

Understanding Consumer Purchase Intention Towards Biodegradable Footwear : A Study

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Abstract

Business processes are redesigning themselves into green business processes to sustain themselves in the modern business world. Pollution and climate change are the major factors which are influencing the organizations to launch biodegradable products which are environment friendly. The companies in the global footwear industry are launching biodegradable footwear products, and the present paper discusses consumer behavior with reference to the purchase of biodegradable footwear. A questionnaire based survey was conducted in Hyderabad, and the sample size for the study was 120 respondents. It was found that there is lot of consumer awareness about green products, but *purchase intention* of the consumers influenced them significantly with reference to the purchase of biodegradable footwear. Hence, it is concluded that organizations should develop commercials/advertisements to increase the purchase intention of biodegradable footwear among the consumers. In addition, online marketing tools should be used to market biodegradable footwear.

Keywords : green products, green marketing, biodegradable footwear, eco-friendly footwear, consumer purchase behavior, environment friendly products, sustainability, purchase intention

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Green marketing has acquired a significant place in the present world. This is because significant stress has been created by an increasing population on our eco-systems, and the desire of more individuals and families to adopt a resource-intensive lifestyle (Rajan, 2009). Environmental pollution is increasing at an alarming rate due to modernization and activities of mankind on the earth. The rapid climatic changes and global warming are the major issues faced by human beings on this planet. The different kinds of pollution like water, air, and soil pollution are caused by non green products. One of the best alternatives for organizations in the present world is adopting green marketing. In this paper, terms like green marketing, environmental pollution, sustainability, biodegradable products, and eco-friendly products are interchangeable and they all mean the same, that is, products which do not harm to the environment. The lifestyle of individuals and their behavior influences the business organizations to produce different products. The life span of products like polythene, leather, and chemicals is polluting the environment, for example, wastage released from chemical industry causes water and soil pollution. Dumping of used products is also becoming challenging for industries, consumers, governments, and the society. Green marketing is the study of all efforts to consume, produce, distribute, promote, package and reclaim products in a manner that is sensitive or responsive to ecological concerns (Dahlstorm, 2010). Green Marketing refers to the process of selling products and services based on their environmental benefits (Bukhari, 2011). Biodegradability is the decomposition of organic (living or once living) materials by organisms as a part of nature's recycling system of growth and decay (Ha, 2008). It means that biodegradable products are converted into minute particles, and these products can be recycled because they are made from natural raw materials. Products like synthetics which are manufactured by petrol and chemicals are not biodegradable.

Many studies have been conducted on organic food products, green electronic products, eco friendly cleaning products. However, environmentally friendly footwear is new to a majority of the consumers. Very recently, Puma, a German based lifestyle sports and apparel manufacturer, launched biodegradable shoes; these shoes are manufactured by natural raw materials which can be recycled. The customers can return the shoe to the company at the end of the

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product's lifecycle. In this process, the consumers' attitude towards the environment plays an important role (PUMA, 2012). According to Nielsen's survey, India is among the top three Asia-Pacific countries which showed a positive intention towards environmentally friendly products. The other two countries were Indonesia and Vietnam, where consumers showed an interest for eco-friendly products (Nielsen, 2011).

Green Marketing versus Traditional Marketing

Green marketing gives utmost importance to customer satisfaction, organizational goals, and environmental compatibility, whereas traditional marketing gives priority to customer satisfaction and organizational goals only. Green marketing is a long term orientation and thinks about cradle-to-grave of the products, whereas traditional marketing is an immediate channel network. Traditional marketing implements a reactive approach to waste management, but green marketing implements a proactive approach to waste management (Rajan, 2009).

Green Consumer Behavior

Green consumer has been defined in many number of ways by different people; however, it can be simply understood as how a consumer behaves towards products which are eco-friendly. The terms eco-friendly, recyclable, reusable, environmental-friendly, green, pro-environmental mean the same. Many research works have been conducted from the 1980s onwards for understanding green consumer behavior. The consumers who want to adopt eco-friendly products in the present or in the future are green consumers. People often declare themselves as green consumers by saving water, oil, and energy sources (like electricity). From the above discussion, green consumer behavior can be defined as consumers who have a positive attitude towards green products and are interested to adopt green practices in their lifestyle. For example, a customer who uses a jute bag instead of a polythene bag while shopping is a green consumer. There are different stages in human behavior to show green consumption behavior. Hence, it is tough to declare a consumer a non-green consumer by observing a single activity.

