

A Study To Measure The Customer Perception Towards Green Products- With Reference To Thiruvananthapuram

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Abstract

In recent picture all consumers were aware about degradation of the environment and also the importance of eco-friendly products. Eco-friendly products are good for environment, have better quality/performance and also are high priced. Perception of consumers is important in the purchase decision of organic food consumption. The perception is the formed as a result of interpreting the experience. The study analyses the perception of customers towards green product on the basis of variables like Expectation, Awareness, Experience and Service Quality. The study is useful to the green entrepreneurs who wish to start a new venture with eco friendly product, as it reveals perception of customers on green product. The structured equation model was adopted here to know the fitness of constructs and the contribution of each factor to customer perception. The questionnaire survey method also has been used to collect the data from 400 consumers across Thiruvananthapuram. For the purpose of collecting data the study area is divided into Talukes and then again divided into villages and identified the green shops in each village. Thus multistage sampling method is used for collecting data. The results reveal that all constructs like Expectation, Awareness, Experience and Service Quality are the major contributing to determine the perception of customers. Out of this expectation is the dominant factor in determining the customer's perception. Thus the expectations of the green product with regard to the different socio-demographic factors like gender, age, level of income, occupation, location, educational qualification were also analysed. However the perception of customers towards green products opens up the new opportunities for eco-friendly entrepreneurs.

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Introduction

According to Ottman (1998, p. 89), a well-known author in the field of green marketing. Green products are typically durable, non-toxic, made of recycled materials, or minimally packaged. Of course, there are no completely green products, for they all use up energy and resources and create by-products and emissions during their manufacture, transport to warehouses and stores, usage, and eventual disposal. So green is relative, describing products with less impact on the environment than their alternatives. In general, green product is known as an ecological product or environmental friendly product. **Shamdasami**, defined green product as the product that will not pollute the earth or deplete natural resources, and can be recycled or conserved. In other words, green product refers to product that incorporates the strategies in recycling or with recycled content, reduced packaging or using less toxic materials to reduce the impact on the natural environment. **Krause (1993)**, in his study reveals

that consumers were becoming more concerned about their everyday habits and the impact on the environment. The outcome of this is that, some of the consumers translated their environmental concern into actively purchasing green products commitment (Martin and Simintiras, 1995). According to Soonthonsmai (2007), Consumers who are aware of and interested in environmental issues are termed as green consumers. Ottman coined that consumers accepted green products when their primary need for performance, quality, convenience, and affordability were met, and when they understood how a green product could help to solve environmental problems. The knowledge gap on the uses and values of green products prevents consumers in committing themselves to any purchase decisions. Thus, the increasing number of consumers who desire and are willing to buy eco-friendly products are creating opportunity for businesses that are using “eco-friendly” or “environmentally friendly” as a component of their value proposition. Businesses that offer products which are manufactured and designed with an environmental marketing mix have a long term competitive advantage. A better understanding of consumers’ buying behaviour will allow businesses to acquire more market-applicable approach to sustain in the competitive market (Collins MarfoAgyeman, 2013) Consumers have a constructive attitude toward greening environment; they are more inclined to purchase green products. The continuous awareness of environmental problems may in turn change consumers’ attitudes and purchase intentions as well (Clem (2008).

Preethi pillai and Dr.S.O Junare (2016) claims that According to the demographic characteristics the perceptions of consumers are different. He find that majority of the respondents agree that eco-friendly products are good for environment, have better quality/performance and also are high priced. Although there were many who showed disagreement to the point that eco-friendly product are well promoted in the market and are easy to distinguish in comparison with conventional products. Perception of consumers’ differs among various income groups. Dr V. Ranganathan and S. Ramya (2016) suggests that Awareness of brand image is the strongest factor that has positively influenced their purchasing decision. A person who has some concern for the environment would have a stronger preference in purchasing a green product. According to Yi Chang Yang (2017) Brand knowledge is positively related to perceived quality. Consumers who have adequate brand knowledge and eco friendly products are perceived as higher quality. Perceived quality of green products had a positive influence on consumers’ purchasing intention. Perceived quality was found to act as the mediating role between brand knowledge and purchasing intention. SuboohYusuf, Zeenat Fatima (2015) revealed in their study that Consumer attitude and perception are positively related to each other. People are concerned about a green product. The people are getting the idea of green marketing from different sources such as television, newspaper magazines, radio, and school/universities outdoor media others. According to Vishnu Nath, Rupesh Kumar, RajatAgrawal ,AdityaGautam (2013) explained in his study that For understanding the consumer perception the first indicators used is Environmental Awareness and Knowledge. Consumers need have complete knowledge about the environment so that they can choose products which least affect the environment.

