

Analysis of consumers' willingness to pay extra for the buying of the green products

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Abstract

The current generation consumers are more conscious on health and safety aspect and hence they ready to spend more prices for the eco-friendly products. In other hand, they are other category of people they also more conscious towards the environment and health issues but, they hesitate to spend extra value for the same. In this scenario, willingness to pay extra for the environmental friendly products has become big dilemma. Hence this research was carried out by keeping same as research objective. This study was designed based on descriptive method and data were collected from 520 respondents by using non-probability convenience sampling method. Collected data were analysed by using suitable statistical techniques and results were obtained. Considering the severity of today's ecological problem reported by consumer, their willingness to pay extra for green product stated that the companies do not repose expected responsibility levels towards environment should behave favourably in protecting environment shall be their priority and not to consider it as inconvenient. Quite the reverse, consumers who are not willing additionally to pay for green product reported that firms are practicing their responsibility (in average) to protect ecological system, however, the individual is not considering ecological problems during their purchases. Consumers of this nature attribute to lower grade neither ecologically friendly nor creating severity to the eco-system.

Key Words: *Consumers attitude, Eco-friendly products, Environmental concern, Green products, Willingness to Pay*

Introduction:

The concept in the marketing domain says that prices must attain the perceived value of the product and not on the production costs which always have to be covered. There are few points where the 'green' products have the higher pricing due to the high produce cost, that are to be forwarded to their buyers. These high prices can be termed as the increased 'value' which is real/ the perceived value. The environment based products should be having low prices due to the benefit of efficiency that it minimises the cost of production (Michael E. Porter and Claas van der Linde, 1995)

The consumers are ready to pay high price for the products that are less harmful for the environment. Many researchers have found that actual high price paid is between 5 per cent to 10 percent (Kapelianis, Dimitri and S. Strachan, 1996). The marketing of green based products should make sure that the value created with respect to the environment is significant for the consumer which has to be marketed to the consumers very well.

Another problem that is connected with the pricing is the way in which the firms shall gain consumers to know the lifelong goods value such as the buying price, sustainability and the cost of operations which must be grouped along with the pricing and with the purchase decision making. The consumers are less holistic during the product evaluation which is tough for the consumers to understand this concept. Moreover, some consumers are having the perception of environment-based products should be having low prices, other consumers are ready to pay high price. These scenarios are raising the dilemma that, what is the consumers' stand to pay for green products? This question paved the foundation to conduct this research.

Review of literature:

The economic value is explained as the measure of highest possible money a person is able to be willing for sacrificing and considering for obtaining the goods and services than the other goods and services (Schwartz, S. H., and Howard, 1980). This concept is termed as the willingness to spend for someone towards the produced goods and services. The willingness to spend shall be utilised to explain the attitude towards the willingness to spend higher on the initial consumers. This willingness to spend is a variable factor that calculates the person's willingness to spend on the differences in the price that is present between the green based products and the non-green based products available in the market.

The study by (Kwang Sing Ngui et.al 2011) is about the organic food market that has grown globally for the earlier decades. This study showed the factors for willingness for organic foods purchases among the various consumers in the city of Malaysia by engaging the questionnaire form of doing the survey. Theory of Planned Behavior study was used to frame the research and the hypotheses. The structural equation modelling was adopted on the attitude, on the norms of the subjective matter and on the affordability factor of behavior control was considered in this model to know the effect of intention or the willingness to pay (WTP) when buying organic foods. The WTP was able to predict the real purchases made. The consumer attitude and the subject norms showed a prominent positive impact on the WTP whereas the impact towards the affordability factor was insignificant. The form of

attitude additionally affected the norms of the subjective matter and factor of affordability by showing that the work put in to market the consumption growth shall aim on impacting the attitudes of consumer.

