

Consumers Perception Towards Health Motivates Them To Choose Functional Beverages: An Empirical Study

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Abstract

Since the consumption pattern of Functional Beverage (FB) drinks is not consistent asking for in-depth research to understand why consumers choose FB. Consumer's knowledge of functional beverages and increased awareness on health and well-being is directly related to the consumption of these drinks. Major categories of functional beverages – dairy based drinks, fruit/vegetable based drinks, enhanced water, sports drinks, energy drinks and ready to drink teas are part of this study. A sample size of 305 respondents was collected from the population of Delhi and National Capital Territory. For primary data collection, a structured questionnaire was designed and stratified random sampling technique has been used to collect the information required. For data analysis and interpretation, statistical tools like multiple response analysis using crosstabs and frequencies, correlation, regression analysis to study the influence of one variable over another. Main variables of the study were perceived benefits, perceived product, perceived knowledge and perceived information of FB and moderating variable was consumer's demographics. It can be concluded that major factor contributing consumption of FB is health and wellness and based on the findings manufacturers can design their product range.

Keywords: Functional beverages, functional foods, health and wellness, consumers, drinks.

1. INTRODUCTION

FB is an area where lot of research and development is happening and both researchers and manufacturers are keen to know the consumers awareness and their perception towards functional beverages. Due to improper nutrition intake, lesser psychical activities and changed lifestyle lot of non-communicable diseases are becoming the cause of deaths (Diepeveen, Ling, Suhrcke, Roland, & Marteau, 2013). Consumers are seeking an alternate to maintain health with the current lifestyle by preferring functional foods which provide health and convenience. According to the age and lifestyle, consumers have adopted functional beverages in their routine life. They have different requirements for various conditions like fatigue, prevention or fight against particular health issue, energy boost, excitement, stress or taking it as substitute of a meal. The increasing demand of functional beverages will see more growth in future as there is a lot of research and development is going on to discover new ingredients and their attributes (AM, RJ, MA, & OE, 2019). It is not possible to develop new product development strategies for the companies without an understanding of the consumer's consumption pattern.

1.1 Functional Beverages

It is important to understand the sensory evaluation of the products while using novel prebiotics/probiotics in the drinks (Allgeyer, Miller, & Lee, 2010). It is observed that dairy based beverages with probiotics have positive effect on oral health (BaraúnaMagno, et al., 2019). Dairy based drinks also come with a risk of cholesterol which is taken care by plant based drinks. Plant based drinks can become a great carrier of probiotics (KE, 2013). Sports drinks are already making the space in functional drinks category and creating a positive impact by offering healthy alternative substituting CSD. The main reason of their growth is advertisement and variations in flavors,

packaging to claim the consumers (Sisel, 2014). Sports drinks also have an edge over energy drinks as they do not contain caffeine content in it (Fitness C. O., 2011). Now the consumption of water can be in the form of drinks or foods (Evans, James, Shirreffs, & Maughan, 2017). Enhanced water has positive health effects on cancer patients as well. Hydrogen gas believed to have antioxidant properties and decrease the inflammation in the tissues and it helps the patients in reducing the oxidative stress coming from radiotherapy treatment. (Kang, Kang, Choi, & Nakao, 2011). In a study on water fortified with minerals like calcium, magnesium, Zinc etc. revealed that consumers concern for health and wellness leading to the consumption of these enriched water based drinks (Mohammadi, Khashayar, Tabari, Sohrabvandi, & Moghaddam, 2016). Energy drinks always have caffeine with or without other ingredients like taurine, vitamins etc. It was first introduced in US in 1949 and later in 1987 in Australia and 1997 in US Red Bull was introduced, and still the market of energy drinks is growing at a rapid pace (Reissig, Strain, & Griffiths, 2009). Caffeinated energy drinks (CED) are popular among youths and majority of them have consumed it at least once to experience and some have become regular consumers afterwards (Reid, McCrory, White, & Martineau, 2017). Intake of tea comes with lot of water consumption and without sugar, there is hardly any carbohydrate in tea. Tea provides many minerals and phenolics essential for human body (Cabrera., Artacho, & Gimenez, 2006). Above researches on functional beverages shows that major functionality is contribution in the overall health of the consumers. It can be concluded that all major categories of FB are consumer's choice because of their health claim except energy drinks which is still a topic of debate.

