

Exploring Consumer Purchase Intention Towards Green Electrical Equipment With Special Reference To Green Electrical Fan

¹.Baivab Dutta, ²Soumika Das, ³ Poushali Khan, ⁴Souvik Ghosh, ⁵Anala Bhattacharya ⁶Dibyendu Chattaraj

Abstract

Purpose: To study the consumer perception on green electrical equipment and to know consumer perception on overall experience towards green electrical equipment and further investigate the moderating effects of green brand knowledge. to study the green purchase intention and green positioning.

Methods: The Non-Probability Judgemental Sampling, considering the limitations of time, financial supports, and other resources.

Findings: From this study it is implicated that consumers purchase intention towards green electrical equipment. This ⁸ study statistically proved that consumers are aware about the green products and it results in willingness to try green products. At the same results investigated that consumers using green products are more conscious than the consumers using traditional products.

Implications: Throughout the world, "new technology business models" that are tied to clean technologies offer consumers and investors competitive returns while addressing global concerns (UNEP, 2021). Research study observed positive and favourable purchase intention of consumers towards green fans.

Originality: Today, most people shy away from making a change in their lives without knowing how beneficial it is to them. When you adopt an environmentally-mindful lifestyle, it offers several benefits.

KeyWords: Green Purchase Intention, Attitude, Power Consumption, Green electrical equipment.

¹Student, BBA, Institute of Engineering & Management, Kolkata, India, Email: baivab.duttaiemmba2021@gmail.com

²Student, BBA, Institute of Engineering & Management, Kolkata, India, Email: soumika.dasiembba2020@gmail.com

³*Student, BBA, Institute of Engineering & Management, Kolkata, India, Email*
poushali.khaniembba2020@gmail.com

⁴*Student, BBA, Institute of Engineering & Management, Kolkata, India, Email:*
souvik.ghoshiembba2020@gmail.com

⁵*Student, BBA, Institute of Engineering & Management, Kolkata, India, Email*
anala.bhattacharyaiembba2020@gmail.com

⁶*Assistant Professor – Marketing, Institute of Engineering & Management, Kolkata, India E-mail:*
dibyendu.chattaraj@iemcal.com

Introduction

The last three decades have seen a progressive increase in worldwide environmental consciousness due to rising evidence of environmental problems. Environmental protection is increasingly becoming a necessity and part of a bigger agenda in the urbanizing world of developing countries. Environmental problems are associated with human consumption; therefore, the problem of conservation is highly related to consumer consumption behaviors. Hence consumers need to be responsive to reduce environmental damage through the consumption of environmentally friendly products. In turn, this has an impact on marketers of consumer products (Peattie, 1992; 1995; Ottoman, 1998; Paladino, 2005; Abdul- Muhmin, 2007). In the past several decades, depletion of natural resources at different levels has played an important role in environmental deterioration. For instance, Sharples, et al. analyzed extreme bushfires experienced by the Australian public in recent years that resulted in loss of human life, livestock, woodlands, infrastructure, scientific facilities, cultural sites and psychological stress by firefighters and the public at large. Similarly, Hayward, et al. stated that reduction in leaf litter and loss of biodiversity are increasing the threat of bushfires. In the same manner, the rainforests of the Amazon are suffering badly. Aragão, et al. mentioned that a shortage of rainfall is causing a significant water deficit and affecting the photosynthetic capacity of the ecosystem. Under these circumstances, fire incidence and drought-related events are increasing in number. Additionally, keeping this climatic condition in mind, some companies are making a concerted effort to handle this grave issue. Oliver and Lee as well as Alfred and Adam mentioned that Honda, GM and Toyota are largely adopting green technologies that reduce the impact of greenhouse gas emissions. Likewise, Hoelzlhammer indicated that Tesla is providing eco-friendly products to both urban and rural communities such as; Tesla Roadster (sportscar), Tesla semi (electric truck), solar roofs and Tesla Power pack to commercial units. This initiative helps to reduce energy consumption costs and electricity bills for the consumers. Around the globe, customers are becoming more interested in buying green brands due to green brand awareness. A green brand, according to Grant, is a brand that has a considerable eco-advantage throughout its competitors, as well as being capable of attracting more customers that place a high value on the creation of green purchases. According to Hartmann and Ibanez, a green brand comprises a set of traits as well as benefits connected with less detrimental environmental effects, and the formation of a good impression among customers, enhancing their environmental consciousness. Thus, it can be said that

