

Consumer Attitude towards Functional Food: A Study of Dehradun region

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ABSTRACT

The choice of food today is a complex human behavior which is influenced by personal and environmental factors. Food is the most basic of all human needs and in twenty-first century it is used not only to satisfy hunger and provide necessary nutrients for humans but is also used to prevent disease and improve the physical and mental well-being of consumers. The consumer tries to optimize both nutrition and enjoyment derived from food. The term functional food is used to describe a range of novel foods, which are designed to deliver some benefit beyond nutrition to the person consuming them. The paper aims to study the factors which influence the choice of functional food in Dehradun.

Keywords: Functional food, conventional food, socio-demographic factors, convenient food, lifestyle, bio-active agents.

1. Introduction

Food is the most basic of all human needs and in twenty-first century it is used not only to satisfy hunger and provide necessary nutrients for humans but is also used to prevent disease and improve the physical and mental well-being of consumers. Increasing number of consumers believe that food can directly lead to their well-being. Driven by a variety of socio-economic demographic characteristics, lifestyle and changes in food consumption patterns, number of consumers are demanding healthy, nutritious, convenient and safe food and this number is steadily increasing. One of the recent changes in food consumption patterns among Indian consumers has been the increased interest in functional foods (FFs) which represent healthy or herbal types of food which have medicinal properties or food which are for general well-being of consumers that can prevent or cure some diseases. According to ADA Reports there is no universally accepted definition of functional foods but even so the term functional foods is used to describe a range of novel foods, which are designed to deliver some benefit beyond nutrition to the person consuming them. United States is the largest market, followed by Europe and Japan. India's food industry is generating US\$6.8 billion in annual revenues and the number is expected to double in the next five years. Historically, functional foods originated in Japan in response to clearly identified public health needs, such as the need for more calcium and fiber in Japanese diets. The term was first used in Japan in the 1980s, where there was a government approved process for functional foods, called Foods for Specified Health Use (FOSHU). The functional food industry has been flourishing in developed countries over the past few decades. Functional food meant adding functionality to existing traditional food product and not creating a separate group. Functional attributes can be applied to traditional food

agricultural products, such as milk, meat and eggs and to more processed and developed products such as yogurt, cheese, beverages, bars, snacks and confectionaries. Many studies have previously been done on functional food their merits and factors contributing towards growth in their use over the years. But there was gap in the area of how the consumers perceive these functional food. This paper tries to bridge the gap and tries to study the consumer's attitude towards functional food.

2. Research Objectives

1. To study the attitude of consumer towards Functional Food.
2. To study the effect of demographic factors on attitude towards functional food.

3. Review of Literature

Functional foods are designed to supplement the human diet by increasing the intake of bioactive agents that are thought to enhance health and fitness. According to American Dietetics Association (ADA) reports there is no universally accepted definition of functional foods but even so the term functional foods is used to describe a range of novel foods, which are designed to deliver some benefit beyond nutrition to the person consuming them. Fewersays that these foods are similar in appearance to conventional food that is intended to be consumed as part of a normal diet, but has been modified to sub serve physiologic roles beyond the provision of simple nutrient requirements. These foods provide additional nutrients which are consumed on either doctor's prescription or to improve general well being and health of self or family members. For example, these can include the inherently healthful components in fruits and vegetables, whole grains and fiber in certain breads and cereals and calcium in milk, fortified foods and beverages, such as vitamin D-fortified milk. The Institute of Medicine of the National

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Academy of Sciences limits functional foods to those in which the concentrations of one or more ingredients have been manipulated or modified to enhance their contribution to a healthful diet. ADA Reports, 2004 says that all foods can be incorporated into a healthful eating plan but the key is moderation and variety. Mollet & Rowland, 2002; Young, 2000, say that consumers today believe that food directly contribute to health. Today food is taken as one which not only satisfies hunger and provides nutrition but it prevents nutrition related diseases and promotes physical and mental well-being of consumers. This view is expressed by Menrad, 2003; Roberfroid, 2000. According to Kotilainen, Rajalahti, Ragasa, & Pehu, 2006; Roberfroid, 2000a, 2000b, due to increase in cost of medical health care, increase in life expectancy and desire by old people to have improved quality of later years the demand for functional food has increased.

