A STUDY ON CONSUMER ACCEPTANCE OF BRANDED FORTIFIED FOODS AND BEVERAGES IN INDIA

Thesis

Submitted in partial fulfilment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

by

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March, 2019

DECLARATION

by the PhD Research Scholar

I hereby *declare* that the Research Thesis entitled, '**A Study on Consumer Acceptance of Branded Fortified Foods & Beverages in India'** which is being submitted to the **National Institute of Technology Karnataka, Surathkal**, in partial fulfilment of the requirements for the award of the Degree of **Doctor of Philosophy** in Management, *is a bonafide report of the research work carried out by me*. The material contained in this Research Thesis has not been submitted to any University or Institution for the award of any degree.

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Date: 15-03-2019

CERTIFICATE

This is to *certify* that the Research Thesis entitled, "**A Study on Consumer Acceptance of Branded Fortified Foods & Beverages in India**" submitted by **Shamal S**, (**Register Number: 145066HM14F03**), as the record of the research work carried out by him, is *accepted* as *the Research Thesis submission* in partial fulfilment of the requirements for the award of the degree of **Doctor of Philosophy**.

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ACKNOWLEDGEMENT

ABSTRACT

Consumer acceptance of food products is a complex human behaviour influenced by many interrelating factors such as lifestyle and cultural determinants. The study has considered the underlying tenets of the Theory of Planned Behavior (TPB) as a theoretical base for the research inquiry. It was identified that a clear dearth of research studies on health consciousness and consumer knowledge aspects in predicting consumer acceptance. Hence, it was required to probe its influence on consumer acceptance towards Fortified Foods and Beverages (FFBs). Research studies have revealed that the major part of food marketing strategies are made to unhealthy foods and there is a clear deficiency of investigations on the consumer acceptance of health foods in Indian context. Since, India is a multicultural country, it is expected that the behavioural pattern of Indian consumer will be different. Accordingly, the study is focused to provide better insight towards consumer acceptance of FFBs among people from different cultural and lifestyle background.

The prime objective of the study was to explore the impact of different factors on the consumer acceptance of branded FFBs. Indian consumers are becoming more health conscious and the study aims to investigate the role of health consciousness on accepting branded FFBs. Consumer knowledge plays an integral part in health food consumption. The study examines the influence of consumer knowledge on consumer acceptance of branded FFBs. The research design for the study is descriptive in nature. The study has followed consumer intercept survey as the research strategy. Multi stage sampling techniques were used to identify and collect data. Primary data has been collected from 820 Indian consumers spread across Tier I metro cities, namely, Delhi, Bengaluru, Hyderabad, and Ahmedabad. Quantitative research methods were used for data analysis and interpreted accordingly.

The study results revealed that consumer attitude is the key factor which leads to the consumer acceptance of branded FFBs. Further it was identified that more the consumer concern about their health, they may have more positive attitude towards accepting FFBs. The study bridges gap in the literature regarding consumer acceptance of FFBs. Consequently the study has proposed an integrated FFBs acceptance model for the Indian health food market. The model can act as a guideline to the marketers. Moreover, the study will also help the health policymakers to form and execute the required policies to augment the public health.

Keywords: Consumer acceptance, Purchase intention, Health consciousness, Consumer knowledge

CONTENTS

vi

LIST OF FIGURES

LIST OF TABLES

NOMENCLATURE

ADA	American Dietetic Association
ANOVA	Analysis of Variance
ASSOCHAM	Associated Chambers of Commerce & Industry of India
AT	Attitude
AVE	Average Variance Extracted
BEUC	European Bureau of Consumers' Unions
BOP	Back-of-Pack
CA	Consumer Acceptance
CAGR	Compound Annual Growth Rate
CFA	Confirmatory Factor Analysis
CK	Consumer Knowledge
CR	Composite Reliability
DOI	Diffusion of Innovation
EFA	Exploratory Factor Analysis
EFIC	European Food Information Council
F&B	Food and Beverage
FAO	Food and Agricultural Organization
FFBs	Fortified Foods and Beverages
FFRC	Food Fortification Resource Centre
FICCI	Federation of Indian Chambers of Commerce & Industry
FOP	Front-of-Pack
FOSHU	Foods for Specified Health Use
FSSA	Food Safety and Standard Act
FSSAI	Food Safety and Standards Authority of India
GDP	Gross Domestic Product
GMF	Genetically Modified Foods
GoF	Goodness of Fit
GSK	GlaxoSmithKline
HBM	Health Belief Model
HC	Health Consciousness

IBEF	India Brand Equity Foundation
ICDS	Integrated Child Development Services
ICMR	Indian Council of Medical Research
IFIC	International Food Information Council
IHME	Institute for Health Metrics and Evaluation
ILSI	International Life Sciences Institute
ITC	India Tobacco Company
KMO	Kaiser-Meyer-Olkin
MDM	Mid-Day Meal
MoFPI	Ministry of Food Processing Industries
NFHS	National Family Health Survey
PBC	Perceived Behavioural Control
PCA	Principal Component Analysis
PDS	Public Distribution System
PEOU	Perceived Ease-Of-Use
PHFI	Public Health Foundation of India
PI	Purchase Intention
PLS	Partial Least Squares
PMT	Protection Motivation Theory
PU	Perceived Usefulness
PwC	PricewaterhouseCoopers
SEM	Structural Equation Modelling
SN	Subjective Norms
SPSS	Statistical Package for Social Science
TAM	Technology Acceptance Model
TMR	Transparency Market Research
TPB	Theory of Planned Behaviour
TRA	Theory of Reasoned Action
USDA	United States Department of Agriculture
UTAUT	Unified Theory of Acceptance and Use of Technology
VIF	Variance Inflation Factor
WHO	World Health Organization

CHAPTER 1

INTRODUCTION

1.1 CHAPTER OVERVIEW

This chapter introduces the study topic. Section 1.2 gives a brief introduction to the study. Background of the study is provided in Section 1.3. The concept of consumer acceptance is explained in Section 1.4. Food and beverage industry is presented in Section 1.5. Indian food and beverage industry is discussed in Section 1.6. Information about Indian health food industry is provided in Section 1.7. Facts on Fortified Foods and Beverages (FFBs) are presented in Section 1.8. Section 1.9 throws light on the need for the study. Section 1.10 provides details of the problem statement of the study. Section 1.11 deals with the research questions. Research objectives of the study is presented in Section 1.12. Significance of the study is described in Section 1.13. Scope for the study is presented in Section 1.14. Brief outline of the thesis is presented in Section 1.15.

1.2 INTRODUCTION

Consumer response to food products is an extremely complex and rapidly evolving field. It involves a wide range of scientific disciplines, ranging from food science and technology to nutrition, physiology, psychology, biochemistry, and marketing. As expected in such an interdisciplinary area, the terminology used to define consumer behaviour concepts, as well as the methodology for measuring them, vary from one discipline to another. Food 'acceptance' is one such concept and many scientific concepts have evolved to describe different aspects of food acceptance under investigation. Consumers today are very conscious about healthy lifestyle and they are much aware of the negative impact of unhealthy eating habit too. The reason for this concern is the widespread of lifestyle diseases.

The most common lifestyle diseases in India are heart diseases, type 2 diabetes, obesity, hypertension, and certain types of cancer (Tanuja 2018). The present generation is facing the threat of rapidly growing lifestyle diseases as never before in the developing

1

countries particularly in India. Moreover, lifestyle diseases are significantly affecting the younger population of the country (Samudranil 2017). By making the people aware of these serious issues, during the last few decades healthy food products have become a relatively new component of the human diet (Basha and Lal 2019). Marketers are introducing different versions of healthy foods and important categories of healthy foods. Among them are fortified food products, enriched products, altered products, non-altered products, enhanced products, organic foods, genetically modified foods, etc. The world population in general is showing a positive inclination towards fortified foods, an important category of functional foods. The World Health Organization (WHO) (2017) by conducting a global mapping study has revealed the positive outcome of fortification in many countries to prevent deficiency and anaemia. In addition, WHO (2015) identifies nutrition as a significant and manageable determinant of chronic diseases, stressing the need for a shift in nutrient intake towards functional foods like fortified foods.

1.3 BACKGROUND OF THE STUDY

Consumer behaviour has long been of interest to researchers from social sciences domain. Even though the topic has been widely studied in the past, consumer behaviour is still an unabated research topic. Earlier research studies have identified the significance of investigating consumer behaviour as a topic of high interest. Kotler and Keller (2011) opine that overall performance of the businesses is directly influenced by consumer behaviour. Hence the study of consumer behaviour has become the plethora of interest to marketing researchers.

According to Blackwell et al. (2006) consumer buying behaviour is a complex and dynamic characteristic which cannot be defined easily. The comprehension of consumer behaviour is multifaceted and difficult task for the researchers. The definitions given for the concept of consumer buying behaviour vary from one researcher to the other. Customer buying behaviour is broadly classified into three types (Schiffman and Kanuk 2008).

1) Extensive problem solving buying behaviour: This kind of behaviour is exhibited when a customer purchases high involvement, expensive and less frequently purchased

products. It involves an elaborate decision-making process accompanied by high perceived risk, as the customers lack experiencing a specific consumption.

2) Limited problem solving buying behaviour: This is related to situations where customers are trying to find suitable solutions for their unpleasant issues. Consumers may involve in limited problem solving decision-making process, when they buy regularly purchased, low cost products.

3) Variety seeking behaviour: This behaviour is shown when customers buy low-involvement products. Variety seeking relates to instances where customer moves to another brand within a given product category. As a variety seeking, here consumer switches brands on one purchase occasion to the next (O'Guinn et al. 2014).

The concept of healthy lifestyle and health foods is in a nascent stage in India. Hence, in Indian health food market the consumer may show high involvement due to lack of prior consumption experience. In addition, FFB consumers may exhibit variety seeking behaviour due to the availability of different brands. Thus, the present study focuses on a concerted effort of blending extensive problem solving and variety seeking behaviour together.

Various research studies indicate that consumer behaviour plays a pivotal role in marketing domain (Stallworth 2008; Kotler and Keller 2011). Research studies on consumer behaviour is very complex and multifaceted in nature. It involves diverse factors of different disciplines like cultural factors to economic factors and emotional to lifestyle factors and so on. However, it is vital for the marketers to study the consumer behaviour, as it helps them to create a distinctive image of their products in the mind of the consumers and develop effective marketing strategies accordingly. Many studies on behavioural research has led to the development of different theoretical models to assess the consumer behaviour in real life situations. In order to promote a healthy living, the study of consumer behaviour has become a substantial research topic for both researchers and health food marketers.

The fact how and why people decide to buy or not buy a certain food product has been a prominent topic of discussion in the field of consumer behaviour research. Earlier researchers had aimed at identifying, predicting and explaining the factors that

influence the acceptance of food products. However, a clear dearth of research studies concerning consumer knowledge about fortified food is largely missing in the marketing research literature. Hence, present study is focused on understanding the behavioural patterns of Indian consumers towards fortified foods and beverages.

1.4 CONSUMER ACCEPTANCE

Various competing theoretical models propounded, do co-exist in the consumer behaviour and acceptance literature, each with diverse focus and tested in multiple contexts (Rogers 1962; Rosenstock 1974; Ajzen and Fishbein 1975; Janz and Becker 1984; Davis et al. 1989; Ajzen 1991; Venkatesh and Davis 2000; Venkatesh et al. 2003; Vijayasarathy 2004; Bruhn 2007). However, most of these theoretical models attempt to explain the different factors influencing purchase intentions and consumer behaviour. The process by which consumer accepts or rejects food is of both distinct and variable in nature as a consumer's food preferences are largely determined by his consideration for both nutrition and pleasure resulting from food consumption (Costell et al. 2010). Food choice is influenced by many interrelating factors such as socio-demographic factors, life style and cultural determinants. Acceptance of a food is basically the result of the interaction between food and man at a certain moment (Shepherd 1989).

The earlier researchers had given a direction concerning the behavioural pattern of the consumer toward food products (Wee et al. 2014; Ajzen 2015; Rifnaz et al. 2016). The factors influencing food acceptance is a multifaceted discipline and different researchers have defined the concept of consumer acceptance in different way. Consequently there is a lack of clarity and consensus of definition regarding the consumer food acceptance concept. Different studies have investigated the concept of purchase intention in multiple contexts (Ling 2013; Riebl et al. 2016; Ham et al. 2018). The present study goes further to explore the factors influencing purchase intention which lead to consumer acceptance that initiate the consumer's decision making process, thereby convincing him to make the choice of buying the new healthy food alternatives available in Indian food market.

4

1.5 FOOD AND BEVERAGE (F&B) INDUSTRY

The global food and beverages market is continuously on rise at a tremendous pace over the last ten years and it is one of the largest manufacturing sectors in the world. The major segments included in the food and beverages market are grain products, bakery and confectionary, diary, meat, poultry and sea food, frozen food and canned fruits and vegetables, syrup, seasoning oils and general food, pet food, alcoholic beverages, non-alcoholic beverages, and tobacco products (The Business Research Company 2018). The global market size of F&B sector was estimated to be over$5.6 trillion in 2017 (The Business Research Company 2018) and the retail value of F&B sales forecasted to reach up to US$1,788 billion (Euromonitor 2018).

According to Euromonitor (2018) market reports the world Gross Domestic Product (GDP) in 2017 was US$77.5 and the world disposable income was US$50.8tn (65% of total world GDP). World consumer spending was US$43.8 trillion (56% of world GDP) and consumer expenditure on food and beverages recorded US$6.6trillion (8.5% of world GDP) (Figure 1.1). Asia Pacific emerged as the largest arena in the F&B market in 2017 with 35% market share. According to Forbes (2018) report, Anheuser-Busch, Nestle and PepsiCo are the top three F&B companies in the world. The other major companies in the global food and beverages market are Kellogg, Nature's Path Food, Organic Valley, The Hain Celestial Group, AMCON Distributing, Amy's Kitchen, General Mills, etc.
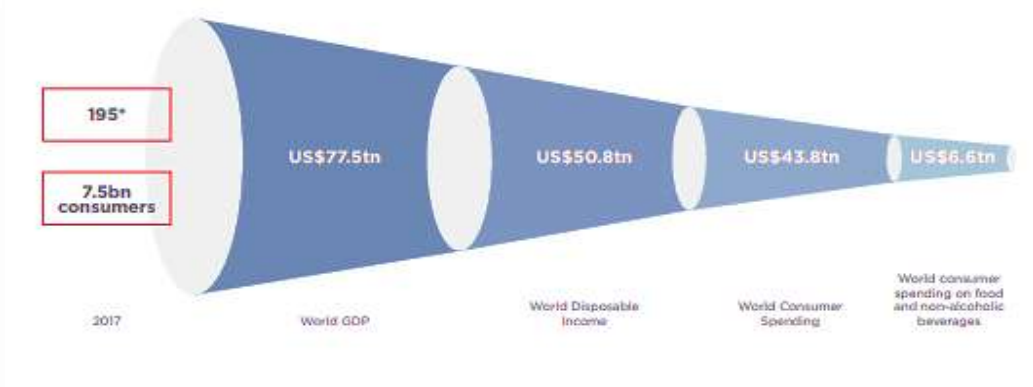
Source: Euromonitor (2018)

Figure 1.1: Consumer Spending in Food and Beverages

India ranked 3rd position in consumer expenditure on food and beverages (Euromonitor 2018). In addition to this Cushman and Wakefield's (2017) report states that India is in 3rdplace in the global markets in terms of consumer's spending on eating out (Figure1.2).
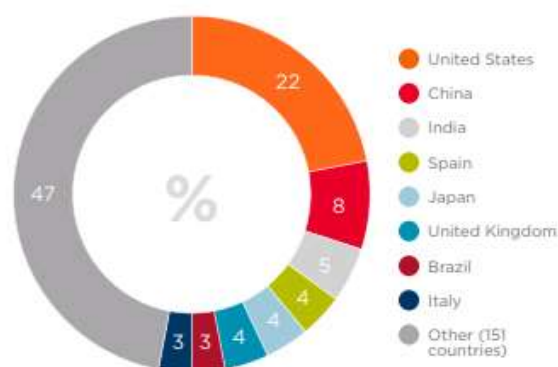
Figure 1.2: Top Largest Markets – Consumer Spending in Eating Out

The global health and wellness food market was valued at 707.12 billion U.S. dollars in 2016 and estimated to increase up to 811.82 trillion U.S. dollars by 2021 (Statista 2018) and is appraised to grow at a CAGR of 5.94% during the period 2018-2022 (Business Wire 2018). The major vendors in global health and wellness food market are Danone, General Mills, GlaxoSmithKline, Kellogg, Nestle, PepsiCo, etc. (Business Wire 2018).

1.6 FOOD AND BEVERAGE (F&B) INDUSTRY- INDIAN SCENARIO

India, with its population of 1.2 billion (as per the Census of India recorded in 2011) is one of the largest consumer markets in the world and offers diverse opportunities in food and beverages marketing. India is set to become the 3rd largest consumer economy by 2025 (Maerschand and Willaert 2018). The Indian Food and Beverage Industry is one of the most vibrant industries that has seen extraordinary growth in the recent past and continues to expand rapidly. The Indian food market is the world's 6th largest and accounts to approximately 31% of India's consumption market (Maerschand and Willaert 2018). Indian food market is expected to cross USD 540 billion by 2020 (Union Minister for Commerce and Industry 2018). However, the major policy changes

like the demonetisation (2016) and the Goods and Service Tax (2017) have temporarily affected the overall growth rate, but the latest market indicators are showing signs of resumption (Maerschand and Willaert 2018).

According to the report of Ministry of Food Processing Industries (MoFPI) (2017) the total consumption of the food and beverage segment in India is expected to increase from US$ 369 billion to US$1.142 trillion by 2025 and Indian food processing industry is expected to reach USD 482 billion by 2020. Revenue in the Food & Beverages segment amounts to US$570million in 2019 (Statista 2019). The Indian food and grocery market is the world's sixth largest market (India Brand Equity Foundation (IBEF) 2017) with huge potential and a promising future. The food retail market is expected to reach €770 billion by 2020 (Maerschand and Willaert 2018). German Engineering Federation (VDMA 2018) reports revealed that packaged food sales are increasing in India due to rise in disposable incomes and India will become the 3rd biggest packaged food market in 2020, after China and the United States.

1.7 INDIAN HEALTH FOOD AND BEVERAGES MARKET

The Indian civilizations have definite evidence suggesting that foods can be effectively used as medicine to treat and prevent many diseases. The health food and beverages market is an essential part of Indian food and beverages service Industry. The health food and beverages market in India continues to expand rapidly as a result of changing lifestyle, increase in disposable incomes, urbanisation, growth of organised retail and increasing health consciousness of consumers (Euromonitor 2018). Moreover, accepting health food products as a part of healthy lifestyle has helped the Indian health foods market sustain continuous growth. The growing health foods market in India has proved their competence gaining significant growth along with major food companies, proactively tapping into the rapidly growing product categories in this segment.

The health foods sector is at a budding stage in India and is poised to register significant growth in the years to come. Health Food Drinks (HFD) market in India was a USD 860 million market in 2017 and is expected to be greater than USD 1 billion by 2020 assuming a growth rate of 5.6% Compound Annual Growth Rate (CAGR) (Red seer 2018). The overall health and wellness food products segment crossed Rs 10,000 crore

sales mark in 2015 (Malviya 2016). Market survey conducted by Nielsen (2016) exposed that health and wellness foods is an INR 10,352 crore market with a growth rate of about 10%. The retail value of health and wellness foods in India has shown a significant annual growth of 14.3 per cent during the last decade (Ali et al. 2018). Indian consumer's preference is more on fortified foods with added nutrients among the health food categories (Nielsen 2016) and consumers are willing to spend more on healthy food products. Figure 1.3 shows the price comparison of conventional and healthy food products.

Source: Nielsen (2016)

Figure 1.3: Price Comparison

According to the market survey of Nielsen (2016), health and wellness food segment is a promising segment for manufacturers to tap into. Figure 1.4 represents the different categories of health and wellness foods that initiate growth in the market.

Source: Nielsen (2016)

Figure 1.4: Categories Driving Growth in Health and Wellness Foods

8

1.7.1 Key Drivers of Health Food and Beverages Market

The health food and beverages market sector has evolved over the past decade, giving rise to exciting new health concepts in food and beverage provisions. A recent marketing research study by Maerschand and Willaert (2018) and Federation of Indian Chambers of Commerce & Industry (FICCI) (2015) identified several factors that have led to an increase in the consumption pattern towards health food and beverages. Some of them are;

Increase in disposable income

The Indian economy growth has directly reflected an increase in the disposable income of the people. This further has resulted in an increase in the consumer spending accelerating a boom in the health food and beverages market, there by offering great opportunities in the segment. Disposable personal income in India increased to 169,623,970 INR million in 2017 from 154,965,120 INR million in 2016 (Trading Economics 2018).

Rise in health consciousness

Growing concern of health consciousness among consumers have offered large opportunity to the food industry. Today consumers are cautious about unhealthy eating habit as a result of an alarming increase in lifestyle diseases especially in developing countries like India. The several factors responsible for the drastic increase in lifestyle diseases are unhealthy eating habit, lack of physical activity, poor sleeping patterns, smoking, increasing stress, and environmental pollution etc. All these factors have alerted the Indian consumers to opt for healthy lifestyle.

Increase in lifestyle diseases

The widely spreading lifestyle diseases have led the Indian consumers to follow a healthy diet. A research study conducted by Indian Council of Medical Research (ICMR), Public Health Foundation of India (PHFI), and Institute for Health Metrics and Evaluation (IHME) (2017) identified that the estimated proportion of all the deaths due to lifestyle diseases has increased from 37.09% in 1990 to 61.8% in 2016.

India is considered as the diabetes capital of the world with the highest number of diabetics numbering to 50.8 million according to the World Health Organization (2017). India ranks number one in terms of people suffering from heart-related issues. According to National Family Health Survey (NFHS-4) (2016), India has the second highest number of obese population of about 155 million. Urban population is more prone to obesity than its rural counterpart. It was observed that100 million Indians suffer from high blood pressure (Firstpost 2018). Besides this, Vitamin D deficiency is becoming a global and national health concern. Almost 1 billion people worldwide suffer from Vitamin D deficiency and it was estimated that around 80% of the Indian population has less Vitamin D levels than the normal. These serious issues have an impact on Indian health food market.

Large share of young population

India represents a substantial share of world population. The major advantage is the large share of young population, India has more than 50% of its population below the age of 25and is expected to have 34.33% share of youth in world population by 2030 (Ministry of Statistics & Programme Implementation 2017). The youngest segment of Indian population has liberal mind set and greater consumption habit, which can foster the health food and beverages market in a vibrant way.

Other factors that promote marketing are the increase in tourism in India, expansion of urbanization, innovative advertisements, rise in supermarkets and e-commerce boom, change in taste and preferences of the Indian consumers, rise in number of working women, etc.

1.8 FORTIFIED FOODS AND BEVERAGES (FFBs)

Over the last century there has been a growing understanding of the correlation between food and health and how dietary changes can improve populations' health (European Bureau of Consumers' Unions (BEUC) 2015) and it was identified from the report that poor nutrition habits increase the risk of obesity, cardiovascular disease, diabetes and cancer. WHO (2015) identifies nutrition as a significant and manageable determinant of chronic disease, stressing on the need for a shift in nutrient intake towards functional or fortified foods.

The concept of "functional food" was introduced in Japan in the 1980s. Since then various efforts have been made to define functional foods. Still there is no globally accepted definition. The lack of clarity in relating to the definitions of what constitutes a functional food may confuse consumers to some extent (Aine et al. 2002). However, this has not curbed the rapid development of such products among food industries. Jain et al. (2014: 33) defined "functional foods as food products that contain vital nutrients that go beyond just nurturing usual growth and development of an individual".

Functional food is a relatively new concept to Indian consumers (Jain et al. 2014). Food Safety and Standard Act (FSSA) (2006) is the single reference point in relation to regulation of functional foods in India. Food Safety and Standards Authority of India's (FSSAI) (2006) definition is relevant in Indian context. Broadly "Functional food" may be defined as a food which influences specific functions in the body that may provide added health benefits or remedy from some diseased condition following the addition/concentration of a beneficial ingredient, or removal/substitution of an ineffective or harmful ingredient.

According to Siro et al. (2008) the prominent types of functional foods are fortified products, enriched products, altered products, non-altered products and enhanced products. A fortified food is a food product fortified with additional nutrients. Enriched products are food with added new nutrients or components which are not normally found in a particular food. Whereas, altered products refer to food from which a deleterious component has been removed, reduced or replaced with another substance with beneficial effects. While, non-altered foods are food products naturally containing increased content of nutrients or components. Enhanced products are those foods in which one of the components has been naturally cultured under special growing conditions, inducing new feed composition, and by genetic manipulation or otherwise. Functional food market in India is growing at a rapid pace as health concern is perceived as a value which has percolated into the Indian society which is undergoing dramatic demographic shifts and also people's awareness of influence of diet on health has steadily increased (Sharma and Garg 2013; Ehealth 2017). Increase in people's awareness on influence of diet on health will enhance fortified foods market in India.

11

The FSSAI Food Safety and Standards (Food Products Standards and Food Additives) Regulation, 2011 approve the use of minerals for food fortification purposes within recommended limits. The Food and Agricultural Organization (FAO) (1995), WHO (2015), and FSSAI (2018) have identified food fortification as one of the strategies to reduce the prevalence of malnutrition, particularly in underdeveloped countries. Numerous organizations have come forward to help people living in backward areas of countries such as India and Nigeria, by bridging the gap between nutrition and agriculture (Transparency Market Research (TMR) (2017). Fortification refers to the addition of compounds to foods that was originally, absent in them or present in very low level (Frewer et al. 2003). Fortified food products can be defined as food products fortified with additional ingredients or suitably modified to provide a distinct health benefit (PricewaterhouseCoopers (PwC)-FICCI 2013). Fortified foods are foods or food products to which extra nutrients have been added. It includes packaged food and beverages to which healthy ingredients (e.g. calcium, omega3) have been considerably added. Fortified beverage mixes, biscuits and oils comprise of 80% of the overall FFBs market.

According to Food Safety and Standards (Fortification of Foods) Regulations (2018) every package of fortified food product shall carry the +F logo on the label. Accordingly all the Food Business Operators (FBOs) have to mandatorily use +F logo if they are fortifying their products /commodities like Wheat Flour, Rice, Edible Oil, Double Fortified Salt and Milk. Fortified foods and beverages are considered for the present research study, as FFBs form the largest segment within the nutrition food and beverages market (PwC-FICCI 2013). Research report (PwC-FICCI 2013) shows that FFBs has grown to become the largest category in health food and beverages unit and the segment has witnessed increased penetration across existing categories (cereals, bread etc.) and the emergence of new categories (soups, tea etc.). Hence the focus of the present research study is to investigate the acceptance of fortified food products among Indian consumers. The +F logo is illustrated in Figure (1.5).

Figure 1.5: The +F logo of FSSAI

1.8.1. Fortification across States

FSSAI has formulated a comprehensive regulation on fortification of food which marks an important milestone in India. FSSAI initiates necessary food fortification programmes to tackle micronutrient malnutrition. The fortified product category and the fortified food distribution system led by FSSAI across the different states of India are:

1. Himachal Pradesh
   - Edible Oil: Edible Oil: In all the districts in Public Distribution System (PDS)
2. Haryana
   - Edible Oil: In the Ambala District in Integrated Child Development Services (ICDS) /Mid-Day Meal (MDM) /PDS (pipeline)
   - Double Fortified Salt (DFS): All districts under ICDS
   - Wheat Flour: In the Ambala District in ICDS/MDM/PDS (pipeline)
   - Rice: In the Ambala District in ICDS/MDM/PDS (pipeline)
3. Punjab
   - Fortified Milk
4. Uttar Pradesh
   - DFS Salt: in 10 districts in PDS (pipeline)
   - Rice: In 1 district (Varanasi) in MDM (Pipeline)
5. Madhya Pradesh

- DFS Salt: in 89 Blocks in PDS (pipeline)

6. Gujarat

    - Edible Oil: In all the districts in PDS

7. Maharashtra

    - Wheat Flour: in 3 districts in MDM and in 1 district in PDS (pipeline)

    - Andaman & Nicobar Islands

    - Wheat Flour: In all the districts under PDS

8. West Bengal

    - Wheat Flour: In all the districts under PDS except Kolkata

9. Tripura

    - DFS Salt: All districts under MDM/ICDS

10. Odisha

    - Rice: operational in 2 districts and scaling up to 14 tribal blocks (pipeline) under MDM and in 1 district (Deogarh) in PDS (pipeline)

11. Karnataka

    - Rice : in 3 district (operational) and scaling up to 4 districts (pipeline) under MDM

12. Tamilnadu

    - DFS Salt: All districts under MDM/PDS

    - Rice: in 10 districts under ICDS/MDM (pipeline)

13. Kerala

    - Wheat Flour: In all the districts under PDS (pipeline)

14. Andaman & Nicobar

    - Wheat Flours: In all districts under PDS

15. Rajasthan

    - Edible Oil

1.8.2 Major Players in FFBs Market

Even though the market demand for fortified food products are rising in the country, there is no much marketing communication about its benefits coming from the food industry and brands (Gary 2018). The major companies operating in the Indian market

for vitamin/ calcium fortified foods and beverages include Kellogg Company, The Coca Cola, Cadbury, Abbott, Nestle, GlaxoSmithKline, Amul etc. The study has considered different class of branded FFBs on the basis of their market penetration and brand popularity.

Nestle India

Nestle India is gradually expanding its reach and product portfolio in the infant nutrition category in India. 'Nestle Cerelac Infant Cereal' is one of the popular brands in infant formulas segment (Dutta 2016).

Britannia

Britannia has launched 'Britannia Fortified Flavoured Yogurt' after the great success of the 'Daily Fresh Dahi' in the milk-based products. The brands are available in the major metro cities in India (Shukla and Sharma 2018).

Kellog's India

Breakfast cereal market in India is growing at a rate of 17% CAGR from the past five years (Research and Markets 2016). Kellogg holds the leading position in this segment with a market share of 37%. Kellog India's growth in double-digit over the past seven years in India with an investment of US$ 30 million (Research and Markets 2016) is outstanding. Kellogg's Special K Breakfast Cereals is one of the leading fortified brands among the breakfast cereal segments in India.

ITC

In India, branded wheat flour market is growing rapidly. The leading brand in the fortified atta segment is India Tobacco Company's (ITC) 'Aashirvaad'. It has a consumer spend of Rs 4,200 crore in the wheat flour market and 28% market share in the branded wheat flour segment (The Times of India 2018).

Abbott

PediaSure Grow & Gain, a leading brand in the infant formulas has overtaken GSK's (GlaxoSmithKline) Junior Horlicks emerging as the largest brand in urban India (Singh and Raghavan 2018).

GlaxoSmithKline

Malted health drink market in India is dominated by GSK that has more than 60% market share. Horlicks lite is one of the key brands of GSK in health drink segment and has successfully maintained the leading position in the market (Red seer 2018).

Godrej Industries-Foods Division

Godrej Industries-Foods Division, introduced a branded health beverage 'Sofit', the product is a combination of Soy milk and natural fruit juices. Sofit soya milk is termed as 'The New Taste of Health' in the health food market. Sofit is focused on the metro cities of India (Exchange4media 2004).

Tata Chemicals Limited

'Tata Salt Plus' is a largest revenue earner and a leading brand in the accessory food items category of fortified foods in India with a business turnover of Rs.1, 082.83 crore in 2015 (Mitra 2015).

Amul

Amul, popular dairy brand in India aspires to hit Rs 65,000 crore in revenues by 2020. To achieve this Amul has started extending its product portfolios in health beverage segment as well. 'AmulCalci+ Milk' is a fortified milk brand of Amul which is gaining acceptance of health conscious consumers (Shashidhar 2016).

Kaleesuwari Refinery Private Limited

Kaleesuwari Refinery Private Limited has launched its vitamin D3-fortified all-new 'Gold Winner Vita D3+ refined oil'. Gold Winner is a leading brand in the fortified oil segment in India and aims to makes India vitamin D positive (BestMediaInfo 2016).

1.9 NEED FOR THE STUDY

Global growth rate of lifestyle diseases are continuously increasing and simultaneously the importance of healthy lifestyle is becoming popular among the world population. In addition, India shows the highest figures of Vitamin A Deficiency (VAD) in the world. (FSSAI 2018). To solve these issues fortification of commonly eaten foods has been initiated by FSSAI. Hence Food fortification is used as an important tool to

prevent specific nutritional deficiencies, promote a general state of well-being in different populations, and prevent certain chronic diseases. Hence it is unethical to reject the presence of fortified foods and beverages in the Indian market.

The healthy lifestyle concept and the developing of fortified foods and beverages are still in the nascent stage in India. Hence, marketers have a limited understanding of the urban consumers from multi-cultural background. Moreover, Willingness to buy and acceptance of food products vary according to the culture (Efthimia et al. 2007; Dolgopolova et al. 2015). Therefore it was suggested that more research is needed in order to formulate more effective marketing strategies. As India is a multicultural country, the present study has the potentiality to explore consumer acceptance of people from different cultural and lifestyle background. Previous studies have investigated behavioural intention in multiple context but it was proved that research studies concerning behavioural intention and consumer acceptance in the real shopping environment is fragile (Michaelidou and Hassan 2014). Hence, the study goes further to explore the factors influencing purchase intention leading to consumer acceptance in FFBs.

The research study is intended to provide better insight into consumer behaviour on FFBs acceptance and help policy makers make sound health policies for improving the nutritional status of public. Besides, the research also explores the behavioural patterns of consumers along with essential drives, challenges and opportunities in the Indian FFBs market. Moreover, profiling of FFBs consumers is also important to the marketer. The questions like who buys FFBs products, what kind of products are being bought, the degree of consumer knowledge about FFBs, the key reasons behind the purchase decisions, the major factors that influence the acceptance of branded FFBs, and the shopping patterns of the FFBs consumer need to be explored. Hence the focus of the present research study is to investigate the acceptance of branded FFBs among Indian consumers.

1.10 STATEMENT OF THE PROBLEM

Over the past few decades lifestyle diseases have spread very fast as never before in the developing countries particularly in India and they have been responsible for most of

the deaths. Researchers have discovered the causes of the fast development of lifestyle diseases: the major cause's being- increasing environmental pollution, busy way of life, less exercise and unhealthy eating habits. Among all these factors, WHO (2015) had identified nutrition as an effective deterrent of chronic disease, stressing the need for a shift in nutrient intake towards FFBs. The review of literature points out that there is a close relationship between lifestyle diseases and eating habits (Willett et al. 2006; Sharma and Majumdar 2009; Ezzati and Riboli 2013; Lau et al. 2013). Across the globe, food fortification has been used safely and effectively to prevent lifestyle diseases. Food fortification is gaining momentum in India to tackle the micronutrient malnutrition problems of the 1.3 billion people (FSSAI 2019). Moreover, increasing consumers' awareness concerning the benefits of consuming fortified food products is likely to create lucrative opportunities for the market in both global and national level (Million Insights 2019).

Thus it is needed to clarify how and in what direction food industry can help the consumer for healthy living and how effectively they can communicate the health benefits of FFBs by using various marketing activities. As consumers are becoming more health conscious, the food industry realises that fortified food products have the potential to add value to their business and they offer the opportunity of developing a healthier generation, which is one of the top priorities of the nation. The demand for FFBs are mainly driven by growing public understanding of the link between eating habit and diseases (Kearney 2010; Lau et al. 2013). The marketing of high-calorie, low-nutrient foods and beverages is linked to many lifestyle diseases which has been widely recognized as a problem that affects the health of consumers (Grier and Kumanyika 2008).

Nutrition marketing has the potential to influence consumer purchase decision, which leads to change in consumption patterns (Colby et al. 2010). The commercial advertisement and marketing of healthy food and beverages have a strong influence in the eating habit of consumers. Research has consistently shown that the content of food marketing is predominately for unhealthy foods (Chapman et al. 2009) and also there is a lack of research on the marketing and consumer acceptance of functional/ fortified foods in Indian context (Sharma and Garg 2013). So it is interesting to learn about

consumer's attitude and knowledge about fortified foods and beverages in India. The present research study will try to probe into the issues about how health benefits of such products are communicated to consumers, whether they really understand the nutritional information written on the label, and the factors that influence them to accept or reject the new class of FFBs.

India being a relatively new market for health foods (Reteesh and Mallick 2014), it is a challenge for the marketers to identify the target consumers and equip the fortified foods and beverages to meet the consumer's health and wellness goals. Moreover it is important for the marketer to understand the relationship between consumer lifestyle and their food consumption pattern in order to create better marketing strategies. In addition to this, it is relevant to identify the reasons and motives behind the consumer purchase intention towards fortified foods and beverages. Marketer needs to pay attention towards consumer attitude and purchase intention towards FFBs. Furthermore communicating the information regarding the product to the consumer is essential in the marketing of functional food products (Menrad 2003). Since FFB is a novel product in Indian market, consumer knowledge level regard to FFB is critical in the marketing of FFBs. The research study also identifies the various sources of reliable information available to the consumer. Research studies concerning best theoretical framework to predict consumer acceptance of FFBs is fragile. Thus, researcher wants to probe how and in what direction consumers will accept branded FFBs in India. Accordingly the study required to develop an integrated consumer acceptance model for FFBs. Hence the problem identified for the study can be stated as *"consumer acceptance of branded FFBs in India"*.

1.11 RESEARCH QUESTIONS

A research question is a statement that identifies the phenomenon to be studied and it has to be very clear, focused and a debateable question around which a researcher can concentrate on for his research study. Based on the review of literature and research gaps identified, the following are the research questions posed for the study.

1. What is the influence of lifestyle attribute of consumer health consciousness on attitude towards fortified foods and beverages?

2. What is the role of attitude on the purchase intention towards fortified foods and beverages?

3. What is the effect of subjective norms on consumer purchase intention towards fortified foods and beverages?

4. What is the role of perceived behavioural control on the purchase intention towards fortified foods and beverages?

5. What are the various sources of information about fortified foods and beverages available to consumers?

6. Which is the most reliable source of information to the consumers?

7. Does consumer knowledge about fortified food and beverages influence the intention to purchase fortified foods and beverages?

8. Will purchase intention lead to consumer acceptance of fortified foods and beverages?

1.12 RESEARCH OBJECTIVES

Research objectives outlined the definite goals that research study had planned to accomplish during its completion. Based on the review of literature and research questions the following research objectives are formed for the present study.

1. To explore the effect of health consciousness on consumer attitude towards branded fortified foods and beverages

2. To assess the influence of attitude on consumer purchase intention towards branded fortified foods and beverages

3. To identify the impact of subjective norms on consumer purchase intention towards branded fortified foods and beverages

4. To identify the importance of perceived behavioural control on purchase intention towards branded fortified foods and beverages

5. To explore the role of consumer knowledge on the intention to purchase branded fortified foods and beverages

6. To identify the role of purchase intention on consumer acceptance of branded fortified foods and beverages

7. To develop a model for consumer acceptance of branded fortified foods and beverages

1.13 SIGNIFICANCE OF THE STUDY

The research study is an appendage to the existing literature of consumer behaviour in health foods marketing. So, the present study bridges the gap in the literature related to the influence of different factors on the acceptance of FFBs. Given the fact that there was a lack of information about buyers and non-buyers of fortified foods in India, there research study can be taken as a pioneering work upon which other studies, investigating the attitudes and the purchasing behaviour of consumers of FFBs can be built. The proposed consumer acceptance model can act as a guideline to the marketers to segment and position their food products successfully. The study will also help the health policy makers to form and execute the required policies to augment the public health. The results of the study are beneficial for agribusinesses or transnational food retailers who wish to enter the Indian food market. Additionally the outcome emanated from the research study could be efficiently applied to improve the nutritional status of the people.

1.14 SCOPE OF THE STUDY

The present study is emphasising the consumer acceptance of health foods and beverages especially on the perspective of branded FFBs in Indian consumer food market. The disposable income of the metro people is fast growing and making the consumers capable to spend more on fortified/health foods. The Associated Chambers of Commerce & Industry of India (ASSOCHAM 2015) revealed that there has been a surprising rise in the demand of packaged food in tier 1 metro cities and the report pointed out that urban residents consumed 78% of the packaged food, while rural residents consumed just over 22%. Moreover, Rateesh and Mallick (2014) state that most of the healthy/ FFBs are available in urban consumer market of India and the rural population of the country has limited knowledge about health foods and beverages (Daedal research 2012). 14 fortified products from seven categories of FFBs were identified in the study on the basis of their market penetration and brand popularity. Hence the study is focused on exploring different factors affecting the consumer acceptance of branded FFBs in Tier I metro cities of India.

1.15 OUTLINE OF THE THESIS

The thesis is presented in five chapters:

Chapter One represents the introduction of the research study covering background of the study, a detailed description about global and Indian F&B industry. The chapter also provides an overview of Indian health food and beverages market, key drivers of health food and beverages market. The chapter elaborates on FFBs and major players in FFBs market. The chapter describes the need for the study, statement of the problem, research questions, research objectives, significance, and scope of the study. The chapter concludes with a brief outline of the thesis.

Chapter Two provides review of literature. Significant and available literature is meticulously reviewed for getting an insight in all the study variables. Chapter provides an extensive literature of different theoretical models and theoretical background of the study. The chapter includes research gaps identified, conceptual framework, operational definition of the variables, hypotheses developed for the study, and mapping of research objectives with research hypotheses. In addition literature map is provided based on the research works reviewed for the present study.

Chapter Three explains the research methodology adopted for the study covering research approach, research methods, research design, sources of data available to the researcher, and research strategy adopted. Chapter also provides information regarding the research instrument development and measurement scales, sampling technique adopted in the study, and pilot study results. Chapter ends with introducing the different statistical tools used for data analysis.

Chapter Four illustrates the data analysis executed in the study to answer the research questions. It also provides clear interpretation to the analysis results. Hypotheses testing was done with the help of statistical software's like Smart PLS and SPSS.

Chapter Five consists of the findings and conclusions of the study. The chapter discusses the major findings of the research and the study implications. Besides that, chapter explains the limitations of the research and recommendations for future research.

CHAPTER 2

REVIEW OF LITERATURE

2.1 CHAPTER OVERVIEW

The Previous chapter had discussed the detailed introduction of the study. The Present chapter comprises of comprehensive review of concepts, applications and development of consumer acceptance models and theories with the aim of identifying potential factors for developing the best suitable theoretical model for consumer acceptance of FFBs. Section 2.2 provides a brief introduction to the consumer behaviour. The chapter overviews different theoretical models of consumer behaviour and acceptance mentioned in the previous research investigations in Section 2.3. The chapter also expounds the theoretical background of the study. Section 2.4 and Section 2.5 explicates health and food safety. In Section 2.6 the concept of functional foods and fortified foods and beverages are described. Furthermore a critical review on the different factors influencing purchase intention in health food choice is provided in Section 2.7. Section 2.8 details about the construct of purchase intention. Section 2.9 and Section 2.10 highlight the consumer acceptance of food products and acceptance related to FFBs respectively. Accordingly research gaps are identified and prescribed in Section 2.11. An extend review of literature leading to the development of conceptual framework is presented in Section 2.12. Section 2.13 Directs to hypotheses concluding with Section 2.14 which recommends operational definition for the study variables.