The footwear industry is expected to double to ₹ 20,000 crore in five years as Indian consumers go on a shopping spree. Women purchase more frequently than men, and consumers are shopping throughout the year. The competition and market demand for footwear has drastically increased in the last few years (Jacob & Mukherjee, 2011).

Need for the study

There is an urgent need for the organizations to reformulate their strategies and business processes to reduce the impact of pollution on the environment. Footwear is a need for people to perform their regular and routine tasks. Earlier, research on green marketing has been conducted with reference to consumer behavior, attitudes and perception regarding green products, but there is a need to understand the behavior of consumers towards a specific product. Studies focusing on green consumer behavior related to footwear have not been conducted. Therefore, the present study carefully examines green consumer behavior purchase intention towards biodegradable footwear products.

The Indian Footwear Industry

India is the second largest producer of footwear, and consumes approximately 16 billion pairs of footwear. RedTape, Bata, Liberty, Lakhani, Metro, and Action are some of the major Indian brands. The footwear industry also exports its products to foreign countries (Council for Leather Exports, n.d.). The footwear industry is expected to reach ₹ 38,000 crore by 2015. The industry compounded annual growth rate is 15% (India Blooms, 2012). The product 'footwear' was selected for the study because the leather industry, which provides raw material to the footwear industry, causes environmental issues because the lifespan of leather products is high.

✎ **Impact of Leather Products on the Environment :** Leather is a by-product of the meat industry, but unlike meat, leather takes decades to biodegrade itself into the environment. The used footwear, which is made of leather, synthetic, and fiber causes soil and water pollution. It is a challenging task to recycle and reuse the footwear made from artificial raw materials. Many small players are operating in the footwear industry. For them, it is difficult to manufacture products from natural raw materials as it would substantially increase their cost of production and reduce profits. But it is comparatively easy for big players in the footwear industry to manufacture biodegradable footwear without affecting their profits (Hailes, 2007).

➤ **Green Footwear :** Brown Shoe Company innovated a new type of footwear for women, which consists of bamboo heels, vegetable-tanned leathers, and biodegradable latex foam. The company stated that it was not a new brand, but an eco-friendly dimension of the organization (Kumar, 2010). After celebrating approximately 40 Earth Days, finally, the business organizations in the footwear industry launched recyclable footwear. For example, US footwear brand TOMS makes shoes from recycled plastic bottles and recycled rubber. Nike encourages its customers to return the discarded shoes for recycling.

The biggest footwear companies are adopting recyclable business processes to save the environment (Ellwood, 2010). Satish Gokhale, a Pune based design engineer, won the prestigious BusinessWeek award for innovating biodegradable footwear which can be disposed very quickly after one-time use, for example, people need to remove their shoes when entering into computer labs, medical operation theatres, and so forth, where they have to wear smelly slippers, which have been used by others. The biodegradable slippers are very low cost and are easily recyclable (Vaidya, 2005). Another example of green footwear is Simple® Shoes - the US based company that launched biodegradable shoes, which can biodegrade in 20 years as against the industry average of 1000 years (Enhanced News Online, 2010). The company has unveiled many new models of biodegradable footwear for men and women. Gucci announced "Sustainable Soles" footwear, which are environmentally friendly (Chua, 2012). The company is also planning to launch eco-friendly eyewear made from castor seeds. In this way, organizations are thinking innovatively to save the environment by implementing sustainable business processes.