Historically, functional foods originated in Japan in response to clearly identified public health needs, such as the need for more calcium and fiber in Japanese diets. The term was first used in Japan in the 1980s, where there was a government approved process for functional foods, called Foods for Specified Health Use (FOSHU). In 1991, Burdock, Carabin, & Griffiths, 2006; Kwak & Jukes, 2001a; Menrad, 2003; Roberfroid, 2000b, say that the Ministry of Health introduced rules for approval of a specific health-related food category called FOSHU (Food for Specified Health Uses) and this food had specific health claims. The Japanese interest in functional foods brought awareness for the need of such products in places like Europe and the United States. Experts in these countries realized that besides being able to lower the cost of healthcare of the aging population, functional food might also give a commercial potential for the food industry. Finland & Sweden also have a strong tradition of preventive healthcare where diet and health related messages that have been part of their public health efforts since 1970s. The majority of functional foods started out as focusing on reducing the risk of diseases of deficiency. In the latter part of the twentieth century, consumers began to focus on wellness and the reduction of chronic disease. Research shifted to the promotion of health through many lifestyle factors, including the consumption of an optimal diet. According to Fern, 2007, Hilliam, 1998, Kotilainen et al., 2006; said that functional food meant adding functionality to existing traditional food product and not creating a separate group. Functional attributes can be applied to traditional food agricultural products, such as milk, meat and eggs and to more processed and developed products such as yogurt, cheese, beverages, bars, snacks and confectionaries. According to Mark-Herbert, 2004; Niva, 2007; feel that there is no legislative definition of functional food and drawing a line between functional and conventional food is very difficult even for

the food specialists. Coppens, Fernandes Da Silva, & Pettman, 2006; Stanton et al., 2005; say that European legislation does not consider functional food as a separate food category but treats as a separate concept. Now food products are being marketed for their ability to promote wellness, or as a preventative measure against illness and chronic disease. Functional food according to Niva 2007; has technologically added ingredients with specific health benefits. Multibillion-dollar companies like Monsanto, Bristol-Myers Squibb, Lipton, Johnson & Johnson, Dupont, Procter & Gamble and Novartis have provided substantial resources to discover health-enhancing activities within the foods we eat and to change traditional foods so they contain more of these active ingredients. Food market worldwide is growing at an unimaginable pace and marketers are investing billions on developing food loaded with goodness of health. According to Toner and Pitman; the consumer is more aware of the link between diet and health and is more concerned about self-care and personal health. Sloan, 2000 feels that most early developments of functional foods were those of fortified with vitamins and/or minerals such as vitamin C, vitamin E, folic acid, zinc, iron, and calcium. In his research in 2002 he observed that the focus shifted to foods fortified with various micro nutrients such as omega-3 fatty acid, phytosterol, and soluble fiber to promote good health or to prevent diseases such as cancers, etc. The consumer is seemingly demanding more information on how to achieve better health through diet. The consumer's level of understanding and awareness of the importance of diet in providing good health and preventing disease has grown as a result of the numerous government, public health, and education campaigns. But the consumers do not blindly believe these health claims as they perceive risk along with the benefits. According to McConnon et al.; 78% of respondents agreed to the statement that "a lot of health claims made by food manufacturers about their food products are misleading." This shows the importance of the stakeholders working together and especially educating consumers thereby allowing them to make informed decisions about dietary choices. The customer has many noncommercial sources of information about nutrition and diet disease relationship and is ready to buy healthy foods as "insurance" for future health, as long as the products are credible, high quality, readily available, tasty, varied and convenient. The health trends are continuously changing in the country where the citizens are becoming proactive instead of reactive. This proactive nature is changing the consumption pattern in the country. The population is moving towards healthier options of consumption and thus the demand for health foods & beverages is continuously rising in the country. The level of awareness about the health foods & beverages is limited to the urban areas of the country. The rural population of the country

has limited knowledge about health foods & beverages, including concerns such as importance, availability and requirement. Such factors are proving to be a hindrance in the growth of health foods & beverages market of India. Retail prices of functional foods are typically 30 to 500 percent above the comparable conventional foods and the global market size has been estimated between US\$30 and US\$60 billion with Japan, United States, and Europe being the leading markets. Developing countries have started to emerge as exporters to cater to the increasing demand in the developed countries. The demand for functional foods within the developing countries is growing, presenting a lucrative opportunity to develop domestic markets. Industry analysts such as Frost & Sullivan and Netscribes (India) Pvt. Ltd. also predict a continued growth of the sector in the future. Functional food products are not available in all segments of the food and drink market but these products are mainly available in the dairy confectionery-, soft-drinks-, bakery- and baby-food market which was observed by Kotilainen et al., 2006; Menrad, 2003;.With young Indian consumers earning and spending more, the health & wellness market in India is expected to become the fifth largest consumer market in the world by 2025 from being the 12th largest currently. This presents huge opportunities for the functional foods sector at various stages of the supply chain in both new and niche segments. Beverages and dairy will drive this growth of functional foods in India. The strategy for success of functional food will be one where functional beverage manufacturers, pharmaceutical companies, nutrition companies, and food additives companies cooperate amongst themselves and come up with a concept/product that is healthy, offers great flavors, and which is palatable as well as affordable. The growing awareness for healthier lifestyle is the major reason behind the same. The health food and beverages market in India is witnessing double digit year-on-year growth for quite a few years now due to changing lifestyle, improving disposable income, growing health awareness, etc. Malted food products, baby food products, and cooking oils are the top three preferred products in the health foods and beverages market of India. Other popular health food segments in the country are energy drinks, chyawanprash, fruit juices, butter alternatives, digestive biscuits, health drinks, etc. With its strong tradition of healthful eating, India ranks among the top 10 nations in buying functional foods according to Watson; and India's food industry is generating US\$6.8 billion in annual revenues and the number is expected to double in the next five years. This is an estimate made by Ismail in 2006.Sloan2000, 2002;has reckoned that the global functional food market in the United States is the largest market, followed by Europe and Japan. According to Menrad, 2003, 2004; USA is the most important and dynamic market representing an estimated market share of more than 50%

