influence on consumers' purchase decision.

Otherwise, the correlation analysis revealed the importance of trust between each of the green marketing actors in the green marketing value chain. High positive correlations of the trust in green brands with various key outcome variables were found. To be precise, the correlation between green brand trust and

brand loyalty is () and to be honest, if consumers have trust in the green action taken by the brand in the long run then they will surely be loyal to the brand. The finding is also relevant for businesses, particularly on how to build customer loyalty to make them become profitable and have sustainable growth, as the sense of customer satisfaction is shared by the society (García-Salirrosas & Rondon-Eusebio, 2022). Furthermore, the relationship between Green brand trust and the purchase intention was also found to be positive and strong such that a positive sentiment toward Green brand trust translated to the purchase intention for green product. The connection between positive attitudes and purchasing of green products highlights the concept that trust acts as a connecting link between positive attitudes and green purchases, mitigating the skepticism and other concerns that could result in green consumption problems (Basnet et al., 2024).

A strong positive correlation was also obtained for the recognition of the eco-labels and sustainable buying behaviour, as well as recognitions and green brand trust. The correlation with sustainable buying behaviour validated the results indicating that increased awareness of consumers towards eco-labels correlates with their sustainable purchasing behaviour, as eco-labels are a reliable and easily accessible source of information regarding the environment (FuiYeng & Yazdanifard, 2015). Having eco-labels recognised on a product appears to be correlated with the consumer's confidence in the brand's environmental claims which means presence of such labels can increase the consumer's trust in the claim. This find is a reflection on the strength of a product flavouring, combined with a fully realised campaign for building brands trust.

The relationship between company's environmental responsibility and sustainable purchasing behaviour was medium but statistically significant. In comparison to environmental awareness and green brand trust, this correlation is not as great, but it is positive, indicating that the consumers' attitude toward company's overall green approach is related to their purchasing behavior in green marketing causes. Based on these results, the researchers report that these initiatives – despite showing no significant effect in the regression analysis model – do have an effect on consumer behaviour at a corporate level (sustainability reporting and/or greening suppliers). The association and relationship between the two could be a bit different, meaning there may be other intervening factors that link corporate environmental responsibility with sustainable buying behavior, such as brand trust and environmental awareness (Kuria, 2024).

The interesting inter-relations between green marketing dimensions was also revealed by the correlation matrix. For instance, very high correlations were found between environmental awareness and looking for an eco-label and recognising one. This suggests a positive relation between the environment and looking for and recognising an eco-label. Similarly, the correlation of positive advertising exposure to the green brand trust was measured and the result indicated, meaning that the appropriate green advertising can lead to consumers' confidence in green brandness. The amount of intercorrelation among these predictors is moderate but not severe and an investigation of VIFs confirms this in the regression analysis, further suggesting that there was not a problem of multicollinearity.

Structural Equation Modeling

In order to check the theoretical mechanisms of enviro-awareness and green brand trust between the hypothesized relationship between green marketing practices and sustainable consumer buying behaviour, the researchers followed the Structural Equation Modeling (SEM) approach with a rigorous test. For this, a structural equation modeling (SEM) approach with a rigorous test was followed to allow the hypothesized mediating role between environmental awareness and green brand trust in the relationship between sustainable consumer buying behaviour and green marketing practices. Hence this

analytical process was chosen for the reason that it would allow for estimation of multiple direct and indirect pathways that would give a comprehensive test across the theoretical model including measurement error in the latent constructs (Sharma 2021). Based on the six green marketing dimensions (eco-friendly advertising, environmental awareness, green branding, product eco-labeling, corporate environmental responsibility, and consumer perceptions) and one of the components of the sustainable consumer behavior (sustainable consumer buying behaviour), this SEM model is created.

In order to have an idea about the overall fit of the model, absolute fit indices along with incremental fit indices as recommended by methodological literature were used (Maheshwari, 2014). This reduces the ratio of the chi square / degrees of freedom (χ^2/df) to 2.08; the value of chi square over degrees of freedom (df) is less than the typical value of 3, so the hypothesized will fit the data very well in this instance. Such a value would indicate that there is not a considerable difference between the model-introduced covariance matrix and observational cov. matrix, hence making the proposed model theoretical structure quite possible. CFI score was 0.97 and Tucker–Lewis Index (TLI) score was 0.96 which were both above 0.95, the value classified as the excellent fit of the model. The incremental fit indices are calculated as the result of comparing the hypothesized model with a null model, where there are no hypothesized relationships among variables, and high incremental fit indices indicate that the hypothesized model fits significantly better than the null model. The RMSEA was 0.044 with 90% Confidence Interval (CI) from (0.038, 0.050). This value is less than the quality benchmark of < 0.05 which is generally considered to be the criteria for close fit, and significantly less than the acceptable value of < 0.06 (Boztepe, 2012). The fit of the model to the data also is good; the RMSEA lower limit of the 95% CI suggests low odds for poor model-data fit.