An expectation refers to a belief about something that an individual prefers to actualise in the future (Bakker, S., Maat, K., van Wee, B, 2014). Customer service satisfaction depends on how well the service customers receive match their expectations. Factors such as age, gender, ethnicity, and income shape many of these expectations. (Kathryn Bishop Gagliano and Jan Hathcote, 1994).The demographics tend to play an important role in regards both the interest of green product and green certification (D“Souza).An expectation is a belief about something that an individual prefers to actualise in the future (Bakker, Frant, Lo and Jim; Morton, Taylor 2019). An expectation is often based on a personal view or judgment, which may or may not be realistic. An expectation may be drawn from an accumulation of facts, knowledge, and principles, in which can lead to a solid argument (Morton; Taylor 2017).The larger gaps existing between consumers’ expectations and their perceptions of green information products are environmental attributes of green information products. The evaluation of all attributes of green information products in light of customers’ expectations and perceptions of them has yielded a conflicting outcome with a high expectation score and a relatively low perception score in average. This confirms persuasively that gaps exist between customers’ expectations and their perceptions of green information products in all attributes (Shih-Chang Tseng, Shiu-Wan Hung 2013) Customer expectations are the feelings and ideas that (potential) customers have towards a products and services.

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Customers are becoming increasingly aware of the options on offer in relation to the rising standards of service (Krihnaveni et al, 2004). They demand better quality service. Delivering quality service is considered an essential strategy for success and survival in today's competitive environment (Dawkins and Reich held, 1990; Parasuraman et al., 1985; Reich held and Sasser 1990; Zeithaml et al., 1990). According to Buttle et al Quality of service represents an important concept in understanding the ways in which customers appraise service provision. This appraisal can interact with other concepts relating to service provision such as customer satisfaction, retention and behavioural intention. One of the most widely employed approaches is SERVQUAL, which measures service across a number of different quality dimensions SERVQUAL was initially developed out of an in-depth qualitative assessment of how quality of service is discussed by service providers and service customers. According to Parasuraman et al. 1988 covers five dimensions of service quality. These dimensions include *tangible* aspects related to facilities and equipment, the *reliability* of service provision, the *responsiveness* of service employees, the *assurances* of employees (such as expertise and knowledge) as well as employee *empathy*. Each of the quality of service dimensions is considered by measuring both customer expectations of service quality and the perceived performance level of service quality and evaluating the gap which exists between these two measurements. If performance meets expectations, customers are considered to be satisfied while if performance falls short of expectations, customers are deemed to be dissatisfied.

This paper is going to look on the factors that affect the customers' perception on green product and identifying the major contribution factors in perception of green product. Here examined the major factor from four relevant constructs of customer's perception such as expectation, awareness, and experience and service quality. There are a lot of study related to the perception and attitude of customers towards green product. But identification of major factor in perception of customers is very limited. Thus the scopes of this study in wide and useful to the manufactures, government and policy makers etc. This study is very relevant in present era where the health and safety are the serious concern for customers. As the study reveals the major contributing factor in customer's perception towards green product, this is very helpful for green manufactures to redesign the product according to the taste and preferences of customers.

Methodology

The present study is a descriptive cum exploratory in nature and is based on primary data. The primary data for this study was collected through the distribution of self-administered questionnaires to potential respondents across Thiruvananthapuram district. The target respondents of this study were consumers who using the green products. Accordingly the questionnaire consists of questions like socio-demographic factors and the items for evaluating the perception of the consumers. For evaluating the perception of customers here used four variables like expectation, awareness, and experience and service quality. The measurement of the questionnaire items in this study used a 5-point Likert scales ranging from strongly disagree to strongly agree. To ensure the validity of the scale used in the survey, the items were adapted from the relevant research and existing literature to fit the theme and context of this study.

Sampling and data collection

The questionnaire targeted the customers across Thiruvananthapuram. Thus a relatively large sample size is recommended. The sample consists of 400 customers across Thiruvananthapuram. Since multistage sampling method was adopted in the study. In multistage sampling large clusters of population are divided into smaller clusters in several stages in order to make primary data more manageable. Thus the study area was divided into six talukes like Thiruvananthapuram, Nedumangadu, Chirayinkeezhu, Kattakada and Neyyattinkara and then again divided the talukes into villages and identified the green shops in each village. Thus identified the number of shops dealing with the green product in each villege. Randomly distributed the questionnaires to the customers from each taluk. Thus multistage sampling method is used for collecting data.