2.2 INTRODUCTION

For several decades, consumer behaviour had been the pivotal research area for social science researchers. Researches have been done on Consumer behaviour in wider spectrum in the field of social sciences. Nevertheless the researches had failed in formulating a schematic model for comprehending consumer behaviour. Consumers are distinct from each other in many aspects, like consumer needs and wants, consumer psychology, taste and preferences etc. This diverse nature of consumers is the most relevant aspect that offers vast scope for researching the topic - consumer behaviour. The dynamic and complex nature of consumer behaviour pose difficulty in building a

consensus on the common definition of consumer behaviour (Blackwell et al. 2006). Walters (1974) provided a simple definition for consumer behaviour. Walters (1974: 7) defined "consumer behaviour as the process whereby individuals decide whether, what, when, where, how, and from whom to purchase goods and services". Various definitions of consumer behaviour is presented in Table 2.1.

Table 2.1: Consumer Behaviour Definitions

Authors & Year	Definition
Faison (1977: 172)	"Consumer behaviour is the assumption that people have series of needs which lead to drive states".
Engel et al. (1986: 5)	"Consumer behaviour is those acts of individuals directly involved in obtaining, using, and disposing of economic goods and services, including the decision processes that precede and determine these acts".
Kotler (1994: 173)	"Consumer behaviour is the study of how people buy, what they buy, when they buy and why they buy".
Solomon et al. (2006: 7)	"Consumer behaviour is the study of the processes involved when individuals or groups select, purchase, use, or dispose of products, services, ideas, or experiences to satisfy needs and desires".
Stallworth (2008: 9)	"Consumer buying behaviour is defined as a set of activities which involves the purchase and use of goods and services which resulted from the customers' emotional and mental needs and behavioural responses".
Kotler and Keller (2008: 224)	"Consumer behaviour is the study of how individuals, groups and organisations select, buy, use and dispose of goods, services, ideas, or experiences to satisfy their needs and wants".

Source: Review of Literature

According to Schiffman and Kanuk (2007) consumer behaviour is the behaviour that consumers display in searching for, purchasing, using, evaluating, and disposing of

products, services, and ideas. The definition provides a clear understanding of how consumers make purchase decisions to satisfy their needs. Kotler and Keller (2011) defined consumer behaviour as the study of the ways of buying and disposing of goods, services, ideas or experiences by the individuals, groups and organizations in order to satisfy their needs and wants. From a marketer's point of view it is essential to understand the reason behind consumers making purchase. Hence to lay a theoretical foundation for the present study, a review of the previous theoretical models used for consumer adoption or acceptance has to be looked into.

Consumers' behaviour is a persistently evolving process. Wherein consumers are concerned more about health, hygiene and fitness. So the marketer needs to constantly innovate and understand the latest consumer needs and preferences. Marketing research has a wide range of studies done on the factors influencing behavioural intentions. It was identified that there is a dearth of research studies focusing on intention and also consumer acceptance. Studying consumer behaviour serves as a guideline to the marketer and provides insight into the purchase decision made by the consumer and how the consumer accepts a product.

2.3 THEORETICAL MODELS OF CONSUMER BEHAVIOUR AND ACCEPTANCE

For decades, researchers from a variety of disciplines have been investigating on consumer behaviour, technology usage and acceptance. The earlier research studies have led to the development of various theoretical models from the perspectives of information systems, social psychology, sociology etc. and all these theories have made commendable contributions to the literature on user behaviour or consumer acceptance in different contexts. There are numerous research studies concerning consumers' attitudes and purchase behaviours (Rogers 1962; Rosenstock 1974; Ajzen and Fishbein 1975; Janz and Becker 1984; Davis et al. 1989; Ajzen 1991; Venkatesh and Davis 2000; Venkatesh et al. 2003; Vijayasarathy 2004; Bruhn 2007). Earlier research studies indicated that without a comprehensive and deep understanding of consumer acceptance, it is difficult to plan effective marketing strategies. Thus it is vital to investigate the nature of consumer acceptance in consumer behaviour studies.

Evidently the development of a consumer acceptance model requires a strong theoretical base derived from the earlier research studies on consumer acceptance.

2.3.1 Diffusion of Innovation Theory (Rogers 1962)

Diffusion of Innovation Theory (DOI) is the oldest social science theory, describing the changes involved in adopting innovation (Rogers 2010). DOI Theory was developed by Rogers in 1962. The theory explains that over a period of time a product or idea gains attention and permeates through a specified population or social system. The outcome of this is that people in the social system adopt a new idea, product or behaviour. DOI theory has established five adopter categories: innovators, early adopters, early majority, late majority and laggards. According to DOI theory, the five factors that influence adoption of an innovation includes: relative advantage, compatibility, complexity, trialability, and observability (Figure 2.1). These five factors has an impact on the five adopter categories.
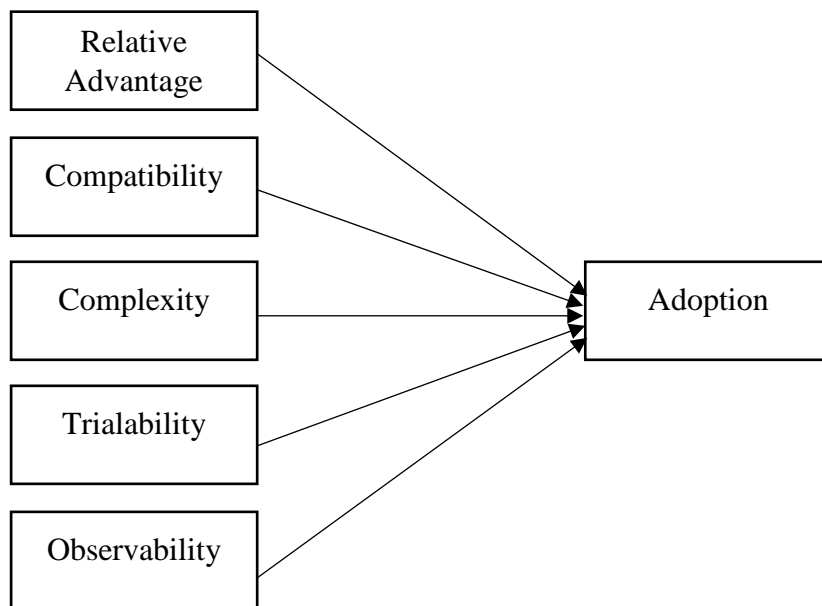
Source: Rogers (1983)

Figure 2.1: Diffusion of Innovation Theory

The concept of relative advantage is the amount to which an innovation is considered better than a mere idea or program. Compatibility dwells on consistency of the innovation in line with the values, experiences, and needs of the possible adopters.

Complexity is about the difficulty in understanding and the use of an innovation. The extent to which trial use or experiment of innovation can be made before the actual adoption is the trialability. Observability is the tangible results obtained by the innovation (Rogers 1983).

The DOI theory was substantially proved to be undeveloped in terms of the practical difficulty in applying it in the field of health innovation because of the numerous limitations it contains. Obviously it does not consider an individual's adaptability to the new behaviour in terms of social support and resources that he has. DOI does not guarantee an inclusive approach to adoption of a public health program. Hence, it was observed that DOI is not a suitable theory to be applied for predicting consumer acceptance.

2.3.2 The Health Belief Model (Rosenstock 1974)

The Health Belief Model (HBM) was developed in 1950s by social psychologists at the United States Public Health Service (Rosenstock 1974; Janz and Becker 1984). HBM is one of the most publicized and commonly used theories in health behaviour research (Carpenter 2010). The HBM's statement on the correlation between a person's fear of imminent disease or illness and trust in the efficiency of the suggested health behaviour or action will foretell the kind of behaviour he/she is likely to inculcate (Rosenstock 1974). The six constructs of the HBM includes: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cue to action and self-efficacy. The first four constructs were conceptualized as the fundamental principles of the HBM and the remaining two namely cue to action and self-efficacy were added by Becker and Miaman (1975) (Figure 2.2).

The main limitation of HBM is that the model does not explain attitudes, beliefs, or factors of an individual that directs to the adoption of a health behaviour. Moreover it does not consider environmental factors and socio-economic factors, which promote the recommended action and influence health behaviours (Janz and Becker 1984). HBM does not suggest a strategy for changing health-related actions as well. Present study is focused on health related behaviour of accepting health foods and it was identified that HBM cannot predict the acceptance of such foods.

INDIVIDUAL PERCEPTIONS   **MODIFYING FACTORS**   **LIKELIHOOD OF ACTION**

	Demographic variables (age, sex, race, ethnicity, etc.) Sociopsychological variables	Perceived benefits of preventive action minus Perceived barriers to preventive action
Perceived Susceptability to Disease "X" Perceived Seriousness (Severity) of Disease "X"	Perceived Threat of Disease "X"	Likelihood of Taking Recommended Preventive Health Action
	Cues to Action Mass media campaigns Advice from others Reminder postcard from physician/dentist Illness of family member or friend Newspaper or magazine article	Self-Efficacy Confidence in one's ability to take action

Source: Janz and Becker (1984)

Figure 2.2: Health Belief Model

2.3.3 Theory of Reasoned Action (Ajzen and Fishbein 1975)

The Theory of Reasoned Action (TRA) was proposed by Fishbein and Ajzen (1975). It has its origins in the field of social psychology. In attitude and behaviour research it is one of the most applied and systematic theories which has been developed. The model defines the links between a person's beliefs, attitudes, subjective norms, behavioural intentions, and user behavioural actions (Figure 2.3).
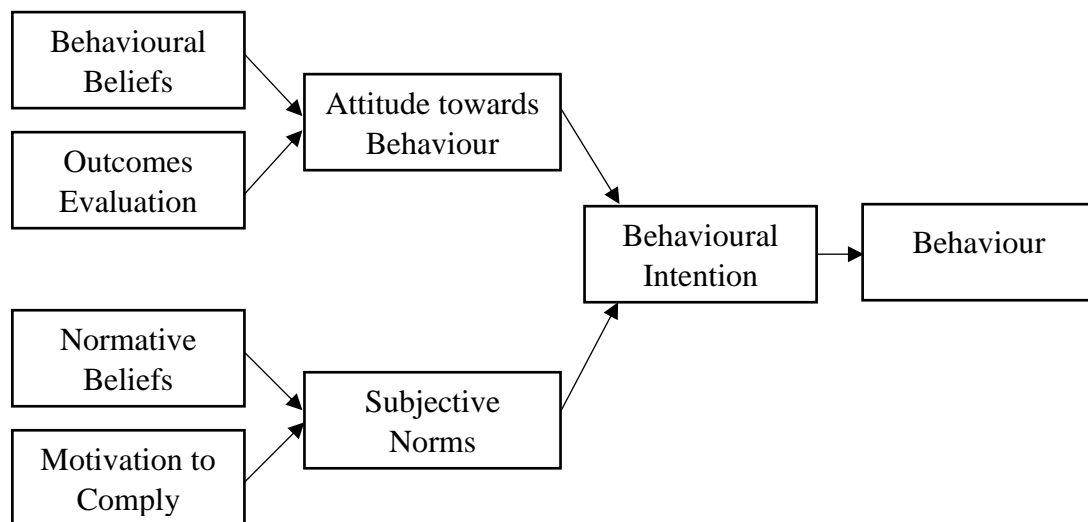
Source: Fishbein and Ajzen (1975)

Figure 2.3: Theory of Reasoned Action

TRA postulates that individual behaviour is driven by intentions to perform it. This intention is itself determined by the individual's attitudes and subjective norms towards the behaviour. TRA recognised the relevance of consumer behaviour since it could be utilised as a mechanism to bring about change in consumers' behaviour when using an innovation. However, TRA ignores the person's perceived control over the behaviour. TRA also avoids ability, time, environmental or organisational limits etc. in the model which may have a significant impact on person's behaviour.

2.3.4 Technology Acceptance Model (Davis 1989)

Technology Acceptance Model (TAM) is a well-known model of consumer acceptance that was studied by Davis in 1989. TAM is one of the best, powerful extension works of theory of reasoned action (TRA). Present models of TAM have roots in different theories. The acceptance of new technologies by final users has been very well studied using TAM (Davis 1989; Davis et al. 1989). It is one of the most popular models to measure technology acceptance (King and He 2006). TAM substitutes TRA's attitude measures with the two key perceptions which are ease of use and usefulness (Davis 1989). Davis (1989) has defined Perceived Usefulness (PU) as the degree to which a person believes that using a particular system would enhance his or her job performance. Perceived Ease-Of-Use (PEOU) was defined as the degree to which a

person believes that using a particular system would be free from effort (Davis 1989).
Institutional, social, and personal control factors have not been addressed by TAM
which is one of its major limitations (Dillon and Morris 1996). Thus, the model is not
suitable for predicting general individual acceptance. The basic TAM model is provided
in Figure 2.4.
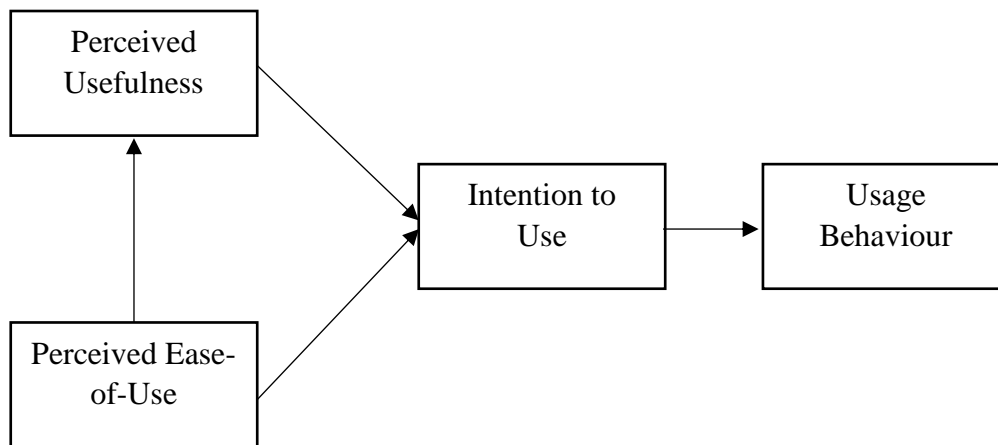
Figure 2.4: Technology Acceptance Model

Venkatesh and Davis (2000) expanded the basic TAM model to include perceived
usefulness and usage intentions and also social influence (subjective norms,
voluntariness and image) and cognitive instrumental processes (job relevance, output
quality, result demonstrability and perceived ease of use). The extended model is
TAM2 (Figure 2.5).

In addition, Venkatesh and Bala (2008) have suggested TAM3 to be induced in the field
of e-commerce combining with the effects of trust and perceived risk on system use.
However TAM has been widely criticised. Bagozzi (2007) claimed that both TAM and
TAM2 account for only 40% of a technological system's use. Moreover the previous
research studies pointed out the uncertainty in perceived ease being an agent of attitude
and usage intention in telemedicine (Hu et al. 1999) online banking (Pikkarainen 2004)
and mobile commerce (Wu and Wang 2005).
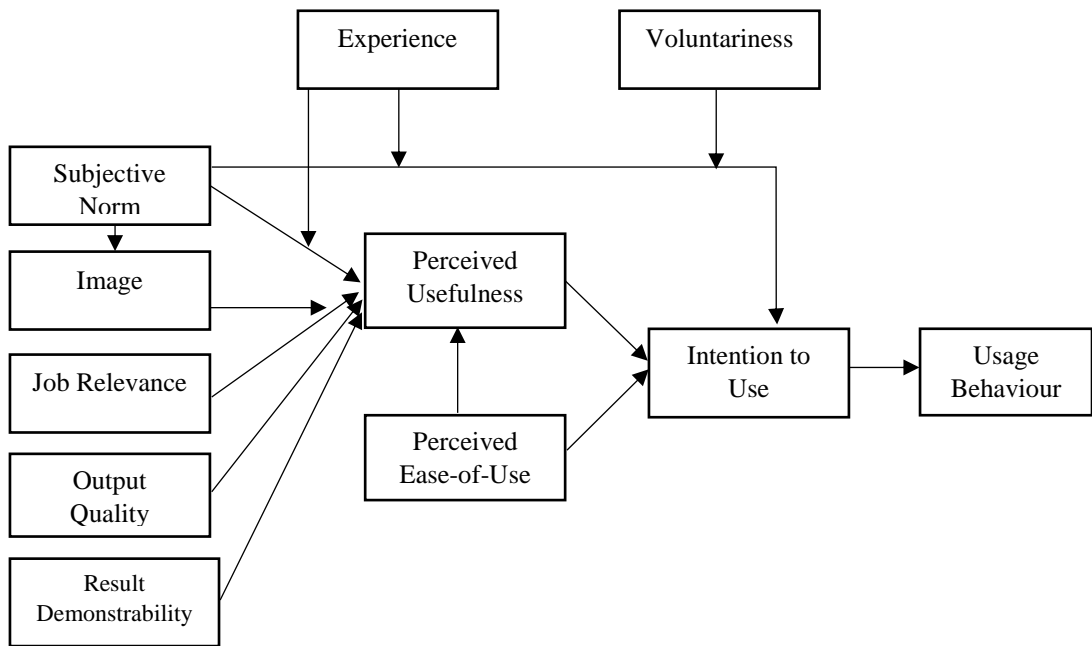
Source: Venkatesh and Davis (2000)

Figure 2.5: Technology Acceptance Model 2

Further, Venkatesh et al. (2003) integrated the key competing user acceptance models and developed the Unified Theory of Acceptance and Use of Technology (UTAUT) (Figure 2.6).
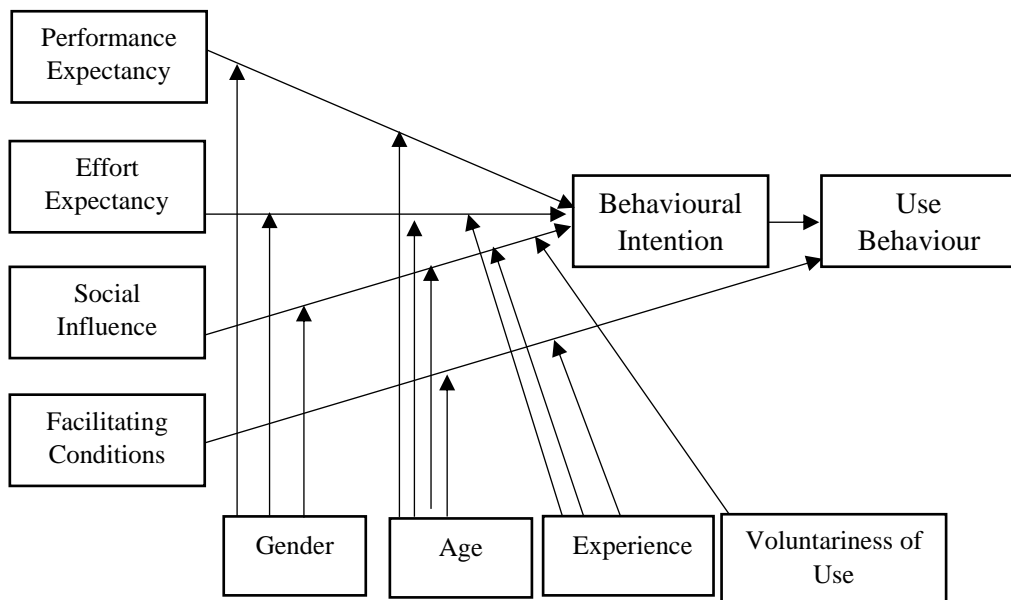
Source: Venkatesh et al. (2003)

Figure 2.6: Unified Theory of Acceptance and Use of Technology

Based on the review of TAM models, the study has identified the significant relationship between purchase intention and consumer acceptance. Accordingly, present study has considered these two constructs to explore the gap between purchase intention and consumer acceptance.

Table 2.2 presents the details about research studies on consumer behaviour and consumer acceptance models.

Table 2.2: Research Summary of Consumer Behaviour and Consumer Acceptance Models

Author & Year	Variables	Area of Research
Davis et al. (1989)	• Perceived Usefulness • Perceived Ease of Use • Attitude • Behavioural intention	User acceptance of computer technology
Ajzen (1991)	• Behavioural Beliefs • Normative Beliefs • Control Beliefs • Attitude • Subjective Norm • Perceived Behavioural Control • Behavioural intention	Theory of Planned Behaviour (TPB)
Liang and Huang (1998)	• Transaction cost • Uncertainty • Asset specificity	Consumer acceptance of products in electronic markets in Taiwan Transaction cost theory used
Venkatesh and Davis (2000)	• Subjective Norm • Image • Job Relevance • Output Quality • Results Demonstrability • Perceived Usefulness • Perceived Ease of Use • Behavioural intention	Technology Acceptance Model 2 (TAM2) User acceptance of technology
Cook et al. (2002)	• Self-identity • Attitude • Perceived Behavioural Control • Subjective Norm	Intention towards purchasing GM food Used TPB model
Pavlou (2003)	• perceived usefulness • Ease of use	Consumer acceptance of electronic commerce

	• Trust	Used TAM and TRA model
Venkatesh et al. (2003)	• Performance Expectancy • Effort Expectancy • Social Influence • Facilitating Conditions • Behavioural intention	Unified theory of acceptance and use of technology (UTAUT) (TAM 3) User acceptance of technology
Pikkarainen et al. (2004)	• Perceived usefulness • Information on online banking	Consumer acceptance of online banking Used extension of TAM model
Vijayasarathy (2004)	• Attitude • Behavioural intention • Normative beliefs • Self-efficacy	Consumer intentions to use on-line shopping Used augmented TAM
Wu and Wang (2005)	• Perceived ease of use has no effect • perceived risk • compatibility • Behavioural intention	Mobile commerce acceptance in Taiwan. Used extended technology acceptance model (TAM) with Innovation Diffusion Theory
Bruhn (2007)	• Credibility of information • Consumer knowledge • Rigor of regulatory policy	Consumer acceptance of new processing technologies
Chen (2007)	• Food neophobia • Food involvement • Attitude • Perceived Behavioural Control • Subjective Norm • Perceived difficulty	Consumer attitudes and purchase intentions in relation to organic foods in Taiwan Used TPB model
Aggelidis and Chatzoglou (2009)	• Perceived usefulness • Ease of use • Social influence • Attitude • Facilitating conditions • Self-efficacy • Behavioural intention	Willingness to use IT in hospitals in Greece. Modified technology acceptance model (TAM) Used unified theory of acceptance and utilization of technology (UTAUT)
Venkatesh et al. (2012)	• Hedonic motivation • Price value • Habit • Performance Expectancy	Consumer acceptance and use of information technology (UTAUT2)

	• Effort Expectancy	
	• Social Influence	
	• Facilitating Conditions	
Wee et al. (2014)	• Safety	Purchase behaviour of organic food products
	• Health consciousness	Used TPB model
	• Environmental concern	
	• Animal welfare	
	• Perceived quality and purchase intentions is not significant	

Source: Review of literature

Review of consumer behaviour models developed in the past research studies encompass different views and interpretations deriving at the conclusion that consumer behaviour cannot be addressed by a single theoretical model. However, many studies have made an attempt to understand the behaviour and have developed theories on the same. The present study has identified different factors which are contributing to the consumer behaviour. It was identified that attitude is a major factor for predicting purchase intention (Cook et al. 2002; Chen 2007) as in the case of Genetically Modified Foods (GMF) and organic food. Subjective norm was considered as the second important factor. Further, perceived behavioural control has a moderate influence on individual's behavioural intentions (Cook et al. 2002; Chen 2007).

In addition, the review on research studies concerning technology, acceptance directed to the fact that behavioural intention leads to user behaviour or consumer acceptance (Davis et al. 1989; Venkatesh and Davis 2000; Venkatesh et al. 2003; Vijayasarathy 2004; Wu and Wang 2005; Aggelidis and Chatzoglou 2009).

2.4 THEORETICAL BACKGROUND OF THE STUDY

The success of a marketing model essentially lies in researcher's ability to identify the variables that really differentiate consumer's approach at the marketplace. Ajzen (1991) recommended the Theory of Planned Behaviour (TPB) to progress on the predictive power of the theory of reasoned action (TRA) by including perceived behavioural control. The TPB (Ajzen 1991) started as the Theory of Reasoned Action (TRA) in 1980 to predict an individual's intentional involvement in an action or behaviour at a particular time and place. TPB was proposed by Ajzen (1991) as a corrective measure

to rectify the major flaw in TRA, which refers to irresistible volition. TRA and TPB are basically similar except that PBC was included as a determining factor for intentions and behaviour.

The TPB states that an individual's behavioural intentions and behaviour are the outcome of the attitude, subjective norms, and perceived behavioural control. Perceived behavioural control refers to people's perception of the ease or difficulty in performing the behaviour of interest. The fundamental factor in the TPB is the individual's intention to perform a given behaviour.

TPB is a theory in psychology that links a persons' beliefs and behaviour. TPB is one of the best predictive persuasion theories (Armitage and Conner 2001). This theory has been applied to study about the relationships among beliefs, attitudes, behavioural intentions and behaviours in numerous angles such as health behaviours, advertising, public relations and substance use. The TPB states that user behaviour or action depends on both intention and PBC. The model representing TPB is provided in Figure 2.7.
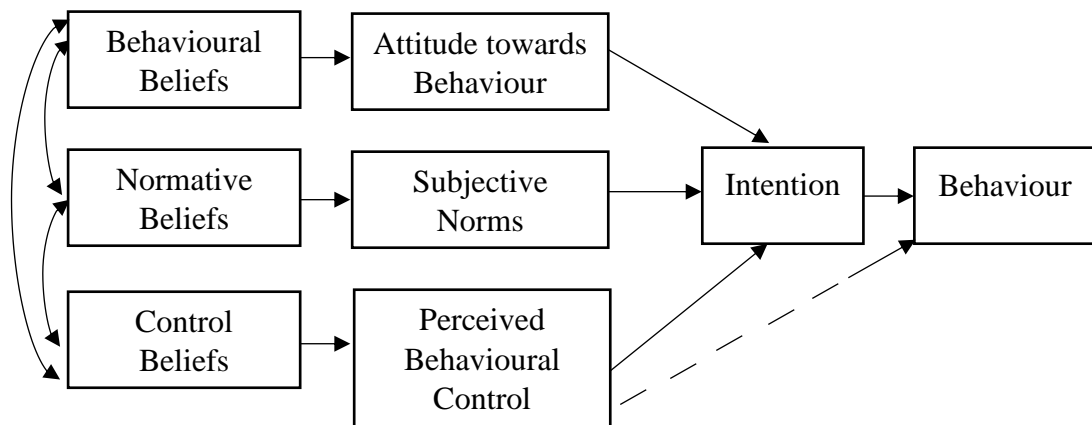
Source: Ajzen (1991)

Figure 2.7: Theory of Planned Behaviour

The TPB (Ajzen 1991) suggests that behaviour is an outcome of attitude, social norms and perceived behavioural control which is related to the object and intention to execute the behaviour. Conner et al. (2003) identified that TPB has enhanced the predictability

of intention specifically for the behaviour in food intake and TPB is suitable for predicting factors that directly relate to healthy eating behaviour (Fila and Smith 2006; Stefanie and Chery 2006). The earlier research studies had confirmed that the TPB would be able to explain health related behavioural intention better than the TRA (Ajzen1991).

The theoretical foundation of the present study is based on the TPB (Ajzen 1991). The past research identifies TPB as the best theoretical model for predicting consumer behaviour especially in health domain. Moreover research across different behavioural domains have proved that TPB stands as a better alternative for predicting consumer behaviour more accurately than any other theoretical models. Hence, the study has utilised TPB for explaining the behaviour of consumers towards Fortified Foods & Beverages (FFBs) as this theory offers the best explanation concerning the factors affecting consumer purchase intention for FFBs. As a result TPB emerged as the theoretical base for the study.

However, TPB is not free from drawbacks, TPB does not account for some variables like fear, threat, mood or past experience, environmental or economic factors that influence the behavioural intention and motivation. In addition, the theory has not focused on the gap between "intent" and "behavioural action". Instead the researcher has incorporated other components to TPB to make it as the best theoretical model. TPB is amenable and the addition of extra variables may disclose a credible prediction of variance in user behaviour (Ajzen 1991). Various cognitive factors have been studied along with the TPB model with this aim.

Few studies have identified the significance of health consciousness and consumer knowledge variables in food choice. It was discovered that adequate research had not been done on the aspects of consumer health consciousness along with consumer knowledge construct in the TPB model to predict consumer behaviour towards fortified foods and beverages in the TPB model. It is unclear how consumer knowledge towards FFBs and nutritional labelling affects consumer acceptance of FFBs. Hence, health consciousness and consumer knowledge factors were integrated in the TPB model. An overall improvisation of TPB blending health consciousness (Wee et al. 2014) with

factors leading to consumer knowledge (Bruhn 2007) can enhance the predictive validity of the TPB.

The proposed model will help the companies in the fortified food and beverage industry to segment the consumers and position their food products successfully. This will also help the health policy makers to develop and implement the required programs to improve the public health.

2.5 HEALTH AND FOOD SAFETY

The Constitution of the World Health Organization, which came into force on April 7, 1948, defined "health as a state of complete physical, mental and social well-being." (Grad 2002: 982). The writers of the Constitution were clearly aware of the tendency of seeing "health as a state dependent on the presence or absence of diseases: so they added to that definition that an individual, if he is to be considered healthy, should not suffer from any disease" ("and not merely the absence of disease or infirmity") (Grad 2002: 981).

Given the significant rise in consumer attention in food and safety issues, there is a need to determine to what extent there is a scientific basis for claims made for food safety. FAO (1995) has defined food safety as handling, storing and preparing food to prevent infection and help to make sure that our food keeps enough nutrients for us to have a healthy diet.

2.6 FUNCTIONAL FOODS AND FFBs

Marketers of different food products are introducing a choice of "functional foods" in to the market. These are the foods which provide health advantages beyond basic nutrition and promise the consumer improvements in targeted physiological functions (Diplock et al. 1999; Thompson 2007; Urala and Lähteenmäki 2003). In addition, consuming functional foods as a part of diet will lead to a healthy lifestyle and reduce the risk of lifestyle diseases. Fortified foods are one of the major categories of functional foods. All the food products have functional value as it provides taste, aroma and nutrition. Nevertheless, foods are now being scientifically examined to improve its health benefits, which may prevent the occurrence of food related diseases. Few

decades back global food market witnessed the development of a new food category called "functional foods". The concept of Functional food has its origin in Japan in the 1980s. Japan recognized functional foods as a distinctive category and identified the substantive benefits of functional foods. Japan considers functional foods as "Foods for Specified Health Use (FOSHU)", and defined them as these are the foods composed of functional ingredients that affect the structure and/or function of the body and are used to maintain or regulate specific health conditions (Shimizu 2003).

There is no globally accepted definition for functional foods. Various organizations in different countries have proposed their own definitions to this emerging food category. Earl and Thomas (1994) in USA defined functional foods as any modified food or food ingredient that may provide a health benefit beyond the traditional nutrients it contains. The International Food Information Council (IFIC) defines "functional foods as foods that provide health benefits beyond basic nutrition" (Hasler et al. 2004: 814). International Life Sciences Institute of North America (ILSI 1999) also defined functional foods in a similar way that "foods that, by virtue of physiologically active food components, provide health benefits beyond basic nutrition" (Hasler et al. 2004: 815). According to Martirosyan and Singh (2015: 212) "functional food is natural or processed foods that contains known or unknown biologically-active compounds; which, in defined, effective non-toxic amounts, provide a clinically proven and documented health benefit for the prevention, management, or treatment of chronic disease". Health Canada (2018) defines functional foods as similar in appearance to, or may be, a conventional food, consumed as part of a usual diet, and is demonstrated to have physiological benefits and/or reduce the risk of chronic disease beyond basic nutritional functions.

The demand for functional foods is growing in the developing countries like India (Sutar 2010). India ranks among the top ten nations in buying functional foods (Watson 2006). In India, Food Safety & Standards Authority of India (FSSAI) is the apex consolidating statute related to food safety and regulations in India. According to FSSAI (2018) functional foods are foods with added probiotic, prebiotic, safe plant or other botanical ingredients. Functional foods may contain plants, botanicals, extracts as well as vitamins and minerals etc. and may either be in food form or in the form of

powders, tablets etc. According to these definitions, it is concluded that functional foods are those food products which may have an extra health benefit or may have special value to control or reduce the risk of lifestyle diseases. American Dietetic Association's (ADA's) has classified functional foods in to four categories. According to ADA functional foods consist of conventional foods, modified foods (modified foods can be of fortified, enriched, or enhanced foods), medical foods, and foods for specific dietary use (ADA 2004) (Table 2.3).

Table 2.3: Classification of Functional Foods

Types of Functional Food	Functional Foods Examples
Conventional Foods (Whole Foods)	• Garlic, Nuts, Tomatoes, etc.
Modified Foods -Fortified Foods	• Calcium-fortified orange juice, Iodized salt, etc.
-Enriched Foods	• Folate-enriched breads
-Enhanced Foods	• Energy bars, Snacks, Yogurts, Teas, Bottled water, etc.
Medical Foods	• Phenylketonuria (PKU) formulas free of phenylalanine
Foods for Special Dietary Use	• Infant foods, Hypoallergenic foods such as Gluten-free foods, Lactose-free foods, Weight-loss foods, etc.

Source: ADA (2004)

Due to lack of vital vitamins and minerals in Indian population, Government of India is very keen to promote packaged food manufacturers to introduce FFBs products (Euromonitor 2018). Accordingly, on 16th October 2016, National Summit on Food fortification was held announcing the operationalizing of the standards of fortification and invited public comments. After having considered the valuable comments from scientific panel and different stakeholders, final standards (with minimum and maximum levels) for fortified foods were set up on 2nd August 2018 as Food Safety

and Standards (Fortification of Foods) Regulations, 2018. As a result, in order to address micronutrient deficiencies and to promote large scale food fortification across India, the Food Fortification Resource Centre (FFRC) was set up under FSSAI with the support of TATA Trusts. (TATA Trust is a secular non-profit nongovernmental organization established by TATA group of companies). Food fortification offers a very cost-effective solution to address micronutrient malnutrition (FSSAI 2018).

According to FSSAI, fortification is the addition of key vitamins and minerals such as iron, iodine, zinc, vitamins A & D to staple foods such as rice, wheat, oil, milk, and salt to improve their nutritional content. FSSAI (2019: 14) defined fortification as "deliberately increasing the content of essential micronutrients in a food so as to improve the nutritional quality of food and to provide public health benefit with minimal risk to health". These nutrients may or may not have been present in the food originally before processing or may become minimal during the processing. Hence, food fortification means the addition of one or more essential nutrients to a food, whether or not it is normally contained in the food, for the purpose of preventing or correcting a demonstrated deficiency of one or more nutrients in the population or specific population groups (Food and Agriculture Organization (FAO) 1995; WHO 1994). Fortified food products can be defined as food products fortified with additional ingredients or suitably modified to provide a distinct health benefit (PwC and FICCI 2013). Generally when vitamins and nutrients are added to some food, it becomes fortified foods. Some foods may contain content of nutrient in low level. So high amount of nutrient is added to give more functional benefits. Hence the major advantage of consuming FFBs is to get specific health benefits.

FFB industry is at nascent stage in India and marketers are launching a variety of FFB products in the market. It is essential for the stakeholders to understand the acceptability of such products. Present study is focused on the consumer acceptance of fortified foods among Indian consumers. Fortified foods come under the modified food category of functional foods (ADA 2004). Fortified foods offer great potential specifically to promote the health conditions and well-being or to prevent the chances of food borne diseases. Major FFB brands include Kellogg's Special K breakfast cereals, Aashirvaad Fortified Atta, Amul Calci+ Milk, Britannia fortified flavoured yogurt, Gold Winner -

Refined Sunflower Oil, Tata Salt Plus, Tetley Green Tea, Minute Maid Original, Sofit Soya Milk, Nestle Cerelac Infant Cereal, PediaSure Grow & Gain, Bournvita Lil Champs, Horlicks Lite, Amul PRO etc.

2.7 FACTORS INFLUENCING PURCHASE INTENTION IN HEALTH FOOD CHOICE

Consumer behaviour towards food choice is multi-faceted in nature. Earlier research studies have identified that a variety of factors affect consumer's decisions on choosing health food. Marketers should be cautious of these potential factors which may have an impact on consumer behaviour or acceptance of healthy foods. The vital factor that influences the health food choice are discussed in the following sections.

2.7.1 Socio-demographic Factors

Socio-demographics are the characteristics of the population. Studying the socio-demographic characteristics of consumers or usage segment is very important for the marketing of new products. Socio-demographic factors considered in the present study are age, gender, marital status, employment status, family monthly income, education, location of residence of the consumer and present health status of the consumer. The significance of these factors varies across different studies. Consumer acceptance of different products differ cross-culturally and intra-individually (Frewer et al. 2003). Few studies (Bogue et al. 2005; Niva 2006; Bornkessel et al. 2011; Jayasree 2011) have indicated that socio-demographic determinants of consumers have an influence on the acceptance of functional foods. Hence, it is essential for the food marketers to understand clearly the target consumers in the light of socio-demographic backgrounds.

Research studies have shown that functional food consumption vary according to gender differences; female consumers were found to be more interested in perceiving healthy diets than male consumers and they were more concerned about health issues (Monneuse et al. 1997; Bogue et al. 2005; Niva 2006; Brecic et al. 2014). The acceptance and purchase intention towards GMF and functional food products were higher among female consumers (Poulsen1999; Verbeke 2005; Markovina et al. 2011; Khumalo et al. 2011; Bilgiç and Yüksel 2012; Behrens et al. 2015). Female respondents were ready to change their lifestyle by increasing nutritionally enriched food in their

diet (Jain et.al 2014). The study by Kajale and Becker (2014) in India contradicted the findings and confirmed that female consumers consume less GM foods than male.

Research studies (Anttolainen et al. 2001; De Jong et al. 2003; Bogue et al. 2005; Kamarulzaman et al. 2014; Gilbert 2015) confirmed the significant relationship between higher level of education and consumer's acceptance of healthy food products. This contrasted the findings of Poulsen (1999) and Verbeke (2005) in functional foods and Noomene and Gil (2006), Mohr et al. (2007), and Kajale and Becker (2014) in GMF, which reported that highly educated consumers are less likely to buy these special foods and that acceptance rate of healthy food was high among less educated consumers.

Childs (1997) expounded that aged people are more eager to accept disease preventative food habits. Poulsen (1999) and Verbeke (2005) clarified that older consumers (aged 55+) are more positive about functional foods.

De Jong et al. (2003) pointed out that functional food consumers are mainly those with higher income. Brecic et al. (2014) and Gilbert (2015) also confirmed that health food consumption is significantly related to income of the consumers.

Kajale and Becker (2014) conducted a study in India and found that married people are more likely to follow a healthy diet and have more inclination towards GMF.

Verbeke (2005) pointed out that the persuasive factor behind choosing functional foods is either the present health status or illness of a family member.

Consumer behaviour towards food product is very complex and dynamic in nature. Lifestyle segmentation has been a very beneficial concept for marketing and advertisement planners (Wells and Tigert 1971). Earlier researches reveal that lifestyle determinants of consumers have influence on the acceptance of functional foods (Bornkessel et al. 2011; Jayasree 2011).

2.7.2 Consumer Health Consciousness

Consumer lifestyle is an important factor of consumer food choice. Lifestyles are defined as the way how people live and spend their time and money. They propound consumer's motivations and prior learning, social class, demographics, and other

variables. Lifestyle is a summary construct reflecting the values of consumers (Engel et al. 1990). Lifestyle refers to consumer's Activities, Interests, and Opinion (AIO). More precisely to say, it is what the consumers like to do, what their areas of interest are and in general their opinion on various things (Lazer and William 1963; Plummer 1974). Due to the dramatic change in lifestyle of Indian consumers occurring fast as never before, the study on consumer lifestyle is essential as it determines the acceptance of FFBs in India. Since the past decade the trend of the consumers show a positive inclination towards the acquisition of healthy eating habit as a preventive measure against lifestyle diseases. Previous research studies identified that prevention of disease through dietary modification will increase the healthiness of the population (Hasler 2000).

Many approaches are available for the study of lifestyle variables. For better market segmentation (Kucukemiroglu 1997) eight different lifestyle dimensions have been proposed. They are factors pertaining to health consciousness, fashion conscious, leadership, family concern, care-free lifestyle, community consciousness, cost consciousness and practicality. The effect of each lifestyle dimension varies according to the product category, thereby making the health consciousness factor relevant in the current study. Healthy lifestyle will help people to maintain their physical health and prevent lifestyle diseases to a large extend.

A healthy lifestyle may create a positive attitude towards healthy foods. Health consciousness is a determinant of healthy lifestyle, which is an individual's readiness to adopt health care measures or willingness to adopt practices of health care (Becker and Maiman 1975). Health conscious consumers are alert and concerned about their wellness or health and are motivated to improve or retain their health and quality of life to prevent diseases by engaging themselves in healthy behaviours and being self-conscious about health (Newsom et al. 2005). Hence, lifestyle factor of health consciousness may have an important role in attitude formation towards healthy foods.

Health consciousness can be defined as "the degree of willingness to undertake healthy actions" (Ophuis 1989: 1724). Apart from socio-demographic factors, lifestyle-related factor like practices of maintaining health is associated with functional foods consumption (Niva 2006; Franz and Nowak 2010; Irene and Spiller 2014; Diana et al.

2014). Health consciousness helps to develop a positive perception towards functional food (Rezai et al. 2012). Recent research studies shows that health consciousness act as a motivating factor to the consumer for buying eco-friendly functional foods (Moons et al. 2018) and organic food choices (Shin and Mattila 2019). A research study (Lee et al. 2014) on willingness to select restaurants revealed that highly health-conscious people prefer health food than less health-conscious people. A recent study in India (Kapoor and Munjal 2017) shows that women are more health conscious and are influential to decide upon the eating habits of the entire family.

In addition, research study done by Rifnaz et al. (2016) prove that health consciousness will increase and promote positive health attitudes and behaviour like choice of functional food. Mesanovic et al. (2013) examined the effect of health consciousness based on the frequency of visits made by the consumer to a family doctor or specialist which substantiated the influence of health consciousness. Moreover the study suggested that health consciousness can stimulate health attitudes and behaviours. Health conscious consumers have a tendency towards healthy lifestyle. Pferdekamper (2003) recognized that defensive health behaviour acted as a positive determinant on functional food products acceptance. It was also found that health consciousness is the main factor affecting consumers' attitude toward organic wine (Rojas-Méndez et al. 2015). Besides being an important predicting factor of attitude, intention and purchase of organic foods (Magnusson et al. 2003). Functional foods provide consumers a modern way to follow a healthy lifestyle (Siro et al. 2008) and can help the people to improve their health status and prevent the development of lifestyle diseases. Earlier research studies arrive at the conclusion that the influence of socio-demographic factors and lifestyle attribute of consumer health consciousness has an immediate effect on attitude formation towards healthy food products, which varies due to the disparity in the geographical and cultural settings. On this context very few studies have been done, specifically with regards to Indian scenario. So there is a need to study these issues in Indian context.