Although wide ranges of functional foods are available in the market, their positioning is still vague. They are challenging the gap between food and drugs (Kwak & Jukes, 2001). In 2014, a study conducted on functional and organic foods revealed that both the categories are consumer's choice with health as major motivation. And few consumers do not see major difference in the functional foods or organic foods (Goetzke, Nitzko, & Spiller, 2014). In general interest of public health, it is important to establish the concept of functional foods with scientific evidence (Roberfroid M. , 2002). Consumption of Caffeinated Energy Drinks (CED) is still a debate between manufacturers and consumers on health risks associated with it and requires further research in it (Harris & Munsell, 2015).

Positioning of FB in consumer's mind is still vague which is identified as a gap. Awareness among consumers could increase their knowledge and choice of FB.

In another study on consumer perception towards healthy functional foods, a study on Dutch, Finland and American consumers where they were asked that whether ingredients, processing methods, health claims and food types actually change their perception towards functional foods. Results revealed that manufacturer's manipulation with natural ingredients was negligible in choosing functional foods. In fact their perception was dependant on ingredients usage, their health claims, processing methods and product types (Bech-Larsen & Grunert, 2003). It is also significant to understand the consumer's attitude and their knowledge towards functional foods and actual dietary patterns and health risks associated with it (Jong, Ocké, Branderhorst, & Friele, 2003).

Research has shown that consumers have interest in functional beverages but their frequency of consumption varies significantly. Awareness and education of FB products is necessary to see the consistency in the purchase of FB (Kang, Kim, Lee, Lee, & Kim, 2011). A study measuring consumers attitude towards health and taste and their food preferences and lifestyle indicated that people who are positive towards health follow a healthy diet pattern and those who are more interested in convenience have less preference for healthy diet. Also people who are keener in product information and its quality are more interested in health (A.Saba, F.Sinesio, E.Moneta, Dinnella, & Laureati, 2019).

Table 1: Major types of Functional Beverages

<i>Types of Functional Beverages</i>	<i>General Definition</i>	<i>Example</i>
Fortified	Beverages where ingredients are added during or after production	Fortified juices with minerals and vitamins
Enriched	Beverages with addition of new ingredients not found generally in a specific drink	Orange juice with aloe vera, coconut water with aloe vera
Enhanced	Where one of the ingredients functionality is raised	Yogurt or milk with probiotics
Altered	Where food or beverage chemical composition is changed	Water with more hydrogen or oxygen in it.

Source of information is (István Siro', 2008)

Major categories of functional beverages available in the market and used in the study are below mentioned six categories of Functional Beverages (FB).

Table 2: List of categories of FB

<i>Categories</i>	<i>General Definition</i>	<i>Examples</i>
Dairy based drink	Beverages with base of a milk or milk products and infused with additional benefits	Yakult, Amul Prolife, Functional milk like Nestle milk fortified with vitamin A and D
Fruit/Vegetable based drink	Beverages with base of a fruit or its extracts and infused with additional benefits	Tropicana essentials from Pepsico, Minute Maid Pure Squeeze.
Enhanced water	Any type of bottled water that has added nutritional benefits	Tata Water Plus, Aquafina Vitamin Splash, Wild Vitaman Water.
Sports drink	Beverages which provide fluid along with substances called sodium, potassium, magnesium.	Gatorade, Stamina from Amul
Energy drink	Beverages which provide a source of caffeine and other stimulants to give instant energy.	Red Bull, Rio
Ready to Drink Teas	Organic wellness teas with extracts of turmeric, ashwaganda, berries etc.	Blue Buddha, Suja Organic Tea, Nestea

Source: Companies FB profile on website

2. RESEARCH MODEL AND HYPOTHESES

The proposed research model has four explanatory variables, namely Perceived Benefits, Perceived Product, Perceived Information and one dependent variable motivation to choose FB. It also examines the role of moderating variable consumer demographics influencing the association between perceived values and purchase intentions. This study tried to find answer to two research questions:

1. How the different perceived values contribute towards the motivation to choose FB?
2. Does moderating variable – consumer demographics influence the association between perceived values and purchase decision?