As per the study by (Minli Wan, et.al 2016)the continuous and fast growth of economy of China paved for the enhancement of living standards among the Chinese. This has helped for the adoption of the concept of lifestyles of health and sustainability (LOHAS) by Chinese middle-class oriented consumers. This focus for a high life quality made the consumers to have greater interest towards environment friendly products which includes eco-friendly furniture for children. A sample of 320 product consumers across two Chinese metropolitan cities of Shanghai and Shenzhen during the year 2013 was considered and also studied the consumer willingness-to-pay (WTP) a higher price for the environment friendly furniture of children. The outcomes showed that over 98 percent of consumers are willing to pay a higher price for those products. Around 53 percent of respondents said that the WTP is around 10 percent, whereas the percentage of them said that they are WTP more than 10 percent. The outcomes from the ordered Probit model said that there existed a significant correlation between the consumer's WTP and the LOHAS orientation, environmental perceptions, marital status and education level. Findings in this study shall give a good reference for the policymakers, furniture manufacturers and wood material suppliers who are presently calculating to enter these environment friendly markets where the prices are possibly higher in nature.

The study by Smith and (Smith and Ozanne 1998), says that females shall be highly likely to purchase wood products that are certified; during a similar time horizon, both (Mainieri et al.1997) and (Ozanne et al.1999) showed that the female gender was concerned about the environment and were interested to spend high premiums towards the environment friendly wood based products than the male gender.

A study of(Gil et al.2001) is about the attitude and lifestyle for the issues related to environment with the main factors that explains the consumption of green food which has to be noted during the process of designing required strategies by various marketers or producers.

A study of (Wan et al.2015)is of knowing the part of the lifestyle of the consumer in making steps to know their wants and needs. This concept of lifestyle is the highly used formats across for the latest marketing activities. This shall show and inform the self-concept about the consumer and the identity by way of relevant practices (Axsen et al.2015) Taking from the (Dagevos et al.2011) the lifestyle is at the main point of consumerism. This desired lifestyle shows up the consumer choice, when consumer choice is the outcome of the lifestyle. The lifestyle has its significance as the prime variable when studying the consumer behaviors.

According to (Wan et al.2015), the perception is another psychological determinant that shall affect the purchase behavior of consumer and it shows the method in which the consumers pick up, organize and interpret the various information that are sent directly from the environment. The consumer perception about the various product information shall affect ones valuation of the available choices and the purchase decision Wee et al. 2014 when buying the environment friendly furniture for children the consumers will look for main

features of the products and utilise the known features as the format when evaluating various choices.

Objectives of the research:

Based on the research question which has been given at end of the introduction section and followed by its relevant literature, this study was conducted by formulating following research objectives.

- To analyse the demographic factors and influencing factors towards willingness to pay extra for green products
- To compare the consumers those who are willing to pay and not willing to pay extra for the green products buying with respect to various factors

Research Methodology

This research was designed on the basis of descriptive research method. Scope of this study was limited with Tamilnadu based respondents those who aware of green products. This study also limited to demographic factors, influencing factors and technical factors. Based on these factors a proposed research framework has been developed as per the figure 1.