2.7.3 Consumer Attitude

Attitude is a learned predisposition to behave in a consistently positive or negative manner with respect to a given object (Schiffman and Kanuk 2008). Dawes (1972)

defines attitude as the response of an individual to a social object or phenomenon which might be assertive or sceptical or connotative. Attitude involves perceived consequences related to behaviour (Ramayah et al. 2010). Attitudes have a motivational quality, which may drive consumer towards a specific behaviour or resist the consumer from that behaviour (Schiffman and Kanuk 2007). Consumer attitude is the strongest predictor of consumer intentions to purchase a particular brand or product (Kotchen and Reiling 2000). According to the TPB model, attitude does not directly lead to consumer behaviour. Attitude influences purchase intentions that in turn influence consumer behaviours.

Understanding the psychological process behind attitude formation is a vital factor in consumer research. In addition, the success of marketing programme depends on how the marketer is able to recognize the relationship between attitudes and behaviour. Earlier researchers have proposed various models that measure the underlying dimensions of attitude. The important one among these was tri-component attitude model (Grimm 2005; Steven et al. 2006) (Figure 2.8). This model included mainly three components, cognitive, affective, and conative component.
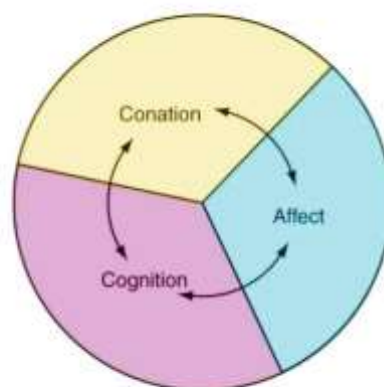
Source: Grimm 2005; Steven et al. 2006

Figure 2.8: Tricomponent Attitude Model

Cognitive component consists of an individual's cognitions, i.e. knowledge or perception about the products or objects. This knowledge and perceptions will lead to

form particular beliefs which in turn results in specific behaviour or outcome (Steven et al. 2006). The second component is affective, which is a person's emotions or feelings for a particular brand or product (Allen et al 2005). These emotions play an important role in evaluating an object. Conative is concerned with the possibility or tendency of a person being pulled towards a specific product behave in a certain situation (Grimm 2005). Conative component is closely related to the consumer's intention to buy. Present study has utilised tri-component attitude model as a base for shaping the attitude construct.

Substantial research studies concerning consumer attitude in multiple contexts have identified that attitude is the key dimension for the development of purchase intention towards environment friendly vehicles (Afroz et al. 2015), with its success owing to green HRM (Human Resource Management) (Yusoff et al. 2015), and in sustaining consumption behaviours (Wang 2017). Environmental attitude had a significant effect on purchase intention towards green products (Maichum et al. 2017) and environmental attitude is a person's positive or negative evaluation of self-performance.

Earlier research studies (Dowd and Burke 2013; Rezai et al. 2014) have identified a close rapport between attitude and intention, particularly in the context of food products and the proceeding attitude has been considered as a consistent predictor of behavioural intention with respect to food choices (Dowd and Burke 2013). Recent research study by Bashir et al. (2019) revealed that attitude had a significant relationship with purchase intention towards halal food. It is evident from the previous researches (Bogue et al. 2005) that attitudes formed for making food choice are the strongest determinant of healthy food habit.

Research studies (Dean et al. 2012; Zhou et al. 2013; Chu 2018; Basha and Lal 2019) concerning organic food choice have found that attitude, in a positive sense is correlated to intention. Research study (Lapkin 2015) in health care found that attitude was the most important forecaster of participants' intention to procure medical safety. Earlier research studies have found that acceptance of GMFs is strongly influenced by the attitude (Cook et al. 2002; Rojas-Méndez et al. 2012), and attitude has a strong influence on the purchase intention towards functional foods and synthetic functional foods (Park et al. 2011; Rezai et al. 2014). Mullan et al. (2013) contradicting these

findings, it is also true that attitudes have no significant relationship with intention towards safe food handling among the adolescents. Hence, the present study pursues to verify whether the attitude toward behaviour can be considered as an antecedent of behavioural intention for FFBs.

2.7.4 Subjective Norms

The term "subjective norms" defined as the perceived social pressure to perform or not to perform the behaviour (Ajzen1991). Subjective norm is defined "as the person's perception that most people who are important to them think that they should or should not perform the behaviour in question" (Dillon and Morris 1996). It is the social pressure of what they perceive their immediate community's attitude to certain behaviour. Subjective norms is that which initiates the consumer's indulgence or non-indulgence in a practice and is considered as the second major determinant of behavioural intentions in the TPB model (Ajzen 1991). Subjective norms are also an antecedent of behavioural intentions in the TPB model. It was identified that subjective norms or social influence at the group level are the chief stimulators of Indian consumers' passion for novel food purchases (Yun et al. 2008). Choo et al. (2004) studied Indians' attitude and revealed the fact that in India, people's attitude towards novel processed food products depended on subjective norm or social influence. Rezai et al. (2014) confirmed that purchase intention towards synthetic functional foods is directly influenced by subjective norms. Finlay et al. (1997) have given evidence that subjective norms are particularly significant in the health domain.

Subjective norms are represented by people like family members, friends, peer groups, or health professionals, etc. Previous researchers have recognized subjective norm as a significant predictor of behavioural intention, including purchase intention towards organic foods (Dean et al. 2012; Ham et al. 2018; Basha and Lal 2019), consumer's intention to buy green products (Yadav and Pathak 2016), and adolescents' safe food handling (Mullan et al. 2013). A recent study results indicated that subjective norm had a significant relation with tendency to use sunnah functional foods (Hamdan et al. 2018). So, it is interesting to know the effect of subjective norms on the intention to purchase FFB in the Indian context. Thus, intention to perform a targeted behaviour is

proposed to be significantly influenced by others who are important in purchase decisions.

2.7.5 Perceived Behavioural Control

Perceived behavioural control (PBC) can be defined as the perception of the ease or difficulty of the particular behaviour (Ajzen 1991). This perception of control is believed to moderate the relationship of intention to behaviour, that is, intention will be converted to behaviour when PBC is high (Gardner and Hausenblas 2004). According to TPB, intention to perform the behaviour leads to behaviour in combination with perceived behavioural control (Ajzen 1991). Ajzen (2002) identified that intention or behaviour can be largely get affected by perceived control. Moreover (Godin and Kok 1996; Fila and Smith 2006) revealed that as attitude, PBC also plays an inevitable role in health-related behaviour. Recent study results shows that PBC is significantly related with intention to purchase halal-labelled products (Elseidi 2018). However, Bashir et al. (2019) found that PBC did not show a significant relationship with the consumer intention towards halal foods. In addition, PBC has a substantial influence on purchase intention towards organic foods (Ham et al. 2018).

Researchers other than food sector also confirmed the significant relationship between PBC and purchase intention. Research study by Teo and Pok (2003) concerning adoption of WAP-enabled mobile phones among internet users shows that PBC is significantly related to purchase intention. Tan (2016) found that PBC has a significant direct influence on intentions to adopt pharmacy value added services. Prior research study (Taylor and Todd 1995) on environmental behaviour found that intention is predominantly influenced by PBC. In contrast, a recent research study (Jain et al. 2017) in India on consumer behaviour towards luxury fashion goods revealed that PBC is not an important factor of purchase intentions. Thus present study wants to works more precisely on the impact of PBC on purchase intention towards branded FFBs.

2.7.6 Consumer Knowledge

Knowledge is a function of familiarity and expertise. According to Alba and Hutchinson (1987: 411) familiarity is defined "as the product-related experiences of a consumer" and expertise is defined as "the ability to execute the product-related tasks

successfully". In the digital era of information, consumer's knowledge regarding the goods and services has an impact on his purchase decisions. The review of literature reveals the inadequacy in researches done on the consumer knowledge interventions on purchase intention. Hence the present study has focused to fill this knowledge gap in the literature. Earlier research study (Rao and Monroe 1988) has assessed consumer knowledge about the product in terms of either subjective knowledge or objective knowledge. Objective knowledge is the accurate information about the product and subjective knowledge is the people's subjective perceptions of the product (Park et al. 1994). Making a clear distinction between subjective knowledge and objective knowledge are difficult. Hence present study combines these two concepts. The study explores into the concept of consumer knowledge in two dimensions, consumer knowledge towards branded FFBs, and knowledge towards nutrition labelling.

2.7.6.1 Consumer knowledge towards branded FFBs

The FFB marketer requires shrewdness and foresight in perceiving consumers' knowledge in order to launch his product in the market segment successfully to satisfy the consumers' healthy\food choice. IFIC (2000) recognized the lack of knowledge about functional food benefit, as the main reason for non-consumption of functional/ fortified foods. Communicating specific information about the health benefits of functional food is regarded as the success factor for the marketing of functional foods (Weststrate et al. 2002; Menrad 2003). The success of marketing functional /fortified foods evidently depends on the information of the same provided simultaneously to the consumer to help in making a choice or purchase decisions (Frewer et al. 2003). It was reported that increased knowledge of functional foods and food ingredients were positively contributing to the success of functional foods in the foods and beverage market (Hilliam 1996; Vella et al. 2014). Thus it was identified that information and consumer knowledge is the key factor to influence consumers' willingness to accept functional foods (Giudice and Pascucci 2012; Sandmann et al. 2017) and knowledge about health benefit of functional food product is a great motivation for consumers to involve in health-related behaviour (Moorman and Matulich 1993).

Fortified foods have received attention in the marketing research literature, even though research has not focused on any important element of functional foods in particular for

consumer knowledge (Saaksjarvi et al. 2009). Consumer knowledge also depends on the consumers' personal health status (Bornkessel et al. 2011). Similarly for improving public health, it is essential to communicate the health benefits of functional/ fortified foods to the public, through intermediaries such as health professionals, educators, the media and the food industry (Diplock 1999). Moreover, it is clear from the recent research studies (Hassan and Mustapha 2010; Büyükkaragöz et al. 2014) that for improving consumers' interest in functional foods, scientific benefit of functional foods has to be properly communicated to the consumers to improve their health by consuming functional/ fortified foods.

Consumer knowledge about functional foods plays a significant role in the purchase decision of functional foods among young consumers (Bogue et al. 2005; Labrecque et al. 2006; Giudice et al. 2012) and it was identified from the past research (Saaksjarvi et al. 2009) that the very important aspect of functional food marketing namely consumer knowledge had been ignored in the studies. The lack of knowledge or limited information provided to consumers will adversely affect their attitudes, perception, and interest in GMF (Rojas et al. 2012). Therefore providing information about health benefit of GMF will increase the purchase intention (Miles et al. 2005) and in India consumer perception towards GMF is largely determined by consumer knowledge and information about the product (Santanu and Paul 2012). Consumer knowledge is a significant factor influencing consumer attitude towards organic food products in India (Singh and Verma 2017).

It is important for the marketer to identify which information source is more reliable and trustworthy. It was identified that health professionals, educators and communicators play a vital role in creating knowledge among the consumers with regard to functional foods and beverages (Kapsak et al. 2011). Trust had an indirect influence on the acceptance of GM foods (Siegrist 2008) previous research suggests that trust in organizations, or in persons is an important factor influencing consumer acceptance towards new food technologies. Moreover understanding the highly influencing source will help the marketer formulate and implement appropriate marketing strategies.

2.7.6.2 Consumer knowledge towards nutrition labelling

According to FSSAI (2012: 1) "Label" means "any tag, brand, mark, pictorial or other descriptive matter, written, printed, stenciled, marked, embossed graphic, perforated, stamped or impressed or securely affixed to the container, cover, lid or crown of any food package". "Labelling" includes "any written, printed or graphic matter that is present on the label accompanying the food". There are different label format followed in different countries but in India it is mandatory for food industries to follow Back-of-Pack (BOP) Labels. However, governments have been considering whether to introduce Front-of-Pack (FOP) labels. India is also reportedly looking into the possibility of introducing novel methods of nutrition labelling to ensure prominent display of nutrition information on labels.

It is clear from the earlier research studies that limited information has a negative influence on their attitudes, perception, and interest in GM foods (Rojas-Méndez et al. 2012). Therefore providing information on health benefit of GMF will increase the purchase intention (Miles et al. 2005). Liu et al. (2015) revealed that consumers' nutrition label use is significantly determined by their familiarity with the nutrition label, subjective nutrition knowledge and subjective understanding. Behrens et al. (2015) reveals that positive information can increase the acceptability and purchase intention of an irradiated food product and it was suggested that the ability to communicate the health benefits of foods is the key to success of promoting synthetic functional foods. Thus it is important to provide nutritional information on product labels (Rezai et al. 2014). So it is clear that consumer communication improves the consumer acceptance of healthy food products (Hirogaki 2012). Since information is the most important factor for the success of functional food market, Annunziata and Vecchio (2010) suggested that more research is needed to improve the clarity of messages on nutrition labels. Moreover relatively little is known about consumers' responses to health effects of functional/ fortified foods (Markovina et al. 2011). Hence the present study concentrates on the effect of consumer knowledge and nutritional labelling on fortified foods and beverages acceptance in India.

Few studies have investigated the role of nutrition labelling on consumer's healthy food choice in Indian context (Dharni and Gupta 2015). Thus the consumer's knowledge of

nutritional labelling and health benefits of FFB are pivotal for consumer food choice decisions. Hence, the influence of consumer knowledge on consumer purchase intention needs to be explored. A comprehensive review of researches were done to find categorically the role of various factors that affect health food choice. Accordingly, the study identified factors like attitude, subjective norms, and perceived behavioural control affecting purchase intention towards healthy foods. In addition, the potential factors like health consciousness and consumer knowledge were integrated in the TPB model to improve the predictability of the model.

2.8 PURCHASE INTENTION

TPB model detailed that purchase intention is an immediate antecedent of behaviour and it is an indication of an individual's willingness to perform a given behaviour (Ajzen 1991). In the TPB model purchase intention is predicted by attitude toward the behaviour, subjective norm, and perceived behavioural control. Purchase intention can be defined as the subjective judgment by the consumers that is reflected after the general assessment to purchase a products or services (Dodds et al. 1991; Blackwell et al. 2001; Shao et al. 2004). Purchase intention is a situation where consumer tends to purchase a particular product or service at a particular situation. Purchase intention continues to be a significant predictor of consumer actual purchase behaviour (Ajzen 1991; Gardner and Hausenblas 2004). According to Blackwell et al. (2001) purchase intention represents the consumer willingness to buy the product or service.

Earlier study on organic food consumption reveals that organic food purchase was significantly affected by the purchase intention of the products (Wee et al. 2014; Ham et al. 2018). Ghosh (1990) stated that purchase intention is an effective tool used for predicting purchasing process. In addition, research study by (Riebl et al. 2016) identified that purchase intention was the strongest predictor of sugar-sweetened beverages consumption and organic food purchase (Basha and Lal 2019). It was observed in a research study in Malaysia (Ling 2013) that environmental attitudes and self-efficacy are the major factors that drive towards purchase intention. But health issues are more important than environmental issues to the Indian consumers (Yadav and Pathak 2016). Hence it is clear that the factors motivating Indian consumer food choice is different from others.

2.9 CONSUMER ACCEPTANCE OF FOOD PRODUCTS

Consumer acceptance of food product is a less explored research area in the marketing literature. Most of the studies have been done up to purchase intention or willingness to pay for food products. Consumer acceptance of any product or service is the result of strong intention of consumers and this relationship is largely established in technology acceptance studies (Davis et al. 1989; Venkatesh and Davis 2000; Venkatesh et al. 2003; Vijayasarathy 2004; Wu and Wang 2005; Aggelidis and Chatzoglou 2009). Thus, present study has critically reviewed TAM models to shape the consumer acceptance construct in the study.

Earlier researchers had specified on the consumer behaviour towards food products. Henson et al. (2010) used Protection Motivation Theory (PMT) and recognised that self-efficacy and response efficacy are the important factors of consumer receptiveness to foods and non-prescriptive medicines having phytosterols. A study (Wee et al. 2014) using Theory of Planned Behaviour (TPB) recognized that purchase behaviour towards organic food products are mainly driven by the consumer's awareness on safety, health consciousness and environmental concern. But a research study by Chen (2007) on TPB in Taiwan revealed that food neophobia, food involvement and attitude are essential to understand the attitude and purchase intention towards organic food products. Thus it is clear that different researchers derived at different findings even after having applied the same theory of consumer behaviour.

Acceptance of Genetically Modified Foods (GMF) studied in Germany (Efthimia et al. 2007; Rojas-Mendez et al. 2012) revealed the beliefs about benefits/risks of GMF and confirmed that limited information or lack of understanding has an adverse effect on consumer acceptance of GMF. Thus positive and scientifically proven information (Behrens et al. 2015; Dolgopolova et al. 2015) is a vital source for consumer acceptance towards technology based food products. Research studies (Levis and Chambers 1997; Urala and Lisa 2003; Erickson et al. 2006; Trappey et al. 2006; Sae-Eaw et al. 2007; Sabbe et al. 2009; Costell et al. 2010; Giudice et al. 2012) have confirmed that sensory characteristics like taste, colour and aroma are the important determinants for consumer acceptance of food products. The recent research (Kajale and Becker 2014) in India has indicated that an increase in consumers trust level in international organizations and

perception about food security benefit are likely to improve the acceptance of GMF in India.

2.10 CONSUMER ACCEPTANCE OF FFBs

For safety and better consumption of fortified food in the future, it is important to identify and characterize fortified food users and acknowledge their understandings, norms and motivation for using such products (De Jong et al. 2003). For the successful marketing of functional foods, the significance of understanding consumer behaviour and consumer perceptions of functional foods have been recognized by several researchers (Childs 1997; Frewer et al. 2003; Verbeke 2005; Niva 2006; Gilbert 2015). But it was found that majority of these studies have been conducted in the developed countries (Childs 1997; IFIC 2000) and only a little research has actually been conducted on functional/fortified foods marketing in developing countries (Verbeke 2005), particularly in India.

It was identified that functional/ fortified foods have progressively entered markets in developing countries, but little is known about their status (Seechurn et al. 2009) and consumer acceptance part, which is pivotal for the success of marketing new functional food products (Verbeke 2005; Siro et al. 2008; Annunziata and Vecchio 2010; Bornkessel et al. 2011; Ali 2018), natural functional foods (Rezai et al. 2017) and enriched processed meats (Shan et al 2017). Hence for the successful marketing of FFB, the marketer has to give more importance to the acceptability part of the consumer, and this acceptability part of functional/FFB is largely missing in the previous consumer studies (Niva 2006; Niva and Makela 2007). It is clear from the previous research studies that hardly any research has been done to throw light on the marketing and consumer acceptance of functional foods in Indian context (Sharma and Garg 2013). So far, few research studies have analysed the factors of consumer acceptance of FFB in India. Hence the study bridges the gap.

2.11 RESEARCH GAPS

The factors influencing food acceptance is a multifaceted discipline and different researchers have defined the concept of consumer acceptance in different way. Consequently there is a lack of clarity and consensus about the consumer food

acceptance concept. Thus present research study is an attempt to explore these aspects. After reviewing theories and models in consumer acceptance and health behaviour areas, several interesting research gaps have emerged.

2.11.1 Research gap 1

Research studies' concerning actual measure of consumer behaviour is rare (Michaelidou and Hassan 2014) and most of the researches in the consumer behaviour area had assessed up to purchase intentions but failed in measuring behaviour. Further research is needed to determine the factors explaining behaviour other than intention and actual behavioural control (Michaelidou and Hassan 2014). The gap between purchase intention and actual behaviour is identified as an extremely under researched area. Hence present study is trying to fill this gap by investigating potential factors of consumer acceptance and measuring consumer acceptance of branded FFBs.

Several research studies (Bech-Larsen et al. 2001; Labrecque et al. 2006) have recognized that attitude and choice of FFBs tend to be cultural specific and better understanding of consumers' cultural background is also important because perception of food and diet varies according to the cultural differences (Jonas and Beckmann 1998). Since India is a culturally diversified country, it is interesting to explore the Indian consumers' acceptance towards FFB. Consequently, the present study is trying to fill this knowledge gap.

It was identified that functional/ fortified foods have progressively entered markets in developing countries, but little is known about their status (Seechurn et al. 2009) and consumer acceptance part, which is pivotal for the successful marketing of new functional food products (Verbeke 2005; Siro et al. 2008; Annunziata and Vecchio 2010; Bornkessel et al. 2011). Hence for the successful marketing of FFBs, the marketer has to give more importance to the acceptability part of the consumer, and this acceptability part of functional/FFB is largely missing in previous consumer studies (Niva and Makela 2007). Evidently the previous research studies show the lack of research on the marketing and consumer acceptance of functional foods in Indian context (Sharma and Garg 2013; Kapoor and Munjal 2017). So far, few research studies

have analysed the factors of consumer acceptance of fortified foods & beverages in India. Hence the study is trying to fill this gap.

2.11.2 Research gap 2

As reviewed previously, a tremendous amount of research studies (Choo et al. 2004; Bogue et al. 2005; Verbeke 2005; Niva 2006; Sabbe et al. 2009; Santanu and Paul 2012; Büyükkaragöz et al. 2014; Wee et al. 2014; Rezai et al. 2014) has focused on exploring the predictive effects of socio-demographic characteristics and consumer behaviour towards food products. Research studies shows that purchase intention and acceptance towards GMF and functional foods were higher among female consumers (Khumalo et al. 2011; Markovina et al. 2011; Bilgiç and Yuksel 2012; Behrens et al. 2015). But a research study in India (Kajale and Becker 2014) identified that female respondents accepting GMF are less than the male. Contrary to this Jain et.al (2014) pointed that female respondents were ready to change their lifestyle by increasing nutritionally enriched food in their diet. However there was no consensus between the findings of these studies. Hence, this issue needs to be addressed in the present study.

Measuring consumer attitudes towards functional foods worldwide is a complex process (Martirosyan and Singh 2015). Earlier researchers (Bredahl 2001; Bilgiç and Yüksel 2012) pointed that there is a lack of knowledge about consumer attitude towards the FFBs and healthy foods. Moreover, Landstrom et al. (2007) suggested additional research studies to clarify the attitudes and use of functional foods in different consumer groups. Mullan et al. (2013) found that attitude has no significant relationship with intention towards safe food handling among adolescents. Hence, it is required to clarify the role of attitude in purchase intention towards FFBs.

The process by which consumer accepts or rejects food is both dynamic and variable in nature and consumers' food preference is largely determined by both nutrition and pleasure resulting from food consumption. Acceptance of a food is basically the result of the interaction between food and man at a certain moment (Shepherd 1989). Food choice is influenced by a large number of factors, including social and cultural factors (Shepherd 1999) still, food choice is not a simple thing, but a complex human behaviour influenced by many interrelating factors such as socio-demographic factors, life style

and cultural determinants. From the review of previous research studies, it was identified that past studies have ignored some important variables, such as consumer knowledge and nutrition labelling aspects. Sääksjärvi et al. (2009) pointed out that research has not focused on consumer knowledge aspects, which is treated as an important element of functional/ fortified food marketing. Consumer knowledge is not explored as an antecedent to purchase intention towards health food acceptance. It is important to identify and characterize FFB users and understand their knowledge, norms and motivation for using such products (Jong et al. 2003).

Despite the potential benefit of consuming functional foods, a little is known about consumer response to functional food health claims (Naylor et al. 2009). It is also important to study whether consumer belief in health claims affect their functional food choice decisions. Thus the present study is trying to fill this gap by adding the consumer knowledge construct to the TPB to improve the predictability of consumer acceptance towards FFB.

Busy lifestyle and increasing health consciousness have changed the food habit of people. Today, consumers are searching for alternative ways to prevent lifestyle diseases and maintain a healthy lifestyle. Accordingly the study has considered the lifestyle dimension of health consciousness. It has been observed that little attention has been paid to draw the relation between health consciousness and consumer perception of functional foods (Kapoor and Munjal2017). Moreover, research studies concerning effect of health consciousness on consumer attitude is under researched and the link between these two construct is largely missing in the previous studies. Accordingly, there is a need to incorporate all possible determinants with the best theoretical model to predict the consumer acceptance of FFB in a better way.

2.11.3 Research gap 3

Nutritional labels are important tools that help consumers to judge the healthy aspects of food. Health claims and nutrition claims are allowed in India and labelling is compulsory for all FFB in India (Food Safety and Standards (Packaging and labelling) Regulations 2011). Labelling of these products is mandatory and it is an offence to sell a product without a proper label in India. Labels define which nutrients and on what

basis must be listed (e.g. per 100 g/per serving). Past research studies revealed that nutrition labelling promotes healthy food consumption (Cowburn and Stockley 2005) and people who understand and use nutrition labels are more likely to make better food choices (Grunert et al. 2007; Hoefkens et al. 2012).

However, the amount of top quality research studies investigating how consumers use nutritional labels is limited (Crockett et al. 2011). Moreover, Jessie et al. (2015) proposed the need for research done in future on the effectiveness of food label interventions to solve the research questions like, how consumers across diverse demographics use labelling information, how health claims and symbols are used,and how it will affect consumer food choice in real-world shopping situations (Grunert and Wills 2007). This indicates the necessity of productive research on the effects of health claims and symbols on consumer behaviour of people from different background (Hieke et al. 2015). Nutrition label on product package plays a vital role in consumer acceptance of healthy food products.

Research studies are rarely done on nutrition labeling, interventions on food choice decisions and the influence of label use in food consumption. Latest research studies (Jessie et al. 2015) show inadequate research done on the attitudes and usage of labelling among the urban and rural poor. As these groups are prone to lifestyle diseases in future, it requires of more information regarding the impact of nutrition label on their food purchasing decisions. So it is interesting for the researchers to evaluate the effect of nutritional labelling on consumer acceptance towards FFBs.

It has been emphasized in the literature (Campos et al. 2011) that there is a need for the research regarding the impact of nutrition labels in developing countries. Previous research studies have focused on consumer behaviour towards foods. Few studies have investigated the role of nutrition labelling on consumers healthy food choice in Indian context (Dharni and Gupta 2015; Gupta and Dharni 2016) and was identified that better use of nutritional labels will direct the purchase intention towards healthy foods. From the review of literature it was found out that there is a clear dearth of such research studies in the present scenario. Hence the present study recommends a deep understanding of consumers' attention and comprehension of nutritional information for making food choices.

Urala et al. (2011) identified that there is no connection between health claims and functional food use. Contradicting this, research studies by Hirogaki (2012) and Czarnacka and Zychowicz (2015) observed that health claims on the label is the decisive factor for consumer acceptance. Obviously, there is a lack of clarity in intimating the role of health claim labels on the consumer acceptance of FFBs. For the successful marketing of functional foods, the significance of understanding consumer behaviour and consumer perceptions of functional foods has been recognized (Childs 1997; Gilbert 1997; Frewer et al. 2003; Verbeke 2005; Niva 2006) and substantial empirical research studies on consumer attitudes towards functional foods has been established (Henson et al. 2010). But it was found that majority of these studies were done in the developed countries (Childs 1997; IFIC 2000) and research on functional foods marketing had sparsely been done in developing countries (Verbeke 2005), particularly in India.

2.12 CONCEPTUAL FRAMEWORK

Perhaps, the most challenging concept in marketing deals with understanding consumer behaviour. But such knowledge is critical for marketers. Better understanding of consumer behaviour provides the information like what is important to consumer and also suggests the major determinants of consumer buying decisions. Hence the effectiveness of entire marketing strategies basically depend on how a marketer is going to comprehend the target consumers. The present research study utilizes social psychological attitude model of attitude behaviour relationships, in particular the TPB for better understanding of the influence of various factors on the acceptance of fortified foods and beverages in India. Earlier research studies have confirmed the applicability of TPB model in predicting consumer behaviour in food choice (Armitage and Conner 2001; Conner et al. 2003; Fila and Smith 2006; Stefanie and Chery 2006; Ajzen 2015; Yazdanpanah and Forouzani 2015; Maichum et al. 2016; Malek et al. 2017; Shin et al. 2018; Qi and Ploeger 2019). Accordingly, the key variables of TPB model namely, consumer attitude, subjective norms, perceived behavioural control, and purchase intention have used in the present study to explore the consumer acceptance of branded FFBs. Various cognitive factors have been added along with the TPB constructs with the aim of improving the predictive power of the model.
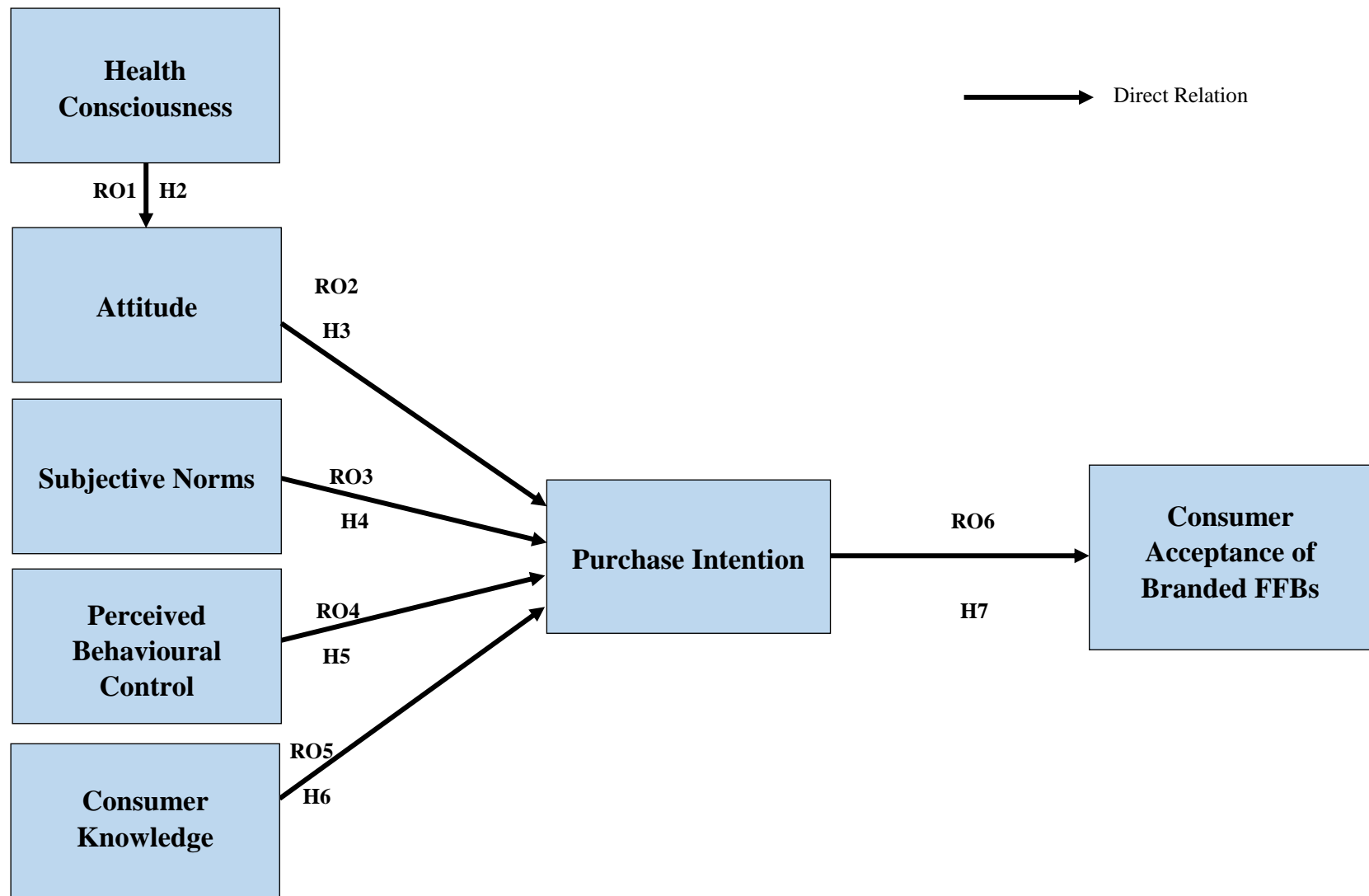
Figure 2.9: Conceptual Framework for Consumer Acceptance of Branded Fortified Foods and Beverages in India

Based on the review of literature the conceptual frame work for the study is developed (Figure 2.9).

Consumer lifestyle is an important factor of consumer food choice. A healthy lifestyle may create a positive attitude towards FFBs. Lifestyle factor considered for the study is health consciousness of consumer. The lifestyle factor of health consciousness have an important role on attitude formation towards FFBs. Research studies incorporating health consciousness variable to TPB are rare. The study explores the influence of consumer health consciousness on attitude in the proposed consumer acceptance model for branded FFBs.

Attitude has been displayed as a reliable predictor of behavioural intention concerning food choices (Dowd et al. 2013). It is assumed that a positive attitude towards branded FFBs will lead to intention to purchase the same. Moreover the study proposed that subjective norms or social influence of health professionals, friends and family are important factors promoting purchase intention. In addition to that study assumes the influence of perceived behavioural control on purchase intention.

The recent literature reveals that consumer knowledge towards nutritional labelling and health benefits of FFBs have a crucial role to play in influencing the consumer's decision to purchase. Hence, consumer knowledge construct has added to the proposed conceptual model because it was identified from the past research (Sääksjärvi et al. 2009) that research has not focused on consumer knowledge aspects, which is treated as an important element of food marketing and it is addressed that consumer knowledge is the key factor to influence consumers' willingness to accept functional foods (Giudice and Pascucci 2010). Hence communicating the health benefits of FFBs to the consumer is essential in marketing of FFBs. Positive information can increase the acceptability and purchase intention towards health food products (Behrens et al. 2015). Accordingly, the study is considering consumer knowledge on FFBs and nutritional labelling aspects in the proposed model to communicate the scientific benefits of FFBs to consumers.

The study has considered all the aforementioned factors in the conceptual model and it proposes that these factors will directly contribute to consumer purchase intention and

ultimately leading to the acceptance of FFBs. The conceptual model offers a clear understanding of the overall acceptance process, and how the consumer's health consciousness, attitude, subjective norms, perceived behavioural control and consumer knowledge factors influence purchase intention, which in turn mobilizes acceptance of FFBs.

2.13 HYPOTHESES DEVELOPMENT

Hypothesis is a clear statement of what is proposed to be investigated. Hypothesis is a formal statement that presents the expected relationship between an independent and dependent variable (Creswell 1994). This allows to identify the research objectives, the key abstract concepts involved in the research etc. Hypothesis helps a researcher to solve problems scientifically.

2.13.1 Socio-demographic Factors and Consumer Attitude

Research studies like Grunert and Wills (2007) and Contini et al. (2015) identified that socio-demographic variables have effect on the attitudinal variables of functional food preference. This reflects the research question regarding the socio-demographic variables and consumer attitude. Childs (1997) expounded that aged people are more eager to accept disease preventative food habits. Poulsen (1999) and Verbeke (2005) clarified that older consumers (aged 55+) are more positive about functional foods and age has a positive inclination toward acceptance of GMF (Kajale and Becker 2014). Nevertheless, the findings of Contini et al. (2015) shows that age does not affect the attitudinal variables of healthy eating.

Research studies confirmed the significant relationship between higher level of education and consumption of functional foods (Anttolainen et al. 2001; De Jong et al. 2003), dietary behaviour for health-enhancing foods (Bogue et al. 2005), consumer acceptance of sugar substitute (Kamarulzaman et al. 2014), and consumer acceptance of functional foods (Gilbert 2015). Conversely research studies by Poulsen (1999) and Verbeke (2005) in functional foods and Noomene and Gil (2006), Mohr et al. (2007), and Kajale and Becker (2014) in GMF pointed out that highly educated consumers are less likely to accept these food products. In addition Contini et al. (2015) found that education does not influence health food choice.

Previous research studies shows that purchase intention and acceptance towards GMF and functional Foods were higher among female consumers (Khumalo et al. 2011; Markovina et al. 2011; Bilgiç and Yuksel 2012; Behrens et al. 2015). But a research study in India (Kajale and Becker 2014) identified that female respondents are accepting GMF are fewer than male. Contrary to this, Jain et al. (2014) pointed out that female respondents were ready to change their lifestyle by increasing nutritionally enriched food in their diet.

De Jong et al. (2003) pointed out that functional food consumers are mainly those with higher income. According to (Kajale and Becker 2014) increase in family income level will simultaneously increases the acceptance of GMF. Brecic et al. (2014) and Gilbert (2015) also confirmed that health food consumption is significantly related to income of the consumers. So it is hypothesised that:

H1: Socio-demographic factors of consumer significantly influences consumer attitude towards FFBs

H1a: There is a significant difference in consumer attitude towards FFBs with respect to the age of consumers

H1b: There is a significant difference in consumer attitude towards FFBs with respect to the educational qualifications of consumers

H1c: There is a significant difference in consumer attitude towards FFBs with respect to the gender of consumers

H1d: There is a significant difference in consumer attitude towards FFBs with respect to the income of consumers

Apart from the above hypotheses, occupation of consumer have to be considered because it has long been acknowledged that certain occupational exposures will worsen or even cause lifestyle diseases (Anne 2004). Earlier researchers (Groth et al. 2001; Darmon and Drewnowski 2008) noticed that occupation may affect diet quality of people. Accordingly the study further needs to explore the influence of occupation of consumer on the attitude towards FFB in Indian context. Therefore, the following hypothesis:

H1e: There is a significant difference in consumer attitude towards FFBs with respect to the type of occupation of the consumers

Regarding marital status of consumers it was identified previously that married individuals tend to eat more number of meals and have higher energy intakes (Davis et al. 2000). Roos et al. (1998) reported that married individuals have a tendency to eat more healthy foods than unmarried individuals. Kajale and Becker (2014) conducted a study in India and found that married people usually follow a healthy diet and have more preference towards GMF. Accordingly the present research study further need to explore the influence of marital status on the attitude towards branded fortified foods and beverages in Indian context. Thus the following hypothesis.

H1f: There is a significant difference in consumer attitude towards FFBs with respect to the marital status of consumer

2.13.2 Health consciousness and Consumer Attitude

Health-conscious consumers are alert and concerned about their wellness or health and are motivated to improve or retain their health and quality of life and prevent diseases by engaging in healthy behaviours and being self-conscious about health (Newsom et al. 2005). In addition, research study by Rifnaz et al. (2016) identified that health concerns possess positive and significant attitudes and motivation towards functional food consumption. Mesanovic et al. (2013) investigated the influence of health consciousness on the frequency of visits to a family doctor or specialist and confirmed the effect of health consciousness influence based on the frequency of visit. Moreover the study suggested that health consciousness can stimulate health attitudes and behaviours. There by satisfies the research question 2 and research objective 1.

Dutta-Bergman (2004) identified that health consciousness plays a major role in producing social capital. Health conscious consumers have a tendency towards a healthy lifestyle. It was also established that health consciousness is the main factor affecting consumers' attitude towards organic wine (Rojas-Méndez et al. 2015). Rezai et al. (2012) found a positive influence of health consciousness on perception towards functional foods. Most of the studies did not check the influence of health consciousness on consumer attitude, which is considered as a key variable in purchase

intention towards food products (Bogue et al. 2005; Rojas-Méndez et al. 2012; Dowd and Burke 2013). Hence it is hypothesised that:

H2: Health consciousness of the consumer is significantly related to attitude towards branded FFBs

2.13.3 Attitude and Purchase Intention

Attitude is the predisposition in which a person has a favourable or unfavourable evaluation over the behaviour (Ajzen 1991). Earlier research studies have found that acceptance of GM foods is strongly influenced by the attitude (Cook et al. 2002; Rojas et al. 2012) and attitude has a strong influence on the purchase intention toward functional foods and synthetic functional foods (Park et al. 2011; Rezai et al. 2014). Paul et al. (2016) in green product purchase behaviour, identified that consumer attitude is a substantial factor for predicting purchase intention. Which reflects research question 3 and research objective 2 of the present study. However, researchers like (Bilgiç and Yüksel2012) pointed out that there is a lack of knowledge about consumer attitude towards the functional/ fortified foods. As a result it is hypothesised that:

H3: Attitude towards FFBs is positively related to consumer's intention to purchase branded FFBs

2.13.4 Subjective Norms and Purchase Intention

Subjective norms or social influence at the group level are the chief stimulators of Indian consumers' passion for novel food purchases (Yun et al. 2008). Choo et al. (2004) studied on Indian's attitude and revealed the fact that in India people's attitude towards novel processed food products depended on subjective norm or social influence. Rezai et al. (2014) confirmed that purchase intention toward synthetic functional foods is directly affected by subjective norms. Finlay et al. (1997) have given evidence that subjective norms are particularly significant in the health domain. Moreover it was identified that health professionals, educators and communicators play a vital role in creating knowledge among the consumers with regard to functional foods and beverages (Kapsak et al. 2011). Moreover, consumers with positive subjective norms lead to rise in behaviour intentions (Han et al. 2010).

So it is interesting to know the effect of subjective norms on the intention to purchase FFB in Indian context and this reflects research question 4 and research objective 3 of the study. Hence the following hypothesis:

H4: Subjective norms significantly influences consumer intention to purchase branded FFBs

2.13.5 Perceived Behavioural Control and Purchase Intention

Perceived behavioural control (PBC) is the perception of the ease or difficulty of the particular behaviour. This perception of control is believed to moderate the relationship of intention to behaviour, that is, intention will convert into behaviour when PBC is high (Gardner and Hausenblas 2004). According to TPB, intention to perform the behaviour leads to behaviour in combination with perceived behavioural control (Ajzen 1991). Ajzen (2002) identified that perceived control over performance of a behaviour can account for considerable variance in intentions and actions. PBC has found as significant predictors of intention in various studies including adolescents' safe food handling (Mullan et al. 2013), green purchase behaviour (Albayrak et al. 2013), and intention towards green products in general (Paul et al. 2016). (Godin and Kok 1996; Fila and Smith 2006) revealed that perceived behavioural control is as significant as attitude in health-related behaviour.

Hence it is important to explore this construct in the present study and which is meant for research question 5 and research objective 4. Consequently it is hypothesised that:

H5: Perceived behavioural control of a consumer is significantly related to consumer intention to purchase branded FFBs

2.13.6 Consumer Knowledge and Purchase Intention

It is clear from the earlier research studies that lack of knowledge or limited information among consumers has an adverse impact on their attitudes, perception, and interest in GMF (Rojas et al. 2012). Therefore providing information about health benefit of GMF will increase the purchase intention (Miles et al. 2005) and in India consumer perception towards Genetically Modified Food (GMF) was largely determined by consumer knowledge and information about the product (Santanu and Paul 2012). But,

Bilgic and Yuksel (2012) identified that consumers did not possess much knowledge about health benefit of functional foods.

Hence it is clear that in a marketing perspective providing healthy foods and nutrition information is an effective marketing strategy for conveying a healthy brand image (Chrysochou 2010). Moreover, consumers with high level of product knowledge have a high purchase intention of buying the product (Peter and Olson 1996; Nysveen and Pedersen 2005). They have better understanding of the product benefits and they search for more technical information which further leads to purchase intention (Alba and Hutchinson 1987).

