

# Determinants of Online Purchase Decision of Green Products



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**Abstract:** *The awareness of green environment among the common man have made them choose green products over non green products. Green companies now try to manufacture green products that are more economical. There are global green companies to local household groups that manufacture green products. These are the outcomes of the green movement that made people become more eco-friendly in their day to day lives. This paper addresses the impact of green product features like green label, green package, green advertisements etc. on consumer's online buying decision. The analysis is carried out using regression methods. The studies would help green product manufacturers and online shopping companies to identify the green product features that influence the online green customers.*

**Keywords :** *online, green, purchase*

## I. INTRODUCTION

Green purchase behavior refers to the consumption of products by people that can be re-used or recycled thereby being responsive to ecological concern. Increasing the awareness of consumers towards environmental issues will increase the demand for ecological products. The green consumer is defined as one who adopts environment friendly behavior and purchases green products over non-green products. Green consumers believe themselves to be responsible for the environment. One of the reasons is health consciousness among the common people.

Lot of research has been carried out about the role of involvement, loyalty, emotional attachment, advertisement and corporate entrepreneurship on the influence of work discretion and buyer's purchase intention [1-8].

In recent years, with the increase in industrialization, the level of pollution has increased posing threat for the environment and human health. This has forced the organizations to implement environment friendly products or applications to protect the environment. Later many supported the environmental movement and implemented programs that would cause minimum harm to the environment. Green products have less impact on the environment and less damage to human health compared to non-green products [9-12]. In this paper, the features of green products that influence online consumers is studied.

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## II. LITERATURE REVIEW

The green product factors that influence online decision process are green label, green package, price, shelf life, customisation, green advertisements and green awareness. Katak studied consumer attitude towards green product and their impact on purchasing decision [13]. The respondents were from Maharashtra. The independent variables are age, gender, education, product, price, place, promotion, performance, package and process. The dependent variable is consumer's buying decision. The data is analysed using statistical technique such as percentage, deviation and rank order method. It was observed that other than educational factor, all other factors indicate significant relationship with purchase of green products.

Studies were carried out by Souckova to determine the perception of environmental product labeling and environmental awareness in Slovakia[14]. In Slovakia, there are very few types of products labeled as eco-products. The respondents were communicated through e-questionnaire and through distribution of hard copies of questionnaire. The independent variables are quality, reliability, price, impact on the environment, brand and eco label and the dependent variable is customer perception on environment awareness and environment product labelling. Data was analysed using frequency distribution. It could be observed that residents of Slovakia are not entirely indifferent to the environment in which they live. Also, they monitor the impact of usage of some of the products and the depreciation it causes on the environment.

In developed countries, the awareness of importance of the environment and the impact of depleting natural resources is a cultural constant whereas in many emerging countries, the movement towards consumption of green products is in its early stages [15]. Gan et al. studied the impact of price on consumers' purchasing behaviour towards green products in New Zealand. It was proved that the traditional product attributes such as price, quality, and brand are still the most important attributes that consumers consider when making green purchasing decision [16].

Boztepe studied about the effect of green advertisements in green marketing on customers purchasing behaviours [17]. The respondents were university students at Kafkas University. The independent variables are demographic variables like age, gender, marital status, education, income and green awareness, green price, green product features and green promotion.

The dependent variable is customer’s purchasing behaviour. Data was analysed using statistical techniques. It could be observed that as environment consciousness, green product features, green promotion and green price increase, green purchasing behaviour increases simultaneously.

Schlegelmilch et al. carried out studies to assess the link between variables specific to environmental consciousness and pro-environmental purchasing behavior [18].

The regression results suggest that such measures may indeed be more useful than either socio-demographic or personality variables, given that the latter variable types explain very little variation in responses to environmental phenomena. This study has illustrated that consumers’ environmental consciousness may have an impact on their purchasing decisions, although the latter is also likely to be influenced by other moderating factors. The findings suggest that the attitudinal component of the environmental domain was observed to be the most important predictor of green purchasing decisions. Kong et al. studied the impact of green advertisements of green products on green purchase intention [19]. It could be observed that green advertisements had positive significant influences on green purchase intention. Many researchers have also carried out studies on customer’s decision on buying different types of green products [20-24].

III. METHODOLOGY

The research design carried out in this study is descriptive in nature. Descriptive research concentrates on formulating the research objective, designing methods for the collection of data, selection of sample, data collection, processing, analysis and report generation. Survey technique is used for carrying out research. The strength of survey research is its wide scope and ability to collect the detailed information from the respondents in order to find the determinants of purchase decision of green products. The conceptual framework is given in Figure 1.

