

Impact of Age and Income over Green Consumer Behavior

Surya Rashmi Rawat *

Symbiosis Law School, Pune, Symbiosis International University, Pune - 412115, Maharashtra, India;
rawatsuryarashmi@gmail.com

Abstract

Past 12 years rank among the warmest years in surface temperature since 1850. The Carbon dioxide concentration is increasing, snow cover is decreasing, glaciers are melting, sea level is increasing and average Arctic temperature is also increasing. Scientists attribute this environmental debacle to humans. Some researchers believe that going green could be an answer to handle this environmental holocaust to some extent. But the question is, 'are we prepared for it?' Through this paper an attempt has been made to answer these questions. The author has attempted to study the impact if any, of the age and income over the green buyer behavior. The research is based on both primary as well as secondary data. The Primary data was collected from the city of Pune, India, through a questionnaire survey conducted over a sample of 378 people belonging to different Age and Income groups. Towards the end, the researcher discovered that Age and Income have an impact over the green buyer behavior. The author also arrived at specific formulae exhibiting this relationship.

Keywords: Buyer Behavior, Green Products, Impact of Age Group, Impact of Income Group

1. Introduction and Motivation

Consumer behavior is a process involving various activities ranging from searching, selecting, purchasing, using, evaluating, and disposing of products and services so as to satisfy their needs and desires. Plessis and Rousseau¹, defined it as, 'the behavior pattern of consumers that precede, determine and follow the decision making process for the acquisition of need satisfying products, ideas or services'. It is basically about making the best choice amongst the available alternatives. There has been a great spur on environmental concern. This emerging eco-friendly wave is creating a win - win situation for both the Industry and the market. It is offering various competitive advantages and opportunities to the ones who are practicing 'green' in their process of production and consumption² In the bid to find out the impact of demographic factors.

over green buying behavior the author has reviewed relevant literature including the definitions of green marketing.

2. Review of Literature

Green Marketing basically signifies marketing of goods and services in an eco-friendly manner. It involves developing good quality products that can satisfy consumer needs by focusing on the quality, performance, pricing and convenience in an environment-friendly manner (Polonsky and Alma³).

According to Surya's 6-D definition of Green Marketing, 'Green Marketing is the process of drawing, developing, distributing and decomposing of a product by satisfying all desires of customers in an eco- friendly manner so as to cause minimum damage to the environment (Rawat⁴, and Rawat⁵)'.

*Author for correspondence

2.1 Demographic Factors and Green Behavior

Occupation and economic circumstances are some of the personal factors affecting consumer behavior⁶. Wagner⁷ observed that market segmentation using socio-demographic profiling⁷ of the green consumer could not arrive at any significant result. The results produced in one study were contradicted in another.

Socio-demographic variables can be used for profiling green consumers though the association between socio-demographic characteristics and environmental consciousness measures are relatively complex⁸. Many authors are of the opinion that green buying behavior cannot be predicted on the basis of socio demographic variable such as age, income, education and gender. The reason behind this inability is the inconsistency observed in such researches, studying the impact of these factors over the green purchasing behavior.

Akehurst⁹ observed that the psychographic variables are more significant in explaining and forecasting the future green buyer behavior than the demographic factors. Associating high prices with majority of green products in comparison to the existing conventional ones, people generally assume that income should have a positive impact over the green consumer behaviour. But the results of various researches analyzing the impact of demographic factors could never produce convincing results¹⁰⁻¹⁹.

Banyte²⁰ and Bourgeois and Barnes²¹, noted that green buyers are generally the ones who receive higher than average income. With this background, now we proceed to find out the response of our sample and see if it could help us understand the relationship between age and income with the green buying behavior.

2.2 Objectives of the Study

The basic objective of this research paper is:

- To study the impact of income over green buyer behavior.
- To study the impact of age over green buyer behavior.
- To identify the relationship if any between the impact of age and income over green buyer behavior.

2.3 Hypotheses

Through the research in hand following hypothesis shall be tested for significance.