Healthy food products have shown significant industry growth in the last few years. Fortified food products are one of the important categories among health foods. Even with the increasing availability and strict adherence to the production practices, most of the consumers are still not aware of fortified food products. Mere knowledge of fortified food products does not necessarily translate into actual consumption. It is the fundamental for the food marketers to create a clear understanding among the consumers regarding the link between lifestyle diseases and healthy diet. Hence the influence of consumer knowledge on consumer purchase intention needs to be explored and which reflects the research question 6, 7, and 8 and research objective 5. Thus the study is focusing on these aspects by proposing the following hypotheses.

H6: Consumer knowledge significantly influences purchase intention towards branded FFBs

2.13.7 Purchase Intention and Consumer Acceptance

Purchase intention is the subjective judgment by the consumers that is reflected after the general assessment to purchase a products or services (Dodds et al. 1991; Blackwell et al. 2001; Shao et al. 2004). Purchase intention continue to be a significant and single best predictor of consumer actual purchase behaviour (Ajzen 1991; Gardner and Hausenblas 2004). Behaviour is an individual's visible reaction in a given situation with respect to a given target. Ajzen (1991 states that behaviour is the outcome of compatible intentions or the result of intentions. Present study has considered consumer acceptance of branded FFBs as the consumer behaviour of the target population under the study.

Research studies on technology acceptance revealed that acceptance is the immediate outcome of behavioural intention (Davis et al. 1989; Venkatesh and Davis 2000; Venkatesh et al. 2003; Vijayasarathy 2004; Wu and Wang 2005; Aggelidis and Chatzoglou 2009). Earlier study on organic food consumption reveals that organic food purchase was significantly affected by the purchase intention (Wee et al. 2014). Ghosh (1990) stated that purchase intention is an effective tool use in predicting purchasing process. This reflects the research question 9 and research objective 6. It is hypothesised that:

H7: Purchase intention is significantly related to consumer acceptance of branded fortified foods and beverages.

Over all the study has proposed seven hypotheses. H1 is regarding the socio-demographic factors of consumer and its influence on consumer attitude towards FFBs. H1 consist of six sub hypotheses concerning the effect of age, educational qualifications, gender, income, type of occupation, and marital status on consumer attitude towards FFBs. H2 hypothesised that health consciousness of the consumer significantly affects attitude towards branded FFBs. H3 hypothesised that attitude towards FFBs is positively related to consumer's intention to purchase branded FFBs. H4 tests the relationship between subjective norms and consumer intention to purchase branded FFBs. H5 hypothesised that perceived behavioural control of a consumer is significantly related to consumer intention to purchase branded FFBs. H6 explores the impact of consumer knowledge on purchase intention towards branded FFBs. H7 examines the relationship between purchase intention and consumer acceptance of branded fortified foods and beverages.

2.14 OPERATIONAL DEFINITION OF THE VARIABLES

Operational definition is the specific way in which a variable is measured in a particular study. The need for operational definitions is fundamental when collecting all types of data. The study has seven variables, in that independent variables are health consciousness, attitude, subjective norms, perceived behavioural control, and consumer knowledge. Dependent variables are purchase intention, and consumer acceptance of branded FFBs.

From the review of literature the study has identified the following variables and operational definition for the variables have been provided (Table 2.4).

Table 2.4: Operational Definition of the Variables

Study Variables	Operational Definition
1. Health Consciousness	Health consciousness refers to consumers' comprehensive orientations toward their health, healthy diet and lifestyle. It involves the inclination towards health care measures to be taken or the extent to which he is ready to adopt practices of health care.
2. Attitude	Attitude refers to the degree to which an individual has a favorable or unfavorable evaluation towards branded fortified foods and beverages.
3. Subjective Norms	Subjective norm is the perceived social pressure to engage or not to engage in the purchase behaviour of branded FFBs.
4. Perceived Behavioural Control	Perceived behavioural control is the perception of self-control over the purchase/acceptance of branded FFBs.
5. Consumer Knowledge	Consumer knowledge refers to the understanding by a consumer in regard to the nutritional information on FFBs labels and health benefits of branded FFBs.
6. Purchase Intention	Purchase intention refers to the plan in which a consumer intends to buy branded FFBs in the near future.
7. Consumer Acceptance	Consumer acceptance refers to the act of a consumer to repurchase or continue the consumption of branded FFB as a part of their common diet.

Source: Review of literature

The basic definition of health consciousness construct was derived from the past studies of Becker and Maiman (1975), and Ophuis (1989). The positive link between health consciousness and consumer choice of healthy food was identified from the recent research studies of Moons et al. (2018), and Shin and Mattila (2019). Consumer attitude construct was operationalised from the definitions provided by Ajzen (1991),

Schiffman and Kanuk (2008), Basha and Lal (2019), and Bashir et al. (2019). Subjective norms variable was taken from TPB model (Ajzen 1991) and the concept was operationalised based on the research studies of Ajzen (2011), Ham et al. (2018) and Hamdan et al. (2018). The basic concept of Perceived Behavioural Control (PBC) was derived from TPB model (Ajzen 1991) and the operational definition of PBC was arrived from the research studies of Ajzen (1991), Elseidi (2018), and Ham et al. (2018). The basic concept of consumer knowledge in health food choice was derived from the research study of Hilliam (1996) and this construct was operationalised on the basis of the research studies of Sandmann et al. (2017), Singh and Verma (2017), and Chien et al. (2018). The basic definition of purchase intention variable was taken from the TPB model of Ajzen (1991). The operational definition of purchase intention construct was derived from the research studies of Ajzen (1991), Riebl et al. (2016), Singh and Verma (2017), and Ham et al. (2018). The dependent variable of consumer acceptance was derived from the research studies of Davis et al. (1989), Venkatesh and Davis (2000), Venkatesh et al. (2003), and Vijayasarathy (2004). Consumer acceptance construct was operationalised on the basis of TAM models and research studies of Sharma and Garg (2013), Ali et al. (2018), and Ham et al. (2018).

2.15 CHAPTER SUMMARY

Significant references and available sources of literature have been meticulously reviewed for acquiring an insight into all the variables for the study. The chapter extensively covers a variety of consumer behaviour models and theoretical background of the study. Apart from this it has explored into the contemporary diverse factors affecting healthy food choice, starting from the evolution of functional food concept and further on consolidated topics of grave concern such as- the concept of FFBs, different types of fortified food available in the market, identified research gaps, conceptual framework. The chapter concludes with postulated hypotheses and operational definition of the variables. Chapter 3 would be dealing with research methodology comprising of discussion on the methodology framework adopted in the study.

Consumer Acceptance of Branded Fortified Foods & Beverages

Purchase Intention

Socio-demographic characteristics
(Khumalo et al. 2011; Markovina et al. 2011; Bilgiç and Yuksel 2012; Jain et al. 2014; Kajale and Becker 2014; Behrens et al. 2015)

Lifestyle
(Franz and Nowak 2010; Irene and Spiller 2014; Diana et al. 2014)

Health consciousness (Rezai et al. 2014; Rifnaz et al. 2016; Kapoor and Munjal 2017; Moons et al. 2018; Shin and Mattila 2019)

Research Gap 2

Consumer knowledge
(Jong et al. 2003; Labrecque et al. 2006; Giudice et al. 2012; Sääksjärvi et al. 2009)

Health and labeling
(Kraus 2015)

Attitude and subjective norms
(Rezai et al. 2014)

Consumer attitude
(Lone 2001; Landstrom et al. 2007; Bilgiç and Yüksel 2012; Bashir et al. 2018; Chu 2018; Basha and Lal 2019)

Research Gap 2

Cognitive, motivational & attitudinal determinants
(Annunziata and Vecchio 2010)

Subjective norms
(O'Connor 2010; Rezai et al. 2014)

PBC is not significant
(O'Connor 2010; Rezai et al. 2014; Yazdanpanah and Forouzani 2015; Bashir et al. 2019)

Labels
(Naylor et al. 2009; Hieke et al. 2015) **particularly in India**
(Dharni and Gupta 2015)

Research Gap 3

Nutritional label interventions
(Labrecque et al. 2006; Crockett et al. 2011; Campos et al. 2011; Hersey et al. 2013; Jessie et al. 2015; Castillo et al. 2015)

Consumer Acceptance

Culture
(Jonas and Beckmann 1998; Dolgopolova et al. 2015)

Research Gap 1

Lack of studies
(Niva and Makela 2007) **especially in India** (Sharma and Garg 2013; Kapoor and Munjal 2017)

Research Gap 1

Actual measure of consumer acceptance or behaviour
(Michaelidou and Hassan 2014; Ali et al. 2018)

Carriers of functional ingredients, brand and price
(Annunziata and Vecchio 2013)

Sensory characteristics, knowledge, and information
(Giudice et al. 2012)

Health claim and consumer communication
(Hirogaki 2012)

Healthfulness
(Kapsak et al. 2011)

Relevance of consumer acceptance
(Verbeke 2005; Siro et al. 2008; Annunziata and Vecchio 2010; Bornkessel et al. 2011)

Behavioural intention
(Davis et al. 1989; Venkatesh and Davis 2000; Venkatesh et al. 2003; Vijayasarathy 2004; Wu and Wang 2005; Aggelidis and Chatzoglou 2009)

Nutrition labeling
(Cowburn and Stockley 2005; Grunert et al. 2007; Hoefkens et al. 2012; Siegrist et al. 2015)

Health claim
(Hirogaki 2012; Czarnacka and Zychowicz 2015)

Research Gap 3

No influence of health claims
(Urala et al. 2011)

Fortified Foods & Beverages

Understanding functional foods
(Childs 1997; Gilbert 1997; Frewer et al. 2003; Verbeke 2005; Niva 2006)

Importance of FFBs users
(Jong et al. 2003)

Health effects
(Seechurn et al. 2009; Markovina et al. 2011)

Market growth in India
(Sutar 2010; Sharma and Garg 2013) and FFBs are the largest segment (PwC-FICCI 2013)

Few studies in developing countries
(Verbeke 2005)

Need for the study
Consumer Acceptance of Branded Fortified Foods & Beverages in India

Source: Review of Literature

Figure 2.10: Literature Survey Map

CHAPTER 3

RESEARCH METHODOLOGY

3.1 CHAPTER OVERVIEW

This chapter focuses on the methodology framework applied in the study. Research methodology Section 3.2 describes the research paradigm and philosophy followed in the study, research approach is explained in Section 3.3, the research method adopted in the study is discussed in Section 3.4, research design of the study is presented in Section 3.5, the data sources is provided in Section 3.6. Section 3.7 introduces the research strategy for data collection. Time dimension of the study describes in Section 3.8. Section 3.9 presents the summary of research process onion as a guideline to the research investigation. Section 3.10 provides a detailed procedure regarding research instrument development and Section 3.11 explains list of variables and level of measurement. Section 3.12 discusses about the measurement scales. Section 3.13 describes sampling design adopted in the study. Section 3.14 briefly explains the details regarding pilot phase of the study conducted. Section 3.15 introduces the intended statistical tools used for the data analysis and interpretation. In addition, sub Section of 3.15 provides information regarding the exploratory factor analysis in Section 3.15.2. Reliability analysis provides in Section 3.15.2. Validity analysis used in the study is presented in Section 3.15.3. Structural Equation Modelling (SEM) of the study measures is briefly explained in Section 3.15.4.

3.2 RESEARCH PARADIGM AND PHILOSOPHY

Research paradigm is a vital part of research methodology and is a broad approach, which enables the smooth conduct of an investigation (Myers and Smith 2012). The right selection of the research paradigm facilitates the achievement of the research objectives. It provides guidelines for the researcher to develop a suitable research methodology and ascertain research validity. Research paradigm has three different philosophies such as positivism, interpretivism and critical research philosophies (Scotland 2012). The selection of a research paradigm is entirely dependent on the -

nature of the research problem, the research environment and the context of the researcher (Trauth 2009).

According to the nature of the research problem and the context of the present study, the choice was made to conduct the work using the positivist research paradigm. In the positivist approach, quantitative methods are followed because positivism philosophy is based on a highly structured methodology and believes in the verification or falsification of hypotheses in an empirical situation (Orlikowski and Baroudi 1991; Johnson and Christensen 2008). This philosophy is based on a single reality, and the present study focuses on the reality of consumer acceptance towards branded FFBs, which are quantitatively measured. Positivism enables the generalization of findings regarding consumer acceptance towards branded FFBs by the study population of Tier I metro cities in India.

A research paradigm consists of ontology, epistemology, methodology, and research methods. Ontology is concerned with what constitutes reality or the study of being (Crotty 1998). In positivist philosophy, ontology is one of realism, which indicates that the reality already exists independent to the researcher (Pring 2000). Epistemology is concerned with the nature and forms of knowledge (Cohen et al. 2007). Positivist epistemology is one of objectivism, which is used to describe how we come to know the truth or reality (Kivunja and Kuyini 2017). Hence, the focus is on the reliable and valid tools to obtain the knowledge. Methodology is a broad term, which includes the strategy or plan of action, which lies behind the choice and use of particular methods (Crotty 1998). The present study has adopted a positivist methodology, wherein a deductive approach was undertaken. An attempt was made to identify the factors, which influenced the outcome variable of consumer acceptance of FFBs by adopting survey as a research strategy. Research methods are specific techniques and procedures used to collect and analyse data (Crotty 1998). The present study has used quantitative research methods and different statistical techniques according to the nature of the data.

73

3.3 RESEARCH APPROACH

Among the three different research approaches (deductive, inductive, and abductive approach) suggested by Bryman and Bell (2015), the study has used deductive and inductive reasoning.

3.3.1 Deductive and Inductive Approach

Deductive reasoning commences with generalisations of consumer behaviour, and it verifies if these generalisations apply to specific instances in the context of consumer acceptance towards FFBs (Hyde 2000). The purpose of the research was to identify the possible factors that influenced consumer purchase intention towards FFBs. Further, the study tested the relationship between purchase intention and consumer acceptance of FFBs. The present study has formulated a set of hypotheses on the basis of review of literature, which were tested during the research process. Hence, the study was grounded on deductive approach and targeted to test the theory. The study reviewed previous research studies and theoretical models derived from existing theories in the area of consumer behaviour like Theory of Reasoned Action (Ajzen and Fishbein 1975), Theory of Planned Behaviour (Ajzen 1991), Technology Acceptance Model (Davis 1989), Diffusion of Innovation Theory (Rogers 1975) and The Health Belief Model (Rosenstock 1974). As a result, seven major hypotheses were developed to test the relationship between the study constructs. The study started with deductive reasoning investigating the area of marketing research to consumer acceptance of FFBs. Sometimes, this is informally called a "top-down" approach. Further, the research study progressed on the basis of the Theory of Planned Behaviour (Ajzen 1991) as it was identified that the TPB model is an apt theoretical framework for the present study.

The research study developed through inductive reasoning, commenced with observation of specific instances, and established generalisations (Hyde 2000). The study observed specific patterns of consumer behaviour towards FFBs and identified the various determinants of consumer acceptance of FFBs. Further, the study added potential factors of consumer acceptance such as consumer knowledge and consumer health consciousness to the TPB to improve the predictability of consumer acceptance towards FFBs. Accordingly, the study formulated tentative hypotheses that needed to

be tested, and finally ended with general conclusions or theory about consumer acceptance towards FFBs.

3.4 RESEARCH METHODS

Research methods is an extensive concept and a wide range of research methods are used in social science research studies. Research methods involved collecting data from consumers of Tier I metro cities and converting the data into numerical form so that statistical calculations can be made with regard to the data collected on FFBs and conclusions drawn. Quantitative research methods were used for the study in resolving the research questions.

3.4.1 Quantitative Research Methods

As the study focuses on a multidimensional view of consumer acceptance towards branded FFBs, it has adopted quantitative research methods. Moreover, it examines the cause and effect relationship between two or more variables (health consciousness, attitude, subjective norms, perceived behavioural control, consumer knowledge, purchase intention, and consumer acceptance), the suitable research method is quantitative to make predictions about consumer behaviour. Quantitative research is a methodology that seeks to quantify the data using quantitative techniques. Quantitative research methods were used to measure the Likert scale data and statistical methods of analysis to confirm the theory. The quantitative research methods can be most effectively used, if the researcher is able to collect numerical data from a large number of respondents and get conclusive answers to the research questions (May 2011). The present study has followed survey as the research strategy to collect primary data and quantitative methods are the best in surveys to draw inferences and the results can be generalised to the entire user population.

3.5 RESEARCH DESIGN

The research design forms the blueprint for conducting a research investigation. The study involves measuring consumer acceptance towards different branded FFBs; hence, the research design adopted was descriptive in nature.

3.5.1 Descriptive Research Design

Descriptive research design helps to provide answers to questions of who, what, when, where, and how associated with the particular research problem of how Indian consumers respond to branded FFB products, what determines their purchase decisions, etc. Descriptive research was used to obtain information concerning the current status of the FFB market and to describe consumer behaviour with respect to the study. The study is descriptive in nature and it requires describing the concepts under study in real situations. The study required a complete description on consumer socio- demographic variables, consumer health consciousness factor, consumer attitude, subjective norms, perceived behavioural control, consumer knowledge, and purchase intentions. Consequently, a theoretical model was developed of consumer acceptance of FFBs in India.

3.6 DATA SOURCES

The study has used both primary and secondary sources of data in the data collection phase.

3.6.1 Secondary Data

Secondary data can be of two types- internal and external. The study has considered external secondary data source at the exploratory phase of the research. As a result, it has explored the area of consumer behaviour to get new insights in to the research by doing extensive review of literature and thereby, identifying the possible factors, which influence Indian consumers to accept FFBs as a part of their diet and lifestyle.

3.6.1.1 Sources of external secondary data

An extensive literature search was conducted for external secondary data to understand the market situation of the health food industry from both, global and Indian perspective. Figure 3.1 represents the external secondary data sources adopted in the study. These five major sources were government, academic, industry, commercial and the internet. Government sources included the Ministry of Home Affairs (2011) and the Ministry of Personnel, Public Grievances and Pension (2014). In academic sources, indexed academic journals allied to the scope of the study was reviewed through leading

electronic databases such as Science Direct, Scopus, EBSCO, MEDLINE, JSTOR etc. In addition to journal articles conference papers and related books were also reviewed. Industry sources included annual reports (WHO, IBEF, etc.) and reports from professional bodies (ASSOCHAM, IFIC, FSSAI, FAO, etc.). Moreover, commercial sources like reports of Euromonitor, Daedal research, PwC, etc. were also considered. Internet sources included websites, related blogs, e-newspapers, etc.
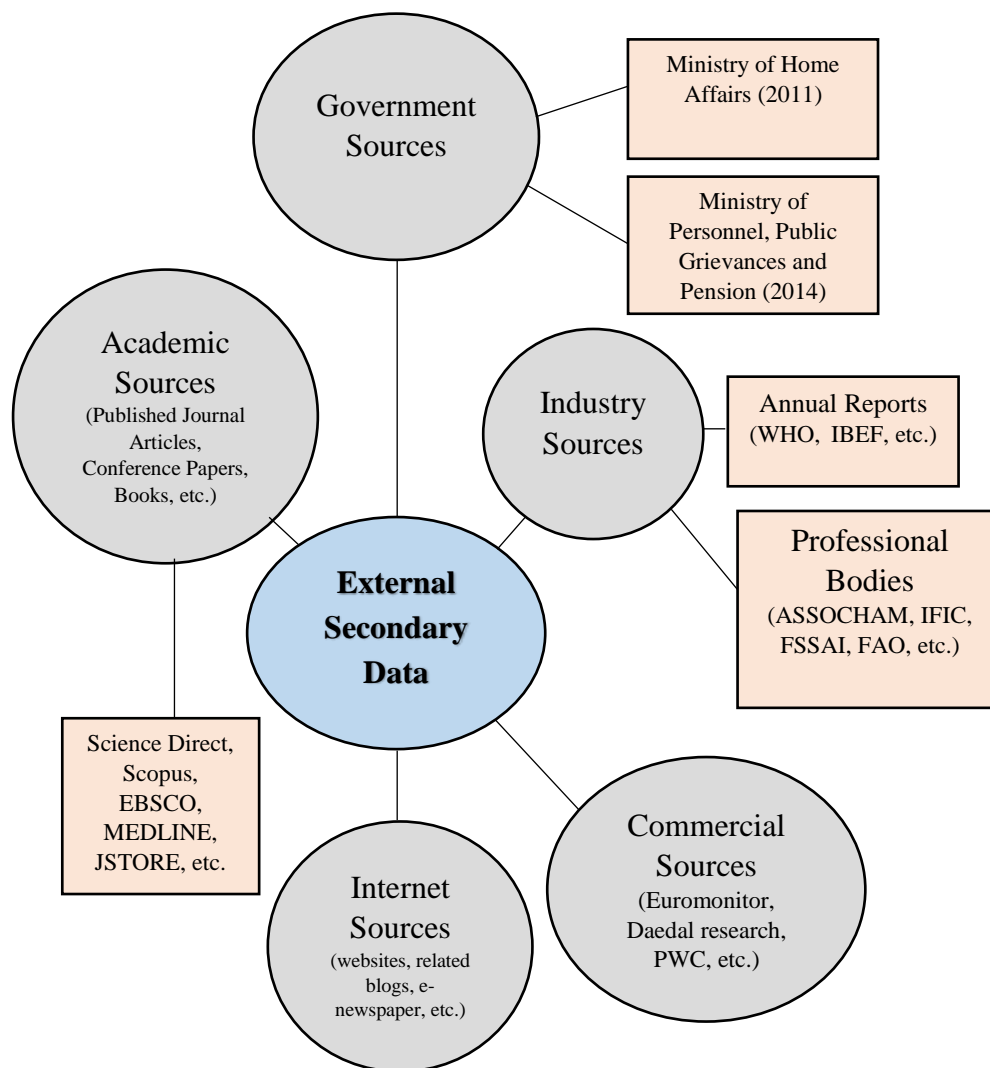
Source: Review of literature

Figure 3.1: External Secondary Data Sources

In order to identify the research problem and research gaps, a systematic and extensive review of the published research works on consumer behaviour studies of food products with nutritional benefits was undertaken. Further, the study put an inclusion and

exclusion criteria to filter the usefulness of the published work for the present study (Figure 3.2).

```
┌─────────────────────────────────┐
│  Initial Search in Science      │
│  Direct, Scopus, EBSCO,         │
│  MEDLINE and JSTORE             │
│  generated 1615 references      │
└─────────────────────────────────┘
              │          ┌─────────────────────────┐
              │────────▶ │  1482 papers were       │
              │          │  excluded because the   │
              │          │  work did not meet       │
              ▼          │  inclusion criteria     │
┌─────────────────────────────────┐ └─────────────────────────┘
│  133 papers had potential to    │
│  be included in the review      │
└─────────────────────────────────┘
              │          ┌─────────────────────────┐
              │────────▶ │  61 papers were         │
              │          │  excluded after review  │
              │          │  of abstract.           │
              ▼          └─────────────────────────┘
┌─────────────────────────────────┐
│  72 papers reviewed for         │
│  identifying the research       │
│  problem and research gaps      │
└─────────────────────────────────┘
```
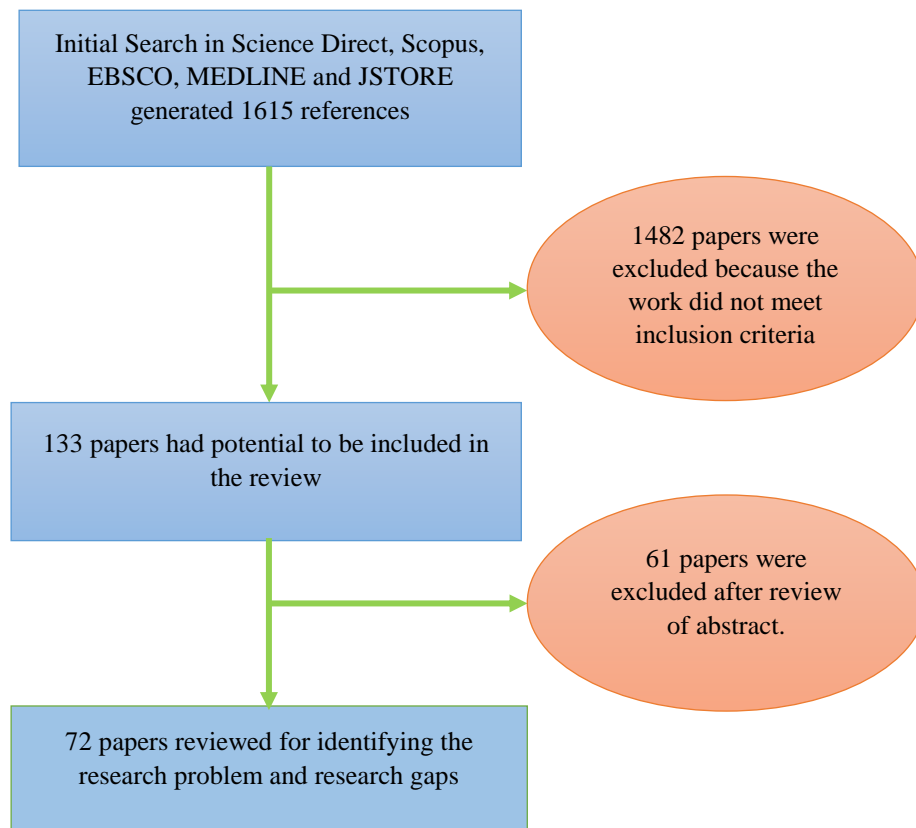
Source: Review of literature

Figure 3.2: Selection Process for Articles

Search strategy

A standard search strategy, comprising keyword terms were used to systematically search in different electronic databases for target consumer behaviour studies about health food products from the year 1975 to 2019. The keywords used were nutritional marketing, lifestyle segmentation, health consciousness, nutritional labelling, fortified foods, functional foods, organic food consumers, healthy lifestyle, consumer behaviour, consumer acceptance, etc.

Inclusion and exclusion criteria

The study considered research works focusing on different factors influencing consumer behaviour towards health food products (functional food products, organic

foods, natural foods, nutritional health snacks, and functional beverages). The study excluded research works pertaining to scientific derivations of nutritional products, pharmaceutical studies, and studies on unhealthy food marketing, as the present study focuses on consumer acceptance of FFBs.

Search results

The initial search in the aforementioned databases made available 1615 references that had the possibility to be included in the review and these were then passed through the inclusion criteria. This led to the rejection of 1482 references and the abstracts of the remaining 133 were reviewed. As a result, it was decided that about 72 articles were of significant use and which were further critically reviewed in order to identify the research problem and research gaps of the study.

3.6.2 Primary Data

Primary data collection is a vital part of any marketing research investigation. It is collected specifically to meet the research needs. Primary data helps the researcher to understand the attitudes and opinions of consumers towards different branded FFBs. The primary data was collected using self-administered questionnaires from Indian consumers spread across Tier I metro cities, namely, Delhi, Mumbai, Kolkata, Bengaluru, Chennai, Hyderabad, Ahmedabad, and Pune (Ministry of Home Affairs 2011; Ministry of Personnel, Public Grievances and Pension 2014).

3.7 RESEARCH STRATEGY

Research strategy can be defined as the road map towards the objectives of the research study and how to achieve these objectives to answer the research questions (Saunders et al. 2009). It is one specific course of action being followed in a specific instance and a unique choice of research method adapted to one specific problem. Survey strategy is popular in business research and is usually associated with the deductive approach (Saunders et al. 2009) and the same has been adopted in the present study to collect primary data from consumers of Tier I cities.

3.7.1 Consumer Intercept Survey

Surveys are frequently used as a research strategy in social and psychological research to describe and explore the dynamic nature of human behaviour (Singleton and Straits 2009). The consumer intercept survey was applied as a suitable research strategy for the study. Survey is a popular choice of researchers for collecting primary data (Aaker et al. 2013). Since the study is descriptive in nature, the most appropriate research strategy was consumer intercept survey. Consumer intercept surveys were also adaptable to the research objectives of the present study. Moreover, the study is cross-Sectional and generally in this type of study survey strategy is used (Saunders et al. 2009). Survey method provides broad coverage of respondents, which ensures accurate choice of the targeted samples (Aaker et al. 2013). The study has considered the consumers, who are aware of at least any one of the branded FFBs from Tier I metro cities.

The major advantage of the survey method is that it can collect plenty of data about an individual consumer at one time (Aaker et al., 2013). It ensures rapid data collection and is often a low cost option compared with other forms of data collection. It also helps the participation of those who cannot be reached by phone or mail (Cooper and Schindler 2006). An earlier research study (Aaker et al. 2013) showed that attitude, motivation knowledge, etc. were frequently measured using surveys. Hence, the present study has utilised the survey method as the research strategy and a broad range of data was collected to measure the study constructs like attitude, subjective norms, perceived behavioural control, health consciousness, consumer knowledge, purchase intention, and consumer acceptance.

3.8 TIME DIMENSION

The primary data was collected during the period of 05-March-2017 to 20-June-2017. A total of 845 questionnaires were distributed to the target consumers, of which 820 valid responses were collected at different shopping malls, spread across Tier I cities. After eliminating the incomplete responses, the study selected 820 eligible responses for the final analysis. The response rate for the questionnaires was very high (97%). In order to cover all groups of consumers and to avoid biasing of the sample, the data was

collected during different times of the day and on different days of the week. As like most academic research the data collected for the study was cross-Sectional in nature and the study is cross-Sectional. Cross-Sectional studies are generally undertaken under descriptive research studies.

3.9 SUMMARY OF RESEARCH PROCESS

As a guideline to the research investigation, the study has adopted a research process "onion" (Figure 3.3) of Saunders et al. (2009). It provides a clear picture of the research philosophy, paradigms followed, research approaches adopted, suitable strategies, choice of research methods, research time dimension, and data collection methods applied in the study. The study has adopted positivism research philosophy. Research approach was both deductive and inductive. Research strategy for the study was survey. Quantitative research methods were followed in the study. Time horizon of the study was cross Sectional in nature and various data analysis techniques were deployed to achieve the research objectives. The research process steps need to be clarified and followed before proceeding to the advanced stage of the research study.
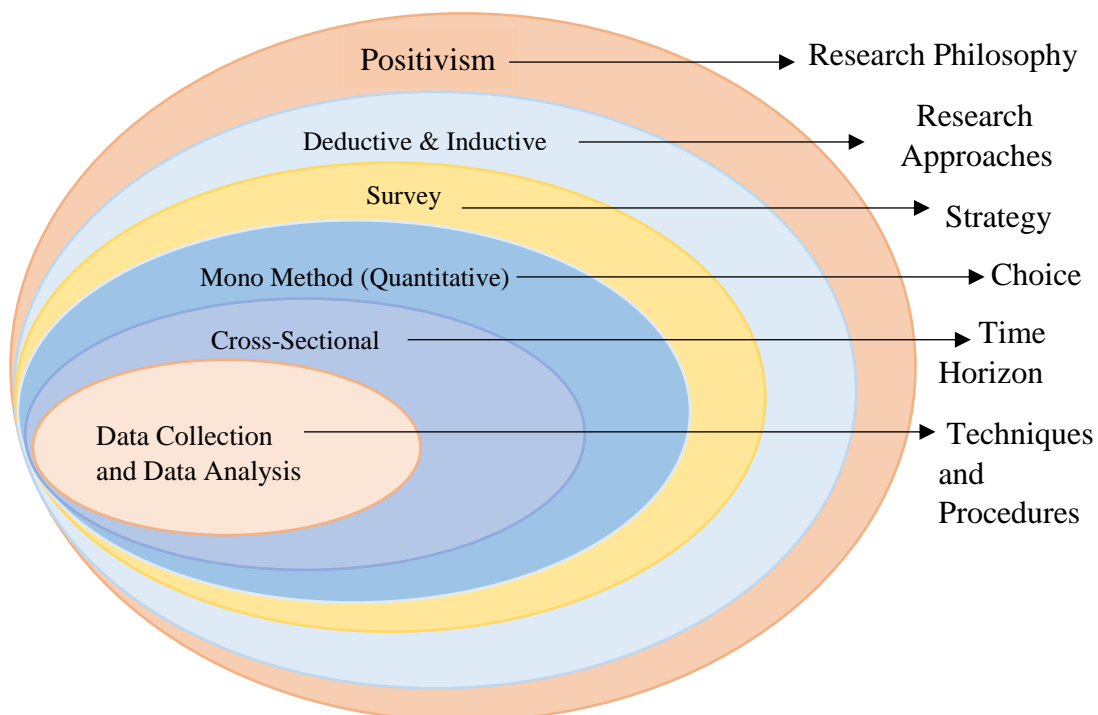
Source: Saunders et al. (2009)

Figure 3.3: The Research Process Onion

81

3.10 RESEARCH INSTRUMENT DEVELOPMENT

The primary data can be collected through various methods and the major ones are, observation method, face- to- face interview method, questionnaire, schedules, check list etc. (Malhotra 2012). A structured questionnaire was the research instrument used for collecting primary data. Questionnaire method has been used effectively in numerous empirical studies in the past (Rezai et al. 2014; Wee et al. 2014; Behrens et al. 2015; Dharni and Gupta 2015; Rojas-Méndez et al. 2015; Jain et al. 2017). The questionnaire was administered via consumer intercept survey.

3.10.1 Questionnaire

Since the study has adopted quantitative methods, the research instrument used for the study was questionnaire and the data was collected through self-administered questionnaires. Questionnaire was the appropriate research instrument to address the research questions and objectives of the study. A structured questionnaire was developed (Appendix A) and pilot testing was done to determine the appropriateness of the wording and length of the questionnaire. The sequence of questions were properly arranged to facilitate consumers in providing accurate responses. Questionnaires are one of the most affordable ways to gather quantitative data and provides a way to gather huge amounts of data on study constructs (Malhotra 2012). Moreover, questionnaire is relatively an easier method as the responses collected through questionnaire is highly structured and can be easily coded for further data analysis.

The questionnaire started with a brief note describing the research study. Following which a qualifying question was asked regarding the consumption of any one of the branded FFBs. The data was collected only from those who were found to be actually consumed at least any one of the branded FFBs. The survey questionnaire had two major Sections- Section A included questions regarding socio-demographic information of the respondents and Section B comprised variables pertaining to consumer acceptance of branded FFBs like consumer health consciousness factor, consumer attitude, subjective norms or social influence, perceived behavioural control, consumer knowledge dimensions, purchase intentions, and consumer acceptance. Closed-ended questions were used throughout the questionnaire. Based on existing

literature, well-validated measurement items for the study constructs were adopted and included in the questionnaire. Multi-item and seven- point Likert-type scales ranging from "Strongly disagree" (1) to "Strongly agree" (7) were consistently utilized to measure the study variables.

Before the actual data collection, the questionnaire was discussed with three academicians who assessed each item for representativeness, specificity, and clarity. Further, the content validity of the questionnaire was established by consulting three experts in the concerned areas. The content validity was done with a dietician in the area of nutrition and suggestions from the dietician were incorporated in the questionnaire, before proceeding to the pre-test of the instrument. Next was a subject expert from a reputed university to fix the subject validity and marketing and consumer behaviour related terms were refined according to the expert's recommendations. The third person was an expert in statistics, especially in health domain, who ensured the content validity of the research instrument.

3.11 LIST OF VARIABLES AND LEVELS OF MEASUREMENT

Research studies use various methods to measure character and personality traits. The present study employed the Likert scale data and analysed at the interval measurement scale with the assumption that parametric statistics can be used with the Likert data by calculating a composite score (mean score) (Carifio and Perla 2008; Norman 2010; Boone and Boone 2012; Sullivan and Artino 2013). The list of variables and level of measurement used in the study is given in Table 3.1.

3.12 MEASUREMENT SCALES

The measurement scale accurately assigns numbers to categorize and/or quantify the variables and the present study considered measurement scales that had been validated in earlier studies, while few items were self-developed and validated according to the context of FFBs. All the study constructs were measured using the 7- point Likert-type scale (Likert 1932) since it superior to the five-point scale in the aspect of reliability (Churchill 1999).

Table 3.1: List of Variables and Levels of Measurement

Sl. No.	Variable	Nature of Variable	Level of Measurement
	Socio-demographic Variables		
1	Location of Residence	Categorical	Nominal
2	Gender	Categorical	Nominal
3	Age	Scale	Interval
4	Marital Status	Categorical	Nominal
5	Employment Status	Categorical	Nominal
6	Family Monthly Income	Scale	Interval
7	Education	Categorical	Nominal
8	Present Health Status	Categorical	Nominal
9	Store of Purchase	Categorical	Nominal
10	Information Source	Categorical	Nominal
11	Reliable Source of Information	Categorical	Nominal
	Study Constructs		
1	Health Consciousness (HC)	Scale	Interval
2	Attitude (AT)	Scale	Interval
3	Subjective Norms (SN)	Scale	Interval
4	Perceived Behavioural Control (PBC)	Scale	Interval
5	Consumer Knowledge (CK)	Scale	Interval
6	Purchase Intention (PI)	Scale	Interval
7	Consumer Acceptance (CA)	Scale	Interval

Lifestyle variable of health consciousness was measured using the health consciousness scale developed by Gould (1988, 1990), Dutta (2004), Tarkiainen and Sundqvist (2005), and Hong (2009). Few items of the scale were slightly modified to fit in the context of FFBs from the original format. The measurement scale had 13 items to measure health consciousness construct.

Consumer attitude towards FFBs was measured using 9 items adapted from earlier studies (Gil et al. 2000; Bredahl 2001; Verdurme and Viaene 2003; Wang et al. 2013). Few items were faintly modified to fit within the context of FFBs.

Subjective norms or social influence was measured using the scales adapted from Chan (1998) Bredahl (2001) and Han et al. (2010). The scale measuring subjective norms had 7 items and few items were slightly altered.

Perceived behavioural control scale was adapted from earlier research studies (Sparks et al. 1997; Armitage and Conner 1999; Chen and Peng 2012; Dean et al. 2012). The measurement scale had 6 items to capture data related to perceived behavioural control of consumers on FFBs.

Consumer knowledge was measured using the scale suggested by Schivinski and Dabrowski (2014). The scale had 9 items and most of the items were self-developed to get the adequate information regarding consumer knowledge regarding FFBs. The major reason behind self-development of items to measure consumer knowledge was the lack of research literature concerning consumer knowledge in health foods. Self-developed items were added after the discussion and validating the items with experts in the area of marketing.

Purchase intention scale was adapted from Putrevu and Lord (1994), Sweeney and Soutar (2001), and Tarkiainen and Sundqvist (2005) and 4 items were slightly modified to measure purchase intention variable in the FFBs context.

The scale to measure consumer acceptance of FFBs had taken from the study of Jain et al. (2014). All the 3 items were modified to measure consumer acceptance towards FFBs.

Likert-type scales are suggested for empirical research studies which measure marketing and brand utilities (Sweeney and Soutar 2001; Anisimova and Thomson 2012). Based on the review of literature, the measurement items for each study construct was developed (Table 3.2).

Table 3.2: Questionnaire Development and Measurement Scales

Construct	Measurement Items	Authors (Year)
Health Consciousness	1. I have plenty of health reasons to purchase FFBs (adapted)	Gould (1988, 1990)
	2. I am self-conscious about my health (adopted)	Dutta (2004) Tarkiainen and Sundqvist (2005)
	3. I chose food carefully to ensure better health (adapted)	
	4. I consider myself as a health conscious consumer (adapted)	Hong (2009)
	5. I think often about health related issues (adopted)	
	6. I only worry about my health when I get sick (adopted)	
	7. Living life without disease or illness is very important to me (adapted)	
	8. Living life in the best possible health is very important to me (adapted)	
	9. My health depends on how well I take care of myself (adapted)	
	10. I am alert to changes in my health (adapted)	
	11. I am concerned about my health all the time (adapted)	
	12. I take responsibility for the state of my health (adapted)	
	13. I actively try to prevent disease or illness (adapted)	
Attitude	1. Buying FFBs is a good idea (adapted)	Gil et al. (2000)
	2. FFBs are healthier (adapted)	Bredahl (2001)
	3. FFBs have superior quality (adapted)	Verdurme and Viaene (2003)
	4. FFBs are more tasty (adapted)	
	5. FFBs are better than the traditional foods (adapted)	Wang et al. (2013)
	6. FFBs are low-priced than traditional foods (adapted)	

	7. I am confident that consuming FFBs will benefit me in solving my health problems (adapted)	
	8. FFBs have no harmful effects (adapted)	
	9. FFBs is important for a healthy lifestyle (adapted)	
Subjective Norms	1. My family and friends think that I should buy FFBs (adapted)	Chan (1998) Han Bredahl (2001)
	2. People whose opinion I value prefer that I should buy FFBs (adapted)	Han et al. (2010)
	3. TV programs help me to eat healthy (adapted)	
	4. Newspapers help me to eat healthy (adapted)	
	5. Public health organisations (FSSAI, IPHA, etc.) think I should engage in healthy eating (adapted)	
	6. My doctors suggest to engage in healthy eating (adapted)	
	7. My family and friends would rather buy FFBs rather than traditional food products (adapted)	
Perceived Behavioural Control	1. To buy or not to buy FFBs is entirely up to me (adapted)	Sparks et al. (1997)
	2. I am confident that if I want, I can buy FFBs (adapted)	Armitage and Conner (1999)
	3. I have money and time to buy FFBs (adapted)	Dean et al. (2012)
	4. I think it is easy for me to buy FFBs (adapted)	
	5. I believe I have the ability to purchase FFBs (adapted)	Chen and Peng (2012)
	6. I see myself as capable of purchasing FFBs in the future (adapted)	
Consumer Knowledge	1. I know at least one product of FFBs (self-developed)	Schivinski and Dabrowski (2014) and self-developed items
	2. I can easily recognise FFBs among other products (adapted)	
	3. The *fssai* logo helps me to buy FFBs (self-developed)	
	4. I recognise the nutrition labels of FFBs (self-developed)	

	5. The information provided on the nutrition label is very understandable (adapted)	
	6. Nutrition label helps me to buy FFBs (adapted)	
	7. I am well aware about the benefits of FFBs (self-developed)	
	8. Consumption of FFBs helps to prevent lifestyle diseases (self-developed)	
	9. Consumption of FFBs leads to a healthy lifestyle (self-developed)	
Purchase Intention	1. I am willing to buy FFBs while shopping (adapted)	Putrevu and Lord (1994)
	2. I will make an effort to buy FFBs in the near future (adapted)	Sweeney and Soutar (2001)
	3. I would recommend FFBs to friends or relatives (adapted)	Tarkiainen and Sundqvist (2005)
	4. I intend to purchase FFBs if they are available (adapted)	
Consumer Acceptance	1. I would recommend others consumption of FFBs (adapted)	Jain et al. (2014)
	2. I would prefer to buy FFBs than prepare them at home (adapted)	
	3. I intend to continue using FFBs (adapted)	

Source: Review of Literature

3.13 SAMPLING DESIGN

The sampling involved the process of selecting units from the population of interest. It is usually not feasible to make a complete census of a population because of time and budget constraints. Samples are necessary to make inferences about the whole population. In the present study, it was challenging to do the census of FFB consumers in India within a specific period. Hence, a suitable sampling technique was applied in the research study. The sampling design required to sample the FFB products and brands, and the FFBs consumers are detailed in the subsequent Sections.