green customers are getting momentum nowadays as they have not only environmental consciousness but also spend money to purchase green products (GP). Additionally, Soyez, as well as Joshi and Rahman (2015), have suggested that consumers' green purchase behavior is determined by product functional attributes and environmental concerns. Similarly, Kumar and Ghodeswar stated that green product purchase decisions are based on multiple factors, such as environmental friendliness/social appeal by companies as well as their inclination to examine green-product-associated information from customers. Increasingly, consumers are becoming more knowledgeable about the environment and reflecting this knowledge in their decisions to buy green products. The shift of consumer perception to green product is a great evolution in the recent year. Several changes are already appeared in consumer observation. Different variables are responsible for changing of consumer behavioral pattern. The two major revolutions in consumer market are awareness of environment friendly product or green product and switching to electronic store. The investigation shows that young consumers are more interested to green products than ever before. Young consumers are highly satisfied with the label green practices. This generation is more conscious about future, they believe that the environment will reply roughly on their unconsciousness to it, they aware about product recycles, they aware about the danger of high carbon emission in this planet. However, such awareness is also related with level of education of country citizen and their universal knowledge.

Objectives

The objectives of the project are:

1. To study the consumer green purchase intention on green electrical equipment
2. To examine & investigate the factors influence the consumer green purchase intention on green electrical equipment with special reference to green electric fan.

Literature Review

Consumer attitude on green products:

Attitude is a psychological tendency which is expressed by evaluating a particular object with some favorable or unfavorable considerations (Eagly & Chaiken, 1995). Beliefs and evaluations are the elements that make up attitudes (Assael, 1998). A person may hold some beliefs in an object, and subsequent conviction are evaluated together to form attitudes. Previous study suggests that causality

flows in the order: values-attitude-behavior (Thøgersen & Ölander, 2002). This means that the values have an impact on attitudes, which in turn affects a person's behavior. The most commonly held beliefs about green products are that these products are healthier and promising protection to a better environment. Awareness of personal hygiene or health consciousness, the attitude of care for the environment or environmental attitude, and perceived quality are believed to form attitudes towards green products.

Green Purchase Intention –

Mohd Suki, N (2021) It must be noted that consumers' intention indeed plays a crucial part in marketing strategies. Purchasing intention refers to whatever consumers ponder and plan to purchase. Consumers again determine the type of product to buy because of ecological intentions such as the quest for healthier options, environmental consciousness and sustainability. A change in consumer behaviour is often determined by the market trend. The consumer's ability to weigh the quality, price, value and availability as competitive commodities, is as a result of personal marketing behaviour. To enhance environmental- friendly lifestyle, there is the need to create awareness and use of green products which will lead to a shift from conventional products to green products. It is reported that green products have strong influence on overall green purchase intention. Outstandingly, the green purchase intention (GPI) of consumers' ultimately impacts their green purchase behavior. As consumers' have environmental concerns, they intend to buy GPs so as not to destroy the ecosystem but to act favorably and protect it for posterity. More importantly, consumers' green product awareness, price, availability, value and quality could greatly influence their GPI. In brief, consumers' who consider environmental issues are eager, prepared and likely to pay more for green products if they are conscious of its green credentials, superior value, high quality, functional attributes, environmental concerns and performance. And so, green product awareness should be created to get consumers into GPI and succeeding green consumption. (Mohd Suki, N. Green products usage: Structural relationships on customer satisfaction and loyalty. *Int. J. Sustain. Dev. World Ecol.* 2017, 24, 88–95.)