H_0^1 = There is no significant difference between the green buyer behavior of different income groups.

H_0^2 = There is no significant difference between the green buyer behavior of different age groups.

2.4 Research Methodology

This research is based on primary as well as secondary data. Primary data was collected through a questionnaire survey and in depth interview of a sample of 378 women in Pune, Maharashtra, India. The test sample belonged to four different annual income groups i.e., less than 0.3 million, 0.3 to 0.5 million, 0.5 to 0.8 million and 0.8 - 1.2 million as first, second, third and fourth groups respectively. Age groups of the sample were 20 to 35 Years, 35 to 50 Years and 50 to 65 years.

The correlation test was also conducted to find out the relationship between purchasing power and green buyer behavior.

3. Findings and Discussion

As understood from the review of literature, people are not very optimistic about the impact of socio-demographic variables over the green buying behavior. Therefore, in the present study rather than selecting many socio-demographic variables the author restricted herself to the study of impact of age and income group over green buying behavior.

3.1 Impact of Income over Green Buyer Behavior

Here we shall study the impact of income over the 'Green Buying Behaviour'. Findings are based on the purchase behavior shown by women while shopping for their spouse, children and self.

3.1.1 Impact of Purchasing Power over Green Buyer Behavior towards Self in the Different Income Groups

The analysis and interpretation of primary data revealed the following buyer behavior for women while shopping for themselves. The findings have been categorized to the women's preferring to go for none, one or two Green Products in the each income group.

3.1.1.1 No Green Product for Self amidst the Four Income Groups

38 percent of the population belonging to first income group intended 'not to buy even a single Green Product', where as in the second income group the strength of people sharing same opinion went higher touching close to 60 percent. In the third income group number abruptly fell down to even less than 20 percent with number almost vanishing in the last income group comprising of population earning more than Rs. 0.8 million annually.

3.1.1.2 Buying at least one or Two Green Products for Self amidst the Four Income Groups

Approximately 23 percent in first, 18 percent in the second and sixty percent in third income group intended to buy at least one Green Product. 80 percent of fourth income group preferred to buy at least two products. 22 percent of the third group also consented for the same.

3.1.1.3 Correlation between Purchasing Power and Green Buyer Behavior for Self in the Different Income Groups

The Correlation table below confirms the fact that there is a perfect correlation between purchasing power and the intention to buy for self. As we move up the income group we see that the proportion of population buying green is proportionately increasing, a fact evidently supported by the findings of survey too. **Correlation is significant at the 0.01 level (2-tailed) as is evident from Table 1 and 2.

		INCGP	SELF1
INCGP	Pearson Correlation	1	.750(**)
	Sig. (2-tailed)	.	.000
	N	350	350
SELF1	Pearson Correlation	.750(**)	1
	Sig. (2-tailed)	.000	.
	N	350	350

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

Table 1. Correlation between purchasing power and buying for self

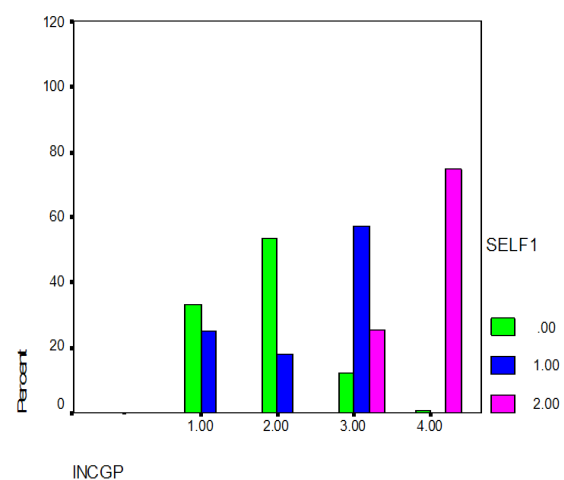
Table 2. Nonparametric correlations

			INCGP	SELF1
Spearman's rho	INCGP	Correlation Coefficient	1.000	.740(**)
		Sig. (2-tailed)	.	.000
		N	350	350
	SELF1	Correlation Coefficient	.740(**)	1.000
		Sig. (2-tailed)	.000	.
		N	350	350

