

International Multidisciplinary Research Journal

Golden Research Thoughts

Chief Editor
Dr.Tukaram Narayan Shinde

Publisher
Mrs.Laxmi Ashok Yakkaldevi

Associate Editor
Dr.Rajani Dalvi

Honorary
Mr.Ashok Yakkaldevi

Golden Research Thoughts Journal is a multidisciplinary research journal, published monthly in English, Hindi & Marathi Language. All research papers submitted to the journal will be double - blind peer reviewed referred by members of the editorial board. Readers will include investigator in universities, research institutes government and industry with research interest in the general subjects.

Regional Editor

Manichander Thammishetty

Ph.d Research Scholar, Faculty of Education IASE, Osmania University, Hyderabad

International Advisory Board

Kamani Perera Regional Center For Strategic Studies, Sri Lanka	Mohammad Hailat Dept. of Mathematical Sciences, University of South Carolina Aiken	Hasan Bakfir English Language and Literature Department, Kayseri
Janaki Sinnasamy Librarian, University of Malaya	Abdullah Sabbagh Engineering Studies, Sydney	Ghayoor Abbas Chotana Dept of Chemistry, Lahore University of Management Sciences[PK]
Romona Mihaila Spiru Haret University, Romania	Ecaterina Patrascu Spiru Haret University, Bucharest	Anna Maria Constantinovici AL. I. Cuza University, Romania
Delia Serbescu Spiru Haret University, Bucharest, Romania	Loredana Bosca Spiru Haret University, Romania	Ilie Pinteau, Spiru Haret University, Romania
Anurag Misra DBS College, Kanpur	Fabricio Moraes de Almeida Federal University of Rondonia, Brazil	Xiaohua Yang PhD, USA
Titus PopPhD, Partium Christian University, Oradea,Romania	George - Calin SERITAN Faculty of Philosophy and Socio-Political Sciences Al. I. Cuza University, IasiMore

Editorial Board

Pratap Vyamktrao Naikwade ASP College Devrukh,Ratnagiri,MS India Ex - VC. Solapur University, Solapur	Iresh Swami S. D. M. Degree College, Honavar, Karnataka	Rajendra Shendge Director, B.C.U.D. Solapur University, Solapur
R. R. Patil Head Geology Department Solapur University,Solapur	N.S. Dhaygude Ex. Prin. Dayanand College, Solapur	R. R. Yalikal Director Managment Institute, Solapur
Rama Bhosale Prin. and Jt. Director Higher Education, Panvel	Narendra Kadu Jt. Director Higher Education, Pune	Umesh Rajderkar Head Humanities & Social Science YCMOU,Nashik
Salve R. N. Department of Sociology, Shivaji University,Kolhapur	K. M. Bhandarkar Praful Patel College of Education, Gondia	S. R. Pandya Head Education Dept. Mumbai University, Mumbai
Govind P. Shinde Bharati Vidyapeeth School of Distance Education Center, Navi Mumbai	Sonal Singh Vikram University, Ujjain	Alka Darshan Shrivastava Shaskiya Snatkottar Mahavidyalaya, Dhar
Chakane Sanjay Dnyaneshwar Arts, Science & Commerce College, Indapur, Pune	G. P. Patankar S. D. M. Degree College, Honavar, Karnataka	Rahul Shriram Sudke Devi Ahilya Vishwavidyalaya, Indore
Awadhesh Kumar Shirotriya Secretary,Play India Play,Meerut(U.P.)	Maj. S. Bakhtiar Choudhary Director,Hyderabad AP India.	S.KANNAN Annamalai University,TN
	S.Parvathi Devi Ph.D.-University of Allahabad	Satish Kumar Kalhotra Maulana Azad National Urdu University
	Sonal Singh, Vikram University, Ujjain	



UNDERSTANDING THE ECO CONSCIOUSNESS AND PERCEPTION OF CONSUMERS TOWARDS VARIOUS DIMENSIONS OF GREEN PERSONAL CARE PRODUCTS WITH SPECIAL REFERENCE TO CHENNAI CITY – A MULTI DIMENSIONAL STUDY

Dr. S. Mayilvaganan¹ and V. Sowmya²

¹Assistant professor of commerce, A.V.C. College (Autonomous),
Mayiladuthurai, Mannampandal .

²Full time research scholar in commerce, A.V.C. College (Autonomous),
Mayiladuthurai, Mannampandal .