Review of Literature

Since the past three decades, a lot of investigation has been conducted by various researchers on green marketing and green consumer behavior. D'Souza, Taghian, Lamb, and Peretiatkos (2006) stated that consumers with a past experience showed a positive attitude towards green products, and they do not want to compromise on quality and price for acquiring green products. Jasson, Marell, and Nordlund (2010) conducted a research on determinants of curtailment and eco-innovation adoption by green consumers and stated that values, beliefs, norms, and attitudes have a significant impact on green consumer behavior. The researchers chose the environmentally friendly car for conducting their study. Straughan and Roberts (1999) examined the ecological conscious consumer behavior and stated that psychographic variables impact individual behavior rather than demographic variables. This particular research also explained the importance of environmental segmentation for ascertaining consumer behavior towards environmental friendly products.

McDonald and Oates (2006) tested Peattie's green purchase perception matrix and stated that individuals' behavior towards green products differed from the dimension of perception. They found that there was a high level of difference between efforts of people and their perception. Tadjewski and Wanger-Tsukamoto (2006) conducted a study to gain qualitative insights into green consumer behavior and suggested that marketing communications should be developed to reach the individual need of green consumers. They used both qualitative and quantitative methods to find the relationship between cognitive psychology and green consumer behavior. Singh (2011) in his study stated that elderly people have a positive intention towards green products, and marketers need to communicate the importance of green products to the consumers. Availability and Quality are the two factors which influence the purchase decision making towards green products by elderly consumers. Braimah and Tweneboah-Koduah (2011) made an investigation about the impact of branding on consumer purchase decisions in Ghana, and stated that there is a low awareness of green brands and, therefore, the purchase decision is low. Hence, the study showed that awareness of green products among consumers plays an important role.

Bhattacharya (2011) conducted an investigation on consumers' attitude towards green marketing in India, and stated that marketers should launch more aggressive campaigns about green products as the consumers are suspicious about the quality of green products. The consumers are not sure whether they are going to pay premium prices for green products in India. Okada and Mais (2010) conducted a survey among a select group of consumers twice and stated that the advantages of green products must be communicated to consumers who have a positive attitude towards eco-friendly products, and the disadvantages of non-green products must be communicated to consumers who have a negative attitude towards eco-friendly products. Combs, Zhu, and Chipoorutana (2011) considered four dimensions - food safety concern, labeling of green products, price quality inference, and attitude towards green labeled products. The researchers conducted a study among Chinese consumers, and organic food products were selected for the study.

The researchers observed no significant relationship between price-quality and consumers' actual green purchase of green-labeled food products. The structural equation model was used for data analysis. Carrete, Castano, Felix, Centeno, and Gonzalez (2012) argued that consumers are confused and are more interested in personal benefits rather than in environmental values, and it is the responsibility of the marketers to communicate the benefits of green products, and low priced green alternatives should be provided because there can be a lot of potential from low-income group consumers in the long term. Tsen, Phang, Hasan, and Buncha (2006) examined the consumers' willingness to pay for green products and stated that there is a positive relationship between consumers' willingness to pay for green products and consumers' attitude towards environmental issues. Carofano (2006) argued that there are enough customers willing to purchase green footwear products and according to the Lifestyle of Health and Sustainability website, there is a huge demand for products which focus on health, environment, social justice, and sustainable living.

Objectives of the Study

The primary objective of the research study is to understand the intention, affordability, and purchasing decision of consumers towards biodegradable footwear. The study was also conducted to ascertain the awareness levels among the consumers about biodegradable products, and to study the attitude of consumers with reference to their responsibility towards the environment.

Hypotheses

The major hypotheses of the research are as follows :

- ✎ **Hypothesis (H1): Consumers' Awareness regarding biodegradable products has no impact on the purchase of biodegradable footwear.**
- ✎ **Hypothesis (H2): Intention of consumers towards biodegradable products has no impact on the purchase of biodegradable footwear.**
- ✎ **Hypothesis (H3): Consumers' Affordability of biodegradable products has no impact on the purchase of biodegradable footwear.**

Research Methodology

A self-administered questionnaire was designed to collect the data. Snowball sampling method was used to select the respondents. Initially, the respondents were asked whether they had any idea about green products, and if the answer was yes, then the questionnaire was given to the respondent. The questionnaire consisted of two parts. The first part of the questionnaire collected the details about the demographic profile of the consumers (i.e. the respondents), and the second part consisted of items which collected data about awareness, attitude, willingness to pay a premium price for green products, and the future purchase intention about green footwear, and another item collected details regarding the preferred media type which the consumer preferred to get information about green products. The sampling methodology used was a combination of random and convenient sampling.

