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Abstract- Green Marketing is considered as one of the major trends in modern businesses. Today, green marketing is a one of the main focal points in business endeavours to gain competitive advantage. Consumers are becoming more sensitive in their environmental attitudes, preferences and purchases. In this regard an extensive study has been undertaken to investigate the awareness and perception level of the consumers of Kolkata and suburbs. The main purpose of the present study is to investigate the Awareness & Perception of the consumers towards green marketing practices. A descriptive research has been conducted with the help of primary data collected from 197 respondents with the help of personal interview and questionnaire survey. CHI-SQUARE ANALYSIS is used to check the influence of consumers' demographics on Awareness & Perception towards Green Marketing Practices. RELIABILITY TEST has been done to check the internal consistency of data, PRINCIPAL COMPONENT ANALYSIS, MULTIPLE REGRESSION ANALYSIS and CONFIRMATORY FACTOR ANALYSIS are performed to identify major factors contributing towards Awareness & Perception of the consumers; to investigate their influence level and to frame an equation on the basis of the same; and to ensure whether hypothesised model is a perfect fit with the original model. Finally a STRUCTURAL EQUATION MODELING has been framed.

Keywords: *green marketing, awareness, perception, consumers, model.*

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Perception-Awareness Model with Respect to Green Marketing Practices-A Study in Kolkata and its Suburbs

Dr. Dipa Mitra [α], Mr. Jayjit Chakraborty [σ] & Mr. Shantanu. P. Chakraborty [ρ]

Abstract- Green Marketing is considered as one of the major trends in modern businesses. Today, green marketing is a one of the main focal points in business endeavours to gain competitive advantage. Consumers are becoming more sensitive in their environmental attitudes, preferences and purchases. In this regard an extensive study has been undertaken to investigate the awareness and perception level of the consumers of Kolkata and suburbs. The main purpose of the present study is to investigate the Awareness & Perception of the consumers towards green marketing practices. A descriptive research has been conducted with the help of primary data collected from 197 respondents with the help of personal interview and questionnaire survey. CHI-SQUARE ANALYSIS is used to check the influence of consumers' demographics on Awareness & Perception towards Green Marketing Practices. RELIABILITY TEST has been done to check the internal consistency of data, PRINCIPAL COMPONENT ANALYSIS, MULTIPLE REGRESSION ANALYSIS and CONFIRMATORY FACTOR ANALYSIS are performed to identify major factors contributing towards Awareness & Perception of the consumers; to investigate their influence level and to frame an equation on the basis of the same; and to ensure whether hypothesised model is a perfect fit with the original model. Finally a STRUCTURAL EQUATION MODELING has been framed. This model may help the policy makers of the Indian green marketers to strengthen their marketing strategy and to improve their eco friendly performance, if required, to promote a green lifestyle.

Keywords: green marketing, awareness, perception, consumers, model.

I. Introduction

Green marketing is an emerging concept, which deals with practicing safe practices such that people are aware about their surroundings and the problem, while purchasing a product and disposing it off after use. It has environmental impact, as it is about increasing the awareness to consumer and making them sensitive, such that they switch to green product and services.

Green marketing is gaining popularity and success because of its environmental friendly approach. Green products are easy to use and dispose off as they can be recycled and reused. This concept is becoming a trendsetter as it is allowing most of the consumer about environmental issues and helping them to become selective in using green products. Consumers nowadays are becoming more and more sensitive and selective in their approach for green products.

Customer satisfaction plays a very important role as far as green marketing is concerned. There is lot of pressure to the manufacturers politically, socially and ethically, in manufacturing of green product, that is economical and suits consumer needs. Companies are becoming more and more competitive in manufacturing of green products, as most of the manufacturers are profit driven, and are motivated to embrace changes. Purchasing behaviour of the customer is changing from traditional product to green products as they are nowadays much more aware of the environment and its surrounding. The packaging, advertising, and marketing of green products have gone through sea change in recent years, but the problem these firms are facing is the cost in the production and manufacturing of green products and making it available for the masses.

In this respect an empirical study has been undertaken to understand the Awareness & Perception of the consumers of Kolkata and its suburbs towards green marketing practices; to investigate the major factors and their influencing level on Awareness and Perception towards green marketing practices; and finally to frame a model on the same to facilitate the policy decision of the green marketers.

II. Literature Review

Follows, S.B and Jobber, D. (2000) have worked in creating values and specific attitudes. They tried to analyze consumer behaviour in purchase intention and the consequences that leads to ease of disposal of green products. Authors have tried to identify the results of using green products and had provided a background in analyzing the attitude of the consumers using green products.