ABSTRACT

The research paper is designed towards unearthing the eco consciousness of consumers and the way they perceive various dimensions of green products with special reference to green personal care products. The study is made with the help of data collected in Chennai city and analyzed with the help of various statistical tools in SPSS software. The study is inclined towards the perception of consumers in green personal care products on various aspects. The study is made in selected categories of personal care product industry only.

KEYWORDS: Eco friendly products, attributes, animal testing, environmental awareness and personal care products.

I. INTRODUCTION

Personal care product is a non-medicinal consumable product that is intended to be used in the topical care and grooming of the body and hair and that is rubbed, poured, sprinkled, or sprayed on, introduced into, or otherwise applied to a body, human or animal, for cleansing, beautifying, promoting attractiveness, or altering the appearance without affecting the body's structure or functions. Personal care products are specifically for use in such activities as cleansing, toning, moisturizing, hydrating,

exfoliating, conditioning, anointing, massaging, coloring/decorating, soothing, deodorizing, perfuming, and styling. There are various segments in personal care products such as body care products, skin care products, oral care products, hair care products, face care products and baby care products. Personal care products may be of either natural or synthetic. Green products are those products where the amount of chemical used is less or no chemicals are used. The Federal government

defines green as "Products and services that reduce the health and environmental impacts as compared to other products and services used for the same purpose". The study shows the attitude of personal care product users on various dimensions of green personal care products.

II. DEFINITION OF RELATED TERMS

Polonsky (1994) defines green marketing as all activities designed to generate and facilitate any exchanges intended to satisfy human



needs or wants, such that the satisfaction of these needs and wants occurs, with minimal detrimental impact on the natural environment.

Elkington (1994) defines the green consumer as one who avoids products that are likely to:

- (i) endanger the health of the consumer or others.
- (ii) causesignificant damage to the environment during manufacture, use or disposal.
- (iii) consume a disproportionate amount of energy.
- (iv) cause unnecessary waste.
- (v) use materials derived from threatened species or environments.
- (vi) involve unnecessary use of, or cruelty to animals.
- (vii) adversely affect other countries

III. OBJECTIVES OF THE STUDY

- To gain an insight into consumer's attitude, general opinion and price sensitivity to green personal care products.
- To assess the level of environmental awareness among consumers with regard to green cosmetics and various categories of personal care products.
- To study the consumer attitude towards animal tested cosmetic products.

IV. SCOPE OF THE STUDY

- The study covers consumer's perception of green personal care products.
- The study analyses consumer's attitude to various factors regarding green personal care products and selected categories of green personal care products.

V. REVIEW OF LITERATURE

The study by MoloyGhoshal(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.

Rajan Saxena(2010) maintained that Green products and services are today increasingly being accepted by both the companies and customers.

Greening product or market is viewed as the outcome of rational strategic choice. It may thus involve the search for different types of competitive advantage (Gladwin, 1992).

As a result of staggering pollution levels and the diversity of environmental concerns, a wide range of pressures is coming to bear upon industry/firms from many sides. The intensity of these pressures varies by country, sector, industry and firm. It is clear, however, that firms need to respond in order to ensure further use of scarce resources, public and political legitimacy, profitability and financial assurance (Schot, Johan & Fisher, Kurt 1993).

VI. RESEARCH METHODOLOGY

1.Sampling Design

The study is based on a survey of 150 respondents (consumers) in Chennai, Tamil Nadu. Convenience sampling technique was adopted in the selection of respondent customers. The research was conducted in a period of three months i.e., from April 2015 to June 2015. A structured questionnaire which consists of five segments is formulated to collect data among the respondents of Chennai city. Both primary data and secondary data that are collected from previous research studies are used for the study.

2. Research Design

The study conducted is exploratory in nature. It involves a survey of respondents for understanding the

level of customer awareness with respect to personal care products, level of responsibility towards the environment, understanding of eco-friendly concepts, and attitudes to the testing of cosmetics on animals, pricing of green personal care products and various aspects with relation to selected categories of green personal care products namely cosmetics, hair care products and skin care products. This article is made on five dimensions which are as follows.

