



MANAGEMENT TODAY

-for a better tomorrow

An International Journal of Management Studies

home page: www.mgmt2day.griet.ac.in

Vol.7, No.1, January-March 2017



Mapping of Demographic Profile of Customers vis-a-vis Preference for Green Food Products: A Study in and around Kolkata (India)

Sudipta Majumdar¹ and Sukanta Chandra Swain²

¹Asst. Professor, Faculty of Management Studies, ICFAI University Jharkhand, Ranchi, India, E-mail: smajumdar2004@gmail.com

²Professor, Faculty of Management Studies, ICFAI University Jharkhand, Ranchi, India, E-mail: sukanta_swain@yahoo.com

ARTICLE INFO

Article history

Received 12.05.2016

Accepted 25.03.2017

Keywords:

green food products, factors, Kolkata, one-way ANOVA, demographic variables

ABSTRACT

Since green products ensure safety and sustainability from health and environmental point of view, research on green products from consumers' perspective has been the need of the hour. Considering this, our earlier researches have focused on identification and prioritization of factors influencing preferences for green products – both food and cosmetic products. It has been evidenced in many researches that the demographic profiles of the consumers matter in preferring anything. Thus, this study tries to establish whether there is any significant impact of demographic profile of the consumers on their preference towards green food products. Demographic profiles considered in this study are; age-group, gender, last grade of school completed, occupation, income and number of members in the household. In fact, the objective of this paper is to map demographic profile of consumers (on the above mentioned facets) with their preference by way of applying one-way ANOVA for the data obtained from the 400 respondents (green food product users) selected from Kolkata, India and in and around of it. The findings so obtained will certainly lend a hand to contrive for stretching the incidence and depth of usage of green food products focusing on influential facets of demographic profile of the consumers.

1. Introduction

From the last decade onwards people became more concerned about their health, as a result of which, they are using more of green products. Green products can be stated as having less of an impact on the environment and are less damaging to human health than traditional products. Hence they are also called as sustainable or environment friendly product. Green products

are formed from recycled components, be manufactured in a more energy-conservative way, or be supplied to the market in more environmental friendly way. Since people are becoming more aware about the concept of environmental consciousness, the usage of traditional or conventional products are getting reduced. Traditional products are those manufactured in the traditional way. They are not being produced keeping environmental considerations in mind. In today's competitive scenario green products are competing with the conventional or regular products (products produced by traditional methods). But, this usage pattern is not applicable to all parts of the society. Knowledge and awareness about the green products play a very vital role in enabling the customers to use them. But, this awareness and knowledge do not exist, thus restricting the usage of the green products. From the last decade onwards, we

Responsibility of Contents of this paper rests upon the authors and not upon GRIET publications

ISSN: 2348-3989 (Online)

ISSN: 2230-9764 (Print)

Doi: <http://dx.doi.org/10.11127/gmt.2017.03.06>

pp. 34-39

Copyright@GRIET Publications. All rights reserved.

have started using the green products and it will take time before it penetrates to all parts of the society.

The concept of green products is becoming more popular with the aspect of food items. Since people are becoming more health conscious, they are giving more importance to the consumable products. People started using more green food products to minimize their health risk. But, here also like normal green products knowledge and awareness is not there in all parts of the society. So, these are more being used by the more educated parts of the society. Also, organizations and government are incapable of promoting the concept of "Green". But the best part is, the concept has started and it is penetrating to the society at a very fast pace. If all the factors which contribute to the popularity of green products, such as price of the product, its quality, customer's perception about the products, awareness about them, are being handled carefully by the government and the organizations, then they will become more popular in the society.

As we have been discussing, there are various factors which positively as well as negatively influence the popularity of green food products. In this context, it is important to examine various demographic factors which influence the usage of green products, specifically in food sector in Kolkata and around Kolkata in West Bengal, India. The various demographic variables, such as Age, Gender, Education, Occupation, Income and Number of members in the household are selected from a thorough literature review. The consumers' perception about each demographic variable is being understood. This paper aims to provide a snapshot of consumers' behaviour about Green Food Products with respect to various Demographic variables in India (Kolkata).