3.13.1 Selection of FFB Products and Brands

There are a large variety of FFB products available in the health food market and they can be found in several forms (FAO 1995; United States Department of Agriculture (USDA) 2016). Based on the reports of FAO (1995) and USDA (2016), the study included seven product categories of FFBs in India, namely, fortified cereals and cereal-based products, infant formulas, fortified milk and milk products, fortified fats and oils, accessory food items, fortified tea and other beverages, and malted health drinks. More than 50 companies are producing FFBs in different product categories in India (FSSAI 2018). The major companies manufacturing FFBs in India are Tata Chemicals Ltd., ITC Limited, Patanjali Ayurved Ltd., New Kissan Milk Foods, Tara Grains Private Limited, Rasi Nutri Foods, Bajaj Salt Pvt. Ltd., A P Organics Ltd., Future Consumer Limited, Parveen Garg, G U Mills, etc. (FSSAI 2018).

In order to get a better prediction of the proposed model, the FFB products selected were to fit a number of criteria. Firstly, in order to ensure the generalizability the product categories of FFBs needed to be different from each other. Hence, efforts were made to select one product/brand from each of the seven product categories. Secondly, the market penetration of the FFB products had to be high enough to develop a brand image in the customers' minds (Bong Na and Keller 1999). Since the study involved FFB consumers from different cities across India, awareness of the FFB brands had to be high among the consumers from these different cities to measure their acceptance. Hence, based on high market penetration (Appendix B) and brand popularity in India (India Brand Equity Foundation (IBEF) 2017), the study identified 14 FFB brands. Based on the number of brands in each product category and the IBEF (2017), the study included three brands from two categories, namely, fortified milk and milk products and malted health drinks. The study included two FFB brands from three product categories, namely, fortified cereals and cereal- based products, infant formulas, and fortified tea and other beverages. One brand was included in the category of accessory food items, viz., fortified fats and oils.

The study used the judgemental sampling, one of the major categories of non-probability sampling technique, for the selection of the FFB brands. Table 3.3

represents the FFB product categories and different FFB brands considered for the study.

Table 3.3: FFBs Brands Considered for the Study

Product Category	Fortified Foods and Beverage Brands
1. Fortified Cereals and Cereal based products	• Kellogg's Special K Breakfast Cereals • Aashirvaad Fortified Atta
2. Infant Formulas	• Nestle Cerelac Infant Cereal • PediaSure Grow & Gain
3. Fortified Milk and Milk Products	• Sofit Soya Milk • Britannia Fortified Flavoured Yogurt • Amul Calci+ Milk
4. Fortified Fats and Oils	• Gold Winner Fortified Sunflower Oil
5. Accessory Food Items	• Tata Salt Plus
6. Fortified Tea and Other Beverages	• Minute Maid Original Fortified Orange Juice • Tetley Green Tea
7. Malted Health Drinks	• Bournvita Lil Champs • Horlicks Lite • Amul PRO

Source: Review of Literature

Consumer acceptance of the branded FFBs was measured for 14 FFB products across the 7 categories of FFBs. The researcher further required to do selection of FFB Consumers.

3.13.2 Selection of FFBs Consumers

In order to measure consumer acceptance of the branded FFBs, the target population for the study included consumers aged 18 and over, who had consumed or were aware of at least any one of the FFB products. The cities in India were categorised on the basis of a grading structure devised by the Government of India. This system helps the authorities to allot House Rent Allowance (HRA) to employees of the public sector, posted in different cities across the country. Following the recommendations of the Sixth Central Pay Commission of 2008, the cities were categorised as Tier I, Tier II, and Tier III cities (Ministry of Personnel, Public Grievances and Pension 2014). The

Associated Chambers of Commerce & Industry of India (ASSOCHAM 2015) reported a surprising rise in the demand of packaged food products in Tier I metro cities and pointed out that urban residents consumed 78% of all packaged food, while rural residents consumed just over 22%. FFBs is a new product to the Indian consumer market and also the product is quite a scientific one, which requires the target consumers to have a minimum level of education and buying power along with the zeal and the interest to try out new food products. It was also found that most of the FFBs were available only in Tier I metro cities in India.

Rateesh and Mallick (2014) reported that most of the healthy/ FFBs were available in urban consumer markets of India, and the rural population of the country had limited knowledge about health foods and beverages (Daedal research 2012), while urban people were more curious about purchasing new products. Moreover, the Tier I metro cities geographically represents all the four regions of the Indian subcontinent. Hence, these cities formed the sampling frame for the study. The sampling frame represents the list of 8 Tier I metro cities, from which the sample cities were actually drawn.

Based on the review of literature, the sampling frame of Tier I metro cities were developed and are presented in Table 3.4.

Table 3.4: Sampling Frame of Tier I Metro Cities

Tier I Metro Cities
Delhi
Mumbai
Kolkata
Bengaluru
Chennai
Hyderabad
Ahmedabad
Pune

Source: Ministry of Personnel, Public Grievances and Pension (2014)

3.13.2.1 Sampling method

The sampling of the FFB consumers was undertaken in two stages. In the first stage, the cities were selected from the list of Tier I cities, and in the second stage, FFB consumers were selected from the selected Tier I cities of India.

In the first stage, due to the availability of the sampling frame of Tier I metro cities, the study adopted simple random sampling, which is one of the primary applications of probability sampling. For better representation, the study made sure that there was 50% representation of Tier I cities from the sampling frame (Bryman and Bell 2015). Simple random sampling was undertaken by using a random number table. This method is typically used when a complete frame of reference is available. Consequently, using the random number table the study chose four Tier I metro cities, namely, Delhi, Bengaluru, Hyderabad, and Ahmedabad for the consumer intercept survey. These four cities represented 50% of the Tier I cities of India.

The second stage of sampling, involved the selection of FFB consumers from Delhi, Bengalore, Hyderabad, and Ahmedabad. Purposive sampling, a non-probability sampling technique was adopted to select the consumer from the selected cities. The respondents of the study were consumers or shoppers of shopping malls, supermarkets, and the retail outlets. Hence, the study adopted mixed sampling technique. When a sample plan envisages the use of two or more basic methods of sampling, it is termed as mixed sampling (Cooper and Schindler 2006). The study has combined both probability (simple random sampling for the selection of cities) and non-probability sampling (purposive sampling for the selection of consumers of FFBs) methods.

The study followed a mixed method of sampling; one or more of the sampling techniques were based on the probability method, and the remaining stage was based on the non-probability method of sampling (Figure 3.4).

3.13.3 Estimation of Sample Size

Determining the exact number of respondents or observations is vital in an empirical study to make inferences about a population in which the samples are drawn. Hence, the sample size estimation regarding the consumers of different branded FFBs was-
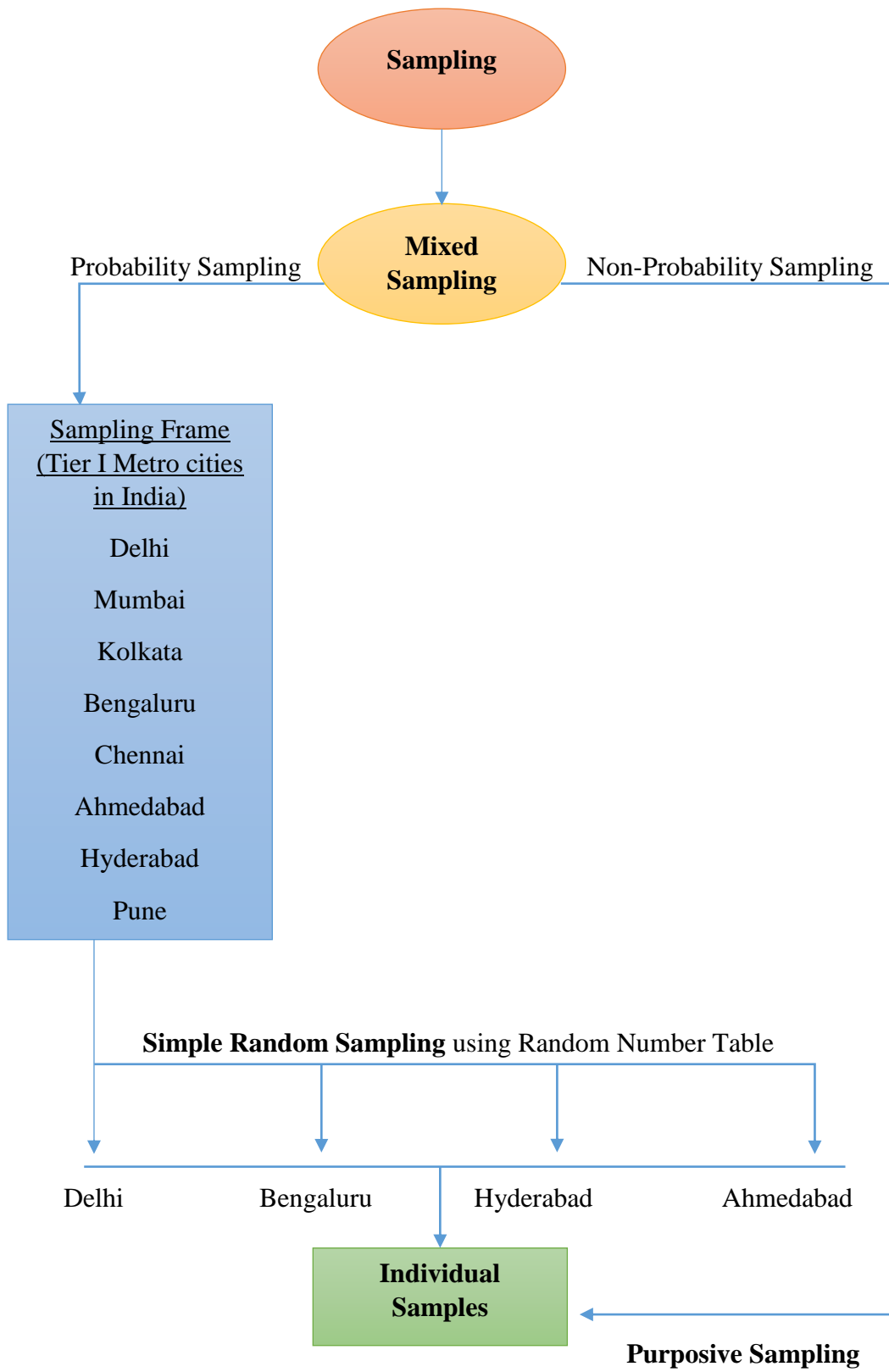
Figure 3.4: Sampling Techniques

-essential to make the inferences. The sample size estimation and type of sample depends on the cost and time available to the researcher (Cooper and Schindler 2006) and was done in two stages.

First stage:

In the first stage, the sample size was calculated by applying the Slovin (1960) formula, especially since the researcher had no knowledge about the population's behaviour (Taro, 1967).

Sample size (n) = $\dfrac{N}{1+ N\ (e)^2}$

Where, n = the sample size,

N = the population size,

e = the acceptable sampling error,

N = 93,666,926, and

e = 0.05.

n = $\dfrac{93{,}666{,}926}{1 + 93{,}666{,}926\ (0.05)^2}$

n = 400

Considering the design effect on sample size calculation, the sample size of 400 was multiplied by the design effect of 2 to achieve an adequate sample size (Kish 1965).

Sample size (n) = $\dfrac{N}{1+ N\ (e)^2}$ * D

= 400*2, Sample size (n) =800

Second stage:

In the second stage, the total sample size of 800 was divided among the randomly selected four Tier I metro cities according to the number relative to the total population

of the selected cities. Accordingly, each city was properly represented so that the sample size drawn was proportionate to the city's share of the total population. The proportionate division of the 800 samples among the selected four Tier I metro cities is presented in Table 3.5.

Table 3.5: The Proportionate Division of Samples

Tier I Metro City	Population	Proportionate Sample Size
Delhi	21,753,486	390
Bangalore	8,728,906	157
Hyderabad	7,749,334	139
Ahmedabad	6,357,693	114
Total		**800**

Source: Ministry of Personnel, Public Grievances and Pension, 2014

3.14 PILOT STUDY

The pilot phase of the study was conducted in the Tier I metro city of Bengaluru as it represents a diverse population from the different parts of the country. In many respects, the characteristics of Bengaluru city are similar to that of other Tier I metro cities in India (Pratap 1988). The population in Bengaluru city is more cosmopolitan compared with Mumbai or Delhi and the market size is neither too small nor too large (Bhattacharya 2013). Thus, Bengaluru emerged as a suitable city for pilot testing, which was conducted from 13 December, 2016 to 18 December, 2016 using the consumer intercept survey for collecting data from 50 FFB consumers from different shopping malls, spread across the city. In order to understand the underlying dimensions of consumer acceptance towards branded FFBs, 51 items were subjected to principal components factor analyses. Accordingly, the pilot study results confirmed the use of 51 items in the questionnaire to measure the concerned study constructs. The statistical validity and reliability of the study variables were also checked. Further, the questionnaire was used for final data collection.

3.15 DATA PREPARATION AND ANALYSIS

Data editing, coding, and basic analysis was done using the statistical package SPSS 23.0 software. As the univariate and multivariate outliers can influence the outcome of the statistical analyses, the univariate outlier was identified through boxplot and was deleted from the dataset. Multivariate outliers were deleted by checking multivariate data assumptions. The data analysis techniques applied in the study are discussed in the following paragraphs.

Data analysis has been done in two parts: descriptive statistics and inferential statistics. In descriptive statistics, the study analysed the demographic profile of the consumers. To bring out socio-demographic details, percentage and frequency statistics was performed with the demographic information. Further, the study used mean, median, and standard deviation for the scale variables. Regarding inferential statistics, the study used correlation analysis of study measures and the Chi-Square test. Statistical tools like Analysis of Variance (ANOVA) and multiple regression analysis (Structural Equation Modelling) were used to test the hypotheses.

The study used the Chi-Square test of independence to test the statistical independence or association between the socio- demographic variables and the health status of the consumers. The ANOVA technique was performed for testing the socio-demographic variables with consumer attitude to understand the changes in consumer attitude according to the socio-demographic variables. The study used the Pearson correlation coefficient to measure the strength of the linear association between the study constructs like health consciousness, attitude, subjective norms, etc. In addition, the following statistical tools were used as a part of measurement and structural model validation.

3.15.1 Exploratory Factor Analysis (EFA)

Exploratory factor analysis is a statistical technique performed to find out the underlying structure of a relatively large set of variables (Hair et al. 2013). The study used EFA for establishing construct validity. The scales for measuring study constructs were a combination of the established and self-developed items. As a result, the study established both content and face validity for the measurement items. The Principal

Component Analysis (PCA) was used to establish the dimensionality of the study constructs. The Varimax rotation approach was adopted for doing PCA. The cut- off value for the factor analysis was 0.5 and higher and hence, items with factor loading value of less than 0.5 were eliminated (Hair et al. 2013). For performing principal component analysis, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was established. A critical value of 0.5 was considered for the relevance of sampling adequacy for factor analysis.

3.15.2 Reliability Analysis

Cronbach's alpha (α) and Composite Reliability (CR) was used to estimate the internal reliability of the multi- item scales for each study construct. Cronbach's alpha (α) measures the degree to which the responses are consistent across the indicators within a measure, i.e., the internal consistency of a scale by finding inter-correlations of items in the scale (Cronbach 1951; Brown and Moore 2012). Nunnally (1978) suggested that Cronbach's alpha (α) value of 0.7 and higher as good reliability score. The composite reliability estimates the degree to which a set of latent construct indicators share in their measurement of a construct (Hair et al., 2013). Research studies by Nunnally and Bernstein (1994) had stated that CR values of 0.6- 0.7 are acceptable. Cronbach's alpha (α) and Composite Reliability (CR) were estimated for all the study measures and are reported in the required Sections.

3.15.3 Validity Analysis

Validity analysis of study constructs is inevitable in any research investigation. The validity of an instrument is the degree to which it measures what it is supposed to measure. A good validity result is an indication of the soundness of the research study. The three type of validity measures for establishing validity are content or face validity, convergent validity and discriminant validity. *Content or face validity* is about sufficient coverage of the subject being studied, i.e., the extent to which an assessment is subjectively viewed as covering the variable or construct that it is supposed to measure. *Convergent validity* is "the extent to which a measure correlates positively with alternative measures of the same construct" (Hair et al. 2013). Average Variance Extracted (AVE) is the most commonly adopted measures for convergent validity.

Discriminant validity is "the extent to which a construct is truly distinct from other constructs by empirical standards" (Hair et al. 2013). Convergent validity and discriminant validity was established during the data analysis stage.

3.15.4 Structural Equation Modelling (SEM)

Structural Equation Modelling, a multivariate statistical analysis technique was used to analyse the structural relationship between consumer acceptance and other study variables. It is a combination of factor analysis and multiple regression analysis and explains the relationship among multiple variables (Hair et al. 2013). SEM is a confirmatory technique to determine whether the hypothesised model developed will provide an accurate prediction of the outcome variable or not. Since the study required to test the hypothesised relationship among the study variables to develop consumer acceptance model for FFBs, SEM was considered as the appropriate statistical analysis method. The structural equation model consisted of two parts, measurement and structural model. The evaluation of the measurement model and the structural model were executed with Structural Equation Modelling (SEM) using the Smart PLS (Partial least squares) software.

Measurement model also known as outer model provided the relationship between the latent variables and their indicators. The assessment of a measurement model is required before proceeding to test the structural model. The Smart PLS algorithm technique was used to evaluate the construct validity of the measurement model, which involved comprehensive examination of factor unidimensionality, construct reliability, convergent validity, and discriminant validity of the study constructs. The assessment of the measurement model provided good results for reliability and factor validity of all the study constructs.

Structural model, also known as inner model, provides relationship between the latent variables considered in the model. The assessment of the structural model was done to inspect the predictive power and strength of the relationships between the study variables like consumer health consciousness, attitude, subjective norms, etc. in the hypotheses, which involved diagnosing collinearity among the measurement constructs, assessing significance and relevance of the structural model path

coefficients, evaluation of the R^2 values of the model, assessment of effect size of the model (f^2), and assessment of predictive relevance (Q^2). The analysis results supported the structural model of the study measures.

3.16 CHAPTER SUMMARY

Chapter 3 deals with the detailed research methodology applied in the study. It discusses the research paradigm, research approach, research methods, research design, data sources, research strategy, and research process adopted in the study. In addition, it describes the extensive procedure of research instrument development and measurement of the scale along with information regarding the sampling design adopted in the study. It also provides details regarding the pilot study executed and the chapter has concludes by explaining the different statistical tools used for the final data analysis and interpretation.

CHAPTER 4

DATA ANALYSIS AND INTERPRETATIONS

4.1 CHAPTER OVERVIEW

Previous chapter discussed the detailed research methodology and pilot study results. This chapter presents the data analysis and interpretations of the study. Primary data had been collected from Indian health food consumers spread across different cities of India and was analysed and interpreted using the IBM Statistical Package for Social Science (SPSS) 23.0 and Smart PLS software. Data editing, coding and screening is provided in Section 4.2. Section 4.3 describes the fortified foods and beverages brands consumed by the respondents. To bring out socio-demographic details SPSS 23.0 software has been used and the information is detailed in Section 4.4. Section 4.9 explains the descriptive statistics of the factors influencing consumer acceptance. Section 4.10 highlights the inferential statistics of the study. Section 4.11 consist of hypotheses testing of study variables. Evaluation of measurement model is provided in Section 4.12. To test out reliability and validity and path analysis SPSS 23.0 and Smart PLS 2 software have used and the description was given in Section 4.12.1 to 4.12.8. Section 4.13 provides validity test of study constructs. Section 4.14 discusses the Confirmatory Factor Analysis (CFA) of study measures. Section 4.16 details the correlation analysis of study measures. Section 4.17 provides evaluation of structural model of the study using Smart PLS 2 and 3 software. Section 4.18 discusses the results of hypotheses testing. The role of attitude as a mediating variable in the relationship between health consciousness and purchase intention was presented in Section 4.19. Section 4.20 gives information about coefficient of determination r square (R^2). Section 4.21 presents assessment of effect size of the model (f^2). Section 4.22 explains the assessment of predictive relevance of the model (Q^2). Goodness of Fit (GoF) of the proposed model is presented in Section 4.23.

4.2 DATA EDITING, CODING AND SCREENING

The data was screened for any missing data and possible errors during entry by examining the descriptive statistics. Data editing and coding has been done by using SPSS 23.0 software. As the univariate and multivariate outliers can influence the outcome of statistical analyses, the univariate outlier was identified through boxplot and was deleted from the dataset. Multivariate outliers were deleted by checking multivariate data assumptions. The missing data treatment was done by applying list-wise deletion method. The list-wise deletion method is appropriate when the sample size is large (Hair et al. 2010). In the present study, the number of responses collected was 845. The scrutiny of these 845 responses was conducted and 25 responses were deleted after the outlier and missing data treatment. As a result, 820 responses were considered for the analysis of the study.

4.3 FORTIFIED FOODS AND BEVERAGES BRANDS CONSUMED

The FFBs market in India continues to expand rapidly as a result of changing lifestyle, increase in disposable incomes, urbanization, consumers' consciousness of health and fitness, ageing population, and increase in prevalence of lifestyle diseases (Figlobal 2017; Nuffoods Spectrum 2017). To address the malnutrition problems, FSSAI is promoting food fortification to a bigger extend. It has issued standards for fortification of salt with iodine and iron, of vegetable oil and milk with Vitamin A and D, and wheat flour and rice with iron, folic acid, zinc, vitamin B12, vitamin A, and some other micronutrients. Accepting health food products as a part of healthy lifestyle has helped the Indian health foods market sustain continuous growth.

The survey results (Figure 4.1) depicted Aashirvaad Fortified Atta as the most consumed (74%) fortified food. It is a popular brand of the India Tobacco Company (ITC), with 75 percent market share in the fortified atta segment. It is a Rs. 3500 crore brand with consumer spending growing by over 16 percent (Monica 2017).

The second most consumed FFB product was Gold Winner Fortified Sunflower Oil (63%), a brand of Kaleesuwari Refinery Pvt Ltd., followed by Tetley Green Tea (60.4%) and Kellogg's Special K Breakfast Cereals (59.2%).

Bar chart with percentage labels: 25.4%, 31.2%, 36%, 36.2%, 37.3%, 38.2%, 42.6%, 43.5%, 44.6%, 46.7%, 59.2%, 60.4%, 63%, 74%

X-axis: 0% 10% 20% 30% 40% 50% 60% 70% 80%

Consumers of Different FFB Brands (in percent)

Y-axis label: **Branded FFBs**

Legend:
- Amul PRO
- Bournvita Lil Champs
- PediaSure Grow & Gain
- Sofit Soya Milk
- Nestle Cerelac Infant Cereal
- Horlicks Lite
- Britannia Fortified Flavoured Yogurt
- Amul Calci+ Milk
- Tata Salt Plus
- Minute Maid Original Fortified Orange Juice
- Kellogg's Special K Breakfast Cereals
- Tetley Green Tea
- Gold Winner Fortified Sunflower Oil
- Aashirvaad Fortified Atta

Source: Research Survey Data

Figure 4.1: Fortified Foods and Beverage Brands Consumed

The other FFB brands covered in the study and their percent consumption were Minute Maid Original Fortified Orange Juice (46.7%), Tata Salt Plus (44.6%), Amul Calci+ Milk (43.5%), Britannia Fortified Flavoured Yogurt (42.6%), Horlicks Lite (38.2%), Nestle Cerelac Infant Cereal (37.3%), and Sofit Soya Milk (36.2%).

The least consumed FFB products were PediaSure Grow & Gain (36%), a clinically proven nutrition to help kids grow, Bournvita Lil Champs (31.2%), a nutritional health drink, especially formulated for children between the ages of 2 to 5 years, and Amul PRO (25.4%), a malt-based milk additive to help healthy growth. It was observed that the least consumed FFB products were malt-based health drinks. Recent market reports in India shows that Malt-based drinks like Horlicks and Bournvita face a growth slip from 13.2 percent in 2014 to 8.6 percent in 2017.

4.4 SOCIO-DEMOGRAPHIC PROFILE OF THE CONSUMERS

Socio-demographic factors like gender, age, marital status, employment status, family monthly income, education, and location of residence were used to describe the socio-demographic characteristics of the FFB consumers (Table 4.1).

Table 4.1: Socio-demographic Profile of the FFB Consumers

Profile	Category	Percent of Consumers (n= 820)
Gender	Male	54.5
	Female	45.5
Age (in years)	18-24	12.2
	25-35	12.8
	36-45	29.0
	46-55	25.0
	Above 55	21.0
Marital status	Married	74.5
	Unmarried	25.5
Employment status	Employed	74.3
	Private sector	57.6
	Government sector	22.2
	Self-employed	17.6
	Others	2.6
	Unemployed	25.7
Family monthly income (in INR)	25,000 and below	8.9
	25,001- 50,000	17.0
	50,001- 75,000	17.2
	75,001- 1,00,000	40.5
	Above 1,00,000	16.5
Education	Up to 12th Standard	37.2
	Graduate	32.3
	Post graduate	27.9
	PhD	1.8
	Others (ITI & Diploma Courses)	0.8
Location	Delhi	48.8
	Bengaluru	20.4
	Hyderabad	17.0
	Ahmedabad	13.8

Note: n= Sample Size, Source: Research Survey Data

The proportion of male consumers (54.5%) in the sample was more than that of females (45.5%). This supported the findings of a previous research study (Maharana and Ladusingh 2014), which confirmed a clear gender disproportion in food and healthcare expenditure. According to Maharana and Ladusingh (2014), males were found to spend higher than their female counterparts.

It was observed that 29 percent of the consumers belonged to the age group of 36-45 years, 25 percent belonged to the age group of 46-55 years. Hence, the largest segment of consumers was in the age group of 36-55 years (54%). The least percent of consumers was in the age group of 18-24 years (12.2%), followed by 25-35 years (12.8%). Above 55 years consumers were 21 percent.

In respect of marital status of the consumers, majority of them were married (74.5%) and only 25.5 percent were unmarried.

Regarding employment status, it was found that, 74.3 percent of the consumers were employed and the rest (25.7%) were unemployed. About 57.6 percent of the consumers were employed in the private sector followed by 22.2 percent who were employed in the Government sector. Self-employed consumers were found to be 17.6 percent, and others (2.6%) were working in Quasi- Government Agencies, NGOs, etc.

Majority of the consumers (40.5%) had a family monthly income between Rs.75,001 - 1,00,000, followed by the income category of Rs.50,001 - 75,000 (17.2%) and Rs.25,001 - 50,000 (17%). About 16.5 percent of the consumers were having a family income of more than Rs.1,00,000 per month. The percent of consumers with family monthly income of less than Rs.25,000 per month was 8.9. Most of the consumers had monthly income of above Rs.50,000. Hence it is expected that disposable income of the consumers of these cities will be in higher side and which can in turn foster the healthy food consumption.

About 37.2 percent of the consumers were educated up to 12th Standard, followed by Graduates (32.3%) and Post- graduates (27.9%). It was observed that 1.8 percent of the respondents were PhD holders, while others (0.8 percent) comprised of ITI & Diploma holders.

The respondents were randomly selected from the four tier 1 metro cities according to the number relative to the total population of the selected cities. Among the total respondents, 48.8 percent were from Delhi metro region, followed by respondents belonging to Bengaluru (20.4%), Hyderabad (17%), and Ahmedabad (13.8%).

4.5 PERCEIVED HEALTH STATUS OF THE CONSUMERS

The study revealed that more than 60 percent of the consumers were having at least one lifestyle disease (Figure 4.2). The different lifestyle diseases are constituted by certain types of heart related diseases, obesity, some types of cancer, blood pressure, diabetes, etc. (Sanjeev 2016).
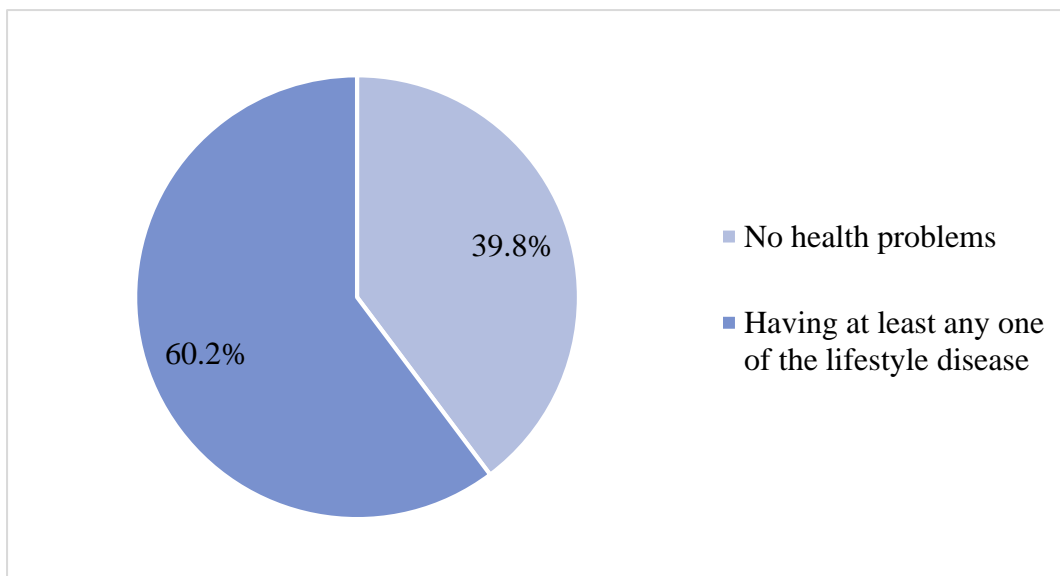
Source: Research Survey Data

Figure 4.2: Perceived Health Status of the Consumers

The study results confirmed the observation of the research study by Ashavaid et al. (2004) that most consumers are under risk of lifestyle diseases in India. A research report by the Indian Council of Medical Research (2017) revealed that in 1990, 30.5 percent of the population were suffering from lifestyle diseases and this had further increased to 55.4 percent in 2016. These findings are in tandem with the present research study results that the burden of lifestyle diseases is increasing over time.
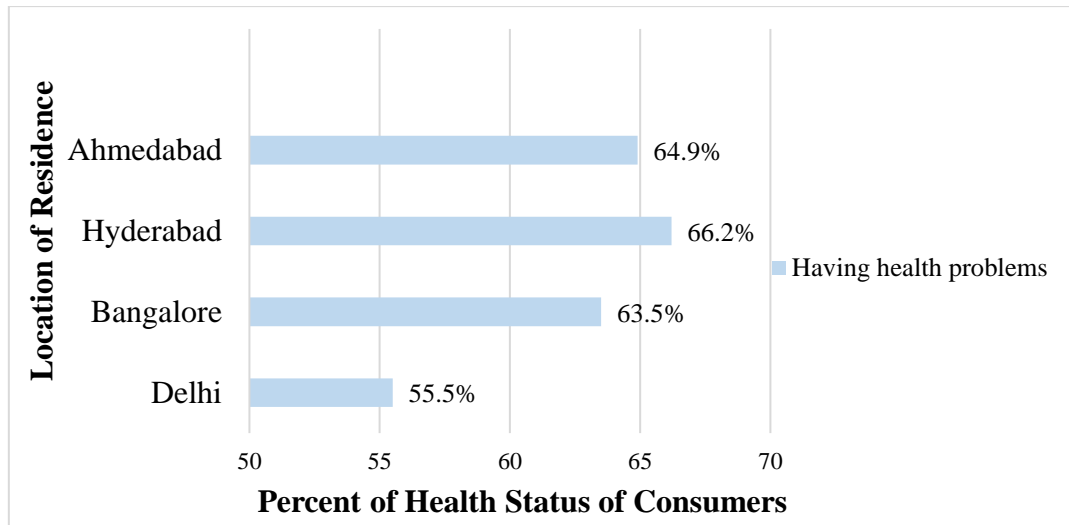
Source: Research Survey Data

Figure 4.3: Location of Residence and Present Health Status

The lifestyle diseases among consumers living in different metro cities in India are provided in Figure 4.3. It was observed that lifestyle diseases were highest in Hyderabad (66.2%), followed by Ahmedabad (64.9%). About 63.5 percent of respondents from Bengaluru city were having at least one of the lifestyle diseases. Compared with other metro cities, people with less lifestyle diseases were found in Delhi (55.5%).
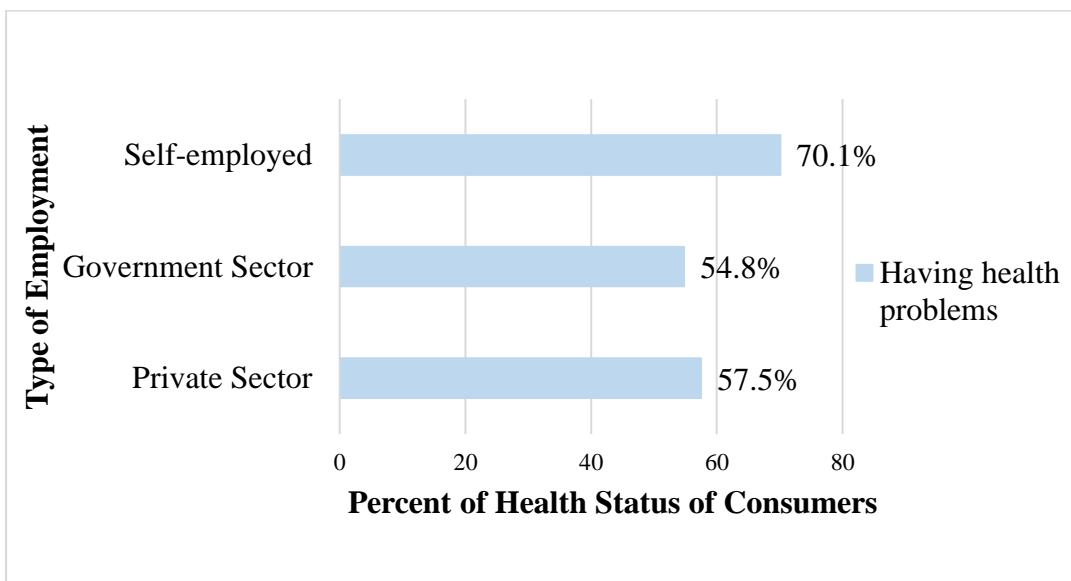
Source: Research Survey Data

Figure 4.4: Type of Employment and Present Health Status

The lifestyle diseases among consumers of different employment status are provided in Figure 4.4. It was observed that self-employed respondents are more vulnerable to lifestyle diseases (70.1%), followed by respondents working in the private (57.5%) and Government sector (54.8%).

4.6 PREFERRED SHOPPING OUTLETS FOR BRANDED FFBs

Supermarkets emerged as the most (84.8%) preferred shopping outlet for purchasing FFBs, followed by hypermarkets (76%) and retail outlets (71.8%). Online store (16.7%) and medical stores (19.1%) were least preferred shopping outlets (Figure 4.5).
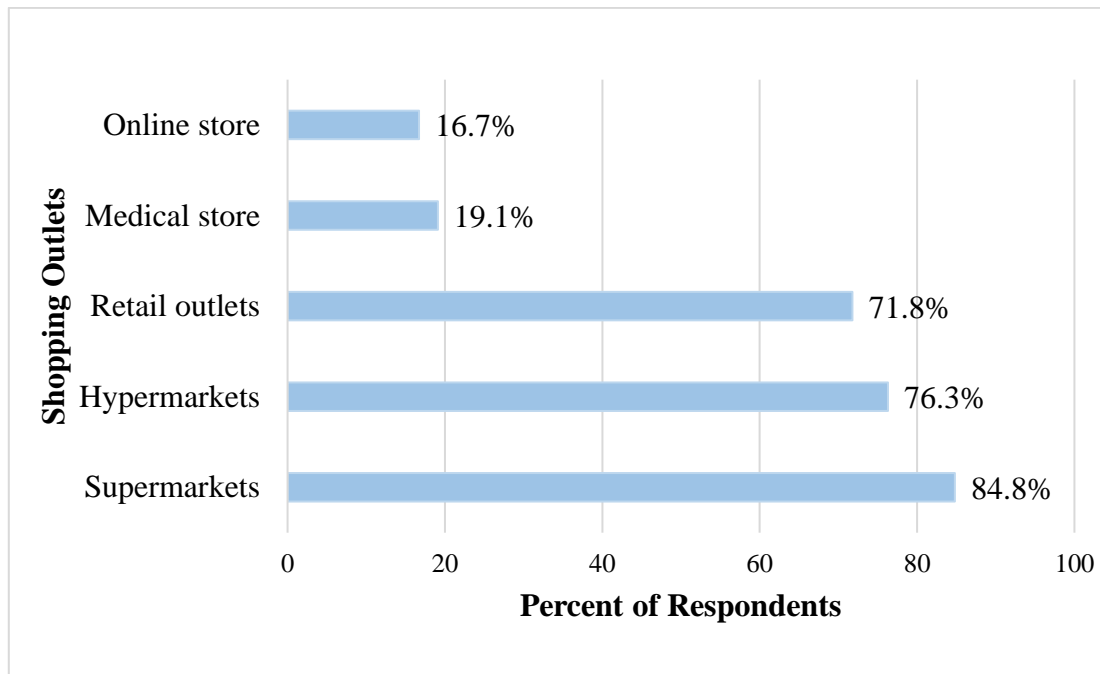
Source: Research Survey Data

Figure 4.5: Shopping Outlets for Branded FFBs

The results of the present study supported the findings of earlier research studies (Gupta and Tandon 2013; Kesari and Atulkar 2014; Pandey and Rai 2014) that Indian consumers showed more preference towards organized retail formats like supermarkets, hypermarkets, and retail outlets for their shopping needs. The reason behind this preference can be attributed to several reasons such as large variety of product brands, easy availability, cleanliness, etc. (Gupta and Tandon 2013; Kesari and Atulkar 2014; Pandey and Rai 2014).

4.7 SOURCES OF INFORMATION ABOUT BRANDED FFBs

Descriptive analysis results showed television as the most preferred source of information available to the consumers (75.1%) (Figure 4.6). The findings matched with the results of a research study by Osswald and Dittrich (2012) conducted in the Indian city of Hyderabad regarding sustainable food consumption and urban lifestyles, wherein television was the major source of knowledge about organic food products. Motadi et al. (2016) in South Africa confirmed television as the major source of information for consumers of fortified foods. A research study in America (Brodie et al. 2001) also confirmed the popularity of television as a medium of health information. Additionally, the survey results of the American Dietetic Association (ADA 2011) revealed the television as the most common source of nutrition information.
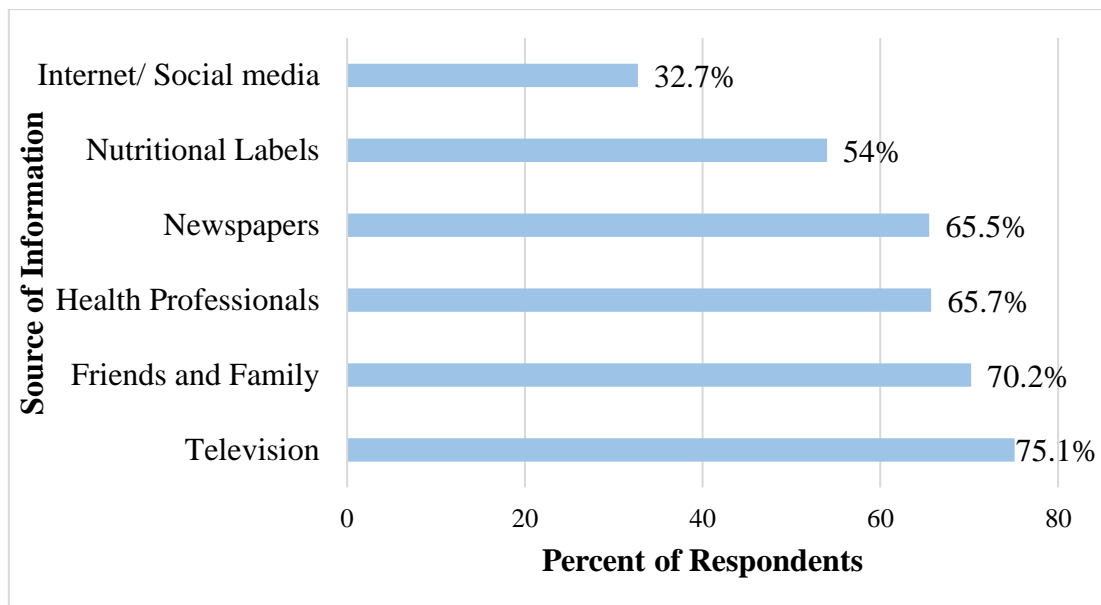
Source: Research Survey Data

Figure 4.6: Source of Information about branded FFBs

About 70.2 percent of the consumers considered friends and family as their source of information regarding the FFBs, whereas 32.7 percent considered this as the internet/ social media. This results contradicted the findings of a market study in the United States (The Hartman Group 2015) that young consumers used the social media for advice on health and wellness. Moreover, the present study results controverts the findings of past research studies (Dutta-Bergman 2004, 2005; Cotten and Gupta 2004)

regarding health information seeking behaviour in the United States that the internet is the important source of information for consumers regarding health and wellness. Hence, it is concluded that information sources can vary across countries based on accessibility to the internet and other novel mediums of communication.

Health professionals were found to be in the third position (65.7%), followed by newspapers (65.5) and nutritional labels (54%). The descriptive analysis results clearly indicated which source of information was preferred by consumers for seeking knowledge about branded FFBs and it was concluded that television is the most preferred source.

4.8 HEALTH PROFESSIONALS ARE THE MOST RELIABLE SOURCE OF INFORMATION

Health professionals (medical doctors, dieticians and nutritionists, etc.) are the most reliable source of information (35.4%) regarding FFBs (Figure 4.7).
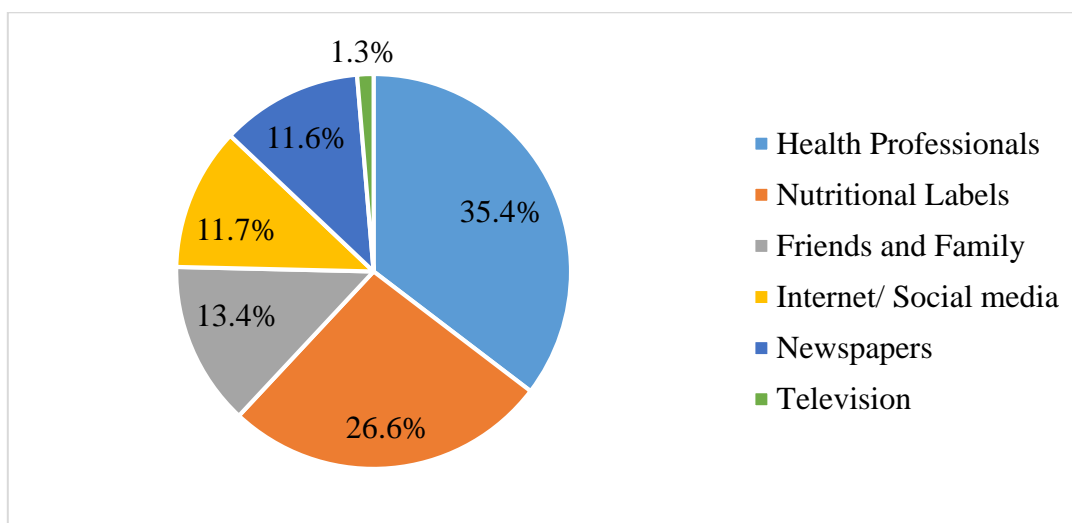
Source: Research Survey Data

Figure 4.7: Reliable Source of Information

The findings supported earlier research studies (ADA 2011; Mahan and Raymond 2016; Julita and Ozimek 2017). Nutritional labels (26.6%) on the FFBs products were considered as the second most reliable source of information and earlier research studies confirmed the same (Campos et al. 2011; Kyle and Thomas 2014; Koen et al. 2016). About 13.4 percent of the consumers considered friends and family as a reliable

source of information, followed by the internet/ social media (11.7%) newspaper (11.6%), and television (1.3%).