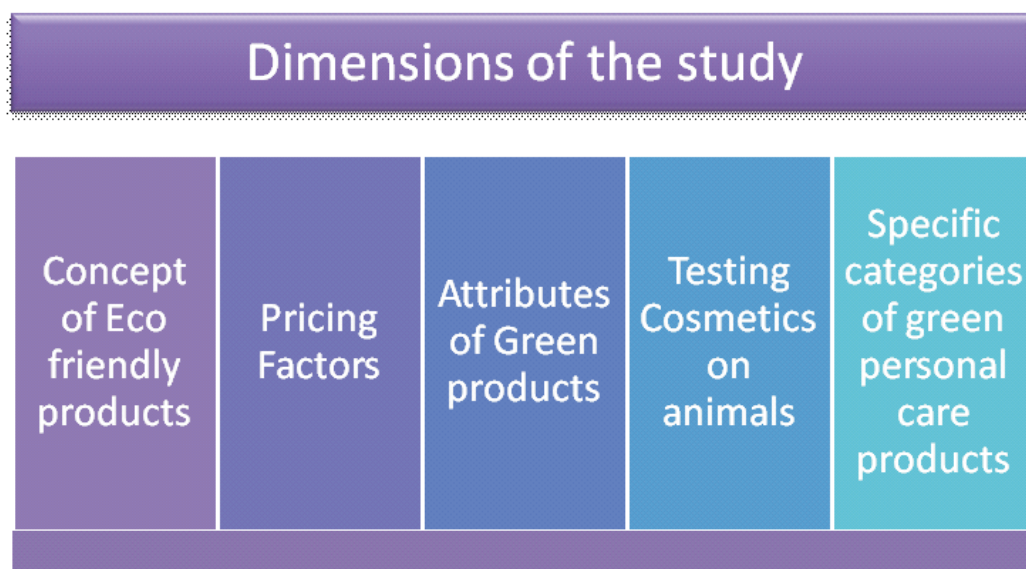
The first dimension of understanding the concept of eco-friendly products is measured in terms of 5 scale rating strongly agree, agree, neutral, disagree and strongly disagree to factors such as eco-friendly products are good for the environment, eco-friendly products are good for health, eco-friendly products have better quality, eco-friendly products are reasonably priced and using such products makes us feel good.

The second dimension of pricing strategy of green products are also measured in 5 scale rating to factors such as high pricing of green products, willingness to pay high, purchasing decision is based on price and prices are compared while purchasing a product.

The third dimension of product attributes are also measured in 5 scale rating to product characteristics such as recyclable, reusable, costly, saves money in the long run, non toxic, bio degradability, waste minimization, minimizes the amount of damage that it causes to the environment and cruelty free products.

The fourth dimension of attitude of customers to testing cosmetics on animals are also measured in the same 5 scale rating to factors such as awareness on testing certain cosmetics on animals, awareness of the fact that leaping bunny indicates no animal testing, purchase of products that are not tested on animals and awareness of the fact that even animal tested products are tend to be dangerous when applied on human body.

The fifth dimension of measuring the attitude of customers with special reference to specific categories of personal care products such as cosmetics, hair care products and skin care products are measured in the same 5 scale rating to factors such as natural characteristic of personal care product, no side effects, chemical free nature and safety of green personal care products since it is not made with chemical ingredients.



3. Statistical Tools

The statistical tools used for this study are

- t test
- ANOVA
- Friedman test
- Correlation analysis
- Multiple regression analysis

Regression is the determination of statistical relationship between two or more variables. In simple

regression two variables are used. One variable (independent) is the cause of the behaviour of another one (dependent). When there are more than two independent variables the analysis concerning relationship is known as multiple correlations and the equation describing such relationship is called as the multiple regression equation.

Regression analysis is concerned with the derivation of an appropriate mathematical expression is derived for finding values of a dependent variable on the basis of independent variable. It is thus designed to examine the relationship of a variable Y to a set of other variables X1, X2, X3.....Xn. the most commonly used linear equation in $Y = b_1 X_1 + b_2 X_2 + \dots + b_n X_n + b_0$

Here Y is the dependent variable, which is to be found. X1 , X2 ,... and Xn are the known variables with which predictions are to be made and b1, b2 ,...bn are coefficient of the variables.

In this study, the dependent variable is attributes of green products, Independent variables are pricing factors, testing cosmetics on animals, cosmetics, hair care products and skin care products are discussed as follows:

Dependent variable	: Attributes of green products (Y)
Independent variables	: 1. pricing factors (X1)
	2. Testing cosmetics on animals (X2)
	3. Cosmetics (X3)
	4. Hair care products (X4)
	5. Skin care products (X5)
Multiple R value	: 0.625
R Square value	: 0.391
F value	: 18.491
P value	: <0.001**

4. Null Hypotheses

The following null hypotheses are formulated and further tested:

Ho1: There is no significant difference between men and women with respect to attitudes relating to various dimensions of green personal care products.