2. Review of Literature

In this paper, we intend to examine the impact of individual attributes of customers towards marketing of green products. In the Indian context, green products are still consumed by a very small subset of customers and the consumption is largely dependent on individual attributes, i.e. demographic and psychographic characteristics (Harper and Makatouni, 2002; Ahmed and Juhdi, 2010). Impact of these characteristics is more evident for green food product segment (Davies *et al*, 1985; Lea and Worsley, 2005). In the following section, we summarize the findings by published literature on these issues.

The demographic variables are related to the basic characteristics of a person such as age, gender, income etc. which affect the consumer buying behavior. With respect to green products, the various demographic variables which affect customer's attitude towards green food products are age, gender, household income, education, social class, etc. The age of the customers affected significantly the purchasing of organic food products (Davies *et al*, 1985). Similar observations were reported in some other papers (e.g. Lea and Worsley, 2005) where impact of age on customer's belief about the organic food products was established. Middle-aged persons have a strong positive belief about the effects of organic

items which they consider as an alternative of conventional food products (Lea and Worsley, 2005). Household income also positively influences consumption and purchasing of organic foods as reported in several papers (Davies *et al*, 1995; Lea and Worsley 2005; Chinnici *et al*, 2002). Also it was examined that the composition of a family infer that households with children and specifically women members of those families prefer buying more green food items than that of the household without children (Davies *et al*, 1985). The higher formal educational level also positively influences the purchasing behavior for green food products (Lockie *et al*, 2002; Ahmed and Juhdi, 2010). This is because more education makes the consumers more aware about the environment which will ultimately influence their purchasing behavior.

We have found from the above discussion that, green food product consumption is being studied based upon some basic demographic variables. Since income of the consumer plays a pivotal role in green food product consumption, it can be further studied along with the effects of occupation. This aspect was examined on the consumers buying behavior but not on green food products (Cline *et al*, 2006). Also, no study has been made regarding the impact of cultural aspects (Razzaque, 1995) on green food product consumption. So, here in this study, the relationship between consumption of green food products with respect to various demographic profiles of the customers is being studied.

3. Methodology

The study was based on quantitative data on consumers' perception about green food products and their demographic profile. Data was collected both in online and offline format. All the respondents were briefed about the project before they respond.

In case of the online format, the data was collected with the help of mail-based questionnaire. The questionnaire was sent to many respondents selected randomly. A cover letter was also sent along with the questionnaire. A total of 100 respondents were selected randomly and the questionnaires were sent to them. To improve the success rate, the questionnaires were sent repeatedly to the prospective respondents. Approximately, 65 respondents sent back the filled-in questionnaires.

The survey was also carried on in the offline format. For that, the questionnaires were distributed to the respondents, i.e., green product users selected randomly from the different parts of Kolkata, India. A total of 400 respondents were surveyed for their responses.

So, considering both the online and offline format, 400 respondents were surveyed for their responses.

The questionnaire was formulated from reviewing existing literature (e.g. Sanchez, 2010; Hofmester-Toth, 2010; Grewal, 2000). Although the questionnaire was a comprehensive one to identify the factors that drive preference for green products and advanced analysis there upon, the use of the filled-in questionnaire for this part of the study figure out the impact of