4.9 DESCRIPTIVE STATISTICS OF THE FACTORS INFUENCING CONSUMER ACCEPTANCE

Descriptive statistics (mean, median, and standard deviation values) for the study constructs, namely, health consciousness, attitude, subjective norms, perceived behavioural control, consumer knowledge, purchase intention, and consumer acceptance are provided in Table 4.2.

The maximum and minimum values possible for each variable were seven and one, respectively. The mean and median values are slightly closer. The mean scores ranged from 4.65 to 5.19. The highest mean value of 5.19 was obtained for consumer acceptance, which denoted that consumers are having a higher inclination towards consumer acceptance of branded FFBs. The lowest mean value of 4.65 was obtained for perceived behavioural control.

Table 4.2: Descriptive Statistics

Variables	Mean	Median	Standard Deviation
Health Consciousness (HC)	4.95	5.00	0.98
Attitude (AT)	4.91	5.00	0.88
Subjective Norms (SN)	4.68	5.00	1.12
Perceived Behavioural Control (PBC)	4.65	5.00	1.03
Consumer Knowledge (CK)	4.88	4.77	0.86
Purchase Intention (PI)	4.89	5.00	0.87
Consumer Acceptance (CA)	5.19	5.33	1.02

Source: Research Survey Data

The results showed that the standard deviation values of all the study constructs did not show much variation, indicating an approximate normality for the data distribution. Subjective norms (1.12) and perceived behavioural control (1.03) constructs had

slightly higher standard deviation values with mean values of 4.68 and 4.65, respectively. This indicates that the respondents may have diverse opinions on the measurement scale of subjective norms and perceived behavioural control constructs.

4.10 INFERENTIAL STATISTICS

Chi-Square test is one of the important statistical method in inferential statistics and was used to test the statistical independence or association between the socio-demographic variables and the health status of consumers.

4.10.1 Age Group of Above 45 Years are More Vulnerable towards Lifestyle Diseases

It was observed from the Figure 4.8 that as age increases, the chances of getting lifestyle diseases also increases. The chi-square test results ($\chi^2 = 446.416$, df = 4, and p = 0.000) confirmed that the health status of consumer is dependent on their age. The study result confirmed that respondents above 45 years were more susceptible towards lifestyle diseases. As a result, the country is facing an increase in demand for FFBs.
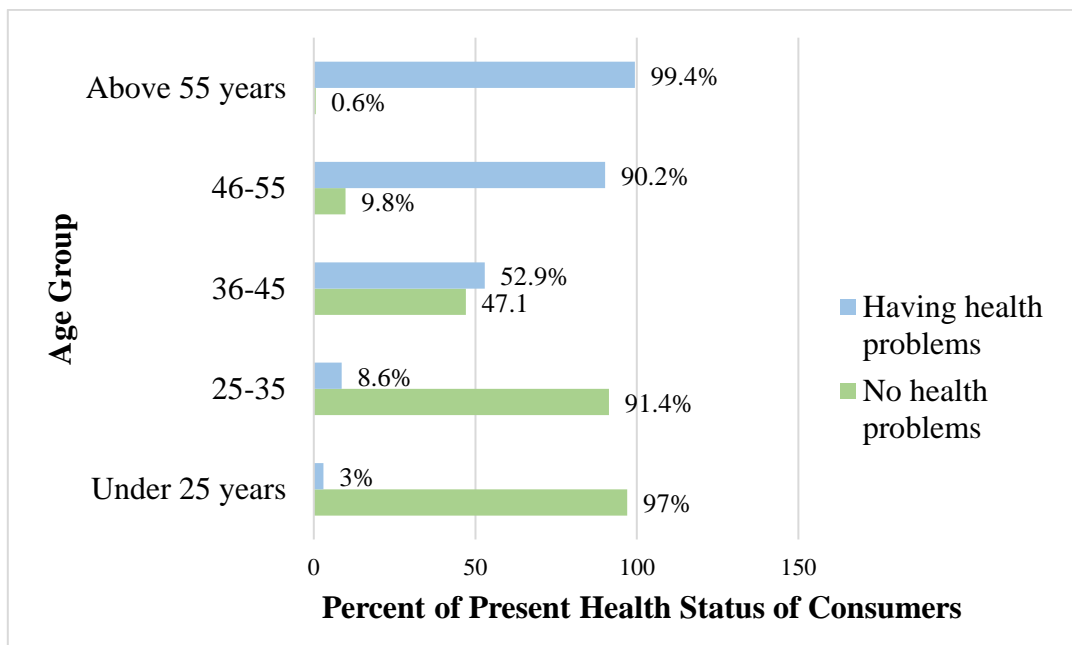
Note: χ2 = 446.416, df = 4, p = 0.000 (Highly Significant)
Source: Research Survey Data

Figure 4.8: Age Wise Health Status of Consumers

111

4.10.2 Gender and Health Status of Consumers

Figure 4.9 represents the gender-wise health status of the consumers. It could be noted that female consumers (61.1%) had more lifestyle diseases than male consumers (59.5%). However, the chi-square test results ($\chi^2 = 0.222$, df = 1, and p = 0.637) signified that the health status of the respondents was independent of gender.
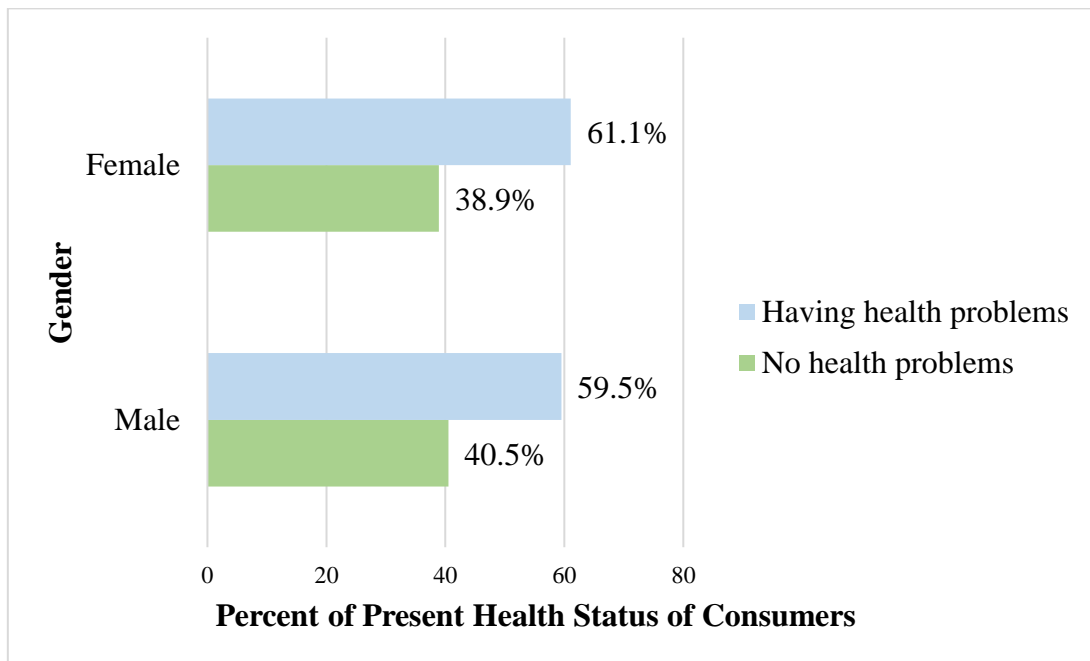
Note: χ2 = .222, df = 1, p = 0.637 (Not significant)
Source: Research Survey Data

Figure 4.9: Gender-wise Health Status of Consumers

4.10.3 Married People are More Susceptible to Lifestyle Diseases

Figure 4.10 depicts that married people are more prone to lifestyle diseases (69.2%). The Chi-square test yielded χ^2 value of 80.837 at 1 degree of freedom, which is significant at p = 0.000, indicated the substantial relationship between marital status of consumers and their health status.

This result may be due to the influence of age. Most unmarried people are in the age group of less than 35 years. Hence, the chances of lifestyle diseases are less for this age group of consumers.

Figure 4.10: Marital Status with Present Health Status

From the chi-square analysis, it was indicated that the health status of the consumers was independent of the gender of the consumers and consumer health status was affected by age and marital status.

4.11 RESULTS OF HYPOTHESES TESTING

ANOVA and Structural Equation Modelling (SEM) analysis were performed for hypotheses testing. The Smart PLS software was employed for executing Structural Equation Modelling (SEM) to evaluate the measurement and structural models. ANOVA, a statistical technique was used to measure potential differences in a scale-level dependent variable attitude by socio-demographic variables having two or more categories. The present study has used ANOVA technique for testing socio-demographic variables with consumer attitude for understanding difference in consumer attitude at a significant level of 0.05. Hence it was hypothesised that,

H1: Socio-demographic factors of consumer significantly influences consumer attitude towards FFBs

113

4.11.1 Age and Attitude towards Branded FFBs

H1a: There is a significant difference in consumer attitude towards FFBs with respect to the age of consumers

The ANOVA results (F = 0.127 and p = 0.973) showed no significant difference in the level of attitude towards FFBs between the different age groups of the consumers (Table 4.3). Hence, H1a is not supported.

Table 4.3: ANOVA Results for Age and Consumer Attitude

	Sum of Squares	df	Mean Square	F	Significance
Between Groups	0.396	4	0.099	0.127	0.973
Within Groups	633.839	815	0.778		
Total	634.234	819			

Source: Research Survey Data

The study results indicated that age does not have any impact on attitude formation towards branded FFBs. This may be because age of the consumers did not influence health consciousness (F = 0.976 and p = 0.420) (Table 4.3a). Accordingly, it was found that the level of consumer health consciousness remained the same, irrespective of age. This might be the reason that there was no influence of attitude towards branded FFBs across the different age groups.

Table 4.3a: ANOVA Results for Age and Health Consciousness

	Sum of Squares	df	Mean Square	F	Significance
Between Groups	3.788	4	0.947	0.976	0.420
Within Groups	791.092	815	0.971		
Total	794.880	819			

Source: Research Survey Data

This result supports the past studies (Contini et al. 2015; Rifnaz et al. 2016; Bromage et al. 2019) that age do not affect the attitudinal variables of healthy eating. But, the result refutes the study findings of (Gilbert 1997; Poulsen 1999; Magnusson et al. 2003 2001), which confirmed that the age of the respondents was a significant contributor to attitude towards organic foods.

4.11.2 Educational Qualifications and Attitude towards Branded FFBs

H1b: There is a significant difference in consumer attitude towards FFBs with respect to the educational qualifications of consumers

The ANOVA results (F = 2.38 and p = 0.05) shows no significant variance in the attitude of consumers possessing different educational qualifications towards FFBs (Table 4.4).

Table 4.4: ANOVA Results for Educational qualifications and Consumer Attitude

	Sum of Squares	df	Mean Square	F	Significance
Between Groups	7.323	4	1.831	2.38	0.05
Within Groups	626.911	815	0.769		
Total	634.234	819			

Source: Research Survey Data

Hence, alternative hypothesis, H1b is not supported at 95 percent confidence level. This result is in agreement with Contini et al. (2015) that education does not prove to influence health food choice.

This result refutes with the study results of (Childs 1997) in the US that functional food consumer are well-educated. Regarding organic foods, it was found that people with higher education seemed to be more willing to pay more for it (Jolly 1991; Wandel and Bugge 1997).

115

4.11.3 Attitude towards Branded FFBs across Genders

H1c: There is a significant difference in consumer attitude towards FFBs with respect to the gender of consumers

The ANOVA results (F = 6.874 and p = 0.009) shows significant discrepancy in the level of attitude towards FFBs in both male and female consumers (Table 4.5).

Table 4.5: ANOVA results for Gender and Consumer Attitude

	Sum of Squares	df	Mean Square	F	Significance
Between Groups	5.285	1	5.285	6.874	0.009**
Within Groups	628.949	818	0.769		
Total	634.234	819			

*Note: The mean difference is significant at the 0.01 level, ** p < 0.01 (99%)*
Source: Research Survey Data

Consequently, alternative hypothesis, H1c is accepted. This is in agreement with the study findings of Childs (1997), Gilbert (1997), Ares and Gámbaro (2007), and Laheri (2017) that female consumers had a more positive attitude towards functional foods with yogurt and marmalade. Besides, male consumers had a more positive attitude towards functional foods with honey and cream soup (Ares and Gámbaro 2007). In addition, significant differences were observed between genders for perception towards probiotic yogurt, energy drinks, and whole grain baked food (Bilgic and Yuksel 2012). The results suggested that attitude towards FFB products varied between genders.

Further, dummy variable regression analysis was conducted to compare the influence of male and female consumers separately on attitude towards branded FFBs. The results ($\beta = 0.161$, t = 2.622, p = 0.009) confirmed that female consumers had a more positive attitude towards branded FFBs (Table 4.6).

Table 4.6: Dummy Variable Regression for Gender and Consumer Attitude

	β -Value	Std. Error	t-Value	Significance
Female	0.161	5.285	2.622	0.009**

*Note: Dependent Variable= Attitude, β -Value is significant at the 0.01 level, ** p < 0.01 (99%)*
Source: Research Survey Data

4.11.4 Family Monthly Income of the Consumer and Attitude towards Branded FFBs

H1d: There is a significant difference in consumer attitude towards FFBs with respect to the income of consumers

The ANOVA results (F = 0.986 and p = 0.414) showed no significant difference in the level of consumer attitude towards FFBs between the different income groups of the consumers (Table 4.7).

Table 4.7: ANOVA Results for Family Monthly Income and Consumer Attitude

	Sum of Squares	df	Mean Square	F	Significance
Between Groups	3.054	4	0.764	0.986	0.414
Within Groups	631.180	815	0.774		
Total	634.234	819			

Source: Research Survey Data

Hence, alternative hypothesis H1d is not supported. This result does not support the earlier research findings of (Alvensleben and Altmann 1986) that demand for organic foods positively correlated with income.

4.11.5 Type of Occupation and Attitude towards Branded FFBs

H1e: There is a significant difference in consumer attitude towards FFBs with respect to the type of occupation of the consumers

117

The ANOVA results (F = 0.395 and p = 0.757) display no significant variance in the level of attitude towards FFBs among the different occupation groups of the consumers (Table 4.8). Hence, alternative hypothesis H1e not accepted.

Table 4.8: ANOVA Results for Type of Occupation and Consumer Attitude

	Sum of Squares	df	Mean Square	F	Significance
Between Groups	0.916	3	0.305	0.395	0.757
Within Groups	468.092	605	0.774		
Total	469.008	608			

Source: Research Survey Data

4.11.6 Marital Status and Attitude towards Branded FFBs

H1f: There is a significant difference in consumer attitude towards FFBs with respect to the marital status of consumer

Table 4.9: ANOVA Results for Marital Status and Consumer Attitude

	Sum of Squares	df	Mean Square	F	Significance
Between Groups	0.036	1	0.036	0.047	0.828
Within Groups	634.198	818	0.775		
Total	634.234	819			

Source: Research Survey Data

The ANOVA results (F = 0.047 and p = 0.828) shows no significant difference in the level of consumer attitude towards FFBs between married and unmarried groups of consumers (Table 4.9). Hence, alternative hypothesis H1f not supported.

Conclusion on Hypotheses Testing

Table 4.10: Hypotheses Test Results for Socio-demographic Variables with Consumer Attitude

Hypothesis	F-Value	p-Value	Results
H1a	0.127	0.973	Rejected
H1b	2.38	0.05	Rejected
H1c	6.874	0.009**	Accepted
H1d	0.986	0.414	Rejected
H1e	0.395	0.757	Rejected
H1f	0.047	0.828	Rejected

*Note: The mean difference is significant at the 0.01 level, ** p < 0.01 (99%)*
Source: Research Survey Data

Table 4.10 shows a summary of the hypotheses test results for socio-demographic variables with consumer attitude. The hypotheses were tested using the ANOVA technique, which revealed that except H1c, all the other hypotheses were statistically insignificant and accordingly rejected in the study. This result is in line with the findings of Landstrom et al. (2007) that factors other than demographics better elucidate consumption of functional foods, and consumer demographic profiles are partially correlated with the acceptance of functional food (Dagevos 2005). In organic food consumption, Thompson and Kidwell (1998) found that demographics just had little impact.

Earlier, a US based research study (Kim and Seock 2009) exposed that health consciousness was significantly related to a respondent's perceived level of knowledge. Further, a study by Aertsens et al. (2011) on organic food identified that positive attitude formation was largely related to objective and subjective knowledge regarding organic food. In addition, Zhu and Xie (2015) identified that knowledge plays a pivotal role in attitude formation towards GMF. In the present study, consumer knowledge was

the least influencing factor for consumer acceptance of FFBs (Section 4.18.5). Hence, this might be the reason for the insignificance of the socio-demographic variables on attitude towards branded FFBs.

4.12 EVALUATION OF MEASUREMENT MODEL

An assessment of the measurement model is required before proceeding to test the structural model. The evaluation of the measurement model elucidates how well the observed indicators measure a particular unobserved construct. Smart PLS (Partial least squares) algorithm technique was used to evaluate the construct validity of the measurement model, which involved a comprehensive examination of factor unidimensionality, construct reliability, convergent validity, and discriminant validity of the study constructs.

The study comprised of seven latent variables, which were reflective in nature, where the indicators are caused by the latent variable. The health consciousness construct had 13 indicators, consumer attitude was measured by 9 indicators, subjective norms had 7 indicators, perceived behavioural control construct was measured by 6 indicators, consumer knowledge construct had 9 indicators, purchase intention construct was measured using 4 indicators, and consumer acceptance construct was measured by 3 indicators.

4.12.1 Reliability and Factor Validity Analysis of the Study Constructs

Cronbach's alpha (α) and Composite Reliability (CR) was used to estimate the internal reliability of the multi- item scale for each study construct. Factor analysis and Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy for each construct was carried out using the SPSS 23.0 software.

4.12.1.1 Cronbach's Alpha (α)

The internal consistency of the constructs was confirmed before proceeding to the Structural Equation Modelling (SEM) as required by Hair et al. (2013). Since the study contained a multi-factor model, Cronbach's alpha and Composite Reliability (CR) was used to estimate the reliability of the multi- item scale for each construct. Cronbach's alpha (α) measures the degree to which responses are consistent across the indicators

120

within a measure, i.e. internal consistency reliability (Brown 2006) and accordingly Cronbach's alpha (α) values were calculated. Most research studies recommend a value of 0.7 and higher as good reliability score (Nunnally 1978). All the indicators are having above 0.7 Cronbach's alpha (α) coefficients values, indicating a good level of reliability for each construct (Nunnally 1978). The Cronbach alpha (α) values range from 0.874 - 0.972. The highest value of Cronbach alpha (α) was obtained for the health consciousness (HC) construct (α = 0.972) and the lowest value of Cronbach alpha (α) was obtained for consumer acceptance (CA) construct (α = 0.874).

4.12.1.2 Composite Reliability (CR)

Composite reliability estimates the degree to which a set of latent construct indicators share in their measurement of a construct (Hair et al. 2013). Research studies by Nunnally and Bernstein (1994) had stated that CR values of 0.6 - 0.7 are acceptable. CR values of more than 0.7 is essential for advanced stages of research (Bagozzi and Yi 1988). In the present study, all the values of CR are higher than the acceptable criteria. The CR values range from 0.922 - 0.974. The highest value of CR (0.974) was obtained for the health consciousness (HC) construct and the lowest value (0. 922) was for consumer acceptance (CA).

4.12.1.3 Factor Loading and Kaiser- Meyer-Olkin (KMO) Measure of Sampling Adequacy

The SPSS 23.0 software was used to find the item- wise factor loadings of each construct. The factor analysis results suggest exactly the number of indicators measuring a particular construct, which will further form the consumer acceptance model for branded FFBs. All the variables exceeded the cut-off factor loading score. In order to understand the underlying dimensions of consumer acceptance towards branded FFBs, the 51 indicators across the study were subjected to factor analysis. The Kaiser- Meyer-Olkin (KMO) measure of sampling adequacy for each construct was checked, and it ranged from 0.735 - 0.930. The highest value of KMO (0.930) was obtained for the health consciousness (HC) construct and the lowest value of KMO (0.735) was obtained for consumer acceptance (CA).

4.12.2 Health Consciousness

i. Reliability

The scale measuring the health consciousness construct included 13 indicators. The reliability analysis results revealed that the entire item-total correlation was above the acceptable value of 0.7 (Nunnally 1978; Bagozzi and Yi 1988). The reliability analysis resulted in Cronbach's alpha (α) value of 0.972, which established the internal reliability of the entire item-total correlation. The results confirmed that entire 13 indicators are accurately measuring the health consciousness construct. The composite reliability (CR) value obtained was 0.974, which assessed the internal consistency of the measure of the overall reliability of the health consciousness construct.

ii. Factor Analysis

The Kaiser- Meyer-Olkin (KMO) measure of sampling adequacy and the Bartlett's Test of Sphericity for health consciousness construct was checked. The Table 4.11 describes the result of the two analysis.

Table 4.11: Kaiser- Meyer-Olkin (KMO) Measure of Sampling Adequacy, Bartlett's Test of Sphericity and Percent of Total Variance Explained by Health Consciousness

KMO		0.930
Bartlett's Test of Sphericity	Approx. Chi-Square	14595.380
	df	78
	Sig.	0.000
% of Total Variance Explained		75.22%

Source: Research Survey Data

The KMO value for health consciousness construct was 0.930, which is well above the required minimum value of 0.5, and hence, the sampling adequacy was established. The Bartlett's Test of Sphericity was significant ($p < 0.001$) at 14595.380, thus the consistency of the data set for higher data analysis was supported.

The 13 indicators measuring the health consciousness construct were subjected to factor analysis, which showed the extraction of a single factor and explained 75.22 percent variance. Hence, the percent of variance explained by the factor structure was more than 50 percent, which is considered as an acceptable value (Hair et al. 2013). Factor loadings of all the indicators under health consciousness construct is represented in Table 4.12.

Table 4.12: Factor Analysis Results of Health Consciousness

Health Consciousness Indicators	Factor Loading Values
HC1	0.795
HC2	0.888
HC3	0.903
HC4	0.886
HC5	0.928
HC6	0.799
HC7	0.825
HC8	0.769
HC9	0.769
HC10	0.719
HC11	0.722
HC12	0.870
HC13	0.795

Source: Research Survey Data

The factor loadings exceeded the cut-off score of minimum 0.4 and below, which was used to screen out the weak indicators (Hair at al. 2010). All the indicators were well above the minimum obligatory values.

4.12.3 Attitude

i. Reliability

The scale for measuring the attitude construct had 9 indicators. The reliability analysis was performed to check the internal consistency of the indicators, which yielded the

entire item-total correlation and which was above the acceptable value of 0.7. The analysis resulted a Cronbach's alpha (α) value of 0.960, and confirmed the internal reliability of the entire item-total correlation of the attitude construct. The composite reliability (CR) value was 0.966, which supported the internal consistency of the collection of heterogeneous but similar indicators of the attitude construct.

ii. Factor Analysis

The Kaiser- Meyer-Olkin (KMO) measure of sampling adequacy and the Bartlett's Test of Sphericity for Attitude factors were performed (Table 4.13).

Table 4.13: Kaiser- Meyer-Olkin (KMO) Measure of Sampling Adequacy, Bartlett's Test of Sphericity and Percent of Total Variance Explained by Attitude

KMO		**0.922**
Bartlett's Test of	Approx. Chi-Square	8078.830
Sphericity	df	36
	Sig.	0.000
% of Total Variance Explained		76.25%

Source: Research Survey Data

The KMO measure for attitude construct was 0.922, which is well above the obligatory minimum value of 0.5, and therefore the sampling adequacy for attitude construct was confirmed. The Bartlett's Test of Sphericity was significant ($p < 0.001$) at Chi-Square value of 8078.830, and hence the suitability of the data set for higher analysis was established.

The 9 indicators measuring the attitude construct were subjected to factor analysis, which resulted in the extraction of a single factor and explained 76.25 percent variance for attitude. Accordingly, the percent of variance explained by the factor structure was accepted. The factor loadings of all the indicators under the attitude construct is given in Table 4.14.

124

Table 4.14: Factor Analysis Results of Attitude

Attitude Indicators	Factor Loading Values
AT1	0.804
AT2	0.795
AT3	0.838
AT4	0.817
AT5	0.880
AT6	0.810
AT7	0.844
AT8	0.857
AT9	0.681

Source: Research Survey Data

Factor loading score of 0.4 and above was considered as significant for the present study (Hair et al. 2010). The factor analysis revealed that all the indicators were well above the minimum required values.

4.12.4 Subjective Norms

i. Reliability

The scale for subjective norms construct consisted of 7 indicators. Reliability analysis was carried out, which showed entire item-total correlation above the acceptable value of 0.7. The reliability analysis resulted in Cronbach's alpha (α) value of 0.966 for the indicators measuring subjective norms and the composite reliability (CR) value was 0.972. Hence, it can be concluded that the internal reliability of the entire indicators measuring subjective norms construct is well- supported.

ii. Factor Analysis

The Kaiser- Meyer-Olkin (KMO) measure of sampling adequacy and the Bartlett's Test of Sphericity for subjective norms construct was checked (Table 4.15).

Table 4.15: Kaiser- Meyer-Olkin (KMO) Measure of Sampling Adequacy, Bartlett's Test of Sphericity and Percent of Total Variance Explained by Subjective Norms

KMO		0.891
Bartlett's Test of Sphericity	Approx. Chi-Square	7765.096
	df	21
	Sig.	0.000
% of Total Variance Explained		83.31%

Source: Research Survey Data

The KMO value for the subjective norms construct was 0.891, which is well above the required minimum value of 0.5, and thus the sampling adequacy was supported. Bartlett's Test of Sphericity was significant ($p < 0.01$) at 7765.096, and as a result the stability of the data set for progressive data analysis was confirmed.

Factor analysis had performed for the 7 indicators measuring the subjective norms construct, which resulted in the extraction of single factor. The factor structure explains 83.31% variance for subjective norms construct. Hence the percentage of variance explained by the factor structure is accepted. Factor analysis of subjective norms construct is given in Table 4.16.

Table 4.16: Factor Analysis Results of Subjective Norms

Subjective Norms Indicators	Factor Loading Values
SN1	0.888
SN2	0.902
SN3	0.872
SN4	0.895
SN5	0.843
SN6	0.843
SN7	0.844

Source: Research Survey Data

The factor analysis displayed that all the indicators were well above the minimum required values.

4.12.5 Perceived Behavioural Control

i. Reliability

The scale had 6 indicators to measure the perceived behavioural control construct. The reliability analysis exhibited that the entire item-total correlation was above the acceptable value of 0.7 and resulted in Cronbach's alpha (α) value of 0.920, which supported the internal reliability of the entire item-total correlation. The composite reliability (CR) value was 0.938, which confirmed the internal consistency of the indicators measuring the perceived behavioural control construct.

ii. Factor Analysis

The Kaiser- Meyer-Olkin (KMO) measure of sampling adequacy and the Bartlett's Test of Sphericity for perceived behavioural control factors was examined (Table 4.17).

Table 4.17: Kaiser- Meyer-Olkin (KMO) Measure of Sampling Adequacy, Bartlett's Test of Sphericity and Percent of Total Variance Explained by Perceived Behavioural Control

KMO		0.747
Bartlett's Test of Sphericity	Approx. Chi-Square	4621.745
	df	15
	Sig.	0.000
% of Total Variance Explained		72.09%

Source: Research Survey Data

The KMO value for perceived behavioural control construct was .747, which satisfied the required minimum value of 0.5, and hence the sampling adequacy for this construct was established. Bartlett's Test of Sphericity was significant (p <0.01) at 4621.745, and thus the reliability of the data set for advanced analysis was supported.

The 6 indicators measuring the perceived behavioural control construct were subjected to factor analysis, which resulted in the extraction of a single factor and explained 72.09 percent variance for this construct. Thus, the percent of variance explained by the factor structure was accepted. Factor loadings of perceived behavioural control construct is presented in Table 4.18.

Table 4.18: Factor Analysis Results of Perceived Behavioural Control

Perceived Behavioural Control Indicators	Factor Loading Values
PBC1	0.701
PBC2	0.856
PBC3	0.575
PBC4	0.566
PBC5	0.783
PBC6	0.797

Source: Research Survey Data

The factor analysis indicated that all the indicators measuring the perceived behavioural control construct were well above the minimum required values.

4.12.6 Consumer Knowledge

i. Reliability

The scale for measuring consumer knowledge construct had 9 indicators and the reliability analysis was performed, which yielded the entire item-total correlation and above acceptable value of 0.7. Further, it resulted in Cronbach's alpha (α) value of 0.949, which confirmed the internal reliability of the indicators measuring consumer knowledge. The Composite Reliability (CR) value was 0.956, which supported the internal consistency of the consumer knowledge construct.

ii. Factor Analysis

The Kaiser- Meyer-Olkin (KMO) measure of sampling adequacy and the Bartlett's Test of Sphericity for consumer knowledge construct was executed. The result of the two analysis are presented in Table 4.19.

Table 4.19: Kaiser- Meyer-Olkin (KMO) Measure of Sampling Adequacy, Bartlett's Test of Sphericity and % of Total Variance Explained by Consumer Knowledge

KMO		0.882
Bartlett's Test of Sphericity	Approx. Chi-Square	7797.735
	df	36
	Sig.	0.000
% of Total Variance Explained		71.31%

Source: Research Survey Data

The KMO value of consumer knowledge factor was 0.882, which is well above the obligatory minimum value of 0.5, and therefore the sampling adequacy was confirmed. The Bartlett's Test of Sphericity was significant ($p < 0.01$) at 7797.735, and hence the suitability of the data set for higher analysis was established.

Table 4.20: Factor Analysis Results of Consumer Knowledge

Consumer Knowledge Indicators	Factor Loading Values
CK1	0.687
CK2	0.778
CK3	0.898
CK4	0.834
CK5	0.874
CK6	0.793
CK7	0.707
CK8	0.739
CK9	0.752

Source: Research Survey Data

Factor analysis for the 9 indicators measuring the consumer knowledge construct was done, which ensued in the extraction of a single factor and explained 71.31 percent variance for this construct. Accordingly, the percent of variance explained by the factor

structure was accepted. The Factor analysis of consumer knowledge construct is shown in Table 4.20.

The factor analysis exposed that all the indicators measuring consumer knowledge construct were well above the minimum required values.

4.12.7 Purchase Intention

i. Reliability

The measurement scale for purchase intention construct had 4 indicators. Reliability analysis was performed to check the internal consistency of the indicators, which indicated that the entire item-total correlation value was above the acceptable value of 0.7. Cronbach's alpha (α) values of 0.934 revealed the internal reliability of the entire item-total correlation. Composite Reliability (CR) of 0.952 was obtained for 4 indicators measuring purchase intention construct, which confirmed the consistency of the construct.

ii. Factor Analysis

The KMO measure of sampling adequacy and the Bartlett's Test of Sphericity for purchase intention construct was checked. The test results are displayed in Table 4.21.

Table 4.21: Kaiser- Meyer-Olkin (KMO) Measure of Sampling Adequacy, Bartlett's Test of Sphericity and Percent of Total Variance Explained by Purchase Intention

KMO		0.780
Bartlett's Test of Sphericity	Approx. Chi-Square	3265.464
	df	6
	Sig.	0.000
% of Total Variance Explained		83.55%

Source: Research Survey Data

The KMO value for the purchase intention construct was 0.780, which is well above the required minimum value of 0.5, and thus the sampling adequacy was established. The Bartlett's Test of Sphericity was significant ($p < 0.01$) at 3265.464, and therefore the stability of the data set for advanced data analysis was established.

Factor analysis was performed for the 4 indicators measuring the purchase intention construct, which resulted in the extraction of a single factor and explained 83.55 percent variance for this construct. Accordingly, the percent of variance explained by the factor structure was supported. The factor analysis is presented in Table 4.22.

Table 4.22: Factor Analysis Results of Purchase Intention

Purchase Intention Indicators	Factor Loading Values
PI1	0.713
PI2	0.759
PI3	0.724
PI4	0.571

Source: Research Survey Data

The factor showed that all the indicators measuring purchase intention construct were well above the minimum required values.

4.12.8 Consumer Acceptance

i. Reliability

The measurement scale used for consumer acceptance had 3 indicators. The reliability analysis results revealed that the entire item-total correlation was above the acceptable value of 0.7. The Cronbach's alpha (α) value obtained was of 0.874, which supported the internal reliability of the entire item-total correlation. The Composite Reliability (CR) was 0.922, which established the internal consistency of the consumer acceptance construct.

ii. Factor Analysis

The KMO measure of sampling adequacy and the Bartlett's Test of Sphericity for consumer acceptance factors was checked. The following Table 4.23 presents the result of the analysis.

Table 4.23: Kaiser- Meyer-Olkin (KMO) Measure of Sampling Adequacy, Bartlett's Test of Sphericity and Percent of Total Variance Explained by Consumer Acceptance

KMO		**0.735**
Bartlett's Test of	Approx. Chi-Square	1270.020
Sphericity	df	3
	Sig.	0.000
% of Total Variance		
Explained		79.96%

Source: Research Survey Data

The KMO value for consumer acceptance construct was 0.735, which meets the required minimum value of 0.5, and hence sampling adequacy for the consumer acceptance construct was established. The Bartlett's Test of Sphericity was significant ($p < 0.01$) at 1270.020, and thus the reliability of the data set for advanced data analysis was supported.

Table 4.24: Factor Analysis Results of Consumer Acceptance

Consumer Acceptance Indicators	**Factor Loading Values**
CA1	0.599
CA2	0.809
CA3	0.646

Source: Research Survey Data

The 3 indicators measuring the consumer acceptance construct were subjected to factor analysis, which resulted in the extraction of a single factor and explained 83.55 percent variance for this construct. Thus, the percent of variance explained by the factor

structure was acceptable. The factor loadings of consumer acceptance construct is given in Table 4.24.

The factor results exhibited that all the indicators were well above the minimum obligatory values.

Summary on Reliability Analysis of Different Study Constructs

The values of Cronbach's alpha (α) and Composite Reliability (CR) of the different study constructs are given in Table 4.25.

Table 4.25: Reliability Analysis of Study Constructs

Sl. No.	Study Constructs	No. of Indicators	Cronbach's Alpha (α)	Composite Reliability (CR)
1	Health Consciousness	13	0.972	0.974
2	Attitude	9	0.960	0.966
3	Subjective Norms	7	0.966	0.972
4	Perceived Behavioural Control	6	0.920	0.938
5	Consumer Knowledge	9	0.949	0.956
6	Purchase Intention	4	0.934	0.952
7	Consumer Acceptance	3	0.874	0.922

Source: Research Survey Data

As seen in Table 4.18 the Cronbach's alpha (α) values ranges from 0.874 to 0.972 and the Composite Reliability (CR) values from 0.922 to 0.974. These values are well above the threshold limit. Hence, the reliability of the study constructs is well-established.

4.13 VALIDITY TEST OF STUDY CONSTRUCTS

In a survey research design, construct validity is an assessment of the quality of an instrument to measure what it claims to be measuring. The important types of validity measures of study constructs are content or face validity, convergent validity, and discriminant validity.

4.13.1 Content or Face Validity

Validity is the ability of an instrument to measure what it is intended to measure (Cooper and Schindler 2006). Content or face validity is about sufficient coverage of the subject being studied. The content validity of the questionnaire was done by 3 experts in the concerned areas, of whom one was a subject expert in marketing and consumer behaviour studies, the second was from the public health service, and the third was a nutritionist. Overall, the content validity for the indicators was assessed as adequate.

4.13.2 Convergent Validity

Convergent validity occurs where the expected measures of constructs correlate. Hair et al. (2013) defined it as "the extent to which a measure correlates positively with alternative measures of the same construct". Average Variance Extracted (AVE) is the most commonly adopted measure for convergent validity and is the amount of common variance among the latent construct indicators (Hair et al. 2013). Thus, AVE values are used to establish the convergent validity of the study constructs.

Table 4.26: AVE Values of Study Constructs

Study Constructs	HC	AT	SN	PBC	CK	PI	CA
AVE Values	0.749	0.762	0.833	0.720	0.711	0.834	0.797

Note: AT: Attitude, CA: Consumer Acceptance, CK: Consumer Knowledge, HC: Health Consciousness, PBC: Perceived Behavioural Control, PI: Purchase Intention, SN: Subjective Norms
Source: Research Survey Data

According to previous research studies (Hair et al. 2013), the acceptable range of AVE values should be more than 0.5 to have convergent validity. In the present study, all the study constructs had AVE values above 0.5, which satisfied the thumb rule of Hair et al. (2013). The AVE values obtained for the different measures of the study are given in Table 4.26.

In the present study, all the study constructs had AVE values above 0.5, which satisfied the thumb rule of Hair et al. (2013). The AVE values obtained for the different measures of the study are given in.

134

4.13.3 Discriminant Validity

Campbell and Fiske (1959) introduced the concept of discriminant validity. Hair et al. (2013) defined discriminant validity as "the extent to which a construct is truly distinct from other constructs by empirical standards". An adequate discriminant validity is possible only when each construct is distinctive from the other. There are different methods of the discriminant validity test. In the present research study, two methods were used to assess the discriminant validity. In the first method, it was established by examining the cross- loadings of the indicators. Specifically, the indicator's outer loadings on the associated construct should be greater than all of its loadings on the other study constructs. The cross- loadings of the indicators were assessed and it was found that the indicator's outer loadings on the associated construct was higher than all of its loadings on the other study constructs (Table 4.27).

Table 4.27: Cross Loadings and Discriminant Validity

Constructs/ Indicators	ATT	CA	CK	HC	PBC	PI	SN
AT1	0.8872	0.3051	0.3707	0.3707	0.496	0.5705	0.3074
AT2	0.9032	0.3337	0.4236	0.4194	0.5216	0.655	0.3471
AT3	0.9208	0.457	0.4441	0.444	0.4714	0.6232	0.3896
AT4	0.8508	0.4533	0.3593	0.3517	0.3793	0.4751	0.3351
AT5	0.8966	0.3343	0.3741	0.3229	0.3744	0.5257	0.2393
AT6	0.8301	0.3406	0.3475	0.2911	0.3696	0.494	0.2374
AT7	0.8896	0.3208	0.3744	0.3603	0.4577	0.5152	0.3006
AT8	0.876	0.2605	0.2972	0.3287	0.4491	0.4771	0.1626
AT9	0.7959	0.2749	0.3167	0.3478	0.4453	0.5624	0.3059
CA1	0.5131	0.9255	0.5055	0.5208	0.5166	0.6201	0.5148
CA2	0.2151	0.8868	0.3998	0.2476	0.3972	0.4226	0.3669
CA3	0.2638	0.8659	0.4944	0.3146	0.5438	0.4665	0.4687
CK1	0.3222	0.4554	0.7746	0.377	0.3969	0.3682	0.3147
CK2	0.3677	0.533	0.8666	0.3529	0.5087	0.4195	0.4024
CK3	0.2773	0.34	0.8622	0.2642	0.4127	0.2681	0.0962
CK4	0.4091	0.4493	0.9028	0.3393	0.4542	0.4557	0.3256
CK5	0.2972	0.4279	0.863	0.3144	0.3815	0.3072	0.2259
CK6	0.4102	0.4308	0.8735	0.3394	0.4668	0.4904	0.3305
CK7	0.3668	0.5669	0.8314	0.4623	0.5002	0.4027	0.4689

CK8	0.3214	0.4319	0.8225	0.3544	0.5215	0.3802	0.3256
CK9	0.3938	0.3207	0.7878	0.3219	0.4792	0.3669	0.2396
HC1	0.3087	0.406	0.3484	0.809	0.3347	0.3231	0.2648
HC10	0.4375	0.3226	0.391	0.8509	0.4678	0.4311	0.4953
HC11	0.4379	0.4919	0.4916	0.8731	0.441	0.4683	0.526
HC12	0.2607	0.2893	0.2061	0.8412	0.2671	0.3016	0.2084
HC13	0.448	0.4635	0.4211	0.9188	0.4584	0.4632	0.5157
HC2	0.3032	0.3777	0.3418	0.8881	0.3208	0.3397	0.2852
HC3	0.3061	0.382	0.3524	0.9031	0.384	0.3758	0.2611
HC4	0.3115	0.3415	0.3312	0.8876	0.3383	0.3181	0.2857
HC5	0.3214	0.3441	0.3216	0.9273	0.3727	0.3642	0.2649
HC6	0.2451	0.3169	0.2654	0.7807	0.3008	0.2768	0.2254
HC7	0.3358	0.3185	0.3801	0.8753	0.3694	0.3898	0.2833
HC8	0.4638	0.3786	0.3536	0.8762	0.3867	0.4443	0.4188
HC9	0.332	0.2695	0.3525	0.811	0.2889	0.3017	0.1877
PBC1	0.2493	0.2847	0.2793	0.312	0.7027	0.4417	0.1773
PBC2	0.4748	0.3342	0.3771	0.3308	0.8739	0.4793	0.1939
PBC3	0.4209	0.6418	0.6291	0.4074	0.8651	0.5915	0.5151
PBC4	0.4988	0.5909	0.531	0.4116	0.8372	0.5183	0.4286
PBC5	0.4344	0.4474	0.4852	0.3601	0.9029	0.5401	0.2374
PBC6	0.4961	0.4368	0.4307	0.3613	0.8949	0.5068	0.1907
PI1	0.628	0.4437	0.4284	0.4484	0.5227	0.9111	0.3941
PI2	0.6066	0.4273	0.4362	0.4237	0.5327	0.9361	0.366
PI3	0.5471	0.5641	0.4043	0.3373	0.573	0.9292	0.3851
PI4	0.5264	0.6491	0.439	0.3974	0.586	0.8771	0.4292
SN1	0.313	0.3764	0.3314	0.3704	0.2809	0.368	0.9133
SN2	0.3226	0.4715	0.3113	0.3299	0.2947	0.4016	0.939
SN3	0.2369	0.4729	0.3597	0.3776	0.3616	0.3873	0.9096
SN4	0.327	0.4682	0.3433	0.3545	0.3045	0.3929	0.9376
SN5	0.3287	0.415	0.3412	0.37	0.2987	0.374	0.8836
SN6	0.3632	0.5321	0.361	0.3712	0.3411	0.4319	0.9073
SN7	0.2741	0.5206	0.336	0.3745	0.3669	0.4025	0.8973

Note: AT: Attitude,   CA: Consumer Acceptance, CK: Consumer Knowledge,   HC: Health Consciousness, PBC: Perceived Behavioural Control,   PI: Purchase Intention,   SN: Subjective Norms
Source: Research Survey Data

The Fornell and Larcker (1981) approach is the second and more conventional approach to establishing discriminant validity. Under this approach, "the square root of AVE values should be greater than its highest correlation with any other construct" (Hair et

al. 2013). In the present study, all the square root values of AVE were greater than the cross-loadings of the other constructs. Hence, the Fornell-Larcker (1981) criterion for discriminant validity was satisfied. Table 4.28 shows the square root of the AVE values in the latent variable correlation table.