Ho2: There is no significant difference between different age groups with respect to attitudes relating to various dimensions of green personal care products.

Ho3: There is no significant difference between different occupations with respect to attitudes relating to various dimensions of green personal care products.

Ho4: There is no significant difference between different monthly incomes with respect to attitudes relating to various dimensions of Green personal care products.

Ho5: There is no significant difference among mean ranks towards factors connected with cosmetics.

Ho6: There is no significant difference among mean ranks towards factors relating to hair care products.

Ho7: There is no significant difference among mean ranks towards factors relating to skin care products.

VII. RESULTS AND DISCUSSION

The study has made an analysis on various demographic details such as gender, age, income and occupation (Table 1).

When t test is applied for testing significant difference between gender and attitudes relating to various dimensions of green personal care products it is found that P value is greater than 0.05. Hence the null hypothesis is accepted at 5 % level with regard to all the factors of green personal care products (Table 2).

When t test is applied for testing significant difference between age and attitudes relating to various dimensions of green personal care products it were found that P value is less than 0.05, the null hypothesis is rejected at 5% level with regard to attributes of green products. Hence, there is significant difference among age groups (in years) of the consumers with respect to attitudes relating to various dimensions of green personal care products. Based on Duncan Multiple Range Test (DMRT), above 40 years of age significantly differed with

below 20 Years of age and 21-30 years of age at 5% level, but there is no significant difference between Below 20 years of age, 21-30 years of age and 31-40 years of age and also between 31-40 years of age and Above 40 years of age in attributes of green products. There is no significant difference between age group in years with regard to factors of eco-friendly products, pricing factors, testing cosmetics on animals, cosmetics, hair care products and skin care products, since P value is greater than 0.05. Hence the null hypothesis is accepted with regard to factors of eco-friendly products, pricing factors, testing cosmetics on animals, cosmetics, hair care products and skin care products (Table 3).

It is found that there is no significant difference among respondents with different occupations with regard to factors of eco-friendly products, pricing factors, testing cosmetics on animals, cosmetics, hair care products and skin care products, since P value is greater than 0.05. Hence the null hypothesis is accepted with regard to factors of eco-friendly products, pricing factors, testing cosmetics on animals, cosmetics, hair care products and skin care products (Table 4).

Since P value is less than 0.05, the null hypothesis is rejected at 5% level with regard to cosmetics and skin care products which implies that there is significant difference between consumers with different monthly income with regard to cosmetics and skin care products. Based on Duncan Multiple Range Test (DMRT), above Rs.20000 of monthly income significantly differs from income below Rs.10000 but there is no significant difference between respondents of monthly income of Rs.10000 or less and between Rs.10000-Rs.20000 of monthly income and also between above Rs.20000 of monthly income ranging between Rs.10000-Rs.20000 with respect to perceptions about green cosmetics and skin care products. Based on Duncan Multiple Range Test (DMRT), above Rs.20000 of monthly income is significantly differed with below Rs.10000 of monthly income and below Rs.10000 of monthly income is differed with Rs.10000-Rs.20000 of monthly income in skin care products (Table 5).

Since P value is less than 0.01, the null hypothesis is rejected at 1 percent level of significance and it can be said that there is significant difference among mean ranks towards factors of cosmetics (Table 6). Based on mean rank natural cosmetics are safe (2.88) is the most important factor of cosmetics followed by natural cosmetics saves the earth (2.64), agree to pay extra for green cosmetics (2.41) and chemical free (2.08).

Since P value is less than 0.01, the null hypothesis is rejected at 1 percent level of significance. Therefore, there is significant difference among mean ranks towards factors of hair care products (Table 7). Based on mean rank better quality (3.13) is the most important factor of hair care products followed by no side effects (3.12), healthier for hair and scalp (3.11), chemical free (2.90) and not tested on animals (2.75).

There is significant difference among mean ranks towards factors of skin care products as P value is less than 0.01, the null hypothesis is rejected at 1 percent level of significance (Table 8). Based on mean rank, artificial skin care products ruins the beauty (5.37) is the most important factor of skin care products followed by purchased on the basis of less packaging (5.01), purchased on the basis of eco labels (4.91), pay attention in the selection of skin care products (4.57), not mislead my exotic trends (4.49), and purchased on the basis of organic ingredients and natural products are bought for sensitive skin (3.82).