DATA ANALYSIS AND DISCUSSIONS

The analysis is based on the customers' perceptions on green product. There are four main constructs used to analyse the perception of customers such as expectation, awareness, and experience and service quality. The SEM analysis has been done using SPSS AMOS software. One-way ANOVA are also used for data analysis.

Model testing

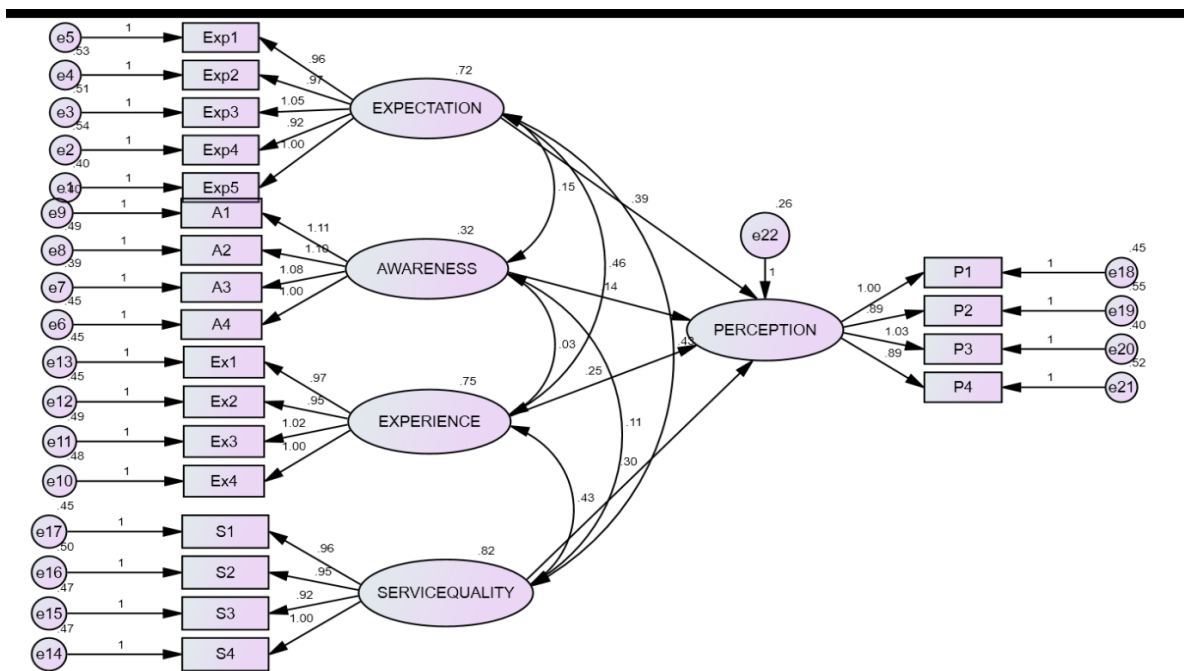
Confirmatory Factor Analysis is the most common method of confirming the consistency of data in the constructs. Confirmatory Factor Analysis is a multivariate statistical procedure that is used to test how well the measured variables represent the constructs.

The construct factors, items and corresponding codes used for the confirmatory factor analysis are shown in table 1.

Construct	Factors	Code
Expectation	Reusable or recyclable	Exp1
	Healthy	Exp2
	Eco-friendly	Exp3
	Minimum wastage	Exp4
	Meets the demand	Exp5
Awareness	Save earth and nature	A1
	Government support	A2
	High quality	A3
	High price	A4
Experience	Innovativeness	Ex1
	Awareness	Ex2
	Observation	Ex3
	Expert opinion	Ex4
Service Quality	Reliability	S1
	Punctuality	S2
	Assurance	S3
	Product knowledge	S4

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Perception	Reusable or recyclable	P1
	High quality	P2
	Innovativeness	P3
	Reliability	P4



To check the validity of measurements, a confirmatory factor analysis was deployed. The factor loadings of the construct Expectation, Awareness, Experience and Service Quality are more than 0.5, which ensures the acceptable level of convergent validity (Hair et al. 2017; Liu and Li, 2010; Campbell and Fiske, 1959). Hence it can be concluded that the construct is adequately explained by the observed variables.