2.1 Perceived Benefits

From the above literature review it is clear that different categories of functional beverages have health benefits (functional value) in common leading to the consumption of these beverages. Consumer interest has grown towards healthy foods and manufacturers are proactively responding by developing functional food and beverages keeping in view the increased demand for these products (Gray, Armstrong, & Farley, 2003). Thus we propose the following hypothesis:

H₁: Functional Value has a positive influence on the motivation to choose FB.

2.2 Perceived Information

Consumers are not only concerned of the health benefits but the methods of production, ingredients usage, processing method and health claim (informative value) supported by clinical background (Bech-Larsen & Grunert, 2003). This shows that favourable health claim or nutrition information develops favourable attitude in purchase and consumption of these products (Kozup, Creyer, & Burton, 2003). A study in Italy on young consumers perception on functional foods revealed that information and knowledge through internet, newspaper, universities etc and motivations and judgements based on taste, health etc. were identified as key factors in the acceptance of functional foods and innovation in this segment (Del Giudice, 2010). Although it is a growing segment of beverages but it lacks consistency in the consumption pattern. Awareness and education of FB can bring consistency in the purchase (Kang, Kim, Lee, Lee, & Kim, 2011). Consumer seeking knowledge is more interested in health benefiting products (A.Saba, F.Sinesio, E.Moneta, Dinnella, & Laureati, 2019). Thus we propose the following hypothesis:

H₂: Informative Value has a positive influence on the motivation to choose FB.

2.3 Perceived Product

An empirical study on Italian consumer's attitude towards functional foods reveals that although consumers are not much clear with the meaning of functional foods but they relate diet and health with each other. They are interested in healthy products and this element is an opportunity for the functional foods market in the development of these products. Results tell that there are large numbers of factors that influence the purchasers buying behaviour (Azzurra & Riccardo, 2010). Healthy foods are consumed to deal with specific nutrition related problems as well. In this context, functional food and beverage products play a vital role (Roberfroid, 2000). In the last few years consumer's perception towards food has completely changed. Now they strongly believe that healthy food leads to good health (Young Y. , 2000). Thus we propose the following hypothesis:

H₃: Perceive product has a positive influence on the motivation to choose FB.

2.4 Influence of Consumer Demographics

Consumers with different age and gender have different requirements for functional foods. It is also interesting to note that families with ill member are more conscious of foods with health benefits (Verbeke, 2005). Lot of research has been done on gender and their food choices. Gender based differences in attitudes in terms of beliefs, practices and choice in life have become a pertinent topic of research including their choices related to food consumption. Studies have shown that women have more awareness and interest in healthier foods (Beardsworth, Brynan, & Keil, 2002). There is also a difference in choice of food with age and gender (Rapoport, 1993). Developing beverages for consumers with different age group and gender would assist the companies in claiming the health benefits supported by the clinical background (Mulvihill & Huff, 2010). For the policy makers it is important to understand the consumer's age and gender to know the food choices of the consumers in terms of what motivates or prevents them to choose healthier diet options (Chambers, Lobb, Butler, & Traill, 2008). Some studies also claim that gender has no difference in terms of their choice of functional foods (Urala & Lähteenmäki, 2003).