Attitude toward Green Products -

Kim, et al. (2021) Attitude toward green as a term derived from customers' appraisal and logical

judgement of the GP. Consumers will be able to choose among brand alternatives due to companies' attempts to transmit environmentally friendly aspects towards them. The consumers' preference as well as an overall assessment of the brand, which encapsulates their likes or dislikes, is linked to their attitude toward it. Prior green market analysis has shown that consumers' attitudes toward environmentally friendly behavior have a significant impact on their environmental knowledge as well as green product purchase intent. This finding is similar to that of Yadav and Pathak, who found that a consumer's attitude toward GP has a significant impact on his or her green purchasing intention. In line with these findings, Paul, et al. found that Indian consumers' attitudes strongly predict their intention to buy a green product. Certainly, according to the findings, consumers with positive views about GP are more likely to acquire a stronger tendency to purchase GP by referring to their green brands. Rezai, et al. found that consumers who have a good attitude toward a brand have a higher purchase intention for that brand. According to certain recent studies, consumers' attitudes regarding green brands have a significant impact on their decision to purchase GP. For instance, Attitude towards brands as consumers' likes/dislikes/preferences and overall evaluation of a brand.

(Kim, Y.; Han, H. Intention to pay conventional-hotel prices at a green hotel—a modification of the theory of planned behaviour. J. Sustain. Tour. 2010, 18, 997–1014. [Cross Ref])

Hypothesis 1: Attitude toward green product is positively related to purchase intention towards green electrical equipment.

Trust in green products –

Chen & Chan, 2013 & Chen & Chan, (2012) which discussed that green trust enhances the green purchasing intentions in connection with green perceived value, green perceived risk, green perceived quality and green satisfaction, few attempts have been made empirically to examine the impact of perceived competence, benevolence and integrity on green purchasing intentions through green trust.

Green trust is a will to depend on a product, service or brand for a basic belief or expectation produced from credibility, goodwill, skills in environmental performance [22]. In reviewing trust to environmentally friendly products, it can be studied through environmental reputation on this product and it is generally trusted, environmental performance is generally reliable, environmental claims can be trusted, environmental awareness of this product fulfills to expectation, and product

promises and committed to protecting the environment [22] (Green Customer Behavior: Impact of Green Brand Awareness to Green Trust, D P Alamsyah , and R Febriani, 2020)

Hypothesis 2: Trust in green products is positively related to to purchase intention towards green electrical equipment.

Eco labeling and Certification-

Ecolabels are marks placed on product packaging or in e-catalogs that can help consumers and institutional purchasers quickly and easily identify those products that meet specific environmental performance criteria and are therefore deemed “environmentally preferable”. Ecolabels can be owned or managed by government agencies, nonprofit environmental advocacy organizations, or private sector entities. Ecolabels can be single-attribute, meaning they focus on a single lifecycle stage (i.e. the use phase) of a product/service or a single environmental issue (i.e. VOC emissions). They can also be multi-attribute, meaning they focus on the entire lifecycle (manufacture, use, maintenance, disposal) of a product/service and address many different environmental issues (i.e. energy use, chemical use, recycling, and more).

Green product certifications are intended to outline and confirm that a product meets a particular standard and offers an environmental benefit. Many product labels and certification programs certify products based on life-cycle parameters, making them multi-attribute programs. These parameters include energy use, recycled content, and air and water emissions from manufacturing, disposal, and use. A green product certification is considered most respected when an independent third-party is responsible for conducting the product testing and awarding the certification. Third-party means they are independent of the product manufacturer, contractor, designer, and specifier. Third-party labels and green product certification programs can be helpful in evaluating the attributes of green products because they validate that the product meets certain industry-independent standards. They can also offer greater assurance to consumers, designers, specifiers, and others that a product's marketing claims accurately reflect its green attributes. Many product certifications are also recognized within comprehensive green building rating systems such as LEED, Green Globes, BREEAM, and the National Green Building Standard. As a result, green product certifications are on the rise as market conditions change and the demand for greener products continues to increase.

Hypothesis 3: Eco labelling and certification is positively related to purchase intention towards green electrical equipment.

Consumer environmental awareness –

Purohit (2011) in his study on “Consumer buying behaviour on green products” analysed the consumer attitude, roll of marketing mix in buying intention and relationship between consumer attitude and buying intention towards green marketing. The study was conducted with 238 post graduate students. The study found that product, price, place and promotion had significant correlation with buying intention of eco-friendly products.

A study conducted by D’Souza et al., (2006) contrary reported that generally, perception of green products is negatively associated with customers intention to purchase them if they are of higher prices and low quality in comparison to traditional products.