Model fit measurement statistics

Fit Indices	Model	Measure	Result
Chi-square/DF	2.98	P less than 5	Acceptable fit
RMSEA	.071	RMSEA < 0.08	Good fit
GFI	.902	GFI > 0.90	Good fit

Several goodness of fit indices was used in assessing the research models. The most commonly used indices are the likelihood ratio chi-square test, Root-mean-square error approximation (RMSEA), and Goodness of-fit index (GFI). A ratio of χ^2 to degrees of freedom (χ^2/df) value less than 5 indicates an acceptable fit between a hypothesized model and sample data. RMSEA values less than 0.071 indicate close fit while values ranging

from 0.05 to 0.08 indicate a reasonable fit and values greater than 0.09 indicate a poor fit (MacCallum, Browne, & Sugarwara, 1996). From the above table the value of the ratio between χ^2 and the degrees of freedom was 2.98, indicating an acceptable fit for the data. The other indices, RMSEA=.071, GFI=.902, and, show a good fit.

Identification of the dominant factor in Customers’ Perception

From the above analysis it is clear that expectation, awareness, experience and service quality have positive effect on Green product Perception. The result shows that the expectation (.39) is the major contributing factor in green product perception. Second major factor is service quality (.30). Third major factor is experience (.25). Awareness has least importance in determining the green product perception.

Expectation

Since the expectations are the dominant factor in determining the perception of customers regarding green product, a detailed analysis was conducted on expectations based on the socio demographic factors.

Item		Sample	Percentage
Gender	Male	202	50.5%
	Female	198	49.5%

From the above results it is clear that males (50.5%) have more expectations on green product as compared to females (49.5%).

One way ANOVA test for analysing the relationship between expectation and various socio demographic factors.

Variables		Mean	F value	P value
Age	25-30 years	4.0648 (.47923)	.909	.436
	31-35 years	4.0827(.50057)		
	36-40 years	4.1741(.41308)		
	Above 40	4.1438(.44645)		
Social class	Lower Class	4.0903(.39285)	.961	.429
	Middle Class	4.0945(.50296)		
	Upper Middle class	4.1467(.41648)		
	High Class	3.9857(.42582)		
Location	Urban	3.9815(.60222)	2.482	.085
	Semi Urban	4.1376(.43766)		
	Rural	4.0725(.46160)		
Occupation	Government Employee	4.1594(.38410)	1.162	.327

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	Non-Government Employee	4.0649(.49988)		
	Business man	4.2435(.45510)		
	Professionals	4.0667(.49644)		
	Farmers	4.0640(.38175)		
Educational qualifications	Less than High School	4.1474(.37024)	.886	.472
	High School Degree	4.2051(.57397)		
	Pre-degree	4.0978(.45693)		
	Diploma	4.0381(.43382)		
	Post Graduate	4.0749(.48189)		
Marital status	Married	.47165(.47165)	.410	.664
	Unmarried	.47891(.47891)		
	Separated	.42426(.42426)		

As per the analysis, the P value is greater than 0.05. Since the P value is greater than 0.05, the null hypothesis is accepted at 5 per cent level of significance. Hence it can be said that there are no significant differences in the expectation of customers on green products based on different demographic variable. Therefore it can be concluded that the expectation of the customers based on different socio demographic factors like age, marital status, social class, location, Age, Occupation, Educational qualifications regarding the green products are similar. Thus it is observed that the green product expectation of people are same regardless of their socio-demographic factors such as Age, Social class, Location, Occupation, Educational qualifications and Marital status.

CONCLUSION AND IMPLICATIONS

The result of this study can be used by marketers, manufacturers as well as the government to promote green products efficiently. Since the expectation and service quality is the major contributing factors of green product the manufactures can concentrate the quality of service that have provided by them. This study reveals that the different expectations of the customers based on their different demographic factors, the manufactures can offer the green product based on their expectations. As the experience and awareness is the least contributing factors of green product it is advised to the manufactures that do not spend more on the advertisements and promotional activities.

The study mainly concentrated to analyse the perception of customers on green product. To check the validity of measurements, a confirmatory factor analysis was deployed construct is adequately explained by the observed variables. Several goodness of fit indices was used in assessing the research models. The result indicates an acceptable fit between a hypothesized model and sample data A detailed SEM analysis has been conducted to fix the fitness of the conceptual model. The model is based on the factors that contribute to the perception of customers. Here the main four constructs such as expectation, awareness, and experience and service quality are used as the determinants of perception on green product. The result shows that the expectation is the major contributing factor when customer perception is concerned. That means the perception of a customer is changing based on their expectations. The customer is willing to purchase the green product only based on the expectations

on that product. Different customers have different kinds of expectations on a green product. That might be based on their different lifestyles and experiences.