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

The graphical representation of the findings as shown by Figure 1 clearly explains the fact that there is a direct correlation between the purchasing power and the buyer behavior towards Green Products for self. The X-axis and Y-axis of the graph are representing the income groups and sample's preference to buy number of products respectively. Analysis of graph reveals that the number of products bought is gradually increasing with the increase in the purchasing power hence further verifying the results of correlation as discussed above.

Figure 1. Impact of income over green buyer behavior towards self.



3.1.2 -Impact of Purchasing Power over Green Buyer Behavior towards Spouse in the Different Income Groups

The study of data revealed the following buyer behavior for the women while shopping for their spouse. The findings have been categorized to the women's preferring to go for none, one or two Green Products in the each income group.

3.1.2.1 Buying No Green Products for Spouse amidst the Four Income Groups

34 percent of the first, 52 percent of second, 20 percent of third and only 2 percent of 4th income group refused to buy 'even a single Green Product'.

3.1.2.2 Buying at least One Green Product for Spouse amidst the Four Income Groups

Approximately 23 percent of 1st, 30 percent of second, 40 percent of third and 0 percent of fourth income group intended to buy at least one Green Product.

3.1.2.3 Buying at least Two or Three Green Products for Spouse amidst the Four Income Groups

Third and fourth income group came up with quite encouraging results with more than 40 percent in 3rd and close to 60 percent in 4th Income group intending to buy more than two Green Products. The 5 percent of 3rd and 97 percent of fourth income group also showed their preferences to pick up three organic products for their spouse respectively.

3.1.2.4 Correlations between Purchasing Power and Green Buyer Behavior for Spouse

The Correlation table below reveals that there is a perfect correlation between purchasing power and the intention to buy for Spouse, a fact convincingly supported by the Analysis of buyer behavior towards buying for spouse. We found that as we move up along the income groups starting from first group ranging from less than Rs 0.3 million annually to last Income Group of Rs. 0.8 million to Rs. 1.2 million annually, there is a significant increase in the number of population buying Green Products. **Correlation is significant at the 0.01 level (2-tailed) as is evident from Table 3 and 4.

The graphical representation of the findings as shown by Figure 2 clearly explains the fact that there is a direct correlation between the purchasing power and the buyer behavior towards Green Products for spouse.

Table 3. Correlations between Purchasing Power and Green Buyer Behavior for Spouse

		INCGP	SPOUSE 1
INCGP	Pearson Correlation	1	.711(**)
	Sig. (2-tailed)		.000
	N	350	325
SPOUSE 1	Pearson Correlation	.711(**)	1
	Sig. (2-tailed)	.000	
	N	325	325

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

Table 4. Nonparametric Correlations

			INCGP	SPOUSE 1
Spearman's rho	INCGP	Correlation Coefficient	1.000	.684(**)
		Sig. (2-tailed)		.000
		N	350	325
	SPOUSE1	Correlation Coefficient	.684(**)	1.000
		Sig. (2-tailed)	.000	
		N	325	325

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

The X-axis of the graph represents the income groups with the Y-axis representing their preference to buy number of products. Analysis of graph reveals that the number of products being bought is gradually increasing with the increase in the purchasing power hence further verifying the results of correlation as discussed above.

3.1.3 Impact of Purchasing Power over Green Buyer Behavior towards Children in the Different Income Groups

The Analysis of Data revealed the following buyer behavior for the women while shopping for their children. The findings have been categorized to the women's preferring to go for one, two or three Green Products in the each income group.

3.1.3.1 Buying at least One Green Product for Children amidst the Four Income Groups

The analysis reveals that there is not even a single income group where sample is not ready to buy at least one Green Product for their Children. 30 percent of first, 40 percent of second, 23 percent of third and 4 percent of fourth income group said yes to buy at least one green product.