Laroche et al. (2001) have suggested in their study that, consumers are ready to pay high cost while purchasing a green product, as they find that, there lies an opportunity for big company and businesses in investing in eco friendly products. Manufacturers are

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making green products, as they find it profitable for the companies and businesses to invest in green products.

Hartmann et al. (2005) have worked on and have come up with a strategy that is attracting lot of attention from manufacturers and consumers, both in marketing and branding green products. It assumes emotional and economic benefits in marketing green products, both for businesses and consumers as a whole. The study focuses on branding and marketing green products.

D'Souza et al. (2006) have found that, there is a lot of expectation of the consumers regarding high quality green products, which are environmentally user friendly and can be recycled, as well as cost effective. To market green product quality, cost and awareness among the consumer play a very important and vital role.

Clem (2008) has emphasized that, consumers nowadays are becoming more concerned about the environment and there is an urge among consumers to use green products and adopt green practices. The continuous effort by government and other political sources have positive impact in increasing consumer awareness. The socio, economic and political scenario had been responsible for the change in attitude and purchase of green products.

Singh, S.P (2008) has highlighted the problems associated with green products. Green marketing can be applied to consumer goods, services, industrial goods, eco tourism and other related areas. Companies manufacturing and green products, keeping in mind the consequences of producing green products, are able to venture into new markets and are able to generate profits as compared to the companies, that lack vision in manufacturing green products.

Andrews, C. and Devault, D. (2009) have been able to explain the correlation between government policy, business strategy, that is responsible to develop a market for green product. Businesses have encouraged innovation and adopted new technology, that is promoting the production of green products. Consumer behaviour has undergone a paradigm shift and is acting as a key driver in promoting green products.

Mishra, P. and Sharma, P. (2010) in their work, have tried to understand the impact of green marketing in Indian Context and suggested the ways that can be adopted to promote green marketing in future. As per the authors, green marketing is sure and certain to grow in future. However, there are challenges in implementing green strategies in Indian context, such as lack of awareness, standardization and authenticity.

Drozdenko et al. (2011) have highlighted some of the very important and critical areas, that are related to pricing, distribution and marketing strategy for green products. It was found that there are gender differences for the product categories, but there were no differences, that were observed with respect to education and family income. It was found that, consumers are ready to pay higher prices for purchase of green products.

Dey, P. (2015) has discussed the characteristics of Indian consumers such as demographic factors such as age, qualification and income, that play a vital role for the companies and the manufacturers in formulating green marketing strategies, that are impacting consumer behaviour in use and purchase of green products. Indian consumers in general, lack awareness and interest in purchase of green products.

Rahman et al. (2017) have been able to focus on the advertising and promotional strategy, that is increasing the awareness about green products among consumers. A strong correlation was found between the consumer perception and green marketing strategies opted by the manufacturers. The study emphasizes the use of marketing, and selling green products that are environment friendly.

III. Research Objectives

The main purpose of the present study is to investigate the *Awareness & Perception* of the people of Kolkata and its suburbs *towards green marketing practices, to point out the* most significant factors influencing respondents *Awareness & Perception towards Green Marketing Practices*, and to identify the impact of those factors on Consumer *Awareness & Perception* and finally to established a model to facilitate the policy decision of the green marketers regarding this issue checking the model fit.

IV. Research Methodology

A descriptive research has been conducted with the help of primary data collected from the respondents by personal interview and close ended questionnaire. After collecting data from 197 respondents through questionnaire survey from Kolkata and its suburbs, CHI-SQUARE ANALYSIS is used to check the influence of consumer demographics on *Awareness & Perception towards Green Marketing Practices*. RELIABILITY TEST has been done to check the internal consistency of the data. PRINCIPAL COMPONENT ANALYSIS is performed to identify major factors. MULTIPLE REGRESSION ANALYSIS is used on the major factors identified to investigate their influence level and to frame an equation on the basis of the same. Confirmatory Factor Analysis is applied to ensure whether hypothesised model is a perfect fit with the original model or not. Finally a STRUCTURAL EQUATION MODELING has been framed to confirm all the paths of the model are associated with statistically significant coefficients and the model is a perfect fit.