Table 4.28: Discriminant Validity Test based on Fornell-Larcker Criteria

	AT	CA	CK	HC	PBC	PI	SN
AT	**0.87304**						
CA	0.3934	**0.89308**					
CK	0.4246	0.5272	**0.84362**				
HC	0.4165	0.4246	0.4157	**0.86585**			
PBC	0.5089	0.5485	0.5473	0.4313	**0.84882**		
PI	0.6299	0.5772	0.468	0.4389	0.6085	**0.91367**	
SN	0.3397	0.5123	0.3734	0.3987	0.3528	0.4328	**0.91274**

Note: Values shown in bold letter are the square root of AVE values. Values below the diagonal are correlation between constructs.
AT: Attitude,   CA: Consumer Acceptance, CK: Consumer Knowledge,   HC: Health Consciousness,
PBC: Perceived Behavioural Control,   PI: Purchase Intention,   SN: Subjective Norms
Source: Research Survey Data

The diagonal of the latent variable correlations are the square root of the AVE for each variable. The square root values range from 0.843 - 0.913. Moreover, it is clear that the square root of AVE for each variable (shown in bold) is higher than any other value. Hence, the test results confirm that the discriminant validity of the measurement model is adequate.

4.14 CONFIRMATORY FACTOR ANALYSIS (CFA)

Confirmatory factor analysis (CFA) is a statistical technique used to verify the factor structure of a set of observed variables (Brown and Moore 2012). It confirms the number of underlying dimensions of the instrument and the pattern of indicator-factor relationships. Moreover, it is an important statistical technique for establishing construct validity and provides promising results for convergent and discriminant

validity. The testing of hypotheses can be done with the help of CFA results, which is used to check the consistency of the measurement of a construct with the investigators understanding of the nature of the study construct (Thompson 2004). The present study has executed CFA as a precursor to structural equation modelling. The Smart PLS (Partial least squares) algorithm technique was used to perform confirmatory factor analysis to confirm the item- wise factor loadings of each construct in the final model.

4.14.1 Health Consciousness

Confirmatory factor analysis of all the indicators under health consciousness construct is diagrammatically represented in Figure 4.11.
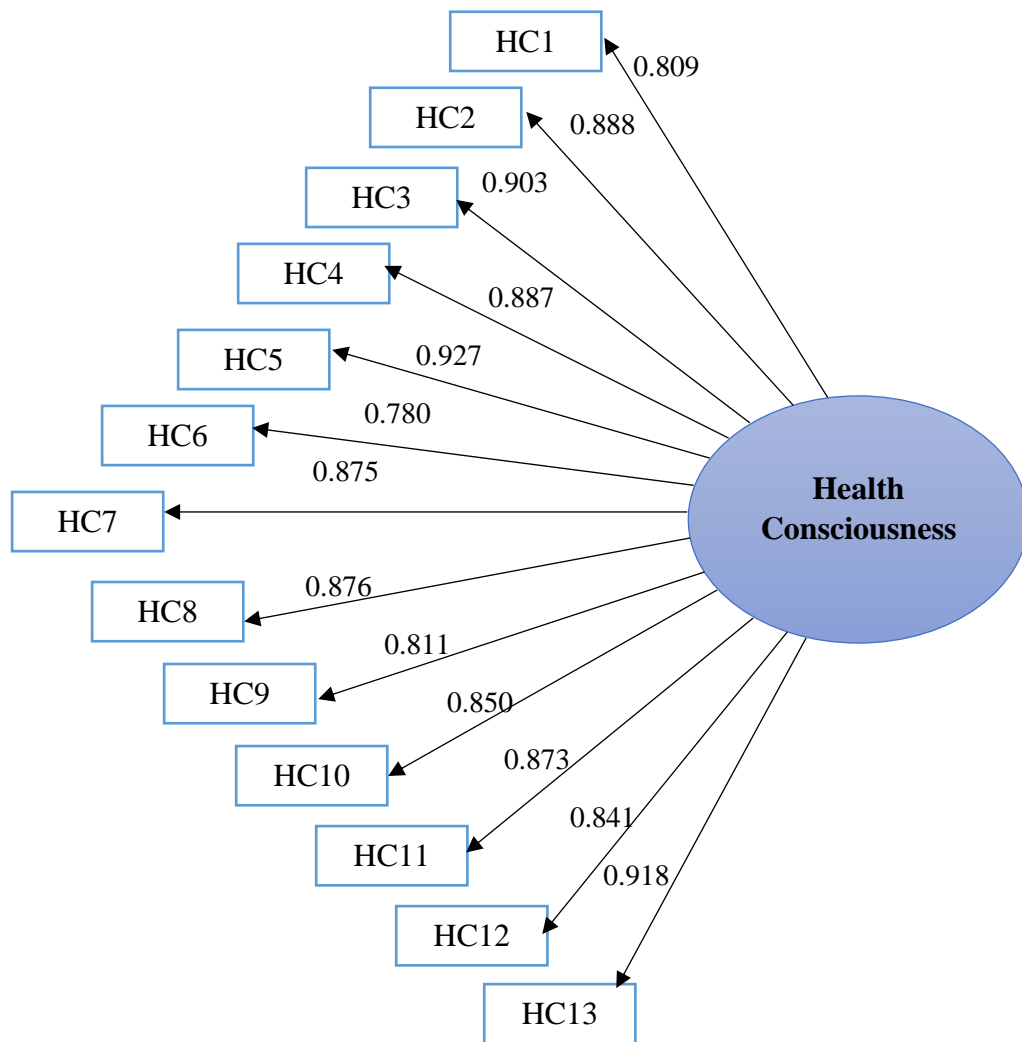
Figure 4.11: CFA Loadings of Health Consciousness

The factor loading values range from 0.780 - 0.927, and the highest factor loading value (0.927) was obtained for "I think often about health related issues" (HC5) and the lowest factor loading value (0.780) was obtained for "I only worry about my health when I get sick" (HC6).

4.14.2 Attitude

Confirmatory factor analysis results of all the indicators under attitude construct is presented in Figure 4.12.

The factor loading values range from 0.795 - 0.920, and the highest factor loading value (0.927) was obtained for "Fortified Foods & Beverages have superior quality" (AT3) and the lowest factor loading value (0.795) was obtained for "Fortified Foods & Beverages is important for a healthy lifestyle" (AT9).
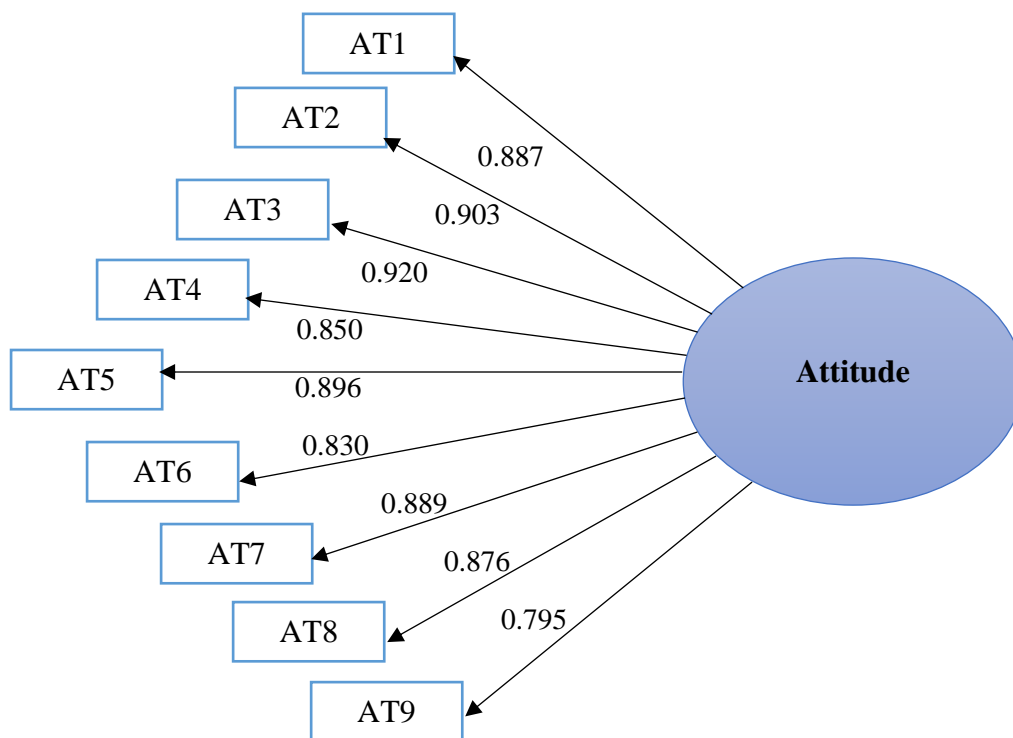
Figure 4.12: CFA Loadings of Attitude

4.14.3 Subjective Norms

Confirmatory factor analysis results of all the indicators under subjective norms construct is shown in Figure 4.13.
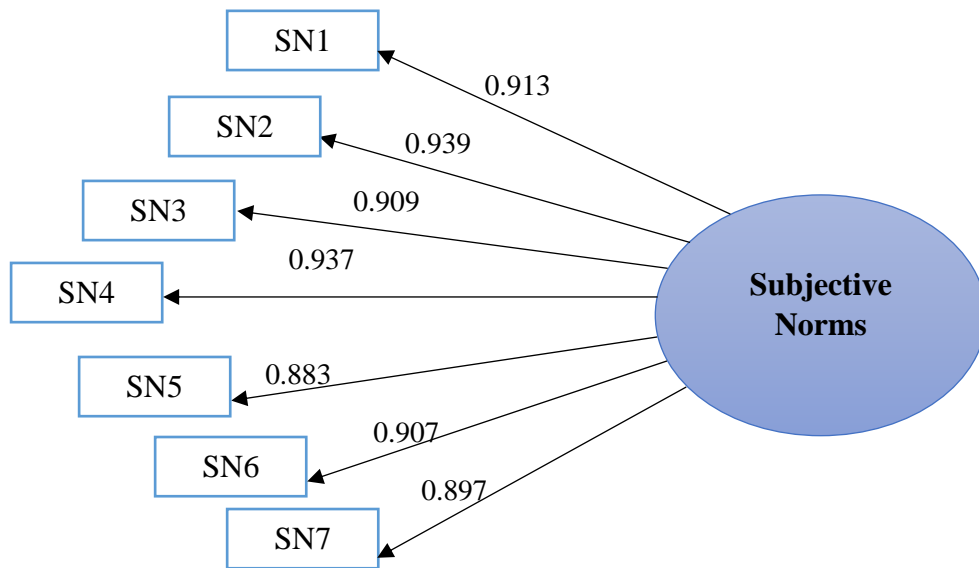
Figure 4.13: CFA Loadings of Subjective Norms

The factor loading values range from 0.883 - 0.939, and the highest factor loading value (0.939) was obtained for "People whose opinion I value would prefer that I should buy Fortified Foods & Beverages" (SN2) and the lowest factor loading value (0.883) was obtained for "The public health organizations think I should engage in healthy eating" (SN5). All the indicators were well above the minimum obligatory values.

4.14.4 Perceived Behavioural Control

The confirmatory factor analysis results of all the indicators under perceived behavioural control construct is presented in Figure 4.14.
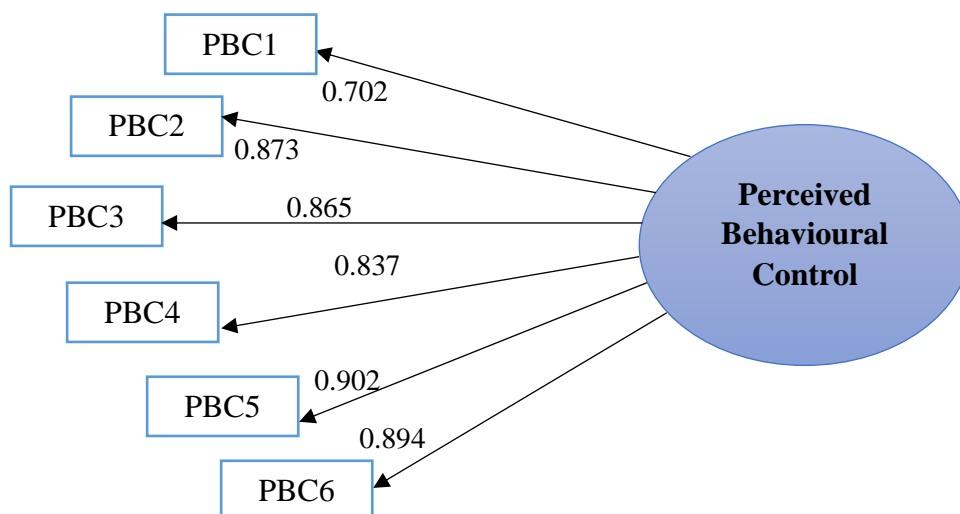
Figure 4.14: CFA Loadings of Perceived Behavioural Control

The factor loading values range from 0.702 - 0.902, and the highest factor loading value (0.902) was obtained for "I believe I have the ability to purchase Fortified Foods & Beverages" (PBC5) and the lowest factor loading value (0.702) was obtained for "To buy or not to buy Fortified Foods & Beverages is entirely up to me" (PBC1).

4.14.5 Consumer Knowledge

The confirmatory factor analysis results of all the indicators under consumer knowledge construct is presented in Figure 4.15.
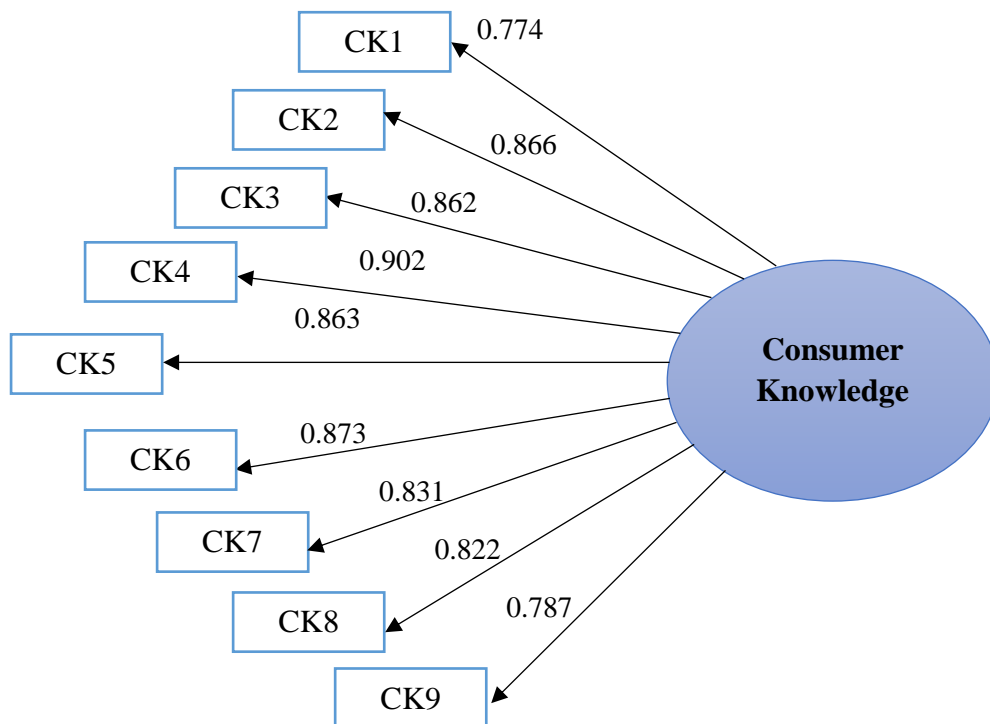
Figure 4.15: CFA Loadings of Consumer Knowledge

The factor loading values for consumer knowledge construct ranges from 0.774 - 0.902, and the highest factor loading value (0.902) was obtained for "I recognize the nutrition labels of Fortified Foods & Beverages" (CK4) and the lowest factor loading value (0.774) was obtained for "I know at least one product of Fortified Foods & Beverages" (CK1). Accordingly, it was confirmed that all the indicators were well above the minimum required values.

4.14.6 Purchase Intention

The confirmatory factor analysis results of all the indicators under purchase intention construct is diagrammatically presented in Figure 4.16.

The factor loading values range from 0.877 - 0.936, and the highest factor loading value (0.936) was obtained for "I will make an effort to buy Fortified Foods & Beverages in the near future" (PI2) and the lowest factor loading value (0.877) was obtained for "I intend to consume Fortified Foods & Beverages if they are available for purchase" (PI4).
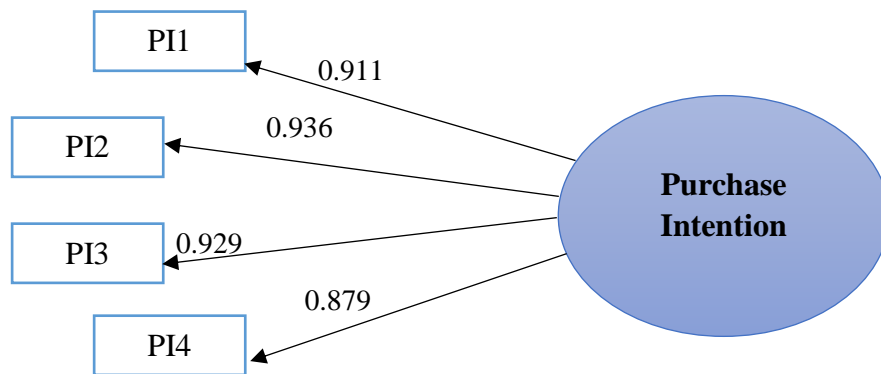
Figure 4.16: CFA Loadings of Purchase Intention

4.14.7 Consumer Acceptance

The confirmatory factor analysis results of all the indicators under consumer acceptance construct is diagrammatically presented in Figure 4.17.
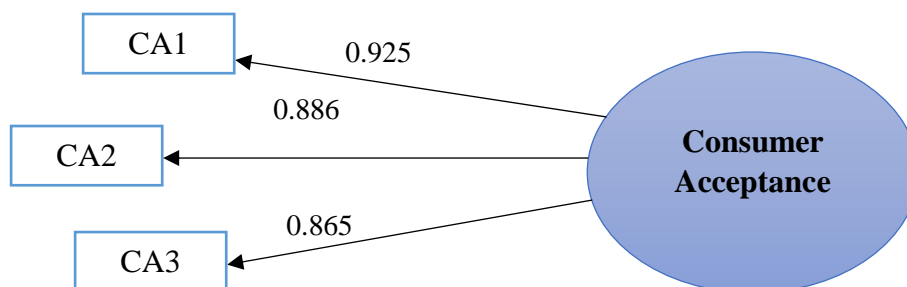

Figure 4.17: CFA Loadings of Consumer Acceptance

The factor loading values range from 0.865 - 0.925, and the highest factor loading value (0.925) was obtained for "I would recommend others consumption of Fortified Foods & Beverages" (CA1) and the lowest factor loading value (0.865) was obtained for "I intend to continue using Fortified Foods & Beverages" (CA3).

4.15 CONCLUSION OF THE MEASUREMENT MODEL ANALYSIS

As recommended by Hair et al. (2013) the present study evaluated the measurement model before advanced analysis of the structural model, which provided good results for reliability and factor validity of all the study constructs. The confirmatory factor analysis ensures the soundness in the measurement model for advanced data analysis. Hence, the analysis can be forwarded to the next phase for correlation analysis of study measures and structural model evaluation.

4.16 CORRELATION ANALYSIS OF STUDY MEASURES

The study has employed the statistical measure of correlation, which depicts the strength of the relationship between two or more variables and the extent to which they fluctuate (Cohen et al. 2014). It helps to figure out the variables that seem to interact with each other and quantify the strength of the measurement variables. The study has used Pearson correlation coefficient, which measures the strength of the linear association between two or more variables.

4.16.1 Health Consciousness and Attitude

The correlation analysis ($r = 0.395$ and $p < 0.001$) revealed that health consciousness has a weak positive linear relationship on consumer attitude towards branded FFBs (Table 4.29).

Table 4.29: Correlation between Health Consciousness and Attitude

		Health Consciousness
Attitude	r	0.395***
	p	0.000

Note: r – is Pearson Correlation, p – is Level of Significance, Correlation is significant at the 0.001 level
***p < 0.001
Source: Research Survey Data

143

The study results confirm that when consumers are more concerned about their health they may have a more positive attitude towards consumer branded FFBs. This result is in support of previous study results of Kim and Seock (2009) that health consciousness has a weak positive correlation with attitude towards natural beauty care products.

4.16.2 Attitude, Subjective Norms, Perceived Behavioral Control, Consumer Knowledge and Purchase Intention

In order to probe the relationship between independent variables and dependent variable, the study further extended the correlation analysis among attitude, subjective norms, perceived behavioural control, consumer knowledge, and purchase intention (Table 4.30).

Table 4.30: Correlation between Attitude, Subjective Norms, Perceived Behavioural Control, Consumer Knowledge and Purchase Intention

		AT	SN	PBC	CK
Purchase	r	0.624***	0.432***	0.604***	0.451***
Intention	p	0.000	0.000	0.000	0.000

Note: r – is Pearson Correlation, p – is Level of Significance, Correlation is significant at the 0.001 level
***p < 0.001
AT: Attitude,   CK: Consumer Knowledge,   PBC: Perceived Behavioural Control,   SN: Subjective Norms
Source: Research Survey Data

a) Attitude and Purchase Intention

The correlation analysis indicated that attitude (r = 0.624 and p < 0.001) has a highly positive relationship on consumer's purchase intention towards branded FFBs. It revealed that when attitude towards FFBs increases, the purchase intention towards branded FFBs also increases substantially. This is in accordance with the findings of the earlier studies (O'Connor and White 2010; Mahesh 2013) in green products and functional foods.

b) Perceived Behavioural Control and Purchase Intention

The correlation analysis revealed that perceived behavioural control (r = 0.604 and p < 0.001) has a strong positive relationship on consumer's purchase intention towards branded FFBs. It indicated that when a consumer has more control over his/her behaviour, it may result in more intention to purchase branded FFBs. This result is in agreement with the findings of Yeon and Chung (2011) in organic personal care products.

c) Subjective Norms and Purchase Intention

Further, it was found that subjective norms (r = 0.432 and p < 0.001) had a weak positive linear relationship on consumer's purchase intention towards branded FFBs.

d) Consumer Knowledge and Purchase Intention

Consumer knowledge (r = 0.451 and p < 0.001) has a weak positive linear relationship on consumer's purchase intention towards branded FFBs.

4.16.3 Purchase Intention and Consumer Acceptance

The study tried to identify the strength of relationship between purchase intention and consumer acceptance. The correlation analysis (r = 0.557 and p < 0.001) revealed that purchase intention has a moderate positive relationship on consumer acceptance towards branded FFBs (Table 4.31).

Table 4.31: Purchase Intention and Consumer Acceptance

		Purchase Intention
Consumer	r	0.557***
Acceptance	p	0.000

Note: r – is Pearson Correlation, p – is Level of Significance, Correlation is significant at the 0.001 level
***p < 0.001
Source: Research Survey Data

Summary of Correlation Matrix

The correlation matrix of all the variables considered in the study is presented in Table 4.32. The correlation coefficients revealed that all the study constructs are significantly

correlated with each other (p < 0.001). The correlation coefficient between attitude and health consciousness construct was (0.395) at p < 0.001 level, which provides initial support to the proposed hypothesis (H2).

Table 4.32: Correlation Matrix of All the Study Constructs

		HC	AT	SN	PBC	CK	PI	CA
HC	r	1	0.395					
	p	0.000	0.000					
PI	r		0.624	0.432	0.604	0.451		
	p		0.000	0.000	0.000	0.000		
CA	r						0.557	1
	p						0.000	0.000

Note: r – is Pearson Correlation, p – is Level of Significance, Correlation is significant at the 0.001 level
***p < 0.001
AT: Attitude, CA: Consumer Acceptance, CK: Consumer Knowledge, HC: Health Consciousness, PBC: Perceived Behavioural Control, PI: Purchase Intention, SN: Subjective Norms
Source: Research Survey Data

The highest correlation emerged between attitude and purchase intention variables (0.624) at p < 0.001 level, which indicates that the relationship between these two variables is highly significant. The correlation coefficient between perceived behavioural control and purchase intention construct was found to be (0.604) at p < 0.001 level, which shows that the relationship between these two variables is highly significant. The correlation between consumer knowledge and purchase intention was placed in the third position (0.451) at p < 0.001 level. The least correlation was emerged between subjective norms and purchase intention construct (0.432) at p < 0.001 level. The correlation results provide a preliminary support to the proposed hypotheses (H3, H4, H5, and H6), which can be tested using the structural equation modelling.

The correlation coefficient between purchase intention and consumer acceptance construct was 0.557 at p < 0.001 level, which indicates that the relationship between these two variables is highly significant and provides initial support to the proposed hypothesis (H7).

4.17 EVALUATION OF STRUCTURAL MODEL OF THE STUDY

This section focuses on the evaluation of the structural model. The assessment of the structural model was done in order to inspect the predictive power and strength of the relationship between the variables in a hypothesis (Hair et al. 2013) and involves the following steps (Hair et al. 2013).

1. Diagnosing collinearity among the measurement constructs;

2. Assessing significance and relevance of the structural model path coefficients;

3. Evaluating the R^2 values of the model;

4. Assessment of the effect size of the model (f^2); and

5. Assessment of the predictive relevance (Q^2).

4.17.1 Collinearity Statistics

Multi-collinearity is a situation in multiple regression in which the independent variables highly correlate with each other (Salmeron et al. 2016). Tolerance and Variance Inflation Factor (VIF) were the two collinearity diagnostic factors used as an indicator of multicollinearity. Research studies recommended different acceptable levels of tolerance and VIF. As a rule of thumb, the tolerance value should be above 0.20 or 0.10 and a value of less than 5 is recommended as the maximum level of VIF (O'brien 2007; Hair et al. 2013). In the present study all the independent variables are examined individually for multicollinearity check. Table 4.33 shows the collinearity statistics obtained using SPSS 23 software.

It was observed that all the VIF values were less than 5, which satisfied the threshold set for the collinearity assessment and accordingly, it was confirmed that all independent variables like health consciousness, attitude, subjective norms, perceived behavioural control, consumer knowledge, and purchase intention are not highly correlated to each other. Thus, the data set was supported for further analysis.

Table 4.33: Collinearity Statistics

DV→ IV↓	HC VIF	AT VIF	SN VIF	PBC VIF	CK VIF	PI VIF
HC		1.38691	1.3577	1.3851	1.37375	1.39403
AT	1.74012		1.76215	1.73455	1.74807	1.47295
SN	1.28537	1.32965		1.33063	1.30766	1.27639
PBC	1.85535	1.85184	1.88269		1.70963	1.67749
CK	1.50867	1.53008	1.51689	1.40166		1.53811
PI	2.14561	1.8069	2.07509	1.92749	2.15565	

Note: DV= Dependent Variable, IV= Independent Variable, VIF= Variance Inflation Factor
AT: Attitude,   CA: Consumer Acceptance, CK: Consumer Knowledge,   HC: Health Consciousness,
PBC: Perceived Behavioural Control,   PI: Purchase Intention,   SN: Subjective Norms
Source: Research Survey Data

4.17.2 Structural Model Path Coefficients

The PLS-SEM algorithm technique through Smart PLS software was utilised to estimate the hypothesised path coefficients (structural model relationships). The bootstrapping technique was used to estimate the PLS path model (Hair et al., 2016). In this technique "a large number of subsamples (i.e., bootstrap samples) are drawn from the original sample with replacement" (Hair et al. 2013). The procedure was done with 5000 bootstrap samples in order to get a better path coefficient model and the thumb rule of no sign change option was followed (Hair et al. 2013).

As per the thumb rule of Hair et al. (2013), the t-values for the two tailed test ranges from t = 1.56 (α = 0.10), t = 1.96 (α = 0.05), and t = 2.57 (α = 0.01). In the present study, 95 percent of confidence level was considered for hypotheses testing. The path coefficient values of the structural model relationships are presented in Table 4.34.

Table 4.34: Bootstrapped Critical Ratio Test with 5000 Sub-Samples for the Proposed Model

Path	Hypothesis	β-Value	t-Value	Results
HC → AT	H2	0.414**	14.533	Accepted
AT → PI	H3	0.370**	11.877	Accepted
SN → PI	H4	0.150**	6.224	Accepted
PBC → PI	H5	0.305**	9.617	Accepted
CK → PI	H6	0.059*	2.171	Accepted
PI → CA	H7	0.577**	21.256	Accepted

*Note: *= p < 0.05 (95%), **= p < 0.01 (99%)*
AT: Attitude,   CA: Consumer Acceptance, CK: Consumer Knowledge,   HC: Health Consciousness,
PBC: Perceived Behavioural Control,   PI: Purchase Intention,   SN: Subjective Norms
Source: Research Survey Data

The path between Health Consciousness (HC) and Attitude (AT) showed significant with β value of 0.414 ($p < 0.01$). Considering the path towards Purchase Intention (PI), predictor variables like Attitude (AT), Subjective Norms (SN), Perceived Behavioural Control (PBC), and Consumer Knowledge (CK) confirmed a significant path with β value of 0.370, $p < 0.01$, 0.150, $p < 0.01$, 0.305, $p < 0.01$, and 0.059, $p < 0.05$ respectively. The β value obtained for the path between Purchase Intention (PI) and Consumer Acceptance (CA) was 0.577 ($p < 0.01$) or 57 percent, which is a highly significant path in the structural model relationship. While the least significant path ($p < 0.05$) was between Consumer Knowledge (CK) and Purchase Intention (PI) (β = 0.059 or 5%). Figure 4.18 illustrates the structural model results of the proposed consumer acceptance model with path coefficients and R^2 values.
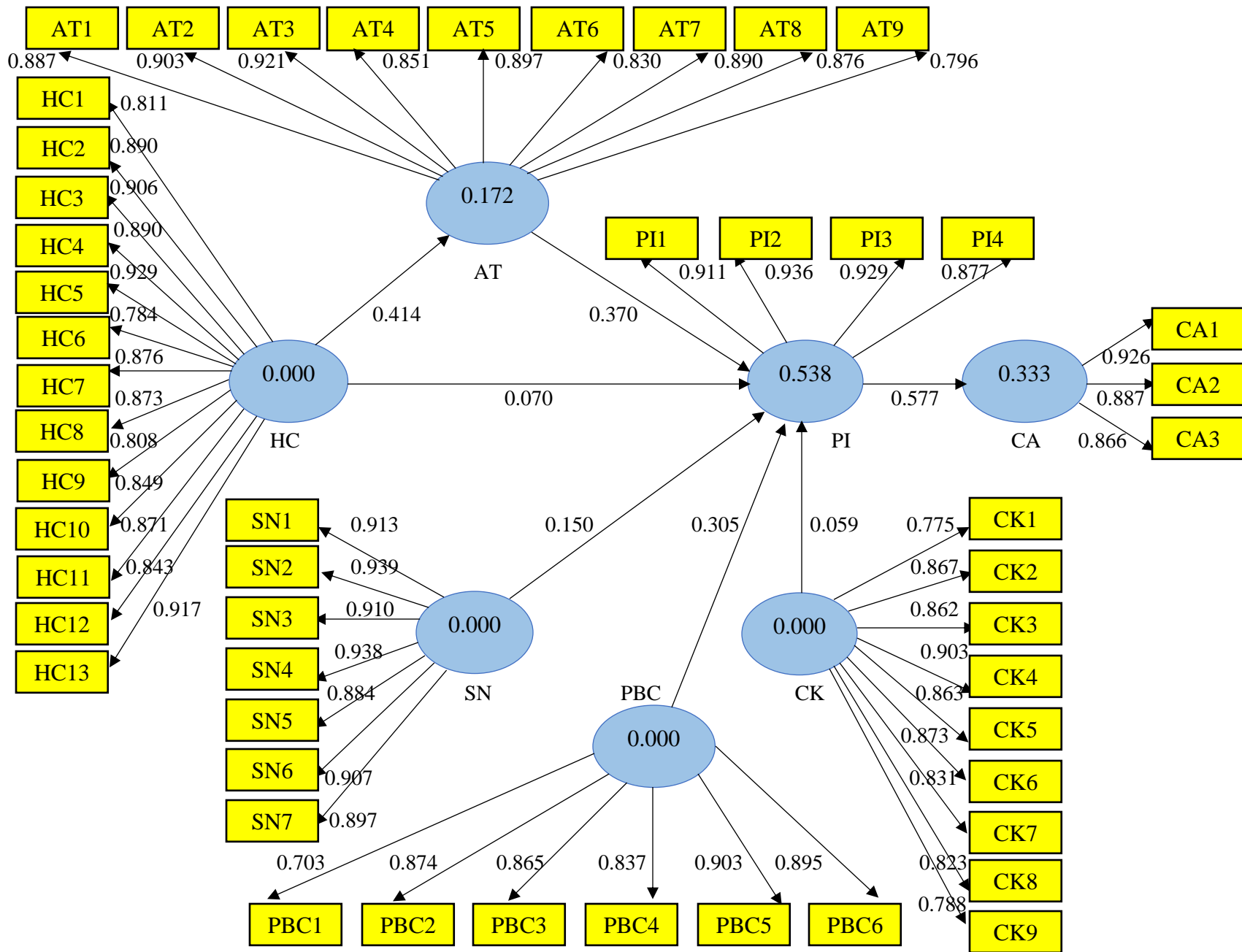
Figure 4.18: Proposed Consumer Acceptance Model for Branded FFBs

150

4.18 RESULTS OF HYPOTHESES TESTING

The hypotheses in the study were tested by performing the SEM technique, and it was found that the paths were significant at 99 percent and 95 percent confidence levels (p < 0.01 and p < 0.05). The following hypotheses are proposed in the study along with the test results obtained from the PLS SEM.

4.18.1 Health Consciousness and Attitude

H2: Health consciousness of the consumer is significantly related to attitude towards branded FFBs

The path between HC to AT was found to be positively significant at $p < 0.01$ level with t-value = 14.533. Hence, the hypothesis H2 is accepted. The results corresponds with finding of previous research study (Chen 2009) in attitudes (β = 0.42) and behaviour towards organic foods and also consistent with Williams and Hammit (2001). While studies regarding functional food choice (Landstrom et al. 2007; Naylor et al. 2009; Chen 2011) revealed that health consciousness was the strongest predictor of attitudes as consumers with more health concerns would have better attitudes toward healthy eating (Sun 2008). However, the results of the present study refutes the previous study findings of Magnusson et al. (2003), Tarkiainen and Sundqvist (2005) , and Michaelidou and Hassan (2008) in which health consciousness appears to be the least factor in predicting attitude towards organic foods (β = 0.14, β = 0.242, β = 0.33) respectively.

In short, the present study has considered health consciousness as the strongest predictor (β = 0.414**) of attitude towards branded FFBs and attitude was considered as a mediating variable between health consciousness and purchase intention of FFBs. Hence, it is concluded that health consciousness plays a vital role in forming positive attitude towards branded FFBs in India.

4.18.2 Attitude and Purchase Intention

H3: Attitude towards FFBs is positively related to consumer's intention to purchase branded FFBs

The path between AT to PI is found to be positively significant at $p < 0.01$ level with t-value = 11.877. Hence the hypothesis H3 is supported. This result is in accordance with the theory of planned behaviour and earlier research studies whereby consumers' willingness to use functional foods were mostly influenced by consumer's attitude (Urala and Lahteenmaki 2003). Previous studies in multiple contexts (Berger et al. 1994; Sparks et al. 1995; Magnusson et al. 2001; Shaw and Shiu 2002; Magnusson et al. 2003; Choo et al. 2004; Michaelidou and Hassan 2008) have established attitude as a strong predictor for purchase intention. Recent studies (Paul et al 2016) also shows that positive consumer attitudes affect purchase intention significantly in green product purchase behaviour (β-value 0.31). More over an Indian study among innovative Indian consumers revealed that attitudes had a substantial impact on behavioural intention towards new food product purchasing (Choo et al. 2004).

Compared to previous studies (Tarkiainen and Sundqvist 2005; Chen 2007; Michaelidou and Hassan 2008) on attitudes towards purchase intention of organic foods ($\beta = 0.56$, $\beta = 0.61$, $\beta = 0.558$), the present study has the β- value of 0.370 in FFBs context. However, attitude emerged as the highest contributing factor of purchase intention towards FFBs in the present study.

4.18.3 Subjective Norms and Purchase Intention

H4: Subjective norms significantly influences consumer intention to purchase branded FFBs

The path coefficient between SN to PI is found to be positively significant at $p < 0.01$ level with t-value = 6.224. Hence the hypothesis H4 is accepted. Earlier studies confirmed the significance of subjective norms. In synthetic functional foods subjective norms had a larger influence ($\beta = 0.244$) on purchase intention (Rezai et al. 2014). In functional foods O'Connor (2010) identified a significant influence of subjective norms on purchase intention ($\beta = 0.222$). Research study in organic foods (Chen 2007; Basha and Lal 2019) also supported the positive influence ($\beta = 0.69$), ($\beta = 0.21$) of subjective norms on purchase intention respectively. However, it is concluded that subjective norms does not have an important role in influencing purchase intention in the case of

FFBs. This results supported with Paul et al. (2016) that subjective norm does not significantly predict (β-value 0.05) purchase intention in green product consumption.

Hence, present study conclude that subjective norms or social influence moderately influence purchasing of FFBs.

4.18.4 Perceived Behavioural Control and Purchase Intention

H5: Perceived behavioural control of a consumer is significantly related to consumer intention to purchase branded FFBs

The path coefficient between PBC to PI is found to be positively significant at $p < 0.01$ level with t-value = 9.617. Hence the hypothesis H5 is supported.

This finding corresponds with the results of previous research (Wang et al. 2013) that PBC has a significant impact (β-value 0.378) on purchase intention towards remanufactured products. This finding is also in accordance with Mullan et al. (2013) who suggested that PBC is an important predictor (β-value 0.354) of intention in safe food handling among adolescents consumers. The results also is in supports Paul et al. (2016) where by PBC has substantial effect (β-value 0.29) on purchase intention towards green products.

PBC did not have an important influence on purchase intention in the studies conducted by (Chen 2007) in organic foods ($\beta = 0.21$) and Cook et al. (2002) in the case of GMF ($\beta = 0.243$). Further, various other researchers (O'Connor 2010; Rezai et al. 2014; Yazdanpanah and Forouzani 2015), pointed that PBC is not an important predictor of purchase intention in the case of functional foods. Interestingly, in the present study PBC emerged as a vital factor for purchase intention towards FFBs.

4.18.5 Consumer Knowledge and Purchase Intention

H6: Consumer knowledge significantly influences purchase intention towards branded FFBs

The path between CK to PI is found to be positively significant at $p < 0.05$ level with t-value = 2.171. Hence the hypothesis H6 is supported. This finding is in accordance with Mullan et al. (2013) that knowledge has a small direct effect on intention and

behavior to perform safe food handling. However, the study results refuted the IFIC (1999) findings that knowledge is one of the pivotal factors that compels to consume functional foods. Further the study contradicts with the findings of past research studies (Peter and Olson 1996; Nysveen and Pedersen 2005) that consumers with a high level of product knowledge have more inclination towards purchase intention. Nevertheless, the findings confirmed that there was a slight and positive effect of consumer knowledge variables in purchase intention towards branded FFBs. The finding corresponds with the results of Sapp (1991) that nutritional knowledge is not significantly related to intentions towards beef consumption.

Even though the relationship was significant, results indicated that consumer knowledge has the least influence on purchase intention. Accordingly, the research gap on consumer knowledge aspects on FFBs were investigated and concluded that knowledge is a necessity but not a requisite criterion that leads to purchase intention (Ajzen 2011). The results could be due to the reason that Indian consumers are not much aware of the nutritional benefits of FFBs and consumers may not be able to understand the nutritional information provided on the label. Hence it is concluded that consumer knowledge barely affect purchasing of FFBs. In order to improve consumer knowledge with FFBs, marketers has to focus on information and promotion campaigns on FFBs.

4.18.6 Purchase Intention and Consumer Acceptance

H7: Purchase intention is significantly related to consumer acceptance of branded fortified foods & beverages

The path coefficient between PI to CA is found to be positively significant at $p < 0.01$ level with t-value = 21.256. Hence the hypothesis H7 is supported and points out that purchase intention can significantly affect the consumer decision as to what he/she will buy and whether he/she would accept branded FFBs. This result is consistent with the theory of planned behavior (Ajzen 1991) and the previous research results of Tarkiainen and Sundqvist (2005) and Wee et al. (2014) proposes that purchase intention positively leads to the actual purchase behaviour of organic foods and purchase of certain products in the online shopping environment (Brown et al. 2003).

154

This result is in line with the previous study in sugar-sweetened beverages (Riebl et al. 2016). An earlier study on organic food revealed that buying behavior is significantly affected by the purchase intention ($\beta = 0.295$) with R square value of 0.165 (Wee et al. 2014).

The study confirmed that the modified TPB model predicts consumer behaviour better than the original model.

4.19 MEDIATING INFLUENCE OF ATTITUDE IN THE RELATIONSHIP BETWEEN HEALTH CONSCIOUSNESS AND PURCHASE INTENTION

The mediating effect of attitude on the relationship between health consciousness and purchase intention was executed using the bootstrapping techniques available with the PLS SEM. In addition, the Baron and Kenny approach was adopted for testing the mediation. Further, to confirm the mediation effect, the Sobel test statistics was computed.

The Baron and Kenny approach is the most commonly used method to assess the mediation effect of one independent variable on another dependent variable. The establishment of the mediation effect can be done only when the four criterions of Baron and Kenny (1986) are established, and which are as follows:

a) There must be a significant relationship between the independent and dependent variable;

b) There must be a significant relationship between the independent and mediator variable;

c) There must be a significant relationship between the mediator variable and the dependent variable; and

d) Once the mediator variable is added, the relationship between the independent and dependent variable should become either non-significant or lower the strength of the relationship.

Full or total mediation is possible when the direct path becomes non-significant in the mediation model. If the direct path becomes weaker, then it shows partial mediation.

155

The present study results revealed that the direct path coefficient value between consumer health consciousness and purchase intention was 0.442 at p < 0.000. The indirect effect of health consciousness on purchase intention when the mediating variable attitude was introduced was 0.225 at p < 0.000. The results showed that the direct effect of health consciousness on purchase intention becomes weaker (0.215) when the mediator variable attitude is introduced at p < 0.000. Hence, partial mediation is established.