3.1.3.2 Buying at least Two or Three Green Products for Children amidst the Four Income Groups

Zero percent of first, 2 percent of second, 80 percent of third and 20 percent of fourth income group preferred to buy at least two green products. 90 percent of the fourth and 10 percent of the third income group preferred to buy three Green Products.

3.1.3.3 Correlation between Purchasing Power and Green Buyer Behavior towards Children

The Correlation table below reveals that there is a perfect correlation between purchasing power and the intention to buy for Children. It is important to note here that it is not just that the correlation is positive but the amount of Green Products that women are desirous and are actually buying for their Children is also quite significant. The research findings could not trace even a single woman who could say no for buying Green Product for her child. The issue here was not whether to buy or not, but how much to buy? Research findings concluded that the number of Green Products bought for the Children went on increasing from one to two to finally three with the increase in the income starting from first group of less than 0.3 million annually to the last Income Group of Rs. 0.8 to 1.2 million annually. **Correlation is significant at the 0.01 level (2-tailed) as is evident from Table 5 and 6.

Figure 3 clearly explains the fact that there is a direct correlation between the purchasing power and green buyer behavior for Children. The X-axis of the graph represents the income groups with the Y-axis representing their preference to buy number of products. On analysis of graph we can see that the number of products bought is gradually increasing with the increase in the purchasing power hence further verifying the results of correlation as discussed above.

Table 5. Correlation between Purchasing Power and Green Buyer Behavior towards Children

		INCGP	CHILD 1
INCGP	Pearson Correlation	1	.635(**)
	Sig. (2-tailed)		.000
	N	350	350
CHILD 1	Pearson Correlation	.635(**)	1
	Sig. (2-tailed)	.000	
	N	350	350

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

Table 6. Nonparametric Correlations

			INCGP	CHILD 1
Spearman's rho	INCGP	Correlation Coefficient	1.000	.631(**)
		Sig. (2-tailed)		.000
		N	350	350
	CHILD1	Correlation Coefficient	.631(**)	1.000
		Sig. (2-tailed)	.000	
		N	350	350

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

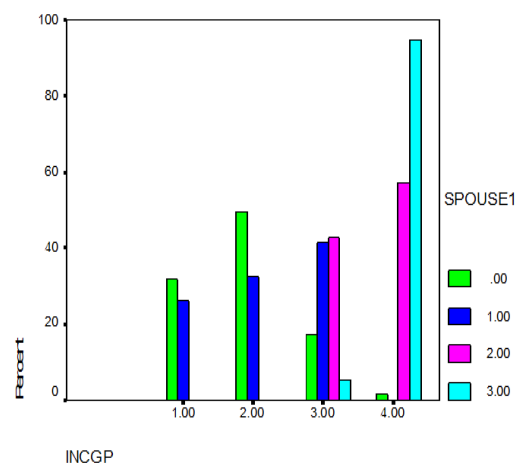
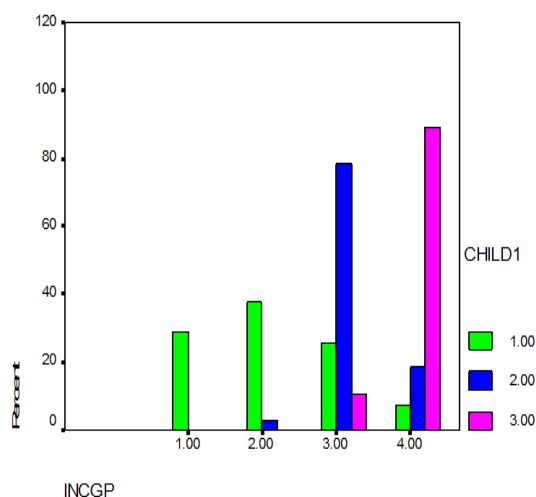


Figure 2. Impact of Purchasing Power over Green Buyer Behavior towards Spouse.