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V. Analysis and Discussion

a) *Chi-Square Analysis*

Table 1: Chi-Square Analysis

DEMOGRAPHICS OF THE RESPONDENTS		AWARENESS & PERCEPTION TOWARDS GREEN MARKETING PRACTICES		CHI-SQUARE VALUE	SIGNIFICANCE LEVEL
		LOW	HIGH		
GENDER	Male	57.1	42.9	3.541	.344
	Female	52.2	47.8		
AGE GROUP	18-25	64.6	35.4	43.125	.002*
	26-35	51.5	48.5		
	36-45	25.3	74.7		
	46-55	36.2	63.8		
	56-66	40.7	59.3		
INCOME LEVEL	Low	82.6	17.4	18.287	.001*
	Medium	68.1	31.9		
	High	30.9	69.1		
RESIDENTIAL AREA	Main City	36.4	63.6	31.653	.000*
	Suburb	74.3	25.7		

Chi-Square analysis depicts that, consumer demographics like *Age, Income Level* and *Residential Area* play significant role in *Awareness & Perception towards Green Marketing Practices*. Only *Gender* has no influence on the same.

The result also reveals that these three has significant influence (0.002, 0.001 and 0.000 respectively) on awareness & perception level towards green marketing practices whereas though female respondents are more aware than male, but as a whole the result of the test shows that Gender doesn't have significance influence (0.344) on awareness & perception towards green marketing practices.

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b) Principle Component Analysis

Table 2: Summary Table of Principle Component Analysis

Reliability Statistics			
Cronbach's Alpha	.834		N of Items 18
KMO and Bartlett's Test			
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.			.855
Bartlett's Test of Sphericity Approx. Chi-Square			2213.65
Degree of freedom	188	Significance Level	.002

MAJOR FACTORS EXTRACTED	CRONBACH ALPHA VALUE	RESPECTIVE COEFFICIENTS	CUMULATIVE VARIANCE
Communication about the green product	.806	.744	17.278
Education & Knowledge about green product	.797	.807	32.326
Environment friendliness of green product	.767	.756	45.571
Higher price of green product	.799	.883	56.020
Green Product Branding	.761	.761	64.46
Availability of green products	.781	.814	72.34

Reliability Statistics shows Cronbach's Alpha value for all 18 items is .834. The KMO value is .855 and Bartlett's test of sphericity being statistically significant (.002) shows the adequacy of data to perform factor analysis. The value of more than .8 is meritorious. In the above table six major factors (eigen values more than 1) are extracted whose values are between .7 and .8. All the extracted components explain 72.34 % variance.

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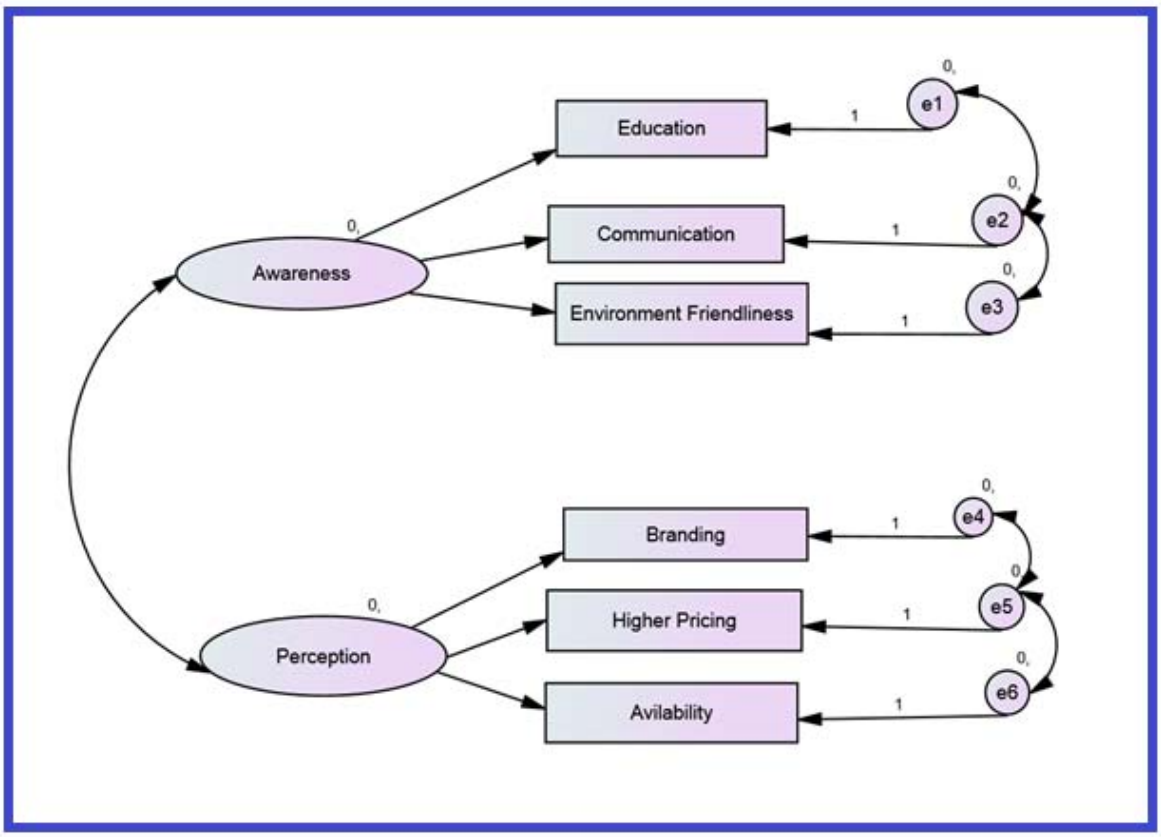
c) Confirmatory Factor Analysis