A five-point Likert scale was designed to collect information about green consumer behavior towards biodegradable footwear. The sample size of the study is 120 respondents. The study was conducted from January 2013 to April 2013. The respondents were carefully selected from different groups like students, employees, business people, and home makers. The study was conducted in Hyderabad city. Hyderabad is a cosmopolitan city; people from various cultural backgrounds and from different locations across the globe reside in Hyderabad. Hence, it was assumed that the respondents represented the population perfectly.

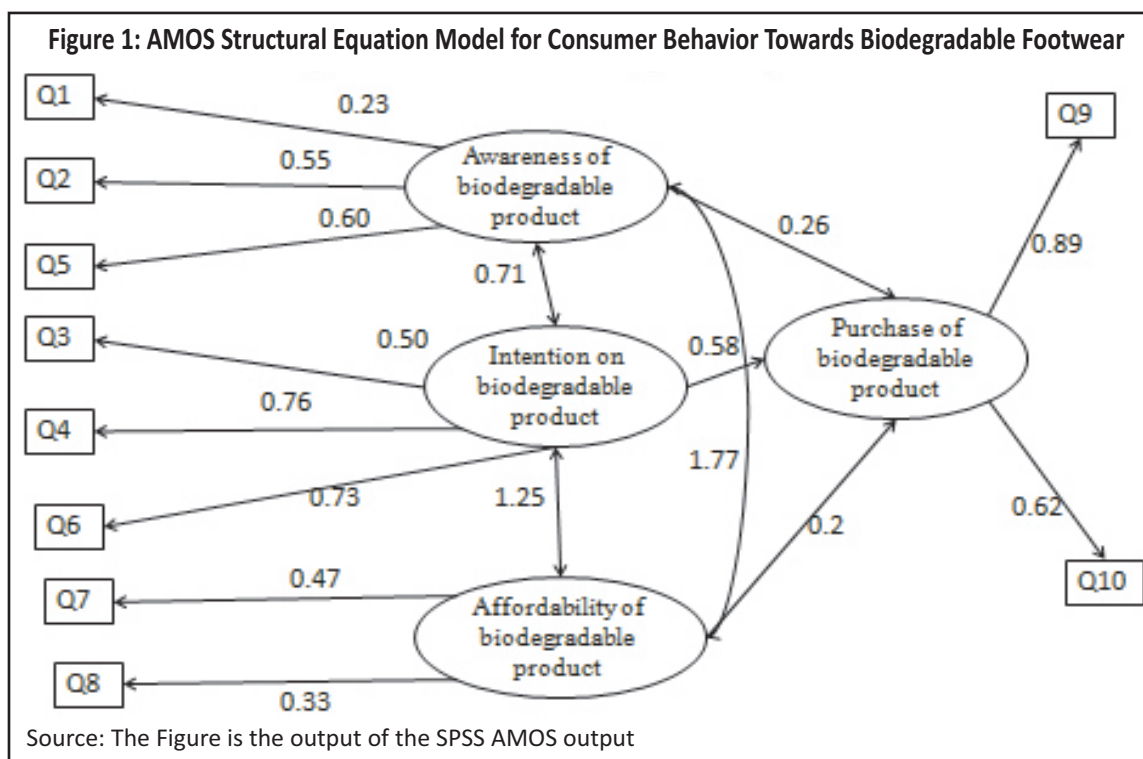
Results and Analysis

Data analysis was conducted in a three-stage process. First, reliability tests were performed. Upon receiving satisfactory results, confirmatory factor analysis (CFA) with SPSS Statistics 17.0 was used to analyze the convergent, concurrent, and discriminate validity of the model. Once the model was validated, SPSS Amos 18.0 was used to test the overall fit of the structural model and to estimate the relationship between the independent variables and the dependent variable so as to accept or reject the hypotheses.