Figure 3. Impact of purchasing power over green buyer behavior towards children.



3.2 Consumers Concern towards Earth and Health

Through the graphical representation now let us try to study the impact of age and income over the concern of population towards Earth or Planet and Health. During study it was revealed that the concern patterns towards Health and Planet of the two income groups i.e., 0.3 to 0.5 million and 0.5 to 0.8 million were more or less the same. Therefore for this part of study the responses of these two income groups have been merged together.

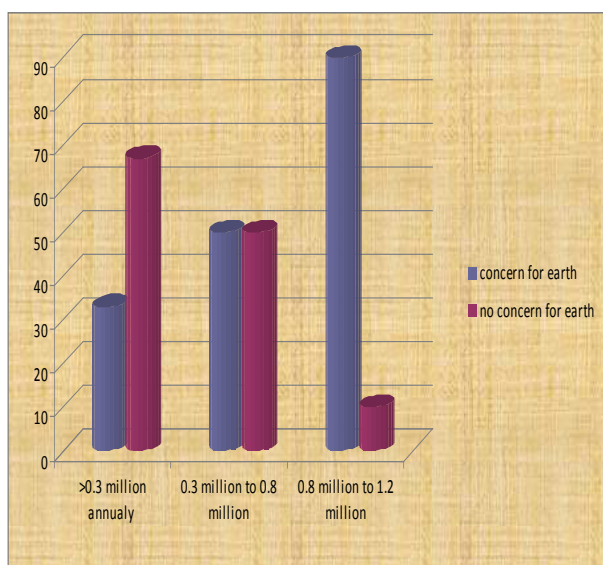


Figure 4. Impact of income group over consumers' concern towards environment.

3.2.1 Impact of Income Group over Consumers' Concern towards Environment

Figure 4 proves beyond doubt that with the increase in income, the concern for earth or environment increases. This may be due to the availability of more money which allows them to care for the planet after spending on their own health.

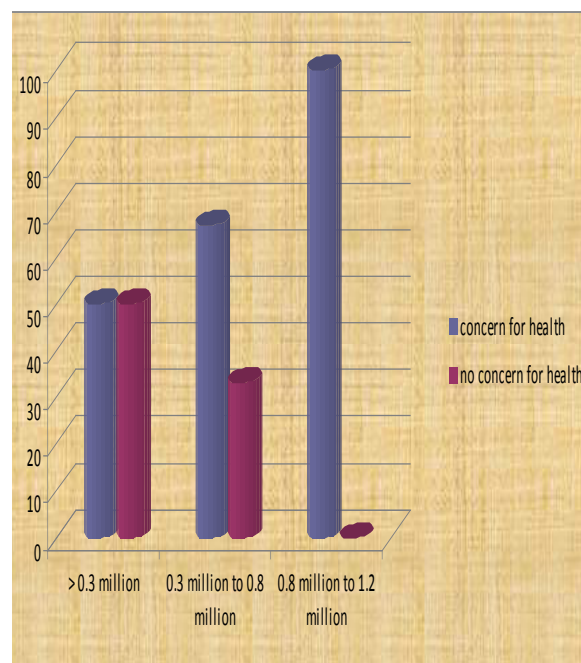


Figure 5. Impact of income group over consumers concern towards health.

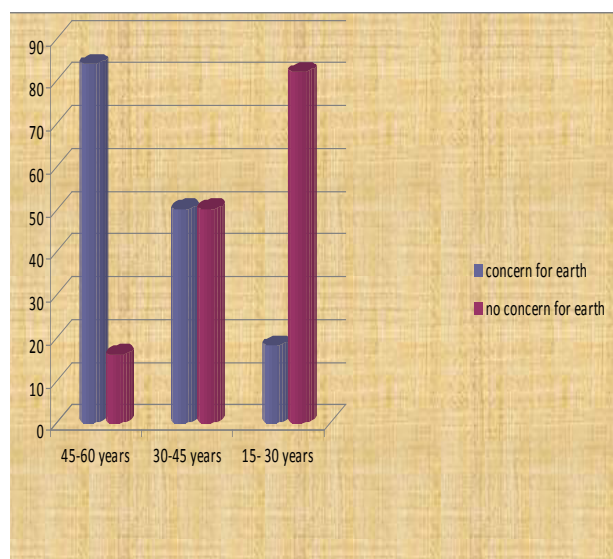
3.2.2 Impact of Income Group over Consumers Concern towards Health