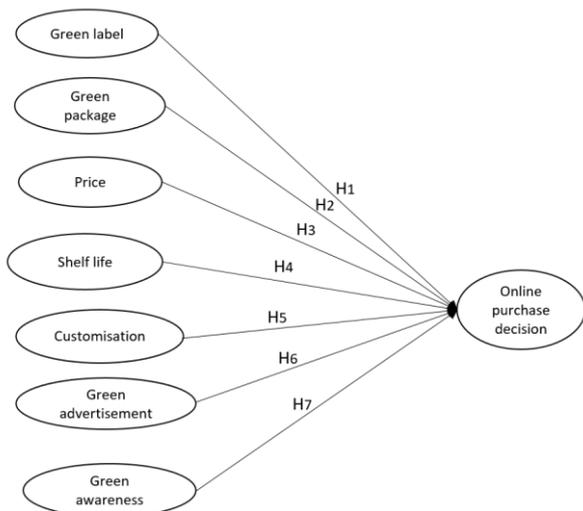


Fig 1: Conceptual framework

The hypothesis for the study are the following

- H1: Green label has no impact on green product purchase decision
- H2: Green package has no impact on green product purchase decision
- H3: Price has no impact on green product purchase decision

- H4: Shelf life has no impact on green product purchase decision
- H5: Customization has no impact on green product purchase decision
- H6: Green advertisements has no impact on green product purchase decision
- H7: Green awareness has no impact on green product purchase decision

The studies are carried using three methods

- (a) Frequency count for analyzing the demographic factors
- (b) ANOVA for relationship studies of independent variables
- (c) Regression analysis to understand the relationship between dependent and independent variables

A regression model is fitted for the data by taking the online purchase decision as the response variable and green label, green package, price, shelf life, customisation, green advertisements and green awareness as the independent variables. The proposed regression model is

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \beta_7X_7 + \varepsilon$$

where, Y = online shopping decision, X<sub>1</sub>= green label, X<sub>2</sub>= green package, X<sub>3</sub> = price, X<sub>4</sub>= shelf life, X<sub>5</sub>= customisation, X<sub>6</sub> = green advertisement, X<sub>7</sub> = green awareness, β<sub>0</sub> is the offset factor and ε is the error.

IV. DATA COLLECTION

Self-administrated questionnaire is used as the research instrument. A brief description on the work was narrated to the respondents prior to the distribution of the questionnaire. This was to ensure that the respondents satisfy the criteria of being a green consumer. The language selected for the construction was English, being a language familiar to common man. The total number of observations is 100. The region selected for data collection are residential and industrial areas of Kochi.

V. FINDINGS AND DISCUSSION

A pilot study was carried out to check the consistency of the data collected. In this study, all the questions are asked in the Likert’s five point scaling technique, where five stands for strongly agree and one stands for strongly disagree. The researcher conducted the pilot study by using convenience sampling method. The collected data was analyzed by using statistical package for social science software package (SPSS) for reliability tests. The results of reliability analysis is displayed in Table 1. It could be observed that all the variables had an alpha value greater than 0.8. This is followed by a detailed data analysis using regression method. The demographic factors considered are age, gender, qualification, occupation and salary. Chart 1 and Figures 2 to 5 shows the frequency counts of the demographic factors.

Table 1: Reliability analysis table

Sl.No	Variables	Cronbach’s Alpha value
1	Green label	0.898
2	Green package	0.876
3	Price	0.802
4	Shelf life	0.818
5	Customisation	0.825