the various demographic variables, such as age, gender, education, occupation, income and number of members in the household on the respondents intention to purchase green products. The paper will be studying the responses on only two types of green products, namely foods products and food items. The questionnaire is divided into eight parts. The first part is trying to measure the environmental consciousness of the respondents with respect to the scales used in the paper by Sanchez, 2010. The second part is measuring the price sensitivity of the respondent with respect to the scale used in a paper by Goldsmith, 1991. In the third, fourth and the fifth part, the respondent's opinion leadership, innovativeness and involvement in buying green products will be studied based on a paper by Grewal, 2000. In the sixth part, the respondent's health consciousness will be studied based on the concept from the literature by Hong 1990. In the seventh part, the respondent's reaction to the different characteristics of the green foods products are studied. The scales are based on the literatures by Ahmad, 2010; Chang 2011; Davies, 1995; Bamberg, 2006 and Lea 2005. The eighth part is same as the seventh part. The only difference is that the products considered here are green food products. The scales are based on the literatures by Ahmad, 2010; Kozup, 2003; Davies, 1995; Bamberg, 2006; Lin, 2012; Chang, 2011 and Lea, 2005. All the factors were measured on a seven point rating scale stating the following things (1 = Very Strongly Disagree, 2 = Strongly Disagree, 3 = Disagree, 4 = Neither Agree Nor Disagree, 5 = Agree, 6 = Strongly Agree, 7 = Very Strongly Agree). The socio-demographic information of the respondents is collected in the ninth part.

The collected data for all the parts of the questionnaire is analyzed using One-Way ANOVA, to uncover the underlying structure of a relatively large set of variables. The IBM SPSS (version 19) is used for the purpose.

4. Data Analysis and Findings

4.1 Respondents' Demographic Profile

This section presents an analysis of the demographic characteristics of the samples as well as their relationship with consumer's behavior about green Food products. In order to visualize a better understanding of the basic profile of the sample surveyed and to obtain a description of distribution of responses, percentage to each variable were taken into consideration.

Table-4.1: Demographic Profile of Respondents

Characteristics	Profile	Frequency	Percent
Age group	18 – 25	30	7.5
	26 – 35	126	31.5
	36– 50	136	34
	>50	103	25.8
Gender	Male	215	53.8
	Female	185	46.3
Last grade of school completed	High School	96	24
	Graduation	167	41.8

	Post-Graduation	137	34.3
Occupation	Student	51	12.8
	Business	123	30.8
	Service	125	31.3
	Housewife	101	25.3
Income	<25,000	39	9.8
	25,000– 49,999	75	18.8
	50,000 – 74,999	113	28.3
	75,000 – 99,999	135	33.8
	>=1,00,000	38	9.3
Number of members in the household	< 2	106	26.5
	2 – 4	163	40.8
	>= 5	130	32.5

Source: Primary Data

The majority (65.5%) of the sample was falling in the age group of 26 - 50 years. Only 7.5% of the samples are young and 25.8 % of the sample was above 50 years of age. So, most of the respondents surveyed as a part of the samples are adult.

Regarding the gender of the respondents, 53.8% of the respondents were male, whereas 46.3 % of the respondents are female.

For the study only educated people were considered. The findings revealed that 24% had completed high-school, 41.8% had completed graduation and 34.3% had completed post-graduation.

About the occupation, 12.8 were students, about 62% were professionals, out of which 30.8% were into business and 31.3 % were into service. Only, 25.3% respondents were housewife.

Majority of the respondents had monthly income between 50,000 and 99,999. Only 9.8 % respondents were earning below 25,000 and 18.8% respondents earning between 25,000 and 49,999. Whereas, 9.3% of the respondents earn above 1,00,000.

Majority of the respondents (40.8%) were having a household between 2 to 4 members. 32.5% of the respondents were having a household of greater than or equal to 5 members.

4.2. Impact of Demographic Profile on Preference for Green Food Products (ANOVA)

4.2.1 Age Group:

One-Way ANOVA is done in order to know whether the age-group, denoted as v1, has significant impact on the use of green food products. For the purpose, the respondents studied have been segregated into four categories; a) 18yrs – 25 yrs. B) 26 yrs. – 35 yrs., c) 36 yrs. – 50 yrs. and d) > 50 yrs. and these age-groups are denoted respectively as 0, 1, 2 and 3 for analysis purpose in SPSS. Preference for green food products is the dependent variable and in analysis, it is denoted as v2. The relevant portion of SPSS output sheet is presented below to

infer whether there is any significant effect of age-group on the preference of green food products.