Table 3: Confirmatory Factor Analysis Framework



Chi-square = 2.164, Degrees of freedom = 4 and Probability level = .706

Confirmatory factor analysis (CFA) is a special form of factor analysis, most commonly used in research.

The factors contributing Awareness and Perception are segregated to establish a hypothesised model.

The chi-squared test value is 2 which is nearer to zero, which indicates a superb fit of data. The RMSEA ranges from 0 to 1, the value of .000 indicates a superb fit of the model in this case..Values for both the NFI and NNFI range between 0 and 1, with a cut off of .95 or greater indicating a good model fit. CFI values range from 0 to 1, here the value of 1 indicates the perfect fit. So by CFA it can be predicted that the hypothesised model is a perfect fit with the original model.

d) Multiple Regression Analysis

Table 4: Multiple Regression Analysis[1]

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.589[a]	.439	.190	.743	.239	4.825	12	184	.000	1.000

a. Predictors: (Constant), Envimpact, GMPeducation, ENVprotection, GMPcommu, , GMPenvsfriendly, GMPbranding,, Pricemorethanconventional

b. Dependent Variable: Awareness

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The R value represents the simple correlation and it is 0.589.The R2 value indicates the total variation in the dependent variable. In this case, 44% variance can be explained. ANOVA indicates the statistical significance of the regression model. In ANOVA, the significance value is .000, which indicates that; the regression model is statistically significant and it predicts the awareness about the green product. This represents an overall good fit for the data. Hence the regression equation can be

AWARENESS = 2.750+ (.286 * Communication) + (.105* Education) + (.172 * Environment friendliness)

Table 5: Multiple Regression Analysis$_2$

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.646[a]	.512	.223	..655	.208	4.073	12	184	.003	1.000

a. Predictors: (Constant), Envimpact, GMPeducation, ENVprotection, GMPcommu, , GMPenvsfriendly, GMPbranding, , Pricemorethanconventional