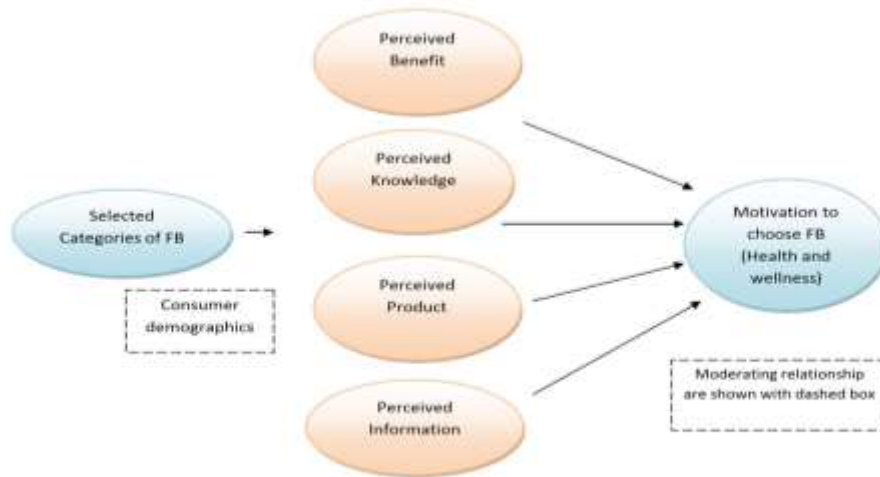


Fig. 1 Proposed Model of Purchase Intentions of Functional Beverages

3. MATERIALS AND METHODS

As the aim of this study is to adapt perceived values in the context of functional beverages, qualitative study was done by developing the items specific to FB values.

Section I

Your General Profile Please

a) **Name (Optional):** _____

b) **Gender:** Male Female

c) **Age (in years):** 15-24 25-34 35-44 45 and above

d) **Marital Status:** Married Unmarried

e) **Education:** Under graduate Postgraduate
Professional & others

f) **Occupation:** Student Self Employed Pvt. Employee
Govt. Employee Any other (pls specify) _____

g) **Monthly family income:** Below Rs. 50,000 50,000 – Rs. 2,00,000
Rs. 2,00,000 – Rs. 5,00,000 Above Rs. 5,00,000

Section II

Wide ranges of FB (Functional Beverages) are available in the market. It is interesting to know why these are getting popular with the consumers.

S.No.	Please tick the appropriate boxes in each row (more than one option may be selected).	Dairy based beverages	Fruit/Vegetable based beverages	Enhanced Water	Sports drinks	Energy drinks	Ready to drink (RTD) Teas
1	Which of the following categories of FB you have heard off?						
2	Which FB category do you normally consume?						

Think about your recent purchase of FB products and share your views towards them.

(5=Strongly Agree, 4=Agree, 3=Neither agree nor Disagree, 2=Disagree, 1=Strongly Disagree)

S.No.	Please tick the appropriate box in each row.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
3	Functional beverages help to improve my mood.					
4	My performance improves when I take functional beverages.					
5	Functional drinks make it easier to follow a healthy lifestyle.					
6	Functional beverages can repair the damage caused by unhealthy foods.					
7	FB products do more than just hydrating the					

	body.					
8	I actively seek information about functional drinks.					
9	Functional drinks are readily available in the market.					
10	I believe that functional drinks fulfill their promises.					
11	If used in excess, functional drinks can be harmful to health.					
12	Exaggerated information is given about the health effects of functional beverages.					

Section III

Consumer's perception impact the buying decisions in many ways and some are listed below. Kindly rate each. (5=Strongly Agree, 4=Agree, 3=Neither agree nor Disagree, 2=Disagree, 1=Strongly Disagree)

S. No.	Please tick the appropriate box in each row.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
13	For a healthy person it is worthless to consume functional drinks.					
14	I can prevent disease by consuming functional drinks regularly					
15	I am prepared to compromise on the taste if the drink has functional benefits					
16	Functional drinks promote my well-being.					
17	I often discuss about health and wellness drinks with my family, friends and colleagues.					
18	I prefer FB over conventional drinks.					
19	Lack of information about FB products stops me from buying and consuming them.					
20	My purchase is influenced with the usage of the ingredients.					
21	Benefits claimed by FB manufacturers met the needs of the consumers.					
22	Price of FB products influence the decision to buy.					
23	FB works as a substitute for a meal.					
24	International brands of FB are preferred over Indian brands.					
25	FB products are well promoted.					
26	It is pointless to add health effects to otherwise unhealthy food.					