Table 4.2 ANOVA output for age-group

Dependent Variable v2					
	Sum of Squares	Df.	Mean Square	F	Sig.
Between Groups	4.247	3	1.416	.538	.656
Within Groups	1041.190	396	2.629		
Total	1045.437	399			

Source: SPSS Output

Hypothesis on Age-Group:

H0: Age-group does not influence consumers' preference towards green food products. In other words, there is no significant difference among different age-groups concerning their impact on preference, i.e., $18-25 = 26-35 = 36-50 = >50$.

H1: Age-group influences consumers' preference towards green food products.

The exact significant level (p value) of ANOVA is exhibited in 6th Col. (Sig.) of table 4.2. The level of significance set by us is 5%, i.e., $\alpha = 0.05$ (on the basis of existing researches of similar type). The table reveals that 'p' value is more than the ' α ' value. In fact, since $p = 0.656$ is greater than $\alpha = 0.05$, the null hypothesis is accepted and established. That means, the age-group does not significantly impact the consumers' preference towards green food products.

4.2.2 Gender

Like age-group, for gender also, One-Way ANOVA is done in order to know whether the gender, denoted as v1, has significant impact on the use of green food products. For the purpose, the respondents studied have been segregated into two categories; a) Female B) Male and these categories are denoted respectively as 0 and 1 for analysis purpose in SPSS. Preference for green food products is the dependent variable and in analysis, it is denoted as v2. The relevant portion of SPSS output sheet is presented below to infer whether there is any significant effect of gender on the preference of green food products.

Table 4.3 ANOVA output for Gender

Dependent Variable v2					
	Sum of Squares	Df.	Mean Square	F	Sig.
Between Groups	.119	1	.119	.045	.832
Within Groups	1045.319	398	2.626		
Total	1045.438	399			

Source: SPSS Output

Hypothesis on Gender:

H0: Gender does not influence consumers' preference towards green food products. In other words, there is no significant difference between two genders concerning their impact on preference, i.e., Male = Female.

H1: Gender influences consumers' preference towards green food products.

The exact significant level (p value) of ANOVA is exhibited in 6th Col. (Sig.) of table 4.3. The level of significance set by us is 5%, i.e., $\alpha = 0.05$ (on the basis of existing researches of similar type). The table reveals that 'p' value is more than the ' α ' value. In fact, since $p = 0.832$ is greater than $\alpha = 0.05$, the null hypothesis is accepted and established. That means, gender does not significantly impact the consumers' preference towards green food products.

4.2.3 Level of Education

Like the other demographic variables, for level of education also, One-Way ANOVA is done in order to know whether the level of education, denoted as v1, has significant impact on the use of green food products. For the purpose, the respondents studied have been segregated into three categories; a) High School b) Graduation and c) Post – Graduation. These categories are denoted respectively as 0, 1 and 2 for analysis purpose in SPSS. Preference for green food products is the dependent variable and in analysis, it is denoted as v2. The relevant portion of SPSS output sheet is presented below to infer whether there is any significant effect of level of education on the preference of green food products.

Table-4.4: ANOVA output for Education

Dependent Variable v2					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	.904	2	.452	.171	.843
Within Groups	1043.652	395	2.642		
Total	1044.555	397			

Source: SPSS Output

Hypothesis on Education:

H0: Level of Education does not influence consumers' preference towards green food products. In other words, there is no significant difference between three levels of education concerning their impact on preference, i.e., High School = Graduation = Post - Graduation.

H1: Level of Education influences consumers' preference towards green food products.

The exact significant level (p value) of ANOVA is exhibited in 6th Col. (Sig.) of table 4.4. The level of significance set by us is 5%, i.e., $\alpha = 0.05$ (on the basis of existing researches of similar type). The table reveals that 'p' value is more than the ' α ' value. In fact, since $p = 0.843$ is greater than $\alpha = 0.05$, the null hypothesis is accepted and established. That means, level of education does not significantly impact the consumers' preference towards green food products.