and this percentage will double by 2008.Hilliam, 1998; Side, 2006;feel that this growth is and will be in future due to favorable legislative framework. Farr, 1997; Kotilainen et al., 2006;Mark-Herbert, 2004;have said that that not only food manufacturers, but also the pharmaceutical industry has become interested in this field. As a result so-called grey area has developed which describes the overlapping of the interests of food and pharmaceutical industries. So companies such as Novartis Consumer Health, Glaxo SmithKline, Johnson & Johnson or Abbott Laboratories are all active in developing functional food. According to ADA,2011,Functional food may include healthful components in fruits, vegetables ,whole grains and even calcium in milk or Vitamin D fortified milk .So functional food can also include dietary supplements.

Hypothesis

H01: Attitude of consumers is same across all age categories.

H02: Gender categories does not influence attitude of consumers towards functional food.

H03: Education status of the respondents does not influence attitude of consumers towards functional food.

H04: There is no effect of marital status on the attitude towards functional food.

H05: Occupation status does not influence attitude of consumers towards functional food.

H06: Attitude of consumers is same across categories of knowledge of functional food.

H07: Specific health problems have no impact on attitude of consumers towards functional food

4. Research Methodology

A self-administered questionnaire was designed, piloted and revised. A seven point Likert scale was used in the questionnaire for this study. The Likert scale is very beneficial as it is easy to construct and offers respondents choices and also allows the researcher to explore attitudinal dimensions (Oppenheim, 1992). The scale represents 1 (strongly disagree) right up to 7 (strongly agree). Demographic profile data was also recorded. The questionnaire was distributed to consumers who had purchased functional food in Dehradun region. The sample for this study comprised of 260 participants, aged above 18 years. All data collected were verified for completeness and was coded, keyed into a computer data file. It was analyzed using IBM-SPSS software version 21. The analyses was conducted using non-parametric statistical tools like Mann Whitney U Test, Kruskal Wallis independent sample test because the data was not normal which was confirmed after Kolmogorov-Smirnov and Shapiro-Wilk test of normality. Lot of studies has previously been done on functional food their merits and reasons for growth in their use over the years .But there was

gap in the area of how the consumers perceive these functional food. This paper tries to bridge the gap and tries to study the consumers attitude towards functional food

and also to study the impact of demographic factors on acceptance of functional food.

5. Results

Table 1: Test of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Log_Attitude_Score	.191	166	.000	.882	166	.000

a. Lilliefors Significance Correction

In the study the sample size was 260 comprising of 100 males and 160 females. From the crosstab of gender and marital status it is clear that males and females in the category married without children were 19 respondents each respectively. In the category married with children below 10 years there were 37 males and 97 females. Finally in the category married with children above 10 years there were 44 males and 44 females. The K-S test (table 1) indicates that the is not normally distributed and hence indicating use of non-parametric test for further

analysis.

The reliability of the scale used was checked using Cronbach's Alpha statistics which was 0.74 on 14 items. So our data is reliable for further analysis.

The content validity was done by consulting various experts in the field of marketing including senior marketing managers from HUL, ITC, Dabur, P&G and academicians from HNB Garhwal University, Uttarakhand Technical University and Doon University.

Table 2: Reliability of the Instrument

Cronbach's Alpha	N of Items
.74	14

Table 2 : Crosstabs Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
	Gender of the Respondent * Marital Status	260	100.0%	0	0.0%	260

H₀₁: Attitude of consumers is same across all age categories.

Table 4 : Independent Sample Kruskal-Wallis

Hypothesis Test Summary			
Null Hypothesis	Test	Sig.	Decision
The distribution of Log_Attitude is the same across categories of Age Category.	Independent-Samples Kruskal-Wallis Test	.002	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

The null hypothesis is rejected at 5% level of significance through Kruskal Wallis Test (table 3) which shows that attitude of respondents for functional food is different across different age categories.