The correlation coefficient between Eco-friendly products and pricing factors is 0.242, which indicate 24.2 percentage positive relationships exists between Eco-friendly products and Pricing factors and is significant at 1% level. The correlation coefficient between Eco-friendly products and attributes of green products is 0.252, which indicate 25.2 percentage positive relationships exists between Eco-friendly products and attributes of green products and is significant at 1% level. The correlation coefficient between Eco-friendly products and Cosmetics is 0.225, which indicate 22.5 percentage positive relationships exists between Eco-friendly products and cosmetics and is significant at 1% level and similarly the other factors are positively correlated with each other.

The multiple correlation coefficient is 0.625 measures the degree of relationship between the actual values and the predicted values of the adjustment. Because the predicted values are obtained as a linear combination of pricing factors (X1), testing cosmetics on animals (X2), cosmetics (X3), hair care products (X4) and skin care products (X5) the coefficient value of 0.625 indicates that the relationship between attributes of green products and the five independent variables is quite strong and positive (Table 9).

The coefficient of determination R-square measures the goodness-of-fit of the estimated Sample Regression Plane (SRP) in terms of the proportion of the variation in the dependent variables explained by the fitted sample regression equation. Thus, the value of R square is 0.391 simply means that about 39.1% of the variation in attributes of green products is explained by the estimated SRP that uses pricing factors, testing cosmetics on animals, cosmetics, hair care products and skin care products as the independent variables and R square value is significant at 1% level.

The multiple regression equation is as follows:

$$Y = 13.665 + 0.390X_1 + 0.050X_2 + 0.325X_3 + 0.620X_4 + 0.088X_5$$

Here the coefficient of X1 is 0.390 represents the partial effect of pricing factors on attributes of green products, holding the other variables as constant. The estimated positive sign implies that such effect is positive that attributes of green products score would increase by 0.390 for every unit increase in pricing factors and this coefficient value is significant at 5% level. The coefficient of X2 is 0.050 represents the partial effect of testing cosmetics on animals on attributes of green products, holding the other variables as constant. The estimated positive sign implies that such effect is positive that attributes of green products score would increase by 0.050 for every unit increase in testing cosmetics on animals and this coefficient value is not significant at 5% level. The coefficient of X3 is 0.325 represents the partial effect of cosmetics on Attributes of green products, holding the other variables as constant. The estimated positive sign implies that such effect is positive that attributes of green products score would increase by 0.325 for every unit increase in cosmetics and this coefficient value is significant at 5% level. The coefficient of X4 is 0.620 represents the partial effect of hair care products on attributes of green products, holding the other variables as constant. The estimated positive sign implies that such effect is positive that attributes of green products score would increase by 0.620 for every unit increase in hair care products and this coefficient value is significant at 1% level. The coefficient of X5 is 0.088 represents the partial effect of skin care products on attributes of green products, holding the other variables as constant. The estimated positive sign implies that such effect is positive that attributes of green products score would increase by 0.088 for every unit increase in skin care products and this coefficient value is not significant at 5% level.

Based on standardized coefficient (Table 10), Hair care products (0.443) is the most important factor to extract attributes of green products score, followed by Pricing factors (0.192), Cosmetics (0.161), Skin care products (0.120) and Hair care products (0.025).

VIII. CONCLUSION

The purpose of the research is to analyse the perception of the consumers towards green products especially green personal care products. When the demographic details of the respondents are tested with various dimensions of green personal care products it revealed that consumer's attitudes are same with respect to gender and occupation. It is also found that consumers select a particular product based on the prices of the corresponding products. It is also revealed that artificial personal care products are dangerous and green personal care products are of better quality and healthy for the skin according to the opinion of the respondents.

There is a positive relationship between attributes of green personal care products and the various independent variables of the study. The study found that consumers have positive attitude towards attributes of green personal care products and it can have an impact in the purchase of green personal care products.

IX. SCOPE FOR FURTHER RESEARCH

- Although the research is conducted on green marketing, the researcher is keen on analysing the consumer perception only on green personal care products. Therefore, further research can be made on other green products and the attitude of consumers relating to the same.
- The research is made only with respect to consumers belonging to Chennai city. Further research can be conducted from other parts of India and even in various other countries in order to assess the growth and development of green marketing in India relating to various time periods.