6	Green advertisements	0.900
7	Green awareness	0.819

Chart 1 : Frequency count of Gender

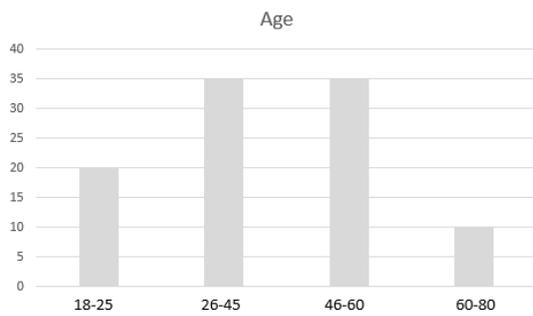


Fig :2 Frequency count of age

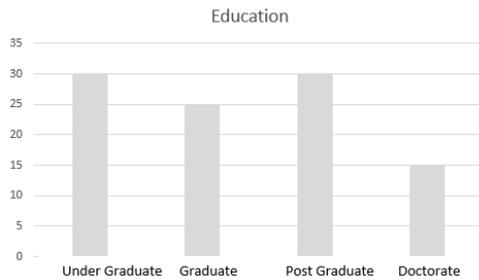


Fig 3: Frequency count of education

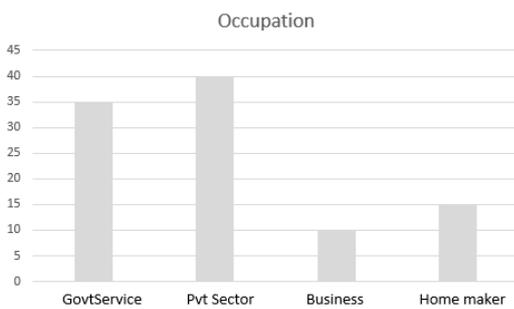


Fig 4: Frequency count of occupation

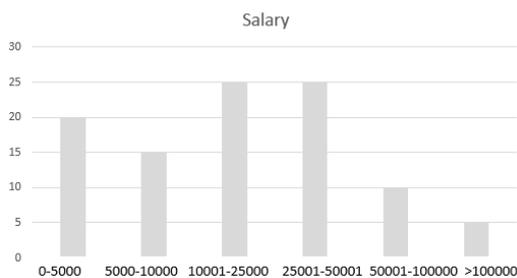


Fig 5: Frequency count of salary

The summary statistics of the independent variables under

study are given in Table II. Table III gives the results of ANOVA.

Table II : Statistics of observations

Variables	Mean	Standard Deviation
Green label	3.14	0.9141
Green package	3.34	0.9050
Price	3.38	0.7754
Shelf life	3.61	0.7917
Customization	3.62	0.7639
Green Advts	3.29	0.8259
Green awareness	3.50	0.6337

Table III : Results of ANOVA

Variable	Sum of squares	df	Mean square	F	p-value
Green label	19.979	1	19.979	85.293	<0.05
Green package	10.090	1	10.090	43.077	<0.05
Price	0.0057	1	0.0057	0.0242	<0.05
Shelf life	2.4918	1	2.4918	10.637	<0.05
Customization	0.5853	1	0.5853	2.4987	<0.05
Green advts	0.1652	1	0.1652	0.7053	<0.05
Green awareness	1.9877	1	1.9877	8.4856	<0.05

The p value (<0.05) is very small. Hence the null hypothesis is rejected.

The regression model is given in equation (1)

$$Y = 0.522 + 0.2034 * X_1 + 0.2784 * X_2 - 0.1010 * X_3 + 0.1186 * X_4 + 0.1102 * X_5 - 0.0908 * X_6 + 0.3734 * X_7 \quad (1)$$

From the above regression model, it can be observed that the coefficients of green label, green package, shelf life, customization and green awareness are positive. Hence they have a positive impact on the dependent variable, online shopping decision. The coefficients of price and green advertisements are negative, which means that they have a negative impact on the dependent variable.

Multiple R-square indicates the variation of the dependent variable influenced by the independent variables. The R and adjusted R<sup>2</sup> values are given in Table IV.

Table IV: R values

R <sup>2</sup>	Adjusted R <sup>2</sup>
0.621	0.592

The value of  $R^2$  is 0.621 and that of adjusted  $R^2$  is 0.592 which means 59.2% of the variation in the dependent variable can be explained by the regression model by taking 7 independent variables. Table V gives the variance inflation factor (VIF) values.

It is clear from Table 5 that there is no multi collinearity present in this data. Hence the model is adequate.

**Table V: VIF values**

Variables	VIF
Green label	2.17
Green package	1.80
Price	2.50
Shelf life	2.14
Customization	2.00
Green advertisements	1.22
Green awareness	2.78

**VI. RESULT AND DISCUSSION**

The effect of green product factors on the purchase behaviour of online customers is analysed in this study. The study was carried out at Kochi with a sample of 100 respondents. Multiple regression model was used to analyse the data. The following are the results of analysis.

- Green label has a positive impact on consumers online purchase decision
- Green package has a positive impact on consumers online purchase decision
- Price has a negative impact on consumers online purchase decision
- Shelf life has a positive impact on consumers online purchase decision
- Customization has a positive impact on consumers online purchase decision
- Green advertisement has a negative impact on consumers online purchase decision
- Green awareness factor of consumer has a positive impact on consumers online purchase decision

This would help green manufacturers and marketers to identify the factors that creates impact on the shopping decision of an online green customer. One of the factors that play a key role in the decision making is the price. Online customers are very particular about the price of the green product. The basic price of a green product together with the additional online service charge is high. The true green consumer would prefer online green products to stay green and save time. Another feature is shelf life. The green product being made with permitted preservatives may not stay longer. So the online delivery should be made before the freshness of the green products gets reduced.

**VII. CONCLUSION**

The consumers of green products have increased tremendously in the recent past. There are many factors that influence the purchase decision of a green customer. The purchase decision of customer is influenced by economic, social, financial and demographic factors. In this paper, the impact of green product factors that influence the purchase decision of online shoppers towards green products is studied using regression analysis. It is observed that other than price and advertisement, all other factors have a positive impact on the online purchase decision of consumers. These studies would help green product manufacturers and online shopping companies to identify the features that are influenced by online green customers.

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