On the other hand the second major contributing factor on consumer perception is service quality. Most of the customers are expecting a good service from the green product providers. Thus the quality of service is another important factor in the perception of green product. The customers are willing to spend on green product only if they get a quality in services from the providers. Thus service quality is a major factor in customer's perception on green product.

The other two constructs like experience and awareness have only least effect on customer perception. This may be because the customers are ready to spend on green product even they are unaware about the green products. Merely the experience and awareness is not enough for the customers to decide whether they should buy the green product or not.

References

1. Pillai, Preeti. "A study on consumers' perception towards eco-friendly products in Ahmedabad." *Management* 2395 (2016): 7492.
2. Ranganathan, V., and S. Ramya. "A study on Consumers' Perception Towards Green Products with reference to Coimbatore city." *Imperial Journal of Interdisciplinary Research* 2.2 (2016): 145-149.
3. Yang, Yi Chang. "Consumer behavior towards green products." *Journal of Economics, Business and Management* 5.4 (2017): 160-167.
4. Yusuf, S., and Z. Fatima. "Consumer Attitude and Perception towards Green Products." *The International Journal of Indian Psychology* 2.3 (2015): 140-146.
5. Nath, Vishnu, et al. "Consumer adoption of green products: Modeling the enablers." *Global business review* 14.3 (2013): 453-470.
6. Krause, Daniel. "Environmental consciousness: An empirical study." *Environment and Behavior* 25.1 (1993): 126-142.
7. Ottman, Jacqueline, and N. B. Books. "Green marketing: opportunity for innovation." *The Journal of Sustainable Product Design* 60.7 (1998): 136-667.
8. Ottman, Jacquelyn A., Edwin R. Stafford, and Cathy L. Hartman. "Avoiding green marketing myopia: Ways to improve consumer appeal for environmentally preferable products." *Environment: science and policy for sustainable development* 48.5 (2006): 22-36.
9. Bakker, Sjoerd, Kees Maat, and Bert Van Wee. "Stakeholders interests, expectations, and strategies regarding the development and implementation of electric vehicles: The case of the Netherlands." *Transportation Research Part A: Policy and Practice* 66 (2014): 52-64.
10. Gagliano, Kathryn Bishop, and Jan Hathcote. "Customer expectations and perceptions of service quality in retail apparel specialty stores." *Journal of Services Marketing* (1994).
11. Tseng, Shih-Chang, and Shiu-Wan Hung. "A framework identifying the gaps between customers' expectations and their perceptions in green products." *Journal of cleaner production* 59 (2013): 174-184.
12. Martin, Bridget, and Antonis C. Simintiras. "The impact of green product lines on the environment: does what they know affect how they feel?." *Marketing Intelligence & Planning* (1995).
13. Soonthonsmai, V. "Environmental or green marketing as global competitive edge: Concept, synthesis, and implication." *EABR (Business) and ETLC (Teaching) Conference Proceeding, Venice, Italy*. 2007.
14. Agyeman, Collins Marfo. "Consumers' buying behavior towards green products: An exploratory study." *International journal of management research and business strategy* 3.1 (2014): 188-197.
15. Morton, Craig, et al. "Exploring the expectations of transport professionals concerning the future automobility system: Visions, challenges, and transitions." *International journal of sustainable transportation* 11.7 (2017): 493-506.
16. Taylor, Andrea, Suraje Dessai, and Wändi Bruine de Bruin. "Public priorities and expectations of climate change impacts in the United Kingdom." *Journal of Risk Research* 22.2 (2019): 150-160.
17. Parasuraman, A., Zeithaml, V. A., & Berry, L. L. 1988. SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. *Journal of Retailing*, 64(1), 12-40.

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18. Parasuraman, A., Zeithaml, V. A., & Berry, L. L. 1994. Alternative scales for measuring service quality: A comparative assessment based on psychometric and diagnostic criteria. *Journal of Retailing*, 70(3), 201–230.
19. Dawkins, Peter, and Frederick Reichheld. "Customer retention as a competitive weapon." *Directors and boards* 14.4 (1990): 42-47.