- The research is made by way of comparing only certain dimensions of green personal care products. But this can be analysed by various other dimensional factors of green personal care products.

X. ANNEXURE

Table 1 showing demographic details of the respondents

Particulars	Frequency	Percentage
Gender		
Male	41	27.3
Female	109	72.7
Age group		
Below 20 years	32	21.3
21 years - 30 years	48	32.0
31 years – 40	38	25.3
Above 40	32	21.3
Occupation		
Employee	42	28.0
Business	18	12.0
Professional	28	18.7
Others	62	41.3
Monthly Income		
Below Rs 10,000	44	29.3
Rs 10,000- Rs 20,000	56	37.3
Above Rs 20,000	50	33.3

Source: Primary data

Table 2 showing t test for significant difference between male and female with respect to attitudes relating to green personal care products

Green Personal Care Products	Gender				t value	P value
	Male		Female			
	Mean	SD	Mean	SD		
Eco-friendly products	19.59	2.95	19.48	3.33	0.183	0.855
Pricing factors	18.44	2.60	17.56	2.55	1.872	0.063
Attributes of green products	35.56	5.45	34.71	5.19	0.886	0.377
Testing cosmetics on animals	16.73	2.61	17.06	2.60	0.697	0.487
Cosmetics	15.88	2.30	15.22	2.69	1.388	0.167
Hair care products	20.37	3.56	19.83	3.83	0.785	0.434
Skin care products	23.46	7.44	25.93	7.01	1.885	0.061

Source: Primary data

Table 3 showing ANOVA for significant difference among age group in years with respect to attitudes relating to green personal care products

Green personal care products	Age Group in years				F value	P value
	Below 20	21-30	31-40	Above 40		
Eco-friendly products	18.69 (3.55)	19.69 (2.87)	19.61 (3.33)	19.94 (3.25)	0.942	0.422
Pricing factors	17.53 (2.93)	18.06 (2.67)	17.89 (2.35)	17.56 (2.44)	0.382	0.766
Attributes of green products	37.00 ^a (4.85)	34.10 ^a (5.07)	35.24 ^{ab} (5.18)	33.78 ^b (5.61)	2.688	0.049*
Testing cosmetics on animals	16.88 (2.83)	17.31 (2.56)	17.16 (2.53)	16.34 (2.51)	0.976	0.406
Cosmetics	15.63 (2.55)	15.94 (2.43)	14.79 (2.94)	15.09 (2.36)	1.636	0.184
Hair care products	21.50 (3.29)	19.83 (3.86)	19.34 (3.97)	19.41 (3.49)	2.460	0.065
Skin care products	23.38 (7.68)	26.46 (7.04)	26.13 (7.17)	24.28 (6.73)	1.579	0.197

Source: Primary data

Note: 1. The value within bracket refers to SD

2. * denotes significance at 5% level.

3. Different alphabet among Age group in years denotes significance at 5% level using Duncan Multiple Range Test (DMRT)

Table 4 showing ANOVA for significant difference among occupations with respect to attitudes relating to green personal care products

Green personal care products	Occupation				F value	P value
	Employee	Business	Professional	Others		
Eco-friendly products	19.95 (3.36)	19.67 (2.85)	19.68 (3.08)	19.08 (3.31)	0.667	0.574
Pricing factors	16.95 (2.46)	17.78 (3.02)	18.57 (2.57)	18.03 (2.44)	2.583	0.056
Attributes of green products	33.98 (5.85)	35.78 (5.04)	34.64 (4.98)	35.48 (5.04)	0.871	0.458
Testing cosmetics on animals	17.10 (2.14)	17.28 (3.61)	17.18 (3.26)	16.71 (2.24)	0.379	0.769
Cosmetics	15.50 (2.59)	15.06 (2.71)	14.71 (3.18)	15.74 (2.25)	1.140	0.335
Hair care products	19.83 (3.89)	19.78 (4.25)	19.00 (4.65)	20.56 (2.96)	1.181	0.319
Skin care products	25.71 (7.56)	25.61 (7.18)	24.29 (7.85)	25.27 (6.75)	0.238	0.870

Source: Primary data

- Note : 1. The value within bracket refers to SD
- 2. * denotes significance at 5% level.
- 3. Different alphabet among Age group in years denotes significance at 5% level using Duncan Multiple Range Test (DMRT)

Table 5 showing ANOVA for significant difference among monthly incomes with respect to attitudes relating to green personal care products

