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An Empirical Analysis on Determining the Eco-Friendly Intentions

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Abstract:

Eco-friendly automobiles mitigates carbon emission and highly sustainable, widely acceptable for consumers health aspects. In this connation, it is considerable factor for a marketer to indulge his self to identify that what consumers' percept about the company's product and promotion factor that would intends the most and intern leads to eco-friendly purchase decision. By intensive literature review the three higher order factors along with age, gender and educational qualifications are considered in the present study with price, product and promotion as independent factors which influence eco-friendly automobile purchase intention. An empirical examination was performed through a survey by considering the sample size of 151 respondents who purchase eco-friendly automobile. Descriptive and inferential statistical techniques are performed such as factor analysis and multiple regressions. By the observations it is evident that demographics have a considerable intervention along with product and promotion on purchase intention and subsequently intention leads to green purchase decision. Eventually, results along with discussions and conclusions are drawn in the study.

Keywords: Consumer intentions, green product, promotions, demographics.

Introduction:

Eco-friendly marketing, it is the aspect of manufacturing, promoting and selling the services / products which are environmentally sustainable and good health benefits for consumers and these are produced and packaged in a eco-friendly way (Ansar, 2013; Mahmoud, 2018; Saini, 2013). It is a view point of the marketer that potential and needed consumers would purchase or show intention to purchase these products because of seeking such benefits and their health conscious (Ansar, 2013; Saini, 2013). It is an obvious assumption that consumers of such conscious would prefer more eco-friendly products than less-green products comparatively were, it is significant to study that factor which influence (Saini, 2013). In the present study along with product, price, promotion the intervening effect of socio-demographics such as age, gender and educational qualifications are studied.

Literature Review:

In business, the words "eco-friendly product" and "environmental product" are generally used for efforts to protect or stimulate the natural environment by conserving energy and / or resources and reducing or eliminating the use of harmful factors, pollution and waste (Mahmoud, 2018; Mahmoud, Ibrahim, Ali, & Bleady, 2017; Saini, 2013; Singh, 2014). The price that the consumer pays is actually the price of the product. It is a critical component of the marketing mix (Rizwan & Siddiqui, 2014). Most consumers will only be willing to pay a premium if there is a perception of the added value of the product. Green advertising aims to influence consumers' purchasing behavior by encouraging them to buy products that do not pollute the environment and draw attention to the positive results of their purchasing behavior for themselves and the environment (Kalsi & Singh, 2015; Lee, 2017; Rizwan & Siddiqui, 2014; Singh, 2014). Purchase intention can be defined as "the likelihood that a consumer intends to purchase a product or service in the future"(Ansar, 2013). Positive purchase intention leads to real purchase or negative purchase intention that restricts consumer not to buy (Manideep, 2019d, 2019b, 2019a; Manideep, Reddy, & Reddy, 2019b).

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Research Design / Framework:

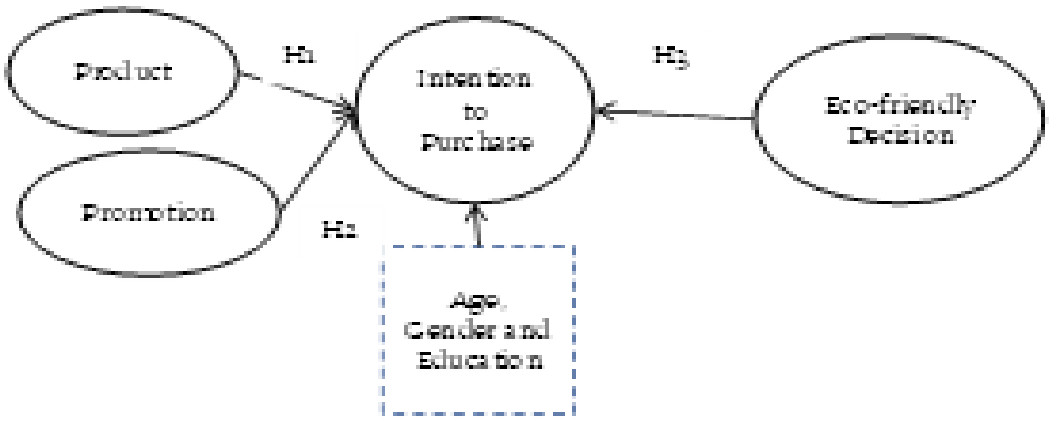

Figure 1: Research Design

Hypothesis Formulation:

H1: Product factor has a significant positive effect on consumers' intention to purchase eco-friendly automobile.

H2: Promotion factor has a significant positive effect on consumers' intention to purchase eco-friendly automobile.

H3: Consumers' decision for purchase eco-friendly products has a significant positive effect on Purchase automobile.

H4: Socio-demographics age, gender and education aspects have a significant positive intervention on consumers' intention to purchase eco-friendly automobile along with independent factors.