Maha Mourad, (2012), explained in his study on “Perception of green brand in an emerging innovative market”, stated the factors affecting the green brand preference of an emerging innovative market and analysed the four concepts of green brand preference.

The study by Moloy Ghoshal (2011) examined that green marketing was still in infancy. In the perception of marketing scholars, green marketing refers to eco-level and market segmentation and the role of structural factors and economic incentives in influencing consumer behavior. The green marketers must understand to satisfy two objectives: improved environmental quality and customer satisfaction.

Hypothesis 4: Consumer environmental awareness is positively related to purchase intention towards green electrical equipment.

Eco Friendly -

Wiwik Handayanil (2017), the environmental technologies that advance sustainable development by lowering risk, increasing cost effectiveness, boosting process efficiency and developing goods that are advantageous to the environment or benign are what are commonly referred to as the environmental products and services market or environmental technologies market.

Rendra Abdi Prayogo (2017), environmental sustainability in business is the practise of making money off of the requirements of the consumer without endangering the environment. Environmental technologies are frequently used interchangeably with clean technologies and green technologies.

Veteran (2017), the difference between the first two terms is that the second one addresses

regulations and public awareness while the first term addresses regulations and directly addresses society's green values.

In the in the financial world, clean technologies are new technology-related business models that provide consumers and investors with competitive returns while addressing global issues (OSEC, 2009). Green products are typically referred to as ecological or environmentally friendly products.

Hypothesis 5: Eco friendly is positively related to purchase intention towards green electrical equipment.

Power consumption -

A review programme, Anagha Darshan (2022) will assist in focusing on differences in energy costs, availability, and dependability of energy supply, determining the optimal energy mix, identifying energy saving solutions, and retrofitting for energy conservation equipment. - Energy consumption by type of appliance and usage, energy cost and tariff data, and energy management techniques are among the information and documents necessary during the full audit and analysis.

Rohan Bhojwani (2022) in the first stage auditing, it means to minimise energy usage in places where energy is wasted and reductions will not cause disruptions to the various functions are implemented. This involves replacing inefficient appliances and lighting systems with more efficient ones (5 stars rated).

Naman Girdhar (2022), each appliance is given a rating of one to five stars. Having 5 stars means it is exceptionally efficient and gives the highest long-term cost savings. Electricity goal is to assist the customer in making an educated decision about energy savings and a result that the cost-saving potential of household and other equipment that will save the power bill.

Prabhu Paramasivam (2022), the energy consumption using conventional loads in each scenario is calculated and compared to the energy consumption using energy-efficient loads instead.

Hypothesis 6: Power consumption is positively related to purchase intention towards green electrical equipment.

Research Methodology

This study was analytical and correlational in nature. It was meant to determine the perception of the

customers towards green electronic equipment. The study was aimed at measuring the relationships among various variables; therefore, it followed explanatory research technique based on survey. This research aims for exploring the scope of consumer perception on green electrical equipment with special reference to green fan.

The collection of data has been carried out physically by circulating questionnaire using forms. The questions used a five-point Likert scale, ranging from “I strongly agree” to “I strongly disagree”.

The Quantitative Type of Research had been used to collect the data.

Data Collection Method: Primary data had been used in the research method.

Sampling Method: The Non-Probability Judgmental Sampling, considering the limitations of time, financial supports, and other resources.

Sample: The data had been collected from the people of Kolkata and adjoining areas. The average sample size is 208.

The sample collection time duration was 1 month.

Measuring Instruments:

Structured self-developed questionnaire had been used for the research instrument.

The following instruments were utilized: A five-point Likert type scale [5=Strongly Agree (SA), 4=Agree (A), 3=Neither Agree nor Disagree (N), 2= Disagree (D), 1=Strongly Disagree (SD)].

Analysis Tools Used: Exploratory Factor Analysis using SPSS 18, and Descriptive Statistics.

Aspects: The basic six aspects are: Eco Friendly, Environmental awareness, Trust, Attitude, Healthy Lifestyle, Trends.

Instrument and Data Collection Procedure:

The study consisted of 6 independent variables such as Eco Friendly, Environmental awareness, Trust, Attitude, Healthy Lifestyle, Trends. All the measures were rated on 5-item Likert scale where 1=strongly disagree and 5=strongly agree.