Table1. Factor Extraction Results from the Items in the Questionnaire

Item No.	Component	Factor Loads	Eigen Value	% variance
Q1	I am aware of green products.	0.561	4.116	37.421
Q2	All green products are biodegradable and recyclable.	0.627		
Q5	I am aware about biodegradable footwear.	0.821		
Q3	Every individual has the responsibility to save the Earth from global warming.	0.671	1.337	12.151
Q4	I am interested to know about green products through...	0.723		
Q6	Manufacturing of biodegradable footwear is a great idea.	0.681		
Q7	Biodegradable footwear will be of high quality.	0.724	1.191	10.830
Q8	I am willing to pay a higher price for biodegradable footwear.	0.693		
Q9	In the future, I will be interested to purchase biodegradable footwear.	0.773	1.027	8.559
Q10	I will surely recommend biodegradable footwear to others.	0.754		
Total percentage of variance		68.960		

Source: SPSS AMOS output



➤ **Reliability Test :** The Cronbach's alpha test was performed on the data, and the value of the reliability coefficient was observed to be 0.731, where the actual acceptance limit is 0.70. Hence, it implied that the data had reliability. The 10 items in the questionnaire were tested using Cronbach's alpha test. One question collected information related to respondents' media preference for getting information about bio-degradable products.

➤ **Exploratory Factor Analysis:** The Kaiser-Meyer-Olkin (KMO) and Bartlett's test were used to test the suitability of the data for factor analysis. The KMO value was 0.715, exceeding the recommended value of 0.60, which can be considered as adequate while Bartlett's test of sphericity reached statistical significance (Approx. chi-square value = 465.425, $df = 55$ and $Sig = 0.00$), which signifies that the data was good for conducting the factor analysis. The 10 items were subjected to principal component analysis (PCA) with varimax rotation to test the suitability of the data for factor analysis.

Table 2. Demographic Profile of the Respondents

Gender		Frequency	Percent
Valid	Male	100	83.3
	Female	20	16.7
	Total	120	100.0
Occupation		Frequency	Percent
Valid	Student	31	25.8
	Employee	75	62.5
	Own Business	4	3.3
	Others	10	8.3
	Total	120	100.0
Age group		Frequency	Percent
Valid	18 to 24 years	16	13.3
	25 to 34 years	73	60.8
	35 to 44 years	31	25.8
	Total	120	100.0

Source: SPSS output

Table 3. Standardized Regression Weights: (Group Number 1 - Default Model)

		Estimate
Purchase	<--- Intention	.584
Purchase	<--- Awareness	.261
Purchase	<--- Affordable	.020
Q5: Awareness about biodegradable footwear	<--- Awareness	.605
Q2: Are green products biodegradable?	<--- Awareness	.551
Q1: Awareness about green products	<--- Awareness	.235
Q6: Manufacturing biodegradable footwear	<--- Intention	.734
Q4: Adopting green products	<--- Intention	.757
Q3: Consumers' responsibility	<--- Intention	.502
Q8: High Price	<--- Affordable	.326
Q7: Quality	<--- Affordable	.474
Q9: Interest	<--- Purchase	.891
Q10: Recommend	<--- Purchase	.621

Source: SPSS output

The items having factor loading less than 0.50 should be eliminated (Hair, Anderson, Tatham, & Black, 1996), but for all factor loadings, each item was above the value 0.50, suggesting that the data set was appropriate (Stewart, 1981). So, all 10 items were accepted, and PCA revealed that these items were grouped into four components with Eigen values exceeding 1 - 4.116 (Awareness), 1.337 (Intention), 1.191 (Affordability), and 1.082 (Purchase) respectively. The total percentage of variance is 68.960. The individual dimensions of the proposed instrument explained total variance exceeding 60%, suggesting the appropriateness of the process. These components correspond to four constructs influencing the Awareness regarding biodegradable products, Intention to purchase biodegradable products, Affordability of biodegradable products, and Purchase of biodegradable products. The results of the principal component analysis are presented in the Table 1. The demographic profile of the respondents is provided in the Table 2.