H02: Gender categories does not influence attitude of consumers towards functional food

Table 5: Independent Sample Mann-Whitney U Test

Hypothesis Test Summary			
Null Hypothesis	Test	Sig.	Decision
1 The distribution of Log_Attitude is the same across categories of Gender of the Respondent.	Independent-Samples Mann-Whitney U Test	.874	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

As it is evident from the table 5 through Mann-Whitney U Test that null hypothesis is retained meaning that gender of the respondent is not influencing his attitude towards functional food.

H03: Education status of the respondents does not influence attitude of consumers towards functional food.

Table 6 : Independent Samples Kruskal-Wallis Test

Hypothesis Test Summary			
Null Hypothesis	Test	Sig.	Decision
1 The distribution of Log_Attitude is the same across categories of Education Status.	Independent-Samples Kruskal-Wallis Test	.105	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

The results in the table 6 indicate that difference in education status does not influence respondents' attitude towards functional food. So null hypothesis is retained.

H04: There is no effect of marital status on the attitude towards functional food.

Table 7: Independent Samples Kruskal-Wallis Test

Hypothesis Test Summary			
Null Hypothesis	Test	Sig.	Decision
1 The distribution of Log_Attitude is the same across categories of Marital Status.	Independent-Samples Kruskal-Wallis Test	.000	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

The null hypothesis is rejected (table 7) showing that attitude is not same across categories of marital status. Different behavior is shown by people who are married or

are married with children below 10 years or married with children above 10 yrs.

H05: Occupation status does not influence attitude of consumers towards functional food

Table 8: Independent Samples Kruskal-Wallis Test

Hypothesis Test Summary			
Null Hypothesis	Test	Sig.	Decision
1 The distribution of Log_Attitude is the same across categories of Occupation of the respondent.	Independent-Samples Kruskal-Wallis Test	.000	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

Hypothesis is rejected as per the results in the table 8, meaning that attitude is not the same towards functional food of employed, unemployed, self-employed, professionals, students, etc.

H06 :Attitude of consumers is same across categories of knowledge of functional

Table 9: Independent Samples Kruskal-Wallis Test

Hypothesis Test Summary			
Null Hypothesis	Test	Sig.	Decision
The distribution of Log_Attitude is the same across categories of Knowledge of Functional Food.	Independent-Samples Kruskal-Wallis Test	.855	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

The results of the table 9 indicate that Knowledge of functional food does not influence attitude of consumers. So null hypothesis is retained

H07: Specific health problems have no impact on attitude of consumers towards functional food

Table 10: Independent Samples Kruskal-Wallis Test

Hypothesis Test Summary			
Null Hypothesis	Test	Sig.	Decision
The distribution of Log_Attitude is the same across categories of Specific health problem.	Independent-Samples Kruskal-Wallis Test	.000	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .05.

The results in table 10 indicate that Null Hypothesis is rejected meaning that people who have health problems are more receptive towards functional food than those who do not have health related issues.

6. Discussion

The results provide several interesting points that can be discussed. From the above analysis it is clear that factors like age of respondents, marital status, occupation, and specific health problems have an impact on attitude of consumers towards functional food. Consumers have knowledge concerning functional food and this knowledge plays an important role in influencing preference towards functional food. The knowledge comes from personal (family, relative, experience and peer groups) and impersonal (mass media, salesperson, packaging, and the internet) sources. Nevertheless, it seems that this knowledge is passively, rather than actively, acquired. In general, respondents are knowledgeable about the functional foods they consume. The results indicate that the majority of the respondents have a positive attitude towards functional food as the Mean Attitude Score is 56.03 with a Standard Deviation of 9.1. The majority of the consumers believe that functional food is enriched food and it is beneficial to their health. Respondents also view functional food as being part of a natural way of living and a way to meet their recommended daily intake of nutrition. However, many respondents agreed that functional food is too expensive. This study shows that socio-demographic characteristics

such as gender and education do not influence many consumers attitude towards functional food.

7. Conclusion And Implication

Being health conscious is the most important factor for developing a positive attitude towards functional food. Therefore, understanding consumers' needs and wants, their attitude towards food safety, and their awareness towards functional food will help the food industry promote functional food and therefore increase consumers' intention to purchase functional food. Food manufacturers and marketers need to be able to communicate with consumers in an effective way to further develop the functional food industry. Furthermore, the government should strengthen food related rules and regulations so that they can protect consumers from false claims and high prices charged by sellers. The government or private sector should promote healthy eating and lifestyle campaigns to educate the public and increase their awareness about the benefits of functional food. The demand for functional food is increasing day by day and functional food market has a huge potential in future.

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