4.2.4 Occupation

Like the other demographic variables, for different types of occupation also, One-Way ANOVA is done in order to know whether the different types of occupation, denoted as v1, has significant impact on the use of green food products. For the purpose, the respondents studied have been segregated into four categories; a) Student b) Business c) Service and d) Housewife. These categories are denoted respectively as 0, 1, 2 and 3 for

analysis purpose in SPSS. Preference for green food products is the dependent variable and in analysis, it is denoted as v2. The relevant portion of SPSS output sheet is presented below to infer whether there is any significant effect of level of education on the preference of green food products.

Table-4.5: ANOVA output for Occupation

Dependent Variable v2					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	9.146	3	3.049	1.165	.323
Within Groups	1036.292	396	2.617		
Total	1045.438	399			

Source: SPSS Output

Hypothesis on Occupation:

H0: Occupation does not influence consumers' preference towards green food products. In other words, there is no significant difference between four levels of occupation concerning their impact on preference, i.e., Student = Business = Service = Housewife.

H1: Occupation influences consumers' preference towards green food products.

The exact significant level (p value) of ANOVA is exhibited in 6th Col. (Sig.) of table 4.5. The level of significance set by us is 5%, i.e., $\alpha = 0.05$ (on the basis of existing researches of similar type). The table reveals that 'p' value is more than the ' α ' value. In fact, since $p = 0.323$ is greater than $\alpha = 0.05$, the null hypothesis is accepted and established. That means, Occupation does not significantly impact the consumers' preference towards green food products.

4.2.5 Income

Like other characteristics of demographic profile as analyzed above, income of the consumers has also been considered for One-Way ANOVA in order to know whether the income level of the consumers, denoted as v1, has significant impact on the use of green food products. For the purpose, the respondents studied have been segregated into five categories on the basis of monthly income in Rupees; a) <25,000 b) 25001-49999 c) 50000-74999 d) 75000-99999 and e) ≥ 100000 and these categories are denoted respectively as 0, 1, 2, 3 and 4 for analysis purpose in SPSS. Preference for green food products is the dependent variable and in analysis, it is denoted as v2. The relevant portion of SPSS output sheet is presented below to infer whether there is any significant effect of income level of the consumers on the preference of green food products.

Table-4.6: ANOVA output for Income Level

Dependent Variable v2					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	4.791	4	1.198	.455	.039
Within Groups	1040.646	395	2.635		
Total	1045.438	399			

Source: SPSS Output

Hypothesis on Income Level:

H0: Income level does not influence consumers' preference towards green food products. In other words, there is no significant difference between five income levels concerning their impact on preference, i.e., <25,000 = 25001-49999 = 50000-74999 = 75000-99999 = ≥ 100000 .

H1: Income level influences consumers' preference towards green food products.

The exact significant level (p value) of ANOVA is exhibited in 6th Col. (Sig.) of table .039. The level of significance set by us is 5%, i.e., $\alpha = 0.05$ (on the basis of existing researches of similar type). The table reveals that 'p' value is less than the ' α ' value. In fact, since $p = 0.039$ is less than $\alpha = 0.05$, the null hypothesis is not accepted. That means, income level significantly impacts the consumers' preference towards green food products.

4.2.6 Number of Members in Household

The last demographic variable which is studied in this paper is the number of members in the household of the consumer, for different number of members in the household also, One-Way ANOVA is done in order to know whether different number of members in the household, denoted as v1, has significant impact on the use of green food products. For the purpose, the respondents studied have been segregated into three categories; a) <2 b) 2 - 4 and c) ≥ 5 . These categories are denoted respectively as 0, 1 and 2 for analysis purpose in SPSS. Preference for green food products is the dependent variable and in analysis, it is denoted as v2. The relevant portion of SPSS output sheet is presented below to infer whether there is any significant effect of level of education on the preference of green food products.

Table-4.7: ANOVA output for Number of Members in the Household

Dependent Variable v2					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	2.261	2	1.131	.430	.651
Within Groups	1043.176	397	2.628		
Total	1045.437	399			

Hypothesis on Number of members in the Household:

H0: Number of members in the household does not influence consumers' preference towards green food products. In other words, there is no significant difference between four levels of occupation concerning their impact on preference, i.e., <2 = 2-4 = ≥ 5 .