Section IV

Following statements are about expected trends that might occur in functional beverage industry. Based on your observations & intuition, kindly rate each. (5=Strongly Agree, 4=Agree, 3=Neither agree nor Disagree, 2=Disagree, 1=Strongly Disagree)

S.No.	Please tick the appropriate box in each row.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
27	Growing concern about health and wellness will increase sales volume in FB industry					
28	Companies customize FB products as per consumers requirements					
29	FB manufacturers are using natural ingredients beneficial for health.					
30	I will prefer to buy those drinks which have long shelf life.					

3.1 Methods of data collection

3.1.1 Questionnaire design

Based on the objectives, a structured questionnaire was developed to assess the consumer perception and awareness towards functional beverages. Questionnaire was developed in a pre-determined order to assess various variables of the study. Five point Likert scale have been used to assess the consumer perception and their awareness for different category of functional beverages.

Questionnaire had four parts or sections. Section I was about consumer demographics which include user's age, sex, marriage status, education, income level, job/occupation and family members.

Understanding of consumer profile is important for the industry in developing new products meeting the specific needs of the consumers.

Section II questions were qualifiers. Here the respondents who have heard and consumed functional beverages were taken as potential respondents.

Section III was designed to understand the consumer knowledge and awareness towards different categories of functional beverages. Knowledge of different products and their availability in the market is directly linked with the consumption of these functional beverages. It will also suggest on which certain categories researchers and marketers need to focus upon.

Section IV was designed to understand motivation factors and how it impacts the buying decision. This section response will assist the manufacturers in knowing the consumers attitude and behavior towards functional products.

Then a pilot study was conducted on questionnaire on a sample size of 45 respondents to see how the questions were understood and to check internal consistency of the variables. Accordingly minor changes were made. Cronbach's Alpha value of .859 indicated that questionnaire was reliable.

3.1.2 Respondents

Only users of functional beverages were part of the study. Online survey method and stratified random sampling technique was used to fill the questionnaire. In total, it was sent to 500 eligible respondents who were using FB in their day to day life. After removing the outliers and incomplete questionnaires, 305 responses were recorded. Table 3.1 describes the profiles the respondents.

Table 3 Summary of the demographic profiles of the respondent

Parameters	Variable	Number	Percentage
Gender	Male	137	44.9
	Female	168	55.1
Age group	15-24	156	51.1
	25-34	75	24.6
	35-44	56	18.4
	45 and above	18	5.9
Marital Status	Married	117	38.4
	Unmarried	188	61.6
Education	Undergraduate	103	33.8
	Postgraduate	143	46.9
	Professional and others	59	19.3
Occupation	Student	157	51.5
	Self Employed	12	3.9
	Pvt. Employed	110	36.1
	Govt. Employee	26	8.5
Monthly Family Income	Below 50000	51	16.7
	50000-200000	135	44.3
	200000-500000	63	20.7
	500000 and above	56	18.4

3.3 Methodology

- In this section the collected data has been analyzed, interpreted and presented in a systematic manner using IBM SPSS version 16 with an aim to meet the objectives of the study.
- Demographic Analysis – To present the demographic profiles of the respondents.
- Factor Analysis – To reduce the large number of variables to fewer variables which had strong correlation among the items but no correlation with other factors.
- Regression Analysis – To study the relationship between two variables preferably metric variables.
- Chi Square Test – To check the significance between categorical variables.

4. RESULTS

4.1 Validity and Reliability

Data validity was checked where no missing value in frequency and standard deviation not equal to zero ensured that data is ready for statistical inferences. Cronbach's Alpha test was used to check the internal consistency of the data. Cronbach's alpha value of .880 ensured that instrument is reliable.