The overall results of the good model fit indices are quite promising in regards to the validity of the hypothesized structural model. The values of 2.08 indicates that the model is not over fitting the data and the CFI and TLI values are greater than 0.95 indicating the model explains most of the covariances among the observed variables. It is especially notable that the RMSEA is also quite low (0.044) in value it is sensitive to misspecification, and is penalising for model complexity, suggesting the inclusion of the pathways acting as mediators is warranted and that the model is well specified. Furthermore, the median model in SEM analysis was used to examine the vector of indirect effects, in order to analyze the specific indirect effects of the green marketing dimensions on sustainable buying behaviour. The results showed that the environmental awareness and brand trust of green were indeed significant mediators at the exogenous variables and the results links. The indirect effects from the media's green advertising on sustainable buying behaviour through environmental awareness was statistically significant, for example suggesting that green advertising in the media not only has a direct effect on buying behaviour but also an indirect effect via raising the consumers' environmental awareness and concern. Conversely, the indirect impact of the recognition of the eco-labels on sustainable buying behaviour through green brand trust was strong, meaning that the eco-labels that consumers can believe foster consumer confidence and this in turn leads to green buying.

Additionally, the direct relationships between the six green marketing variables with the key two variables of the study and then with sustainable buying behaviour were present but not as strong as in the regression model, making the same two key variables influence the relationship between green marketing and sustainable buying behaviour. The outcomes profile confirmed the theoretical design that argues that among the main second-generation variables that encompass green marketing practices is the environmental awareness and belief in the brand, which will contribute to the development of consumer environmentally-friendly behavior (García-Salirrosas & Rondon-Eusebio, 2022). Results of the strong model fit, and also significant indirect effects, suggest that the impact of green marketing on

sustainable consumption is not only direct, linear but it is significantly mediated through the wave of the consumer psychology.

The overall results of SEM support the theoretical model and this study extends the mechanisms by which the process of enhancing the adoption of sustainable purchasing can be enhanced through Green marketing practices. The fitted indexes are excellent (, CFI = 0.97, TLI = 0.96, and RMSEA = 0.044), which suggests that the model is well-specified, and that the hypothesized relationships are well supported by the data. How the campaign, aimed at raising consumers' awareness and trust of the brand, should now also come to suggest other effects from advertising actions that are aimed at stimulating more sustainable consumption, is hard to imagine, and one should not forget the indirect effects – at least not in terms of the indirect effects on consumers' behavior, which the campaign has had and continues to have.

Comparative Findings

A comparative study of the consumers with high and low green marketing awareness was carried out to further explain the practical impact of green marketing. This analysis, both in terms of the content presented and the order that the results are presented, allows an actual assessment of differences in the behavior related to the levels of environmental marketing participation: and are useful inputs for practitioners action. The results obtained from the median split of the Green Marketing Practices Index supported the findings that there were significant consistent differences between the two groups on all aspects of consumers' sustainable behaviour.

That is, there was a strong difference in purchase intention between the high and low green marketing awareness groups, with those in the high group being 28.7% more likely to be intending to make a sustainable purchase. This significant difference means that knowing is more than a passive condition, knowing is a strong motivator for the active motivation to purchase green products. This finding is in line with the regression findings, which affirmed a significant influence of both variables: environmental awareness and green advertising, as well as confirming the influence of green marketing stimuli on influencing intention. Consistent with the regression findings which indicated that both variables, environmental awareness and green advertising had significant influence, it can be said that both variables are able to reinforce the influence of green marketing stimuli on intention to buy. Moreover, the high awareness group experienced a 26.4% greater adoption of green products – making awareness into action. It's therefore vital for companies as the expectancy-behaviour gap reflects that companies can achieve market share growth in sustainable products, by raising awareness in green marketing.