Hypotheses Testing

↳ **Hypothesis (H1)** : Consumers' Awareness regarding biodegradable products has no impact on the purchase of biodegradable footwear. H1 had no impact on purchase of biodegradable products, and hence, H1 is rejected as the critical ratio of regression weight between the two factors (Awareness and Purchase) is 1.992, which is greater than 1.96.

↳ **Hypothesis (H2)** : Intention of consumers towards biodegradable products has no impact on the purchase of biodegradable footwear. H2 is rejected as the critical ratio of regression weight between the two factors (Intention and Purchase) is 3.143, which is greater than 1.96.

↳ **Hypothesis (H3)**: Consumers' Affordability of biodegradable products has no impact on the purchase of biodegradable footwear. H3 is accepted as the critical ratio of regression weights between the two factors (Affordability and Purchase) is 0.268, which is less than 1.96.

The regression estimates in the Table 3 and Table 3(a) show that the positive intention of consumers towards biodegradable products leads to considerable increase in purchase intention towards biodegradable footwear products. However, the regression estimates of Awareness on Purchase intention factor is very high, but Awareness surely impacts the Purchase intention of consumers.

Table 3(a). Standardized Regression Weights: (Group number 1 - Default)

Factor	Impact	Factor	Regression Weights	Critical Ratios
Purchase	<---	Intention	.584	3.143
Purchase	<---	Awareness	.261	1.992
Purchase	<---	Affordable	.20	0.268

Source: SPSS AMOS output

Table 4. Preferred Mode of Communication Regarding Green Products

		Frequency	Percent
Valid	T.V. Advertisements	71	59.2
	Newspaper Ads	7	5.8
	E-Mail	36	30.0
	Mobile SMS	3	2.5
	Others	3	2.5
	Total	120	100.0

Source: SPSS output

It was revealed that most of the respondents were interested in getting information about biodegradable footwear and green products through television advertisements and the second option was through e-mail (Table 4). Overall, approximately 60% of the respondents were interested to receive information about biodegradable footwear/green products. 30% of the respondents were interested to receive information about biodegradable footwear/green products through the Internet, that is, through email.

Discussion

The consumers' awareness regarding environmental friendly products would play a vital role in creating demand for biodegradable footwear in the future. Positive intention to purchase such products would result in consumers making a positive purchase decision in case of biodegradable footwear products. Quality and price, which influenced the consumers to make a purchase decision, were grouped together under the factor Affordable . However, it is to be noted that quality and price did not completely influence the respondents to make a positive purchase decision in favour of biodegradable products. Hence, it is understood that the respondents were motivated by some other personal factors (other than quality and price), which influenced them to take a decision regarding the purchase of biodegradable

products. It was observed that the most preferred mode of spreading awareness regarding environmental friendly products to prospective consumers was the television, and the second preferred channel was through email. The respondents also showed eagerness about the organizations involved in manufacturing biodegradable footwear products/green products. Hence, we feel that in the future, organizations adopting sustainable strategies like manufacturing environmentally friendly products will be able to sustain themselves. Biodegradable products can be positioned as differentiated products from traditional footwear products. Since most of the respondents favored email as the second most preferred mode of information, hence, organizations can use online marketing tools and techniques apart from television advertising. The respondents were also interested in recommending biodegradable products, which means that organizations can experience positive word-of-mouth communication about their biodegradable products.

Conclusion

Consumers' awareness and intention towards biodegradable products influences their decision making towards biodegradable products. Modern consumers are interested in adopting eco-friendly products as they felt responsible for doing their bit towards conserving the environment. In traditional marketing practices, quality and price influence the consumers' decision making processes, however, in case of green marketing practices - apart from quality and price - some other factors also influenced the consumers.

Managerial Implications

Marketers should think differently while promoting biodegradable products to the present generation. New marketing promotional tools and techniques need to be developed to advertise a product to the customers. The footwear industry needs to promote biodegradable footwear products in a different way so that the consumers purchase the same with the intention of recycling the product rather than continuing to consume traditional products. Managers in modern organizations should develop marketing strategies to increase awareness regarding green products so that it creates a win-win situation for both the consumers and the manufacturers.

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