Figure 5 below, shows that irrespective of any other factor the concern for personal health is always a priority for people who can save even a small amount of money. This concern of people towards personal health goes on increasing with the increase in the financial freedom.

3.2.3 Impact of Age Group over Consumers' Concern towards Environment

Figure 6 shows that with the age the concern for earth or environment increases. This may be due to gradual awareness and sense of responsibility which comes with the age.

Figure 6. Impact of age group over consumers' concern towards environment.



3.2.4 Impact of Age Group over Consumers Concern towards Health

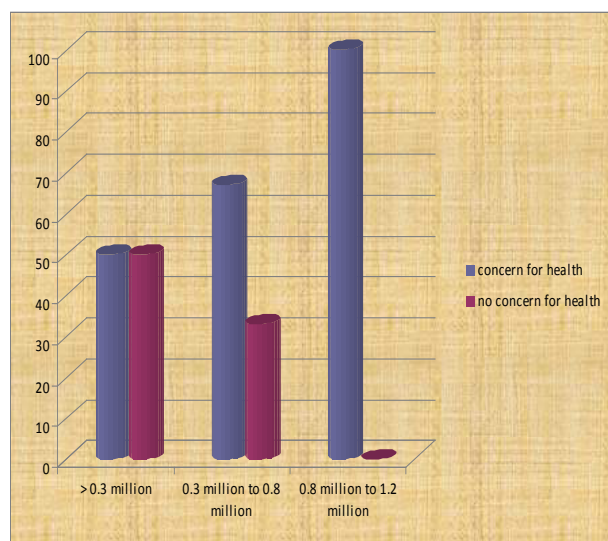


Figure 7. Impact of age group over consumers concern towards health.

Figure 7, shows that it is the time when someone acquires money that decides how he is going to spend it. Meaning thereby that if someone receives money at an early age when he has no responsibility he has a tendency to think green. At an age when he has other priorities like children's, their education and parents then he quietly surrenders his health and also that of the earth before the conventional products with cost, quality and convenience as the striking features.

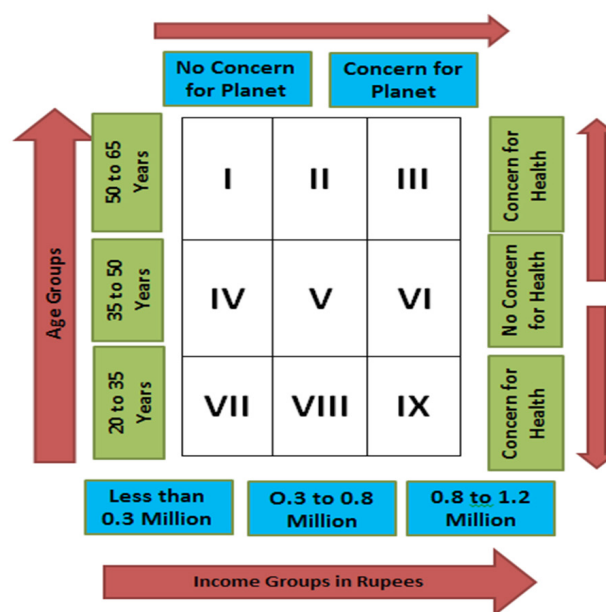


Figure 8. Combined effect of age and income over green buying behavior

4. Combined effect of Age and Income over Green Buying Behavior

On the basis of the research findings researcher arrived at the following quadrant represented by Figure 8. The quadrant explains the impact of age and income over the green buyer behavior and their attitude towards environment. It shows that with the increase in annual income the concern for environment also increases irrespective of the age group.