Furthermore, a comparative finding revealed that the greater awareness consumers had generated greater trust in the brands that had the responsibility of being environmentally friendly with 24.6 % more. This is particularly important when the context in the SEM analysis showed the effect of green brand trust as a mediator between the key variables. With the prevalence of the skepticism surrounding greenwashing in the green marketplace, trust is a delicate commodity to deal with in the green market (García-Salirrosas & Rondon-Eusebio, 2022). The high awareness group had a significantly higher trust level, indicating that standard and transparent green marketing communication that can effectively establish consumer's trust is a buffer against green purchasing cynicism. This Trust translates into a 22.8% rise in Customer Loyalty, thus revealing that not only are consumers more willing to purchase green products when they have been informed about it, but they are also more willing to commit themselves to the actual purchase when they are made aware of how environmentally Green the Brand

actually is. It's viewed as among one of the most useful properties for the sustainability of a business, as it minimizes the cost of getting brand-new consumers and boosts the brand strength.

Finally, the high-awareness group members recognized the eco-labels 20.5% more than the low-awareness group. This is important because recognition of eco-labels is as a necessary precondition to their use as a decision tool. The more consumers are aware of green marketing, the more they also know about green product labels and the significance of various types of labels; this offers them with a credible shortcut when making a judgment on product environmental claims (FuiYeng & Yazdanifard, 2015); General green marketing awareness and specific eco-label knowledge also appear to be mutually reinforcing as the 20.5% difference in recognition indicates: the higher the level of general awareness, the higher the level of specific eco label knowledge and vice versa; between the two an 'ecolabel virtuous circle' emerges which facilitates green purchasing by consumers.

All the five indicators of behavior, namely desire to buy, product adoption, trust in the brand, customer loyalty as well as awareness of eco-labels have obtained very similar results from these comparisons showing a clear evidence of the significant impact of green marketing awareness. The percentage differences were statistically significant and practically significant, ranging from 20.5% to 28.7% and are meaningful changes in the behavior of consumers that can have the material impact on the market. Overall, these results suggest that the proposition for this study, which holds that green marketing when properly implemented, is one of the potent elements in fostering sustainable consumer behavior, is reaffirmed. The comparison is a fine example of what can be made effective by green-marketing in organisations, and how it can lead to a more proactive and trustful consumer group and generate more loyal consumption.

Discussion

The results from this study also have implications on practical level, in terms of better understanding of the dynamics of consumer sustainable behaviour formation, caused by green marketing practices. This idea of having a strong mediating role of environmental awareness and green brand trust revealed in the SEM could provide a more comprehensive approach than previous study since both factors appear to be in the central domain regarding the relationship between green marketing and the customers. Based on theoretical reasons, the strong mediating power of environmental awareness and green brand trust revealed in the SEM could provide a more comprehensive approach than previous study, as both appear to be in the central domain for how the green marketing influences the participants (Sharma, 2021). As regards the predictive power of the regression results ($R^2 = 0.743$), this reveals that the selected factors of green marketing as a whole provide a strong overall explanation of sustainable purchasing behavior, and thus confirms the theoretical hypothesis that it will be a multi-faceted phenomenon with several dimensions of the green marketers' exposure of knowledge, trust and communication that affect the behavior of consumers. Furthermore, the lack of significant direct influence of the constructs in the current study, while there were significant bivariate direct effects and bivariate direct effects between the indirect constructs and awareness and trust respectively, suggest that the influence of the direct effects (corporate environmental responsibility and general consumer perceptions) is rather indirect and lies in the subjects of the more proximal constructs, namely, awareness and trust. The finding is nuanced and invites a more complex understandings of green consumer behaviour than linear models, such as those that focus on a single mediation, traditionally considered. It also highlights a theoretical gap in future work that has to bring more into account the relationship between the two in a hierarchical and mediated manner.

The challenges could be summarized as a simple and applicable guidance system for the practitioners to carry out green marketing strategies. The study results highlight the key role of education aspects in marketing activities and habits, over environmental awareness and behavior in favor of sustainable purchases. The best and the most effective way for the companies to invest is in the work that supports products, but also benefits consumers by providing them with useful information on environmental issues, particularly when making decisions about a specific product (Boztepe, 2012). When it comes to establishing brand trust, a green brand effect makes sense because it looks very much like its counterparts. It is evident that the creation of trust is a crucial mediator, as well as being a “multiplier” of all other marketing actions and strategies (García-Salirrosas & Rondon-Eusebio, 2022), which is why organizations must refrain from the dangers of “greenwashing”. This trust needs to be built upon consistent and verifiable environmental claims, third-party certifications and the open and honest dissemination of information about corporate sustainability efforts. Similarly, since the acceptance of eco-labels in buying decision plays an important role, the presence of well-known eco-labels in ads and packaging seems to be important also (FuiYeng & Yazdanifard, 2015). However, after comparing both groups it will be found that the ones who are aware of the product have more intention of buying the product (28.7%) and more number of products adopted (26.4%) and this means that it is very clear that the society has a big business invention to invest in a green marketing program. Based on these results, policy-makers can rely on data for designing public awareness campaigns and increasing the "environmental literacy" of the public and developing or enhancing eco-labeling standards in order to generate consumer trust on the market.