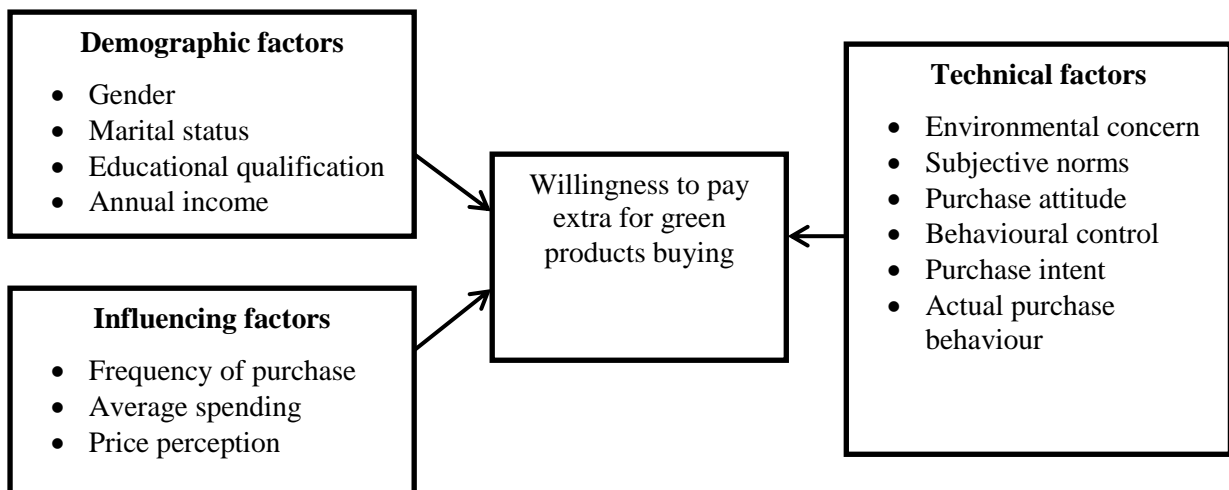


Fig. 1 Proposed research framework

Structured questionnaire was prepared based on three factors such as demographic factor, influencing factors and technical factors. Data was collected from 520 respondents through survey method. Non-probability based Convenience sampling method was adopted for collecting the data, because respondents were chosen based on convenience between researcher and respondents with respect to time and green product awareness. Collected data was recorded in SPSS software package and then analysed the same by using various statistical tools such as reliability analysis, chi-square analysis, and discriminant analysis. Results from the data analysis are presented in the next section.

Data Analysis:

Reliability analysis

Willingness to pay is a separate variable consists of four items that measures how far the consumers set to pay or not to pay more for green products have a high reliability level ($\alpha=0.804$) reveals first rank with $M=3.91$ (1.084) for the statement “do not mind spending more time sourcing the green products” for which majority i.e. three hundred and fifty nine (69.04%) green consumers strongly agree and agree, while one hundred and five (20.19%) stand neutral, fifty six (10.77%) respondents disagree and strongly disagree to the respective statement.

Table 2. Willingness to Pay

Items	Wtd. Mean (SD)	SDA	DA	N	A	SA
I am willing to buy green products even though too expensive and choices are limited	3.76 (1.211)	38	40	107	154	181
		7.31%	7.69%	20.58%	29.62%	34.81%
I am willing to buy green products because the benefits outweigh the cost	3.65 (1.231)	46	42	111	166	155
		8.85%	8.08%	21.35%	31.92%	29.81%
I don't mind spending more time sourcing for green products	3.91 (1.084)	19	37	105	169	190
		3.65%	7.12%	20.19%	32.50%	36.54%
I would still buy green products even though beyond my budget and conventional alternatives are on sale	3.77 (1.097)	22	47	111	186	154
		4.23%	9.04%	21.35%	35.77%	29.62%
Reliability (Cronbach's Alpha)	$\alpha=0.804$					

Second rank with $M=3.77$ (1.097) for the statement “will to pay beyond the budget for green products” for which majority i.e. three hundred and forty (65.39%) green consumers agree and strongly agree, while one hundred and eleven (21.35%) stand neutral, sixty nine (13.27%) respondents disagree and strongly disagree to the respective statement. Third rank with $M=3.76$ (1.211) for the statement “willing to buy green products even it is expensive” for which majority i.e. three hundred and sixty five (64.43%) green consumers strongly agree and agree, while one hundred and seven (20.58%) stand neutral, seventy eight (15%) respondents disagree and strongly disagree to the respective statement. Fourth rank with $M=3.65$ (1.231) for the statement “willing to buy green products for its benefits than cost” for which majority i.e. three hundred and twenty one (61.73%) green consumers strongly agree and agree, while one hundred and eleven (21.35%) stand neutral, sixty eight (16.93%) respondents disagree and strongly disagree to the respective statement.