Research also reveals that the amount of money that an individual receives at a specific age casts a significant impact over the buyer behavior. Let us now study the results one by one on the basis of different age groups.

4.1 Age Group 50 to 65 Years

4.1.1 Quadrant I. Less than 0.3 Million Income Per Annum

In this segment majority comprises of pensioners or people having children settled and with relatively few responsibilities. This group seems to be averse to the planet but has great concern for their health. This category of people would be inclined to buy green product but the green packaging will not appeal to them due to their limited finances.

4.1.2 Quadrant II. 0.3 to 0.8 Million Income Per Annum

In this income group people showed great concern for health. They also showed moderate concern for the planet. This age and income group appeared to offer a potential market for the green products. The population showed an interest to pay for green packaging also but looking at the buyer behavior as revealed by the women and explained under the heading 3.1 above, the actual acceptance of green packaging might face attitude behavior gap.

4.1.3 Quadrant III. 0.8 to 1.2 Million Income Per Annum

The sample in this age and income group can be categorized as the real green consumer as they have money and also awareness of impact of green over the earth. This section of people wants the green product with green packaging. They are the ones who bother about the production process also and expect the zero carbon emitting production process too. They are aware that zero carbon emission is not possible thus they want the corporates to go in for carbon neutralizing.

4.1 Age Group 35 to 50 Years

4.2.1 Quadrant IV. Less than 0.3 Million Income Per Annum

Lower income group in this age bracket is simply averse to the idea of green product. Neither environment nor the health concern bothers them. The lesser finances and higher responsibilities could be the reason behind this behavior. It was observed that majority of the sample had children undergoing senior to higher secondary education. Therefore their career was far higher a concern for them rather than the environment and health.

4.2.2 Quadrant V. 0.3 to 0.8 Million Income Per Annum

This age and income group showed no interest in health. But a significant proportion of this category of people seems to have some concern towards the planet. The association of green with the word status may be the reason for it. But the presence of big attitude behavior gap towards green cannot be denied here.

4.2.3 Quadrant VI. 0.8 to 1.2 Million Income Per Annum

The sample in this age and income group appeared to have a serious bent towards both the environment and the health. But here also it was observed that since even this sample had senior school or college going children so their priorities also appeared to be slightly more inclination towards their career than the health. As far as the concern for environment is concerned surprisingly the population did show a positive attitude towards it. The class factor or the status symbol associated with green may be the reason.

4.3 Age Group 20 to 35 Years

This age group showed mixed kind of responses.

4.3.1 Quadrant VII. > 0.3 Million Income Per Annum

This segment neither showed concern for environment and nor for the health. The less income is the obvious reason for it as also exhibited through the correlation analysis represented by earlier. Surprisingly opposite to the expectation researcher identified a group which showed concern for the earth. The education or awareness of impact of climate change and the role that green product can play in it could be the reason for it.

4.3.2 Quadrant VIII. 0.3 to 0.8 Million Income Per Annum

People in the age group of 20 to 35 years drawing an annual income of 3 Lacs to 8 Lacs showed greater concern towards health with relatively less to no concern towards environment. Responses of women towards their buyer behavior for self, spouse and children, revealed that the women in this income group and at this age showed most diverse attitude towards buying for self and others. The unmarried women had money with no responsibility therefore they showed positive concern towards both the health as well as the environment.

In the same category, the married women without kids or one small kid also shared the similar attitude. But the married women with two or more children appeared to be more concerned towards the health only and that too of their children with no concern for environment due to their limited finances and unlimited responsibilities.

4.3.3 Quadrant IX. 0.8 to 1.2 Million Income Per Annum

The sample in this age group showed a positive concern towards both the health as well as the planet

with an exception of a group which probably was ignorant of the impact of non-green products over the environment. Others either due to the financial independence and may be the awareness of climate change and the role green products can play in mitigating its impact seems to have a strong love for green products and packaging. In fact the people in this segment consider use of green as status symbol could be another strong reason behind this attitude.