b. Dependent Variable: Customer Perception

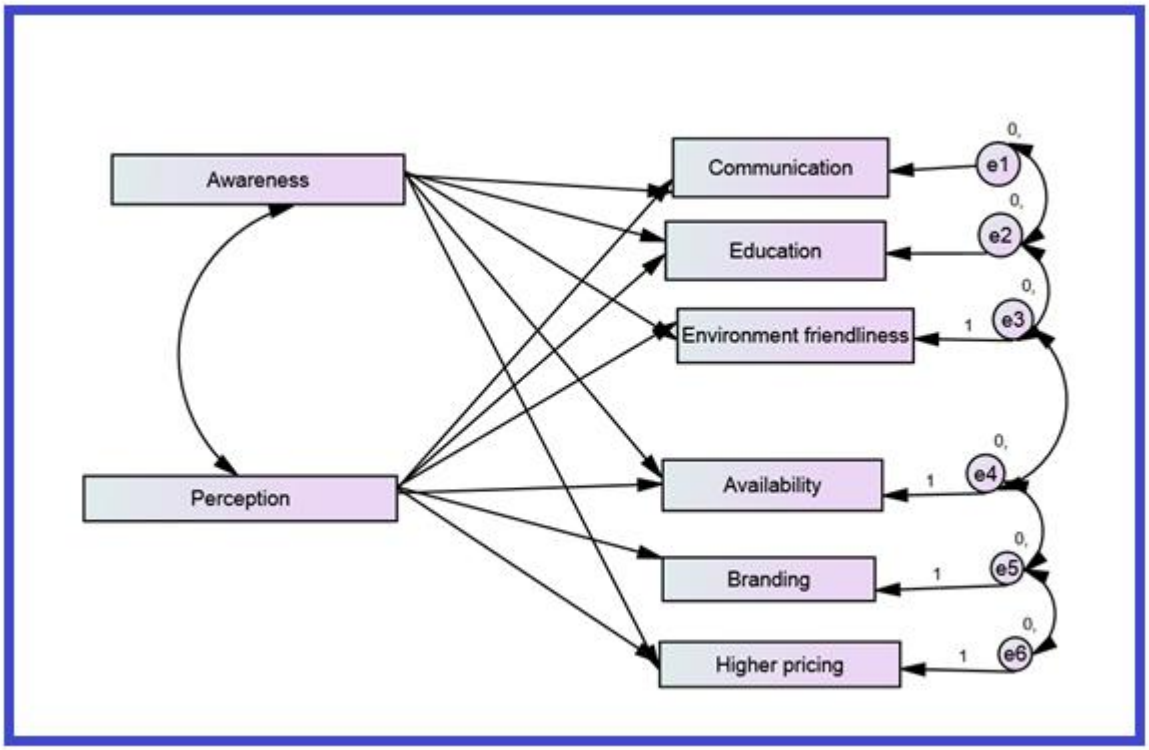
The R value represents the simple correlation and is 0.646. The R2 value indicates the total variation in the dependent variable. In this case, 51% variance can be explained. .ANOVA indicates the statistical significance of the regression model. In ANOVA, the significance value is .003, which indicates that; the regression model is statistically significant and it predicts the Perception about the green product. This represents an overall good fit for the data.

The regression equation is

PERCEPTION= 3.248+ (.302 * Branding) + (.221* Higher Pricing) + (.175 * Availability)

e) Structural Equation Modelling

Table 6: Structural Equation Modelling (Sem)



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Chi-square = 3.293, Degrees of freedom = 3 and Probability level = .000

f) Model Fit Summary

Structural Equation Modelling estimates the degree to which a hypothesized model fits the data. The chi-squared test value is 3 which is closer to zero i.e., indicates a better fit. The RMSEA ranges from 0 to 1, again confirms better model fit. The significance value of .000 indicates a superb fit of the model in this case. Values for both the NFI and NNFI range between 0 and 1, with a cut off of .95 or greater indicating a good model fit. CFI values is 1 that again ensures the perfect fit. All the paths are associated with statistically significant coefficients and the standardised path coefficients are acceptable. So this can be concluded that this model depicts a superb fit.

VI. Conclusion

The above analyses confirm the influence of consumer demographics on *Awareness & Perception Level towards Green Marketing Practices. It portrays that this trend* varies from age group, other than very young respondents, most of the age groups have high awareness & perception level towards green marketing practices. Again in terms income level, higher income group has the highest level of awareness & perception level than the middle and lower income group. On the other hand respondents residing in Kolkata have higher level of awareness & perception level comparing to the suburbs respondents.

Secondly, the most influencing factors in this case is *Communication about the green product* followed by *Educational Knowledge about green product, Environment friendliness about green product, Higher pricing of green product, Green Product Branding and Availability of green products.*

Further the analysis indicates a good model fit and ensures the hypothesised model is a perfect fit with the original model where *communication, education and environment friendliness* are established as the significant predictors of *Awareness;* whereas *Higher pricing, Green Product Branding and Availability* are recognised as the major influencing factors of *Perception.*

Finally Structural Equation Modelling (SEM) estimates the degree to which a hypothesized model fits the data. It confirms that all the paths related to *Awareness* and its components along with *Consumer perception* and its components are associated with are statistically significant coefficients and the standardised path coefficients are acceptable. So this can be concluded that this model depicts a superb fit.

VII. Future Scope

This research may be extended to investigate the global awareness & perception level *towards Green Marketing Practices* to improve their eco friendly performance, if required, to promote a green lifestyle. This study may also be segregated to compare the current scenario with respect to green acceptance breaking East-West dichotomy. In this respect Nadler-Tushman's congruence model may be used to identify the performance gaps, Data Envelopment Analysis may be applied for efficiency-productivity study and Sensitivity Analysis in linear programming may be performed to calculate the range of optimality. R programming and Python may be incorporated. to establish a general *Model* using a *Nested Loop* by which the green marketers of any small or large nation across the globe may attempt to reinforce their green brand and to revitalise their strategies whenever required.

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