Green personal care products	Monthly Income			F value	P value
	Below 10000	10000-20000	Above 20000		
Eco-friendly products	19.75 (3.14)	19.23 (3.61)	19.60 (2.85)	0.347	0.707
Pricing factors	17.52 (2.63)	18.21 (2.86)	17.58 (2.19)	1.155	0.318
Attributes of green products	35.11 (5.04)	34.70 (5.11)	35.06 (5.69)	0.096	0.909
Testing cosmetics on animals	16.77 (2.50)	17.00 (2.57)	17.12 (2.75)	0.211	0.810
Cosmetics	16.11 ^a (2.28)	15.54 ^{ab} (2.57)	14.62 ^b (2.72)	4.166	0.017*
Hair care products	20.18 (3.55)	20.29 (3.35)	19.44 (4.33)	0.765	0.467
Skin care products	27.89 ^a (5.78)	23.88 ^a (7.78)	24.48 ^b (7.15)	4.465	0.013*

Source: Primary data

- Note : 1. The value within bracket refers to SD
- 2. * denotes significance at 5% level.
- 3. Different alphabet among Age group in years denotes significance at 5% level using Duncan Multiple Range Test (DMRT)

Table 6 showing Friedman test for significant difference among mean ranks towards factors connected with cosmetics

Cosmetics	Mean Rank	Chi-square value	P value
Natural cosmetics save the earth	2.64	48.059	<0.001**
Chemical free	2.08		
Natural cosmetics are safe	2.88		
Agree to pay extra for green cosmetics	2.41		

Source: Primary data

Note: ** Denotes significance at 1% level

Table 7 showing Friedman test for significant difference among mean ranks towards factors relating to hair care products

Hair care products	Mean Rank	Chi-square value	P value
No side effects	3.12	13.767	0.008**
Not tested on animals	2.75		
Better quality	3.13		
Chemical free	2.90		
Healthier for hair and scalp	3.11		

Source: Primary data

Note: ** Denotes significance at 1% level

Table 8 showing Friedman test for significant difference among mean ranks towards various types of skin care products

Skin care products	Mean Rank	Chi-square value	P value
Pay attention in selecting skin care products	4.57	88.377	0.008**
Purchased on the basis of eco labels	4.91		
Purchased on the basis of less packaging	5.01		
Purchased on the basis of organic ingredients	3.82		
Not mislead by exotic trends	4.49		
Natural products are bought for sensitive skin	3.82		
Artificial fragrances are dangerous	4.02		
Artificial skin care products ruins the beauty	5.37		

Source: Primary data

Note: ** Denotes significance at 1% level

Table 9 showing Pearson correlation coefficient between factors of green personal care products

Factors of Green personal care products	Eco-friendly products	Pricing factors	Attributes of green products	Testing cosmetic on animals	Cosmetics	Hair care products	Skin care products
Eco-friendly products	1.000	0.242**	0.252**	0.085	0.225**	0.217**	0.039
Pricing factors	-	1.000	0.312**	0.364**	0.399**	0.191*	0.161*
Attributes of green products	-	-	1.000	0.215**	0.433**	0.567**	0.135

Testing cosmetics on animals	-	-	-	1.000	0.278**	0.338**	0.198*
Cosmetics	-	-	-	-	1.000	0.493**	0.124
Hair care products	-	-	-	-	-	1.000	0.139
Skin care products	-	-	-	-	-	-	1.000

Source: Primary data

Note: ** Denotes significance at 1% level

Table 10 showing variables in the multiple regression analysis

Variables	Unstandardized co-efficient	SE of B	Standardized co-efficient	t value	P value
Constant	13.665	3.133	-	4.362	<0.001**
X ₁	0.390	0.151	0.192	2.578	0.011*
X ₂	0.050	0.151	0.025	0.332	0.740
X ₃	0.325	0.164	0.161	1.977	0.050*
X ₄	0.620	0.113	0.443	5.496	<0.001**
X ₅	0.088	0.051	0.120	1.723	0.087