4.2 Descriptive analysis of FB

Table 4: Descriptive statistics of consumer awareness level of FB

		Responses	
		N	Percent
Which of the following FB you heard off?	Dairy based drinks	226	18.4%
	Fruit/Vegetable based drinks	245	19.9%
	Enhanced water	155	12.6%
	Sports drinks	198	16.1%
	Energy drinks	253	20.6%
	Ready to drink teas	153	12.4%
Total		1230	100.0%

Source: Output from SPSS

In the above table, score of percentage clearly shows that energy drinks were most heard by the respondents followed by fruit/vegetable based drinks and dairy based drinks. Enhanced water and RTD teas are the least heard category of FB followed by sports drinks. This means there is need to have more marketing and branding of bottom 3 categories as compared to energy, dairy and fruit/vegetable based drinks.

Table 5: Descriptive statistics of consumption level of FB

		Responses	
		N	Percent
Which of the FB you normally consume?	Dairy based drinks	184	26.6%
	Fruit/Vegetable based drinks	224	32.4%
	Enhanced water	66	9.5%
	Sports drinks	52	7.5%
	Energy drinks	106	15.3%
	Ready to drink teas	60	8.7%
Total		1230	692

Source: Output from SPSS

In the above table, score of percentage clearly shows that fruit/vegetable based drinks are the first choice of the respondents followed by dairy based drinks and energy drinks. Sports drinks occupy the bottom spot followed RTD teas and Enhanced water. This means there is need to have more marketing and branding of bottom 3 categories as compared to energy, dairy and fruit/vegetable based drinks to increase the consumption of the bottom three categories of FB.

4.3 Regression analysis

In order to check the influence of perceived variables on the health and innovation of FB, regression analysis was performed. Results revealed that perceived variables (independent variables) positively influence the health and wellness (dependent variables) of FB. Large number of variables reduced to few variables with the help of exploratory factor analysis where different statements measuring consumer's perception were reduced to four major perceived variables namely perceived benefits, perceived product, perceived knowledge and perceived information. Correlation test was done to see that different variables of perception and health and wellness are correlated with each. Significance level was less than .05. Regression analysis results revealed that perceived variables positively

influence the health and wellness with Adjusted R^2 value of .280 with overall significance value of .000.

4.4 Regression Analysis with consumer demographics (age and gender) as selective case

Linear regression to test the influence of perceived variables (IV) and Health and wellness (DV) with moderating variable gender indicated that Adjusted R^2 in case of males was .249 and females were .311. It shows that females are more concerned towards Health and Wellness. Similarly when regression analysis performed with different age groups revealed that age group of 15-24 years old had Adjusted R^2 value of .229, 25-34 years old of .358, 35-44 years old of .275, 45 and above of .236 means consumers in the age group of 25-34 years are more concerned towards their health and wellness.

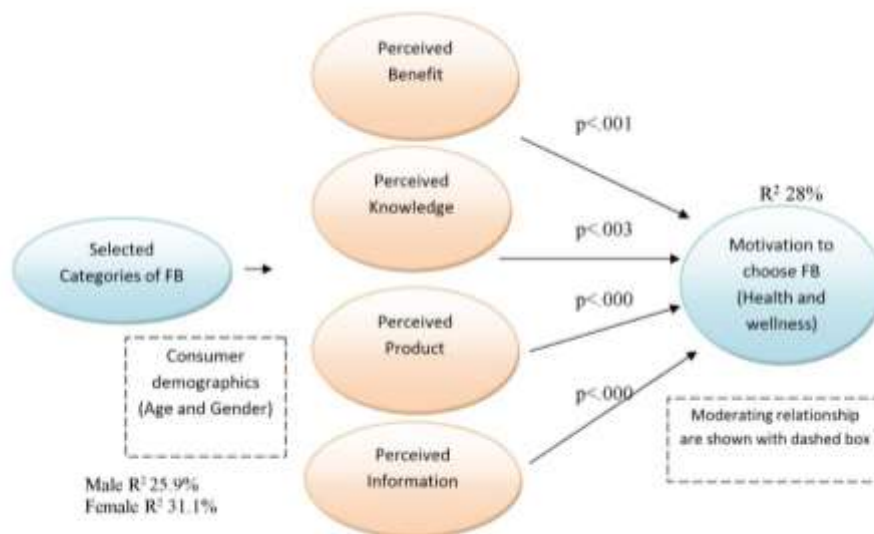


Fig. 1 Final model with results of hypotheses testing

Our results provided empirical support where perceived benefit, perceived product, perceived knowledge and perceived information has a significant positive association with health and wellness has motivation to choose FB.