Methodology:

The effects between the dependent construct purchase intention and the independent constructs i.e., product, promotion and intention are identified and evaluated using hierarchical multiple regression in which demographic factor age, gender and educational qualification interventions are observed and determined in a step-wise order. Validity data adequacy, reliability and correlations are performed.

SCALE DESIGN

The constructs of the proposed research model i.e., price, is been adopted from study made on implications of eco-friendly products food products. The construct of product and promotion was also studied widely in the literature (Kalsi & Singh, 2015; Mahmoud et al., 2017). The rough draft of the questionnaire was examined by field experts for face validity and some of the items are removed as suggested by the field experts. The final questionnaire contains the following items. The items of the intention construct are made according to the study as: 'Do you intent for purchasing eco-friendly products', and 'do you intent to for eco-friendly products from this company?' on a seven point scale (1=no trust to 7= complete trust). The second construct, product benefit is adopted from the studies made with respect to application of eco-friendly products value (Mahmoud et al., 2017; Singh, 2014).

The adopted items are revised as to this study as, 'how beneficial do you consider these eco-friendly products'. Semantic differential scaling is used to identify the intensity, evaluation criterion and potency of the construct on product construct (Intensity: 1= very low to 7=very high, and potency: 1=Very strong to 7= very week). The other vital construct of the model promotion is adopted for the study made to assess the perception of public on eco-friendly products (Ansar, 2013; Rizwan & Siddiqui, 2014). The items of the construct are, 'feelings related to the promotion of eco-friendly products' on a seven point scale (1-very positive to 7= very negative), 'promotional attractiveness related to the products on a seven

point scale (1= not worried at all to 7= very worried), and the other item as, 'adverse health effects' on a seven point scale (1= not at all effect to 7= very adverse effect). The focused construct intention to purchase was adopted for the study made from recent literature (Ansar, 2013; Lee, 2017; Rizwan & Siddiqui, 2014; Saini, 2013;Manideep, 2019b; Manideep, Reddy, & Reddy, 2019a) and the scale was revised according to the present study as 'Eco-friendly products offers enhanced features which is effective for environmental concern' and 'Compare to non-eco-friendly products, these are beneficial for health' on a seven point scale (1= Strongly agree to 7= Strongly disagree).

The questionnaire consists of nine questions and all the questions were made in relevance to likert scale which is very famous in capturing intention and behavioral studies(Ansar, 2013; Jain, 2019; Kalsi & Singh, 2015; Mahmoud, 2018). The items in the scale are validated using explorative factor analysis (Manideep et al., 2019b).

Demographic Analysis:

Participants' demographic characteristics: Convenience samples were drawn from Vijayawada urban area via mall intercept method. Before, distributing the questionnaire they were questioned about their awareness of eco-friendly products / eco-friendly products. Only those who have had such an awareness of the subject area are considered as valid to be sampled inclusion.

The method adopted for data collection is a non-probabilistic sampling method- snowball sampling such that, referrals from consumers as a chain process responses are collected and about 155 responses are collected in that after eliminating the inappropriate and semi-filled responses are removed in the final process of data analysis and only a few about 4 responses cases are replaced with mean values and that task is achieved by SPSS. Finally, 151 samples are considered for analyzing the results. The effect of demographic factor age, gender and educational qualification are intervention factors observed along with independent constructs in the study.

Correlation among constructs:

Study Construct	Eco-friendly Decision	Intention	Product	Promotion	Reability	N
Eco-friendly Decision	1	-.043	.132	.029	0.716	151
Purchase Intention	-.043	1	.267	.095	0.535	151
Product	.132	.267	1	.125	0.690	151
Promotion	.029	.095	.125	1	0.586	151

Table 1: Correlation and reliability Test

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

Analyzing the demographic characteristics of the respondents, from the total sample adopted: about 61.90 percent are male and the rest i.e., 38.10 percent are females. When come to age of the respondents about 13.70 percent of the respondents are below 20 years, about 27.3 percent of the respondents are in the age of 20-25 years, and about 42.4 percent of the participants are in the age category of 25-30 years. Finally, about 16.5 percent of the respondents are above the age of 30 years. With respect to marital status of the respondents about 65.60 percent of the respondents are married and the rest about 34.40 percent are unmarried.

Moving to the other category, about 93.20 percent are in operational level, no respondents belong to tactical level and about 6.80 percent of the respondents are in strategic level. The most important aspect considered for our study is educational

qualification of the respondents, about 71.9 possess graduation as qualification that are in majority and only few in number about 4.3 percent are of neither with any qualification.

INFERENTIAL ANALYSIS

A principle components factor analysis was performed to determine the factors from the adopted questionnaire. Before to that, KMO and Bartlett's test was performed to determine the sample adequacy and it is found that by test it is 0.613 which is sufficient enough for performing factor analysis. This is represented in the below table. The items of the model are measured on a seven point likert scale were, mean and standard deviation of the model constructs are represented in the table below, that the mean of trustworthiness is 3.542, the mean of purchase intention is 3.942, the mean of message expertness is 4.892 and the mean of message attractiveness is 5.449.