Source: Primary data

Note: 1. ** Denotes significance at 1% level

2. * Denotes significance at 5% level

XI. REFERENCES

- Abdullah, Osman, Muhammad, Safizal, Abdullah, Arman, Hadi, Abdul &Manaf, “The Moderating Effect of Product Quality Toward the Relationship Between Green Purchasing Behavior and Firm Performance”, International Journal of Academic Research in Business and Social Sciences, Vol. 4, No.7, (July 2014); ISSN: 2222-6990.
- Adler, Tina, “Environmental Advantages”, Environmental Health Perspectives, Volume 110, No. 10, (October 2002).
- Anne, Marie, Todd, “The Aesthetic Turn in Green Marketing: Environmental Consumer Ethics of Natural Personal Care Products”, Ethics & the Environment, 9(2), (2004); ISSN: 1085-6633.
- Aysel, Boztepe, “Green Marketing and its Impact on Consumer Buying Behavior”, European Journal of Economic and Political Studies, (2012).
- Barry, Shanoff, “It’s Not Easy Bein’ Green”, (October 2014).
- Brad, frinkelstein, “Green Marketing”, (February 2008).
- Burcu, Candan.,Sevtap, Unal, and Aysel, Ercis, “Analysing the Relationship Between Consumption Values and Brand Loyalty of Young People : A Study on Personal Care Products”, European Journal of Research on Education, 2013, ISSN: 2147-6284.
- Carol, Rubidux, “The Cost of Being Green: Does it Pay to be Ecologically Green”, (March 2009).
- Chen, Quishi, “Evaluate the Effectiveness of the Natural Cosmetic Product Compared to Chemical Based Products”, International Journal of Chemistry, Vol. 1, No. 2, (Aug 2009); ISSN: 19169698.
- Dainora, Grundey, &Rodica, Milena, Zaharia, “Sustainable Incentives in Marketing and Stratergic Greening: The

Case of Lithuania and Romania”, *Baltic Journal on Sustainability*, 14(2), (2008).

- Elizabeth, M., Tucker, Nora, J., Rifon, Eun, Mi, Lee, & Bonnie, B., Reece, “Consumer Receptivity to Green Ads”, *Journal of Advertising*, Vol. 41, No.4, (Winter 2012); 9-23.
- Erica, Orange, “From Eco-friendly to Eco-Intelligent”, *The Futurist*, (October 2010).
- Farid, Chemat, Maryline, Abert, Vian & Giancarlo, Cravotto, “Green Extraction of Natural Products: Concepts and Principles”, *International Journal of Molecular Sciences*, (2012).
- George, P., Daston, and Pauline, McNamee, “Alternatives to Toxicity Testing in Animals: Challenges and Opportunities”.
- Hsuan-Hsuan, Ku, Chien-Chih, Ku, Ching-Luen, Wu, & Chih-Ying, Wu, “Communicating Green Marketing Appeals Effectively”, *Journal of Advertising* Vol. 41 No.4, (Winter 2012); 41-50.
- Joonas, Rooka, & Liisa, Uusitala., “Preference for Green Packaging in Consumer Product Choices – Do Consumers Care”, *International Journal of Consumer Studies* (2008); 516-525, ISSN 1470-6423.
- Judy, Dahl, “Green Messages Pack a Marketing Punch-If You Have the Credibility to Back Them Up”, *Credit Union Magazine*, (July 2008).
- Kim, Sheehan, and Lucky, Atkinson, “Revisiting Green Advertising and the Reluctant Consumer”, *Journal of Advertising* Vol. 41 No.4, (Winter 2012); 5-7.



Dr. S. Mayilvaganan

Assistant professor of commerce, A.V.C. College (Autonomous), Mayiladuthurai, Mannampandal .



V. Sowmya

Full time research scholar in commerce, A.V.C. College (Autonomous), Mayiladuthurai, Mannampandal .

Publish Research Article

International Level Multidisciplinary Research Journal For All Subjects

Dear Sir/Mam,

We invite unpublished Research Paper, Summary of Research Project, Theses, Books and Book Review for publication, you will be pleased to know that our journals are

Associated and Indexed, India

- * International Scientific Journal Consortium
- * OPEN J-GATE

Associated and Indexed, USA

- EBSCO
- Index Copernicus
- Publication Index
- Academic Journal Database
- Contemporary Research Index
- Academic Paper Database
- Digital Journals Database
- Current Index to Scholarly Journals
- Elite Scientific Journal Archive
- Directory Of Academic Resources
- Scholar Journal Index
- Recent Science Index
- Scientific Resources Database
- Directory Of Research Journal Indexing

Golden Research Thoughts
258/34 Raviwar Peth Solapur-413005, Maharashtra
Contact-9595359435
E-Mail-ayisrj@yahoo.in/ayisrj2011@gmail.com
Website : www.aygrt.isrj.org