H1: Number of members in the household influences consumers' preference towards green food products.

The exact significant level (p value) of ANOVA is exhibited in 6th Col. (Sig.) of table 4.7. The level of significance set by us is 5%, i.e., $\alpha = 0.05$ (on the basis of existing researches of similar type). The table reveals that 'p' value is more than the ' α ' value. In fact, since $p = 0.651$ is greater than $\alpha = 0.05$, the

null hypothesis is accepted and established. That means, Occupation does not significantly impact the consumers' preference towards green food products.

5 Conclusion

In order to meet the purpose of the study as envisaged in the introduction part of the paper, One-Way ANOVA is used to know whether any facet of demographic profile of the consumers has significant impact on the preference of the green food products. Out of six facets of demographic profile considered, only one, i.e., income level of the consumers has significant impact on preference for green food products. Participatory observation method followed in uncovering the logic behind our findings reveals that owing to comparatively highly priced, the preference for green food products is a direct function of the income level of the consumers. Although all the respondents are the users of green food products, consumers in relatively lower income basket don't afford to all the green food products available in the market and prefer to conventional food products for reasonability of prices. Other five facets of demographic profile such as age, gender, education, occupation and family size don't significantly impact the preference for green food product. On observation, it is found that those who are users, they know very well the utility of the green food products vis-à-vis their conventional counterparts. Thus irrespective of gender, education, occupation and family size, the preference gets intact. However, in-depth study on facet-wise demographic profile on preference may bring forth some exceptional result which may be considered for future research.

On the basis of the research findings, it is inferred that, in order to popularize the use of green food products, the producers need to focus on either of the following two points; a) keep the prices of the green food products in reasonable range to make it affordable to a wider base of consumers and b) to market the same amongst the consumers of higher income-group basket exhaustively.

Bibliography

- Ahmad, S. & Juhdi, N. (2010). Organic Food: A Study on Demographic Characteristics and Factors Influencing Purchase Intentions among Consumers in Klang Valley, Malaysia. *International Journal of Business and Management*, Vol. 5(2), pp. 105-118.
- Bamberg, S. (2003). How does environmental concern influence specific environmentally related behaviors? A new answer to an old question. *Journal of Environmental Psychology*, Vol. 23, pp. 21-32.
- Chang, C. (2011). Feeling Ambivalent About Going Green Implications for Green Advertising Processing. *The Journal of Advertising*, Vol. 40(4), pp. 19-31.
- Chinnici, G. and D'Amico, M. & Pecorino, B. (2002). A multivariate statistical analysis on the consumers of organic products. *British Food Journal*, Vol. 104(3/4/5), pp. 187-199.
- Davies, A., Titterington, A. & Cochrane, C. (1995). Who buys organic food? A profile of the purchasers of organic food in Northern Ireland. *British Food Journal*, Vol. 97(10), pp. 17-23.
- Harper, G. & Makatouni, A. (2002). Consumer perception of organic food production and farm animal welfare. *British Food Journal*, Vol. 104(3/4/5), pp. 287-299.
- Kaiser, F., Wolfing, S. & Fuhrer, U. (1999). Environmental attitude and Ecological behavior. *Journal of Environmental Psychology*, Vol. 19, pp. 1-19.
- Kozup, J., Creyer, E. & Burton, S. (2003). Making Healthful Food Choices: The Influence of Health Claims and Nutrition Information on Consumers' Evaluation of Packaged Food Products and Restaurant Menu Items. *Journal of Marketing*, Vol. 67, pp. 19-34.
- Majumdar, S & Swain, S. C. (2015) Mapping of Demographic profile of Consumers vis-a-vis preference for Green Cosmetic Products: A study in and around Kolkata (India). *International Journal of Personal Care, Cosmetics, Dermatology, Home Care and I&I*, Vol. 10(6), pp. 26-29.