The constructs and the items are drawn from the literature, but the validity and to examine the variance explained by these constructs to the proposed model a dimension reduction technique is used in the present study (Manideep, 2019a, 2019b; Sudheer, Reddy, & Manideep, 2019).

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.094	23.272	23.272	2.094	23.272	23.272	1.940	21.554	21.554
2	1.840	20.450	43.722	1.840	20.450	43.722	1.561	17.348	38.901
3	1.353	15.030	58.752	1.353	15.030	58.752	1.435	15.942	54.843
4	1.040	11.560	70.312	1.040	11.560	70.312	1.392	15.469	70.312
5	.658	7.313	77.625						
6	.450	4.999	95.699						

Table 2: Explained variance of the model

All the items and its responses are loaded in SPSS and Exploratory factor analysis is performed and it is found that four constructs evolved and the variance explained by these constructs is about 70.312 percent. As per the literature, a model explaining 60 percent of variance is considered valid and .the factors are decided based on the eigenvalue, if the eigenvalue is >1 it is considered as a factor(Manideep, 2019b). The SPSS out below table 3 displays the result along with Rotation Sums of Squared Loadings.

	Component			
	Eco-friendly Decision	Intention	Product	Promotion
GD1	.846			
GD2	.835			
GD3	.716			
PI1		.860		

PI2		.845		
PRO1			.844	
PRO2			.827	
PROM1				.817
PROM2				.805

Table 3: Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.a

The rotation technique in this model is varimax rotation, which is an non-orthogonal method that, from table 5, it can be determined that out of 15 items about 6 items are removed due to cross loadings and item loadings under that factor is less that 0.6 and this is done (Manideep, 2019b, 2019d, 2019a, 2019c). It can be observed from table 4, that all the items are >0.6(Correlated with that factor) and 3 items are under price construct, and 2 items are under product construct, promotion factor and at last 2 items under purchase intention construct. The factor analysis does not define any causal relation between the factors but the validity of convergent and divergent validity is evaluated by this.

Hierarchical Multiple Regression:

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.565	.991		.570	.570
	Eco-friendly Decision	.236	.131	.141	1.802	.074
	Product	.283	.084	.264	3.361	.001
	Promotion	.194	.159	.096	1.221	.224
2	(Constant)	1.705	1.082		1.575	.117
	Eco-friendly Decision	.219	.129	.131	1.700	.091
	Product	.294	.083	.275	3.545	.001
	Promotion	.208	.156	.103	1.334	.184
	Gender	-.890	.367	-.187	-2.424	.017

Table 4: Standardized Regression Coefficients

A serial multiple hierarchal regression method is used to observe the impact of the independent variables price, product and promotion on purchase intention from above table it can be determined that price is positively and significantly effects (β =0.251, P<0.05) the consumers purchase intention, promotion do not significantly effects(β =0.195, P>0.05) the consumers purchase intention and product positively and significantly effects(β =0.117, P<0.05) the consumers purchase intention and the awaited objective of the study that educational qualification of the consumer has a significant impact (β=-0.15,P<0.10)on the consumers purchase intention.

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
3	(Constant)	1.781	1.127		1.581	.116
	Eco-friendly Decision	.223	.130	.133	1.712	.089
	Product	.295	.08312	.276	3.541	.001
	Promotion	.209	.157	.104	1.334	.184
	Gender	-.868	.378	-.183	-2.295	.023
	Age	-.049	.195	-.020	-.254	.800
4	(Constant)	2.663	1.194		2.229	.027
	Eco-friendly Decision	.254	.130	.152	1.959	.052
	product	.311	.083	.290	3.751	.000
	Promotion	.188	.155	.093	1.214	.227
	Gender	-.794	.376	-.167	-2.115	.036
	Age	-.109	.195	-.045	-.559	.577
	Educational Qualification	-.586	.285	-.160	-2.052	.042

Table 5: Standardized Regression Coefficients
a. Dependent Variable: Intention to Purchase Eco-friendly Product

Results and Conclusion:

From the first model: message attributes along with educational qualification of the respondents have predicted a 14 percent of proportional variation (coefficient of determinant R^2 is 0.14). It is observed that the proportion of variation has increased by 3 percent (R^2 = 0.11, change in R^2=0.03) about 3 percent of the variance is explained by qualification of respondents and it is a key element in forming purchase intention.

Model	R	R Square	Adjusted R Square	R Square change	F change	Sig. F change
1	.318	0.101	0.083	0.101	5.525	0.001
2	.369	0.136	0.112	0.035	5.877	0.017
3	.369	0.136	0.107	0	0.064	0.8
4	.401	0.161	0.126	0.025	4.212	0.042

Table 6: Model Summary

Hence, it is proved that both the hypothesis, H1 and H2 are positive significantly associated with purchase intention means, both can contribute to formation of purchase intention and H3, the Message Trustworthiness was not significant that means consumers do not consider this as a considerable factor in purchase decision. The control variable qualification of respondents also a major decision contributing factor.

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