So the findings reveal that this segment offers a real green opportunity for green products. The positive attitude of population both towards planet and health offers a very lucrative opportunity for business to not only go in for healthy product ingredients and eco-friendly processing mechanism but also have biodegradable packaging material.

5. Marketing Strategy on the Basis of Impact of Age and Income Group over Green Buying Behavior.

Based on the discussion as mentioned under heading 3.1 and 4.1, we can categorize the consumers into four segments.

5.1 Category A

Based on the discussion as mentioned under heading 3.1 and 4.1, we can categorize the consumers into four segments.

5.2 Category B

Quadrant II, VII and VIII represents the class of people who want their product to be green but the expectation with respect to packaging is not clear. They have the concern for earth but either due to lack of awareness or due to scarcity of finances are not able to translate their attitude to green behavior.

5.3 Category C

If the population belongs to quadrant I with total indifference towards the planet but lot of concern towards personal health, the marketer should ensure that the packaging of the product may not be green as it would simply add cost to the product. What such consumers are looking for is the Green Product and not the green packaging or the Green Production process with zero carbon emissions.

5.4 Category D

Quadrant IV and V represents the class of consumers who neither expect product to be green and nor its packaging to be eco-friendly. For them the time tested traditional products with cost, quality and convenience as its characteristic is what they want. The research shows the low income group people belong to this category.

6. Conclusion

At the end, the author concludes that Green Marketing is going to be a challenging experience. Green Marketing has to evolve since it is still at its infancy. Though some proportion of population is ready to pay premium price for Green Products but a significant pool is still not prepared for it.

We may further infer that with the increase in annual income the concern for environment also increases irrespective of the age group.

Research reveals that the amount of money that an individual receives at a specific age casts a significant impact over the buyer behavior. Receiving big money at young age i.e., from 20 to 35 years and older age i.e., 50 years to 65 years, when there is relatively less responsibility makes a person more inclined towards health and environment concern. There is no point talking about green amidst the low income group and the middle age group ranging from 35 to 50 years as they have more demands to meet than the supply of the money with them. But in the higher income bracket in the same age group, people showed their inclination towards both the environment and health. Reason may be the status symbol associated with the use of eco-friendly products by the people belonging to this income group.

Moving further in the senior age group, if income is comparatively less, the attitude has a shift from good health of the planet to the good health of individual. Contrary to this the same age group in the higher income bracket with lot of financial freedom and no responsibility as such is the best segment to be targeted for green products with Triple bottom line, the Planet, People and Profit. This group of consumers has a high concern towards the environment and also the personal good health.

7. Recommendations

7.1 Lack of Awareness of Benefits of going Green

The population seems to be unaware of the impact of green over health and environment and the mitigating role that green can have over climate change. Thus awareness of Green Marketing has to be spread with full might right from school level.

7.2 Lack of Awareness of Green Stores

They also seem to be unaware of the stores where green products are available, thus green marketers must spread the awareness of stores where green products are available.

7.3 No Green Wash

Employing ethics in practicing green is a must. Even a single instance of Green Wash may have a negative effect over green buying behavior.

7.4 No Green Wash

Green marketing must ensure that it is not causing any detrimental effect to the Health of People and Planet. Serving these two P's viz People and Planet, Profits shall automatically be taken care off.

7.5 Exorbitant Cost of Green

Many segments showed positive attitude towards concern for planet and health, but could not convert their attitude to behavior due to exorbitant cost associated with green. The business must look at this aspect of green seriously. They must fix their price on the basis of actual cost incurred on their manufacture. If it is actually expensive then they must see if they could bear some cost of it as a 'Corporate Social Responsibility' initiative in the name of planet.

Green Marketing is not only a strategy but a necessity. So let's make a beginning!

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