The outcomes of this study had fairly positive findings, but there are some factors to consider. Because the cross sectional study is not able to be interpreted as causal, only a ‘one-shot’ snap shot of relationship exists at one point in time, and not over a longitudinal timeframe when there would be an influence of green marketing over a timeframe on changes in behaviour (Maheshwari, 2014). The hypothesized mediation models seem to be supported by SEM analysis; however causal relationships need to be substantiated by long-term or experimental designs. Self-report of awareness, trust and behaviour also limits opportunities for social desirability bias, which might lead to the participants answering in a way that is favourable to themselves in terms of their environmental awareness and green purchasing behaviour. Although the survey was anonymous to alleviate the perception of this, there is some behavioural data which would not reflect intention or attitude. The students in the sample were geographically diverse and the majority were female; however, the majority also had University level qualifications (63.4%) which may constrain generalisation of the findings to those students with lower levels of formal qualifications. Furthermore, the study was conducted in one country (India); relationships discovered in the study might be subject to country specific cultural, economic and regulatory conditions, hence limit the generalizability of the findings to other countries which may have other market and consumer values (Pillai et al., 2026). In addition, there were some demographic variables that were not accounted for in the key analysis models, such as age and income, which can moderate the relationships between the Green marketing and Sustainable behaviour.

Future studies should extract the current research from these limitations and further it in many crucial aspects. There is a need for further research in order to conduct longitudinal studies on consumer behavior and capture the dynamism of “green” attitudes towards consumption and their impact on buying decisions. The type of research that could be proposed involves how long the impression of green advertising lasts, whether brand loyalty is “cold” as time goes by or not and, if it is, when exactly. Experimental designs (where the consumers' exposure to one or more of the green marketing messages is manipulated between the independent and control groups) would provide stronger causal evidence and would allow for the separation of those aspects of the green marketing campaigns that are most

likely to result in more trust and action among consumers. This study also calls for additional research on systematically engaging customers from various age and generational cohorts while paying due attention to these demographic moderators given the initial evidence of potential differential reactions of younger consumers (Millennials and Gen Z) to green marketing and overall compared to older ones. To find out whether the mediating mechanisms of EA and BT are universal, or context-specific, due to the cultural differences and discrepancy in the levels of institutional trust across countries, cross-cultural comparative studies were also conducted (Kuria, 2024). Additionally, the fact that no important direct effect was found on the corporate environment implies a scope for further research and studies, both in terms of concepts, measuring the CSR factor at a finer level of aggregation, and in terms of its interactions with other factors (such as the perceived level of CSR sincerity of the company, or its sector). Lastly, future studies should take the actual behavioural data (data on consumer purchases or loyalty card data) into account along with self-reported measures to gain a better objective measurement of the link between the green marketing and sustainable consumption.

Conclusion

The objective of this study was to examine the impact of green marketing on the sustainable consumer behaviour, and findings of the study proved to be ample empirical support of the influential role of green marketing practices on the environmentally conscious consumer behaviour. The research results align with the hypothesis and suggest that the sum of all the four factors, namely, environmental awareness, green brand trust, green advertising and eco-label recognition are most influential and can explain 74.3% of the variability of the allocation of purchasing for sustainable products. As perceived important mediating mechanisms between green marketing and its effects, as supported by the excellent fit indices and validated using SEM, this study adds valuable theoretical value to the field of green marketing. This book thus elucidates how pursuit of genuine and transparent green marketing can lead to customer trust, purchase intention and loyalty, in building on previous theory that often saw these connections as direct and unmediated.

Research should be conducted in the future, focusing on the limitations of this cross-sectional study design, such as the more limited ability to infer a causal relationship between green marketing and to measure its effects on a dynamic nature across time, and to apply and test a more suitable research design, like longitudinal or experimental design. The results presented herein are from one national scenario, so further research is needed to examine impact of environmental awareness and brand trust on mediating roles in a different context, to see if environmental awareness and brand trust has a universal or contextually dependent role. Therefore, corporate environmental responsibility has a non-significant direct impact; this effect should be further explored by adopting more-fine-grained measurement of the concept and conduct an in-depth examination of the possible moderators, including perceived corporate sincerity. Work and studies reported here could be complemented by additional ones, involving real, not imaginary, behaviour data from purchase information, systematically studying different generations to better understand how green marketing can be used to stimulate sustainable consumption among various customer groups and in various markets.

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