Chi-square Analysis

In order to understand the relationship between demographic variables and willingness to pay extra on green products, chi-square analysis was carried out. After computing to find association using Cross tabulation between demographics and Willingness to Pay Extra on Green products, Factors influencing purchase decisions and Willing to Pay extra on Green products which covered nine demographic variables and seven other influencing factors to evaluate which variables differentiates the most between the two groups of respondents. Out of nine demographic variables only four variables such as gender, marital status, educational qualification and monthly income is found to have differentiation in both segments. Likewise, in influencing factors three variables such as frequency of buying green products, average expenses and price perception towards green products are found to be differentiated between the two segments. Results are presented hereunder:

Gender significantly influencing willing of consumer to pay additional on green e products is proved statistically at 10% level shows $\chi^2(df=1)=3.205$, Sig.0.073, Table value 2.706 rejecting null hypothesis. This result finds ample support in the literature. Most studies have identified females as being more environmentally concerned than males [208] and [209].

Marital Status significantly influencing willingness of consumers to pay additional on green e products is proved statistically at 5% level shows $\chi^2(df=1) =4.237$, Sig.0.040, Table Value=3.841 thus, rejecting null hypothesis. This could be a strong motivation for married couples to behave in an ecologically conscious fashion. Overall, it seems that married people with children may be more prone to put the welfare of others before their own. Brooker came up with similar findings.

Table 1. Demographic Factors and Opinion on Willingness to Pay for Green products

Sl. No.	Demographic Factor	Chi-square test result	Significance level and Hypothesis status
1	Gender	$\chi^2=3.205$; df=1 TV=2.706 (10%)	Sig.0.073; H ₀ : Rejected
2	Marital Status	$\chi^2=4.237$; df=1 TV=3.841 (5%)	Sig.0.040; H ₀ : Rejected
3	Educational Qualification	$\chi^2=12.609$; df=3 TV=7.815 (5%)	Sig.0.006; H ₀ : Rejected
4	Monthly Income	$\chi^2=9.944$; df=3 TV=7.815 (5%)	Sig.0.019; H ₀ : Rejected
	Influencing factors		
5	Frequency of Purchase	$\chi^2=10.689$; df=2 TV=5.991 (5%)	Sig.0.005; H ₀ : Rejected
6	Average Spending	$\chi^2=10.512$; df=2 TV=5.991 (5%)	Sig.0.005; H ₀ : Rejected
7	Price perception	$\chi^2=6.439$; df=2 TV=5.991 (5%)	Sig.0.040; H ₀ : Rejected

Educational Qualification significantly influencing consumers willing to pay extra on green products is proved statistically at 5% level shows $\chi^2(df=3)=12.609$, Sig.0.006, Table Value=7.815 thus, rejecting null hypothesis. The result is consistent with (Govindasamy and Italia 1999) argue that, among the factors that were found to affect WTP internationally, demographic characteristics such as gender, income and education, are among the most important.

Monthly income is significantly influencing consumers willing to pay extra on green products is proved statistically at 5% level shows $\chi^2(df=3)=9.944$, Sig.0.019, Table Value=7.815 thus, rejecting null hypothesis. The result is consistent with (Angulo et al 2007). assert that only income is a key factor in explaining consumers' WTP a premium and consumers with higher household incomes were not necessarily more entrenched organic buyers than consumers with lower household incomes (Angulo et al 2007).

Frequency of purchase is significantly influencing consumers willing to pay extra on green products is proved statistically at 5% level shows $\chi^2(df=2)=10.689$, Sig.0.005, Table Value=5.991 thus, rejecting null hypothesis. The result is consistent with Chan 2000 who intend to buy green products and the frequency of green product selection as well as the frequency of purchase of green products and the consumption frequency of green products.

Spending on purchase of green products is significantly influencing consumers willing to pay on green products is proved statistically at 5% level shows $\chi^2(df=2)=10.512$, Sig.0.005, Table Value=5.991 thus, rejecting null hypothesis. The result is consistent with Laroche et al., 2001 concluded that the inclination of consumers' to pay a higher price for products with environmental credentials.