Demographic profile:

Our questionnaire was distributed during February 2023. During this time, 208 questionnaires from in and around Kolkata and adjoining areas were collected and used for analysis. An illustration

representing the respondent demographic percentages is shown in Table below.

Demographic Variables	Description
Gender	Male
	Female
Age	≤ 25
	26-35
	36-45
	46-60
Education	Under-Graduate
	Graduate
	Post Graduate & Above
Marital Status	Married
	Un-Married
Profession	Service
	Business
	Self Employed
	Homemaker
	Students
Household Income	Below 50,000
	50,000-75,000
	75,001- 100,000
	Above 1,00,000

Table 1. Demographic Profile

These figures illustrate the Gender, the range of age, the level of education, their profession and the range of personal income and marital status in Kolkata and adjoining areas. The majority of respondents were students (44.1%). Most of the respondents were female (59.1%). The age group of majorities of respondents was >40-60years old (22.8%). The educational qualification of majority of respondents is Under Graduate (42.5%) Convenience sampling is increasingly used in social psychology and consumer behaviour research. (Blogger, 2011).

Nagel kerke R square gives the percentage of variation in the dependent variable accounted for by the independent variables. The table shows that the model accounted for 28.7% %variance in dependent variable ($R^2 = .287$) thus reflecting good fitted model. It also indicated that there is strong relationship among dependent and independent variables.

Table2. Sources of constructs from previous studies

Sl. No.	Items	Source
1	Eco Friendly	W.Handayani, R.A. Prayogo (2017)
2	Environmental awareness	D P Alamsyah, and R Febriani (2019)
3	Attitude	S.Siyal, M.J Ahmed, R,Ahmad, B.S Khan & C.Xin (2021)
4	Healthy Lifestyle	K. Badari Narayana, J. Krishna
5	Trends	Rohan Bhojwani, Anagha Darshan (2022)
6	Trust	Yatish Joshi Zillur Rahman (2015)
7	Power Consumption	Anagha Darshan, Naman Girdhar, Rohan Bhojwani, Kanish Rastogi, S. Angalaeswari, L. Natrayan, and Prabhu Paramasivam (2022)

Analysis & Findings

The objective of current study was to compare the consumer perception on overall experience towards green electrical equipment and also to investigate the moderating effect of green knowledge and their purchase intention.

Therefore, the model was estimated following maximum likelihood technique using logistic regression Abasyn Journal of Social Sciences method with SPSS. As Logistic Regression does not follow multivariate assumptions of normality and linearity, therefore, they did not be tested. The model fit was determined by Nagelkerke R², Hosmer and Lemeshow and classification matrix. Whereas hypothesized paths were tested using Exponentiated Beta Coefficients.

Model Estimation and Assessment of Overall Fit: It is evident from Table 3 that the initial log likelihood function (-2LL) in the base model is 174.434a which is the likelihood before any independent variable is entered into the model. It should be larger than predicted model's -2LL if a relationship is existed between dependent and a set of independent variables. Table indicates that -2 Log of predicted model is 174.434a which is sufficiently smaller than 219.3. The difference between the two is represented by Chi-square statistic. Significant chi square value ($\chi^2 = 106.02$) indicates

that there is relationship between dependent and independent variables. It means independent variables in the model account for some variation in the dependent variable.

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	174.434a	0.186	0.287

Estimation terminated at iteration number 5 because parameter estimates changed by less than .001. Nagel kerke R square gives the percentage of variation in the dependent variable accounted for by the independent variables. The table shows that the model accounted for 28.7% %variance in dependent variable ($R^2 = .287$) thus reflecting good fitted model. It also indicated that there is strong relationship among dependent and independent variables.

Step	Chi-square	df	Sig.
1	11.624	7	0.114

Hosmer and Lemeshow goodness of fit given in Table 4 measures and compare the correspondence between the actual and predicted values of the dependent variables. For this purpose, it should accept the null hypothesis of no difference. In this study we found insignificant chi-square statistic ($\chi^2 = 11.624$,) which indicated that there is no or minimum difference between the observed and expected values from the respondents thus indicating good fitted model.