5. DISCUSSION

5.1 Findings

- Consumers have more heard off dairy, fruit/vegetable and energy drinks as compared to sports/enhanced water/RTD teas. This means that there is a need to have more marketing and branding of sports, enhanced water and RTD teas.
- When consumers were asked which functional beverages they consume again fruit/vegetable based drinks were the leading category followed by dairy and energy drinks. Consumer's demographics play a crucial part in knowing the consumption pattern of functional beverages.
- In gender, males preferred energy and sports drinks and females had more choice of fruit/vegetable based drinks.
- Consumers in the age group of 15-24 years were the leading consumers of FB. This means that with growing age, we less experiment with food choices or has less confidence in the health benefits claimed by these functional beverages. There was significant difference between married and unmarried consumers.
- Unmarried consumers seemed to be more conscious of their health and wellbeing as they were the major consumers of FB than married consumers. This means that after marriage we are less conscious of our health and fitness.

- In the monthly income level categories, consumers in the income range of 50000-200000 had more preference for fruit/vegetable drinks as compared below 50 thousand and above 2lakh income groups. This means that they are the potential buyers and companies need to concentrate on them while designing their fruit/vegetable based drinks.
- This means that consumers have interest in functional beverages but their consumption varies significantly. This is supported by the study of Nam E Kang (2011).
- Consumer's awareness towards health and wellness is significantly contributing in perceived benefits, knowledge and products. Consumers concerned for their health and wellbeing are looking for benefits in these products which can reduce the health risks or cure certain issues related to health. This supports the findings of Nynke de Jong (2003), A Saba (2019).
- FB products should have more informative knowledge on the labels regarding usage, processing and methods of making FB products. This supports the findings of Del Giudice.

5.2 Recommendations

This study on the growing market of functional beverages has provided some meaningful insights both for the academician and industry experts.

- Study has given empirical evidence that consumer's demographics plays important role in the consumer perception regarding functional beverages. Therefore all consumers should not treated as one segment rather functional beverages as per the individual's requirement for different age group and genders should be considered.
- This study also revealed that how consumer awareness and different perceptions of consumers influence each other. Present study exhibits the directional relationship between the consumer's perception and new trends in the category of functional beverages. It states that how perceived benefit, perceived knowledge, perceived product and perceived information are associated with health & wellness and innovations in the segment of FB.
- In addition, it also states that how benefits of functional beverages are influenced by the knowledge, information and functions of FB products. There is a link between benefits of FB and how they are communicated to the consumers.

5.3 Scope of further research

- This study was limited to Delhi and NCR. The same shall be conducted on larger population could further enhance the results and its implications on bigger platform.
- Consumer demographics and their lifestyles keep on changing. Therefore it is important for the researchers and manufacturers to keep this changing dynamic in their mind while studying the perception and trends in the market.
- Major categories of FB are part of this study but still are not limited to these only. Further research can be done widening the scope of functional beverages.
- As of now few aspects related to consumer perception have been studied. Further research can be done by taking into account other factors influencing the perception and trends in functional beverages.
- There are different kinds of functional beverage products and how they perform in future will be interesting to know about. Their sustainability with other beverages would lie in innovation and novelty.

6. CONCLUSION

On the basis of above findings and discussions, it can be concluded that functional beverages are popular among the consumers for various reasons. The main factor is health and wellness contribution of these drinks creating an image in the mind of the consumers that their consumption is good for health. Frequency of consumption and sales vary within the different categories of the functional beverages. It is important for the companies to identify the areas of improvement whether it is in product or marketing, are there and should be worked upon for the sustainability in the long run.

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