Price perception on purchase of green products is significantly influencing consumers willing to pay is proved statistically at 5% level shows $\chi^2(DF=2) =6.439$, Sig.0.040, Table Value=5.991 thus, rejecting null hypothesis. The result is consistent with the definition "an individual's willingness to give up the maximum money for the sake of obtaining goods and services is measured through willingness of the concerned to pay the price difference for green products".

Discriminant analysis

Factors that influences consumers' willingness to pay more for environmentally friendly products

T-Test is conducted on every construct depicted in the conceptual model in order to examine the significant differences. Stepwise discriminant analysis conducted on all the selected factors that identifies the ones different among the most of the two segments which are their opinion on willingness to pay more for green products. The quality of the discriminant function is evaluated and the relevant statistical results are presented in Table 3.

It is evident that discriminant function chi-square value is 251.090 is proved to have achieved large significance level ($P<0.001$). In addition, the percentage of cases correctly classified which are calculated from the validated sample are 81.0 percent, which proves higher than the proportional chance criterion of 50.1% level. T-Test result and the discriminant analysis are presented in the Table 5.68. It is appropriate to give evidence that all constructs were evaluated using five point Likert scale.

Table 3. Basic data on Discriminant analysis

Eigen value	Canonical Correlation	Wilk's Lambda	Chi-Square	Grouped cases correctly classified (%)
0.626	0.620	0.612	251.090	Willing to Pay: 90.6% Not willing to Pay: 64.0% Total = 81.0%

Table 4. T-Test and Discriminant Function Analysis

Factors	Means (SD)		't' Value (Sig.) Df=518	Discriminant Analysis	
	Willing to pay extra (331)	Not willing to pay extra (189)		Wilks' Lambda	Loadings (L)
Environmental Concern	14.76 (3.593)	12.78 (3.970)	5.794 (0.000)		0.557
Subjective Norms	17.47 (2.065)	13.77 (3.334)	15.600 (0.000)	0.698*	0.866
Purchase Attitude	15.76 (4.196)	12.34 (4.959)	8.358 (0.000)	0.628*	0.464
Behavioural Control	28.68 (3.928)	22.74 (5.799)	13.898 (0.000)	0.656*	0.772
Purchase Intent	15.12 (3.107)	12.93 (3.568)	7.337 (0.000)		0.231
Actual Purchase Behaviour	23.14 (4.001)	19.73 (4.437)	8.993 (0.000)		0.124

Discriminant analysis results among green consumers of Chennai who indicated their opinion towards willingness to pay and not willing to pay more shows good prediction levels. T-Test revealed that all six variables viz. Environmental Concern ($t=5.794$, 0.000), Subjective Norms ($t=15.600$, Sig.0.000), Behavioural Control ($t=13.898$, Sig.=0.000), Purchase Attitude ($t=8.358$, Sig.0.000), Purchase Intention (7.337, Sig.0.000) and Actual Purchase Behaviour ($t=8.993$, Sig.0.000) are found to be statistically significant, whereas, difference was observed only for three variables i.e. Subjective norms, Behaviour Control and Purchase Attitude with respect to behaviour of consumers buying environmental friendly products. Attitude is found to be an excellent predictor when examining ecological behaviour of consumers is consistent with the studies by (Banerjee, 1994; McCarty, 1994; Chan, 1999).

Conclusion:

Considering the severity of today's ecological problem reported by consumer, their willingness to pay extra for green product stated that the companies do not repose expected responsibility levels towards environment should behave favourably in protecting environment shall be their priority and not to consider it as inconvenient. Therefore, consumers expect companies to place high importance on ecological security and cordial

relationship with consumers that may help promote positive intent and willingness to pay extra by public during their green purchases. On the contrary, consumers who are not willing additionally to pay for green product reported that firms are practicing their responsibility (in average) to protect ecological system, however, the individual is not considering ecological problems during their purchases. Consumers of this nature attribute to lower grade neither ecologically friendly nor creating severity to the eco-system.

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