Classification Matrix

Observed		Predicted		
		AT		Percentage Correct
		not interested	interested	
AT	not interested	13	32	28.9
	interested	8	155	95.1
Overall Percentage				80.8

From the above table it can be drawn that total 80.8 percentage of correct classification of respondents. Since all the measures of goodness of fit were meeting the criteria, therefore, it was concluded that the model was good fitted. Since all the measures of goodness of fit were meeting the criteria, therefore, it was concluded that the model was good fitted.

Hypothesis Testing

Variables	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)		Test Result
							Upper	Lower	
Eco Friendly	-0.829	0.481	2.971	1	0.085	0.436	0.17	1.12	Rejected
Environmental Awareness	-1.878	0.51	13.575	1	0.000	0.153	0.056	0.415	Accepted
Trust	-2.681	0.51	27.597	1	0.000	0.068	0.025	0.186	Accepted
Attitude	-0.496	0.487	1.038	1	0.308	0.609	0.234	1.581	Rejected
Green Purchase Intention	-0.999	0.563	3.155	1	0.076	0.368	0.122	1.109	Rejected
Eco Labeling and Certification	-1.052	0.485	4.698	1	0.030	0.349	0.135	0.904	Accepted

Hypotheses Testing: Hypothesis 1 stated that “Eco friendly” which is rejected. It has significant negative relationships with attitude towards green electrical equipment. consumers who experienced green electronic equipment they do not consider it as eco-friendly. Hypothesis 2 stated that “Environmental awareness” which is accepted. It has significant positive relationship with attitude towards green electronic equipment. Consumers think that yes green electronic equipment spread environmental awareness. Hypothesis 3 stated that “Trust” which is rejected. It has significant positive relationships with attitude towards green electrical equipment. That means consumer trusts green electronic equipment. Hypothesis 4 stated that “Attitude” which is rejected. It has significant negative relationships with attitude towards green electrical equipment. Hypothesis 5 stated that “Green purchase intention” which is rejected. It has significant negative relationships with attitude towards green electrical equipment. Hypothesis 6 stated that “Eco Labelling and Certification” which is Accepted. It has significant positive relationships with attitude towards green electrical equipment

Conclusion

This paper aims to explore consumer’s awareness about green products and green marketing. The topic has been chosen because of environmental concern as the environmental problems becoming worst day by day. Current study statistically proved that consumers are aware about the green products and it results in willingness to try to green products. At the same results investigated that consumers using green products are more conscious than the consumers using traditional products.

Research study observed positive and favourable perception of consumers towards green fans. Pricing was the major concern in buying green fans.

Limitations

This study has some potential limitations. We were able to collect a very limited number of sample paper for references. So, we believe that there is a need for further researches on the topic. The access to different people and organisations were limited. The sample size was also too small that is around 110 data due to limited amount of time and resources. Also because of which we had to choose a smaller geographical area to work upon, which made it little difficult to find the significant relationships among the different factors of the model.

Reference

1. Ali, J. (2017). Consumer Perception Towards Green Practice: An Empirical Study on Young Consumer from Bangladesh Perspective, 33, 12 – 17.
2. Yue, B. (2020). Impact of Consumer Environmental Responsibility on Green Consumption Behavior in China: The Role of Environmental Concern and Price Sensitivity, 13, 8 – 12
3. Yoshi, Y. (2015) Factors Affecting Green Purchase Behaviour and Future Research Directions, 2, 4-12
4. Shivan. M, Sharma J. (2017) Factors Influencing Students' Intention to Purchase Green Products: A Case Study in Universiti Utara Malaysia, 24, 11-17
5. Mohamad, M. (2019). Factors Affecting the Consumers Decision Behavior of Buying Green Products, 9, 234 – 342
6. Francis, M. (2020) 22 -24 Factors Affecting the Consumers Decision Behavior of Buying Green Products, 3, 120 – 132
7. Natrayan, L. (2020). Energy Audit of a Residential Building to Reduce Energy Cost and Carbon Footprint for Sustainable Development with Renewable Energy Source, 22, 77 – 99
8. John, B. (2021). Introduction to Ecolabels and Standards for Greener Products, 8, 77 – 88.
9. Verra, S. (2021). Green Building Standards And Certification Systems.