In addition to the Baron and Kenny approach, the study utilised the Sobel test statistics for assessing the significance of the mediation effect. It was computed to check whether consumer attitude significantly carries the influence of health consciousness to the purchase intention construct. The T value computed in the Sobel test was 11.734, which is well above the required minimum value of 1.96. Figure 4.19 shows the analysis results of the mediation test using the SmartPLS.

Earlier research studies (Michaelidou and Hassan 2008; Magnusson et al. 2003) have revealed that attitude has a vital mediating role between health consciousness and purchase intention. Thus, before proceeding to test the relationship between attitude and purchase intention, the proposed model was analysed to determine whether attitude mediated a relationship between health consciousness and purchase intention towards FFBs. The mediation analysis showed that attitude partially mediated in the relationship between health consciousness and purchase intention towards branded FFBs. The study result is in not in agreement with the premises of an earlier research study (Michaelidou and Hassan 2008) that the relationship between health consciousness and purchase intention is not fully mediated by attitude, but partial mediation was found to be significant at p < 0.01 level with β-value of 0.370.

The analysis indicated that health consciousness factors like consumer concern about health, responsibility to take care of own health, attention to prevent disease and illness, etc. can be mitigated by the presence of consumer attitude variables such as consumer's positive attitude towards quality, healthiness and taste of FFBs, and which in turn, could lead to purchase intention towards branded FFBs. Hence, the significance of mediation of the attitude construct in the proposed model is established.
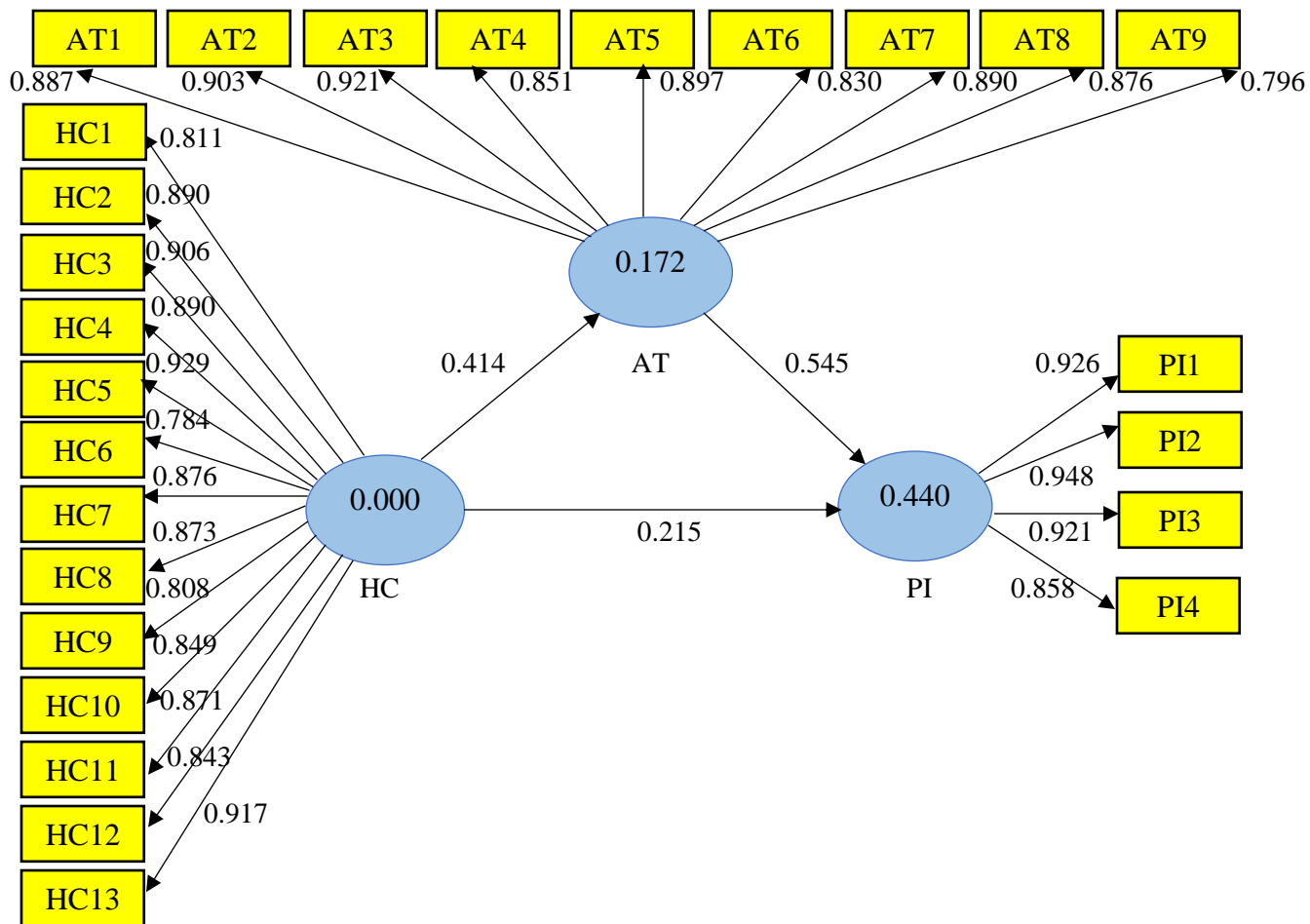
Figure 4.19: Mediation Analysis Results

4.20 COEFFICIENT OF DETERMINATION R SQUARE (R^2)

R-squared (R^2), also called the coefficient of determination, is the most widely used statistical measure to assess a structural model. It is defined as "a measure of the model's predictive accuracy and is calculated as the squared correlation between a specific endogenous construct's actual and predicted values" (Hair et al. 2013). It is a statistical measure of how close the data is to the fitted regression line. It is always between 0 and 100 percent and it is difficult to fix a rule of thumb for an acceptable value of R-square as the value varies according to model complexity and the nature of the research (Hair et al. 2013). According to Chin (1998) and Henseler et al. (2009), R^2 values of 0.67, 0.33, and 0.19 are substantial, moderate, and weak, respectively. Whereas in consumer behaviour research, R^2 value of 0.20 and above are considered as strong explanatory power (Hair et al. 2013).

The coefficient of determination, R^2 was 0.333 for the consumer acceptance (CA) variable. This means that the six latent variables (HC, AT, SN, PBC, CK and PI) substantially explain 33.3 percent of variance in consumer acceptance. HC, AT, SN, PBC, and CK together explain 53.8 percent of the variance of PI and accordingly purchase intention turned as the highest explanatory variable in the study. Hence, it can be concluded that the proposed model has significant explanatory power towards consumer acceptance of branded FFBs.

In addition to R^2 values, it is essential to validate the explaining power of the model through adjusted R^2 value to confirm the variation of R square explained in the original model (Hair et al. 2013). According to Hair et al. (2013), the difference between R^2 and Adjusted R^2 should not be more than 0.50. The adjusted R-square value for the present model was arrived from the SPSS software. It was observed that both the R-square and the adjusted R-square values were nearly the same. Hence, it satisfies the criteria. Table 4.35 shows both the R^2 and the adjusted R^2 values.

Table 4.35: R^2 and Adjusted R^2 values

Model	R	R- square	Adjusted R-square
1	0.557[a]	0.310	0.309
2	0.731[b]	0.534	0.532

Note: a. Predictors: (Constant), PI, Dependent Variable:CA

b. Predictors: (Constant), AT, SN, PBC, CK, Dependent Variable: PI

Source: Research Survey Data

Since the SPSS 23 uses a different determination of coefficient formula, there was a slight difference in the arrived R-square values between 0.310 (SPSS 23) and 0.333 (SmartPLS) for model 1. For model 2, the R-square values were 0.534 (SPSS 23) and 0.538 (SmartPLS). Hence, it can be concluded that there is not much difference in the adjusted R^2 values over the R^2 values and accordingly, the assessment of the structural model using R^2 values was well-established.

4.21 ASSESSMENT OF EFFECT SIZE OF THE MODEL (f^2)

The evaluation of effect size is an inevitable part in the assessment of the structural model. The present study considered Cohen's f^2, a standardized measure of effect size and denoted it as 'f^2'. The assessment of effect size helps to understand the change in R^2 value when one particular independent variable or exogenous variable is omitted from the model (Hair et al. 2013). Specifically, the effect size examines how much a predictor variable contributes to the R^2 value of a target construct in the structural model (Hair et al. 2013).The effect size is calculated by comparing the R-square values of the proposed model and the direct effect model (Cohen 1992). The following formula was used to assess effect size (f^2).

$$f^2 = \frac{R^2_{included} - R^2_{excluded}}{1 - R^2_{included}}$$

Where, R^2 included and R^2 excluded were the R-square values of the endogenous latent variable when a selected exogenous latent variable was included or excluded from the model (Hair et al. 2013). The measure of the effect size f^2 was evaluated using the

SmartPLS 3 software as per the guidelines of Hair et al. (2016). Earlier research studies (Cohen 1992; Chin 1998; Henseler et al. 2009) recommended that the effect size f^2 value of 0.02, 0.15 and 0.35 to be considered as small, medium, and large effects of the exogenous latent variable. Table 4.36 demonstrates the effect size f^2 value assessment for the different paths in the study.

Table 4.36: Evaluation of Effect Size f^2 of Proposed Model

	AT	CA	CK	HC	PBC	PI	SN
AT						0.22**	
CA							
CK						0.007*	
HC	0.21**						
PBC						0.13*	
PI		0.5***					
SN						0.047*	

Note: *** large or strong effects, ** medium effects, and * small effects. Source: Research Survey Data

The PI variable or study construct was found to have a strong effect on CA ($f^2 = 0.5$). The HC construct was found to have medium effect on AT ($f^2 = 0.21$). The AT construct was also observed to have medium effect on PI ($f^2 = 0.22$). It was depicted that the rest of the paths had small effects.

4.22 ASSESSMENT OF PREDICTIVE RELEVANCE OF THE MODEL (Q^2)

Stone-Geisser's Q^2 value (Geisser 1974; Stone 1974) had to be examined in order to get the predictive accuracy of the R^2 value (Hair et al. 2013) and it was stated in the structural model, that Q^2 value greater than zero for a reflective endogenous variable is considered as an indicator of the predictive relevance for that particular variable (Hair et al. 2013). The Blindfolding procedure option from the SmartPLS software was utilised to obtain the measure of predictive relevance Q^2. The cross-validated redundancy method was used for the present study and was suitable for the PLS-SEM approach and the same was used as a measure of Q^2 (Hair et al. 2013). Q^2 value greater

than 0.02, 0.15, and 0.35 was considered to have small, medium, and strong predictive relevance (Geisser 1974; Stone 1974). Table 4.37 shows the Q^2 results.

Table 4.37: Q^2 Results

Endogenous Constructs	AT	PI	CA
Q^2 Value	0.178	0.563	0.306

Source: Research Survey Data

The results show that the Q^2 values of all the endogenous constructs, Attitude (AT), Purchase Intention (PI), and Consumer Acceptance (CA) are greater than zero. This confirmed that jointly with significant path coefficients and R^2 values, Q^2 values also support the predictive power of the conceptual model of the study.

4.23 GOODNESS OF FIT (GoF) OF THE PROPOSED MODEL

Establishing the goodness of fit of the proposed model was the final criterion in the evaluation of the structural model of the present study. The study have already established all other criteria such as assessment of R^2 values, evaluation of effect size (f^2) of the proposed model, and predictive relevance of the model (Q^2). Tenenhaus et al. (2005) recommended a global goodness of fit index for the proposed model. The goodness of fit can be in the range of 0 and 1, and value 1 indicates a good model fit. Earlier researchers (Wetzels et al. 2009) suggested goodness of fit threshold values as small $> = 0.1$, medium $> = 0.25$, and large $> = 0.36$. The Tenenhaus goodness of fit index for the present model is 0.520, which confirms that the proposed model has perfect model fit.

The Table 4.38 presents a clear picture regarding the goodness of fit indices of the proposed consumer acceptance model. It was concluded that all the model fit criteria were well supported for the proposed consumer acceptance model of the present study. Hence, the final objective of the study is achieved.

Table 4.38: Model Fit and Quality Indices

S.No.	Fit Indices
1	Average path coefficient (APC) = 0.325, P < 0.001
2	Average R-squared (ARS) = 0.349, P < 0.001
3	Average adjusted R-squared (AARS) = 0.348, P < 0.001
4	Average block VIF (AVIF) = 1.512, acceptable if < = 5, ideally < = 3.3
5	Average full collinearity VIF (AFVIF) = 1.775, acceptable if < = 5, ideally < = 3.3
6	Tenenhaus GoF = 0.520, small > = 0.1, medium > = 0.25, large > = 0.36
7	Sympson's paradox ratio (SPR) = 1.000, acceptable if > = 0.7, ideally = 1
8	R-squared contribution ratio (RSCR) = 1.000, acceptable if > = 0.9, ideally = 1

Source: Research Survey Data

4.24 CHAPTER SUMMARY

Chapter 4 deals with data analysis and interpretation, and this was done using the IBM Statistical Package for Social Science (SPSS) 23.0 and Smart PLS software. Accordingly, the socio-demographic details were explored and descriptive and inferential statistics analysis was conducted. The correlation analysis of the study measures was performed to see the strength of the relationship between two or more variables. To test the reliability and validity of the study measures, principal component analysis and confirmatory factor analysis were executed and the results were presented. The test of hypotheses dealing with different study variables and consumer acceptance was analysed and the interpretations were presented. The evaluation of measurement and structural model was done and the different factors contributing towards consumer acceptance was analysed by SEM using the PLS method. The conceptual model proposed by the study was supported by the data. The chapter also discussed the effect size of the model (f^2), and predictive relevance of the model (Q^2). The Goodness of Fit (GoF) of the proposed model was assessed and model fit criteria were well supported.

CHAPTER 5

FINDINGS AND CONCLUSIONS

5.1 CHAPTER OVERVIEW

Based on the results obtained in the previous chapter, present chapter discusses the findings and conclusion of the research study. Section 5.2 highlights all the major findings of the study. Other findings are provided in Section 5.3. Section 5.4 describes conclusion of the study. The recommendations are detailed in Section 5.5. Theoretical implications of the study is provided in Section 5.6. Section 5.7 highlights the managerial implications of the study. Limitations of the study is briefly provided in Section 5.8. Chapter concludes with providing direction for future research which is discussed in Section 5.9.

Positivist research paradigm had been followed in the study that enables the generalization of research findings to the study population. The research approach used in the study is both deductive and inductive reasoning. The research design for the study is descriptive in nature. The study has followed survey research strategy and applied quantitative research methods for measuring consumer acceptance of branded FFBs in India. An evaluation on the relationship between different factors predicting consumer acceptance of branded FFBs has been dealt in the study. To address the research questions and objectives, seven major hypotheses were stated and tested empirically. The study is cross sectional in nature and data was collected from consumers across Tier I metro cities in India. The data collected was considered for multi variate data analysis and interpreted.

The study has utilized TPB as the theoretical background. Two more constructs namely, health consciousness and consumer knowledge have been incorporated into the TPB model, to assess the predictability of the model. Descriptive and inferential statistics have been done for the socio-demographic variables. Smart PLS algorithm technique was carried out to evaluate the construct validity of the measurement model which involves the comprehensive examination of factor unidimensionality, construct reliability, convergent validity, and discriminant validity of the study constructs.

The assessment of the structural model has been done in order to inspect the predictive power and strength of the relationships between the variables in the hypotheses. Evaluation of the structural model involves diagnosing collinearity among the measurement constructs, assessing significance and relevance of the structural model path coefficients, evaluation of the R^2 values of the model, assessment of effect size of the model (f^2), and assessment of predictive relevance (Q^2). The analysis results supported the structural model of the study measures and consumer acceptance model for branded FFBs is proposed for the Indian health food market.

5.2 MAJOR FINDINGS OF THE STUDY

5.2.1 Findings on Health Consciousness and Consumer Attitude

The health consciousness variable had a weak positive linear relationship with consumer attitude in relation to branded FFBs ($r = 0.395$ and $p < 0.001$). Health consciousness had a significant positive influence on consumer attitude in the case of FFBs (H2: $t = 14.533$, $\beta = 0.414$, $p < 0.01$).

5.2.2 Findings on Factors Influencing Purchase Intention

a) Attitude

Attitude had a highly positive relationship with consumer's purchase intention with reference to branded FFBs ($r = 0.624$ and $p < 0.001$). Attitude was the prime factor and had the highest positive impact on purchase intention with respect to branded FFBs (H3: $t = 11.877$, $\beta = 0.370$, $p < 0.01$).

b) Perceived Behavioural Control

Perceived behavioural control had a strong positive relationship on consumer's purchase intention ($r = 0.604$ and $p < 0.001$). PBC emerged as the second most important factor for predicting purchase intention of FFBs. The results suggest that PBC is a vital factor of purchase intention in the case of branded FFBs (H5: $t = 9.617$, $\beta = 0.305$, $p < 0.01$).

c) Subjective Norms

Subjective norms had a weak positive linear relationship with consumer's purchase intention with regard to branded FFBs (r = 0.432 and p < 0.001). The path coefficient between subjective norms and purchase intention was found to be positively significant. Subjective norms had a moderate impact on purchase intention in the case of branded FFBs (H4: t = 6.224, β = 0.150, p < 0.01).

d) Consumer Knowledge

Consumer knowledge had a weak positive linear relationship with consumer's purchase intention with regard to branded FFBs (r = 0.451 and p < 0.001). Consumer knowledge had a positive influence on purchase intention in terms of branded FFBs. Consumer knowledge had the least influence on purchase intention in the case of branded FFBs (H6: t = 2.171, β = 0.059, p < 0.05).

5.2.3 Findings on Purchase Intention and Consumer Acceptance

Purchase intention had a moderate positive relationship with consumer acceptance with respect to branded FFBs (r = 0.557 and p < 0.001). Purchase intention is the most contributing factor of influencing consumer acceptance for branded fortified foods and beverages (H7: t = 21.256, β = 0.577, p < 0.01).

5.2.4 Findings on the Mediating Effect of Attitude on Purchase Intention

Consumer attitude partially mediate on the relationship between consumer health consciousness and purchase intention for FFBs. The direct path coefficient value between consumer health consciousness and purchase intention was 0.442 at p < 0.001. The indirect effect was β = 0.225 at p < 0.001. Direct effect was β = 0.215 at p < 0.001 and The T value computed in the Sobel test was 11.734.

5.2.5 Findings on Socio-Demographic Factors Influencing Attitude

The following are the findings on test results of H1 in relation to socio-demographic variables and attitude.

a) Gender

The study results (H1c: F = 6.874, p < 0.01) highlighted a significant difference in the level of attitude towards FFBs between male and female consumers. Dummy variable regression analysis results confirmed that female consumers had a more positive attitude towards branded FFBs (β = 0.161, t = 2.622, p = 0.009).

b) Age

Age did not have any significant impact on the attitude of consumers with respect to branded FFBs (H1a: F = 0.127, p >0.05). This might be due to the reason that age of the consumers did not influence health consciousness (F = 0.976 and p >0.05) and consumer attitude remained same irrespective of age.

c) Educational Qualifications

The study results showed that no significant difference in the attitude of consumers possessing different educational qualifications (H1b: F = 2.38, p >0.05).

d) Family Monthly Income

The results revealed no variance in the level of attitude towards FFBs among the different income groups of the consumers (H1d: F = 0.986, p >0.05).

e) Type of Occupation

The study results indicated no difference in the level of attitude towards FFBs among the different occupation groups of the consumers (H1e: F = 0.395, p >0.05).

f) Marital Status

The results showed no variance in the level of attitude towards FFBs between married and unmarried groups of consumers (H1f: F = 0.047, p >0.05).

5.3 OTHER FINDINGS

5.3.1 Age Group and Lifestyle Diseases

Consumers above 45 years of age were more vulnerable to lifestyle diseases. The chi-square test of independence indicates that the health status of consumer is dependent on their age ($\chi^2 = 446.416$, df = 4, and p < 0.000).

5.3.2 Gender and Health Status of Consumers

Even though female consumers (61.1%) had more lifestyle diseases than male consumers (59.5%), the difference was not statistically significant. Chi-square test results indicated that the health status of the respondents was independent of gender ($\chi^2 = 0.222$, df = 1, and p >0.05).

5.3.3 Marital Status with Present Health Status

Married people are more prone to lifestyle diseases (69.2%). The Chi-square test results pointed out that health status of the respondent is dependent on his/her marital status ($\chi^2 = 80.837$, df = 1, and p < 0.000).

5.3.4 Findings on FFB Brands Consumed

- The most consumed FFB brand was Aashirvaad Fortified Atta. It was found that 74 percent of the consumers had used this fortified food, a popular brand of ITC.
- The second most consumed FFB product was Gold Winner Fortified Sunflower Oil. 63 percent had consumed Gold Winner Fortified Sunflower Oil, a brand of Kaleesuwari Refinery Pvt Ltd.
- 60.4 percent had used Tetley Green Tea and 59.2 percent had consumed the FFB brand Kellogg's Special K Breakfast Cereals.
- The least consumed FFB products were Bournvita Lil Champs (31.2%) and Amul PRO (25.4%), malt-based milk additives to help healthy growth.

5.3.5 Findings on Health Status of Consumers

More than 60 percent of the consumers were having at least any one of the lifestyle diseases. Lifestyle diseases were highest in Hyderabad with 66.2 percent and 70.1 percent of the self-employed respondents were found to be more vulnerable to lifestyle

diseases. Further on, the present study had confirmed that health status of consumer is dependent on their age.

5.3.6 Findings on Preferred Shopping Outlets

Supermarkets emerged as the most (84.8%) preferred shopping outlets for purchasing FFBs, followed by hypermarkets with 76 percent and retail outlets with 71.8 percent.

5.3.7 Most Preferred Sources of Information

Television emerged as the most preferred source of FFBs information available to the consumers (75.1%).

5.3.8 Most Reliable Source of Information

Health professionals were perceived as the most reliable source of information by 35.4 percent followed by nutritional labels with 26.6 percent.

5.3.9 Findings on Sample Characteristics

a) Gender

The proportion of male consumers (54.5%) in the sample was more than that of females (45.5%).

b) Age

The age distribution of the consumers revealed that 54 percent of the consumers belongs to the age group of 36-55 years. 25 percent of the consumers belong to the age group of 18-35 years and remaining 21 percent belongs to above 55years of age.

c) Marital Status

The results showed that, majority of the respondents were married (74.5%) and only 25.5 percent were unmarried.

d) Employment Status

The study revealed that, 74.3 percent of the consumers were employed and the rest 25.7 percent was unemployed. It was found that 57.6 percent of the consumers in the metro

cities were employed in the private sector followed by 22.2 percent who were employed in the Government sector.

e) Family Monthly Income

Majority of the consumers (74.2%) had a family monthly income of more than Rs.50000.

f) Education

Regarding education of consumers it was found that 37.2 percent of the consumers were educated up to 12th Standard, followed by Graduates (32.3%), and Post- graduates (27.9%).

g) Location of Residence

Among the total respondents, 48.8 percent were from Delhi metro region, followed by 20.4 percent from Bengaluru, 17 percent from Hyderabad, and 13.8 percent from Ahmedabad.

5.4 CONCLUSIONS

Based on the significant findings from the study, the following conclusions have been drawn in relation to the research objectives of the study.

5.4.1 Health Consciousness and Consumer Attitude

As a result of lifestyle changes and lack of healthy food consumption, urban Indians are more vulnerable to complex health problems and lifestyle diseases. The research gap identified that little attention has been paid to ponder on the relation between health consciousness and food choice decisions in India. Present study observed that Indian consumers are becoming more health conscious about their food choice decisions and had displayed a positive inclination towards FFBs.

The study had identified that health consciousness is an important factor for developing a positive attitude towards fortified foods. Hence, the research gap concerning role of health consciousness in FFBs in India is investigated and concluded that health consciousness plays a vital role in the formation of positive attitude in consumers towards branded FFBs in India. Previous studies pointed out that research studies

linking health consciousness and consumer attitude is fragile. Present study investigated on this and found a significant strong positive relationship between health consciousness and attitude variables. The results conclude that if the consumers are more health consciousness, their attitude towards healthier options of food products like FFBs will be significant and favorable. The recent study findings of Shin and Mattila (2018) and Husic et al. (2017) supports the present study results that health consciousness leads to the consumption of health foods.

5.4.2 Attitude and Purchase Intention

The findings revealed that consumer attitude is positively related to the intention to purchase branded FFBs. Attitude emerged as the highest factor influencing purchase intention. This result is in support with the recent study results of Wong et al. (2018) that attitude arrived as the major predictor of purchase intention. Therefore, understanding consumer attitude and its dimensions are important for the food industry to make marketing strategies and thereby promote consumer acceptance of FFBs among consumers.

The study is one of its first to measure the impact of attitude as a mediating variable between health consciousness and purchase intention towards branded FFBs in India. The result was in line with the TRA principles and attitude was found to have a partially mediating effect in the relationship between consumer health consciousness and purchase intention for branded FFBs. The findings suggest that consumers who are more concerned about their health and diet are more likely to have favorable attitudes toward purchasing FFBs. The present study investigated on the lack of knowledge about the mediating role of consumer attitude towards branded FFBs. The study conclude that consumer attitude plays significant role in purchase intention of branded FFBs. On investigating the influence of gender of consumers on attitude, the research confirmed that female consumer tend to have a more positive attitude towards FFBs.

It was observed that most of the consumers were buying FFBs as a part of their healthy lifestyle and the consumers believe that FFBs provide better health. Moreover, consumers had considered FFB brands as superior food products which can solve the health problems or enhance the health status. The results conclude that attitude is the

most contributing factor for purchase intention in the consumer acceptance model for FFBs.

5.4.3 Perceived Behavioural Control and Purchase Intention

Perceived behavioural control was identified as the second most important factor which influences purchase intention followed by attitude. This results contradicts with the findings of Bashir et al. (2018), and Wong et al. (2018) showed that PBC is not significant predictors of intention. But in the present study consumers who believe that they have either the resources or the opportunities to carry out a particular behaviour are more likely to enact the purchase behaviours. Due to the rise in disposable income of urban consumers, major shift in consumer spending was observed in the study. This increments supremacy or power of consumers over their purchase behaviour are more likely to form a strong intention to perform that behaviour. Consumers are more capable of buying FFBs. Further, it was observed that most consumers are confident that, they have enough time and money to buy FFBs whenever they want. This ability of consumers in turn influence their purchase intentions to choose branded FFBs.

5.4.4 Subjective Norms and Purchase Intention

The results show that subjective norms had a moderate influence on purchase intention towards FFBs. The result was in line with previous study results of Bashir et al. (2018), and Wong et al. (2018) that subjective norms had no significant impact on purchase intention in consumption of halal food and suboptimal food. It was identified that important referents like family, friends, and peer groups etc. does not have much influence on consumer buying decisions in the case of FFBs. One possible explanation for this result is that the majority of the consumers are self-analytic and they are self-conscious about the negative impact of unhealthy eating habit. Hence, the study concludes that consumers are not considering the suggestions of the subjective norm groups when they make their food choice decisions. Moreover, most of the consumers believe that TV programs and newspaper they read are not helping them to engage in healthy eating.

However, the study results give guidelines to the food marketers to educate health professionals on functional benefits and uniqueness of fortified foods, as it was

observed that most of the consumers had considered health professionals like nutritionist and dietitians as the reliable sources of information with respect to the functional benefits of FFBs.

5.4.5 Consumer Knowledge and Purchase Intention

Food industry need to understand the different factors affecting consumer acceptance of FFBs. The study establishes the role of consumer knowledge in FFBs purchase intention. Compared to the effect of other TPB variables, consumer knowledge is not a significant predictor of purchase intention of branded FFBs. This may be due to the reasons that FFBs are novel concept to the Indian consumer as a result they have little knowledge about FFBs health benefits, and its availability in the market count. The study results conclude that creating purchase intention towards FFBs cannot be assured through consumer knowledge alone. This supports the general argument that knowledge is a necessity but just this factor alone is not sufficient enough for executing a particular behaviour (Fishbein and Ajzen 2011).

The role of consumer knowledge concerning healthy eating was not much researched in the marketing literature. The results revealed that consumer knowledge had a poor impact on intention to purchase FFBs. Which supports with the study findings of Adams (1997) and Demartini et al. (2019) that information/knowledge had no impact on consumer intention or behaviour. Research gap with regards to the nutritional labelling interventions like the effects of labelling information, health claims, and symbols provided on the labels especially in the developing country perspective were investigated in the study. The study found that these dimensions of consumer knowledge factors had little influence on purchase intention towards FFBs. The research gap identified the lack of clarity on the use of nutritional labelling in predicting purchase intention towards FFBs in the marketing literature. Present study had made an attempt to fill this knowledge gap. It was identified that most of the consumers were not able to understand the scientific terms and nutritional information provided on the labels. The recent study findings of Bromage et al. (2019) is in line with the present study results that knowledge and understanding of food fortification is low among consumers. Therefore, it is required of the marketer to provide nutritional information in an understandable way to the consumers.

Hence, marketer should focus on enhancing consumers' knowledge (Van Huy et al. 2019) for the promotion of health food consumption. Hence, it is vital for the food industry to focus on the extent of consumers' knowledge factors and they need to disseminate proper information among the public to educate and increase their knowledge with regard on the health benefits of FFBs.

5.4.6 Purchase Intention and Consumer Acceptance

The study identified the need for developing a consumer acceptance model to determine a comprehensive understanding of consumers' behavioural pattern towards FFBs. Since Indian FFB industry is in the nascent stage and showing steady growth, the significance of consumer acceptance is pertinent. Studies on consumer acceptance of functional foods were under researched. Present study bridges this gap in the consumer behaviour literature. Hence, it was necessary to identify the diverse factors that led to consumer acceptance. Present study had assessed the consumer acceptance construct and identified that most of the population under study had a positive intention to accept FFBs as a part of their eating habit and they are ready to continue the consumption of FFBs in future. Further, the study deduces that the majority of the consumers preferred to buy branded FFBs.

The study results confirmed the findings of Ham et al. (2018) in organic purchase behaviour that purchase intention continue to be the significant strong positive predictor of consumer actual purchase behaviour. Purchase intention emerged as the highest contributing factor for consumer acceptance of branded FFBs. Consumers with high purchase intention to consume FFBs are more likely to accept FFBs. Indian consumers are willing to purchase FFBs and they are ready to recommend FFBs to their friends and relatives. Purchase intention is mainly determined by consumer attitude followed by perceived behavioural control of the consumer. The outcome of the consumer acceptance model shows that intention to purchase FFBs is significantly contributing to the acceptance of branded FFBs.

Attitude mediates the relationship between purchase intention and health consciousness. Consumers' increasing health consciousness gives an opportunity for the players of the food industry, to come up with more diversified range of healthy food

products to explore the market potential. Indian consumers are capable of purchasing FFBs and are more confident in their capability for taking purchase decisions. Subjective norms had a moderate influence on purchase intention. When consumers are well able of take decisions of their own, they are not concerned about the opinions of others. Consumer knowledge factors had a poor influence on consumer purchase intention towards FFBs. Most consumers were not well aware of the nutritional benefits of FFBs. Hence, marketer need to improve the communication strategies to provide prompt information to the target audience.

5.4.7 Consumer Acceptance Model for Branded FFBs

Health consciousness emerged as the prime factor predicting consumer attitude towards branded FFBs. Health consciousness factors like consumers concern about health, responsibility to take care of own health, attention to prevent disease and illness etc. could be accelerated by the presence of positive attitude towards the quality, healthiness and taste of FFBs, and which in turn leads to the purchase intention towards branded FFBs. Attitude plays a vital mediating role between consumer health consciousness and purchase intention towards FFBs. Perceived behavioural control is an important predictor for purchase intention and it was well understood that people with more control over their behaviour have more intention to buy FFBs. Hence marketing efforts need to focus these factors while placing FFBs in the mind of consumers.

Indian consumers value the opinions of peer groups. But in this study, subjective norms were not a substantive predictor of purchase intention. Consumer knowledge had the least impact on the purchase intention, it might be due to the lack of knowledge regarding FFBs among the Indian consumers. Hence marketer need to enhance communication channels to properly disseminate the information to the consumers. Purchase intention is the most influencing factor for consumer acceptance and the research model offers a clear understanding of the overall acceptance process, and how the consumer's health consciousness, attitude, subjective norms, PBC and consumer knowledge factors influence purchase intention, which in turn mobilises acceptance of FFB.

Present study has fulfilled the research gap on the need of a theoretical model for consumer acceptance towards FFBs in India. The study establishes the expanded TPB model for predicting consumer behaviour in FFBs. There by present study made an attempt to fill the literature gap regarding consumer acceptance of branded FFBs. The various factors influencing consumer acceptance of FFBs were identified and was tested for its acceptability in the branded FFB sector. The model delivers a comprehensive means of important antecedents of purchase intention and consumer acceptance of branded FFBs. The proposed model can be a direction to the fortified food industry to fragment and position their offerings effectively to mould a healthy generation. Additionally, the outcome emanated from the research study could be effectively applied to improve the nutritional status of the people. Figure 5.1 diagrammatically represents the proposed consumer acceptance model for branded FFBs developed in the study.

5.5 RECOMMENDATIONS

Healthy eating habits has become popular as a way of life, to live healthily and improve the quality of life. Consumers are ready to pay a premium for the healthier options of food and beverages. The healthy food sector is booming in India (Euromonitor 2018). As an emerging market, India has a huge potential for the food industry to launch healthier versions of their product line to make profit in the untapped areas. FFB sector emerged as the major segment in the healthy food sector. FFB industry had identified this growth opportunity and marketers are coming up with different brands of FFB products. But, the critical hurdle faced by the food marketer is to understand the purchase behaviour of consumers. Based on the findings, the following recommendations are proposed which may help FFB marketer to frame appropriate marketing strategies.

1. Health consciousness have a strong positive influence on shaping favourable attitude towards consuming FFBs. For the success of marketing of branded FFBs in India, marketer need to make consumer more health conscious.
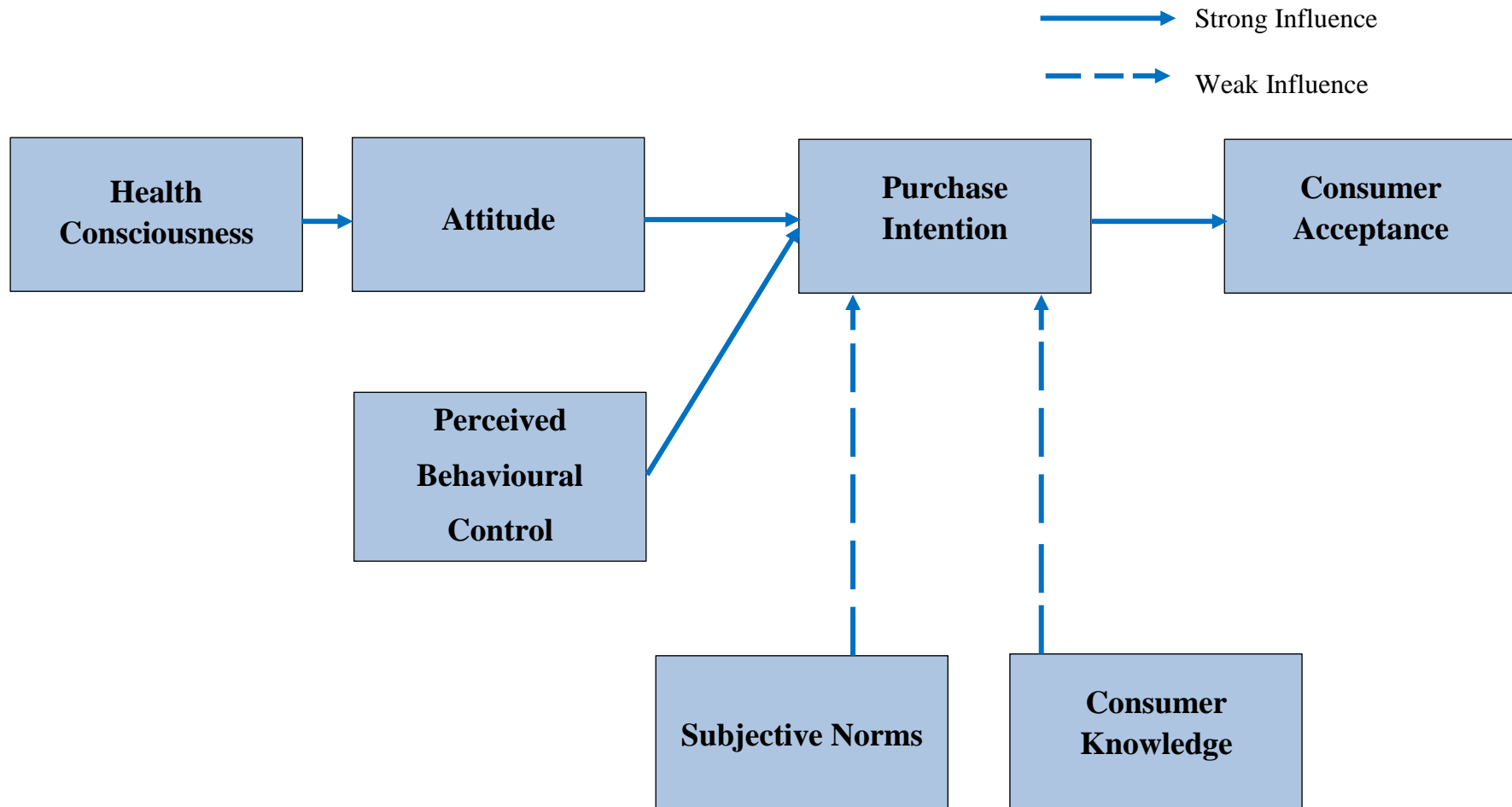
Figure 5.1: Proposed Consumer Acceptance Model for Branded FFBs

2. Consumer attitude is the highest contributing factor for purchase intention towards FFBs. While making marketing strategies food marketers need to pay more attention on generating a positive attitude towards branded FFBs.

3. Most of the consumers are consuming FFB products without knowing that it is a functional or fortified food. Consumer had little knowledge regard to FFB. Hence, marketers need to improve the marketing communication modes that will enable consumers to understand more easily the concept of FFBs.

4. Present study found that age group of above 45 years are more vulnerable to lifestyle diseases. Thus, FFB companies can target these age group as their target consumers for various kind of FFBs.

5. Health professionals are the most reliable source of information regarding FFBs. Hence, marketers need to focus more on health professionals and execute various communication programmes through television ads, as television was the most preferred source of information to the consumers.

5.6 THEORETICAL IMPLICATIONS

For several decades, researchers have been investigating the reasons why consumers change their behaviour over time and situations. This dynamic and complex nature of shift in consumer behaviour is the major research interest in the marketing literature. As a theoretical implication, the research study is an appendage to the existing literature of consumer behaviour in health foods marketing. So, the present study bridges the gap in the literature related to the influence of different factors on the acceptance of FFBs. Given the fact that there was a lack of information about buyers and non-buyers of fortified foods in India, the research study can be taken as a starting point upon which other studies investigating the attitudes and the purchase behaviour of consumers of FFBs can be built.

Even though the Indian fortified food market has been showing a rapid growth from the past few years, limited research has been conducted on fortified food consumer behaviour. The research study offers theoretical insights into better understanding of fortified food consumer behaviour in India. Further, the findings of the thesis can

contribute to consumer acceptance towards health foods and enable marketers to promote health food consumption. Although studies have emphasised on the role of health consciousness in the TPB model, the study has explored the relationship between health consciousness and attitudes in order to predict consumer acceptance of branded FFBs. The results concludes that health conscious segment of consumers accept FFBs more easily in India. Further the study has investigated the potential influence of consumer knowledge and nutritional characteristics on purchase intention in the proposed model of consumer acceptance. Results conclude that consumer knowledge and nutritional labelling had a poor influence on purchase intention towards FFBs.

As a theoretical contribution present study has made an attempt to fill the research gap concerning consumer attitude towards FFBs. Previous studies in different countries found that socio-demographic variables have an important role in attitude towards functional foods/FFBs. But the present study contradicted this and found that socio-demographic variables do not have a strong influence on consumer attitude. Hence, it was established that attitude varies in different countries with different culture.

Previous research studies had suggested that the research gap and the need for a best theoretical model, incorporating all the possible determinants to predict the consumer acceptance of FFBs in a better way. Present study investigated on this and developed the consumer acceptance model incorporating health consciousness and consumer knowledge determinants to the TPB model. The results exposed that the consumer acceptance model developed in the study had improved upon the explanatory power of consumer acceptance towards branded FFBs (Adjusted R^2 Value= 0.532).

The research gap concerning actual measure of consumer behaviour is rare, present study has made an attempt to measure the consumer acceptance construct and found that most consumers accept branded FFBs. Hence, the study bridges the research gap between purchase intention and consumer acceptance.

As a theoretical implication, the research study gives an extension to the existing literature of consumer behaviour in health foods marketing and the theoretical contribution of the present study substantially asserts the development of consumer acceptance model for branded FFBs in India. The study will shed light on potential

applications for consumer behaviour for future researchers to conceptualize, distinguish and comprehend the underlying consumer acceptance models and theories that may affect the previous, current and future application of consumer acceptance of health foods.

5.7 MANAGERIAL IMPLICATIONS

Food safety and health issues are increasing in the country due to the addition of lot of chemicals like colors, artificial ripening agents etc. (Panghal et al. 2018). Hence Indian consumer are becoming more health conscious towards their diet (Basha and Lal 2019) and the awareness on the negative impact of unhealthy eating habit is growing among Indian consumers. However, the major hurdle for the Indian food Industry is that Indian consumers are not yet ready to experiment with new food products (Neha 2018). In the light of these issues present study analyzed consumers who live in the Tier I metro cities, concerning their purchase intention and acceptance of branded FFBs. Marketers can better understand a number of essential determinants that drive consumers' acceptance towards branded FFBs. The findings of the study indicate that consumer attitude is the most prominent factor for consumers' purchase intentions, which provide useful insights for marketers to develop more effective marketing strategies to promote behavioural intentions. Health consciousness has a mediating role between attitude and purchase intention. This provide cues for marketers to consider health consciousness factors. The research study revealed that consumer knowledge is the least influencing factor towards purchase intention. This might be due to the reason that consumers are unaware about the use and benefits of FFBs. Hence marketers need to pay more focus on the marketing communication and consumer knowledge interventions.

Food industry is witnessing an exponential growth, especially in healthy food segment (Million Insights 2019). Indian consumers shows a positive trend towards healthy lifestyle and healthy diet (Basha and Lal 2019). The research study provides implications for food industry, food-retailers, marketing managers and health food consumers in India. The proposed model can be a direction to the food industry to fragment and position their offerings effectively to mould a healthy generation. Moreover, the consumer acceptance model developed in the study will be useful for the marketers to develop appropriate marketing strategies to popularise their brand of food

and beverage among the patrons. The study will also help the health policymakers to form and execute the required policies to augment the public health. The results of the study are beneficial for agribusinesses or transnational food retailers who wish to enter the Indian food market.

5.8 LIMITATIONS OF THE STUDY

All social science research works are imperilled to certain drawbacks. The present study is not exempted from those limitations. As such, the present research study had certain limitations which are given below.

1. The study has collected primary data only from those consumers, who were aware of at least any one of the FFB brands, as a result the study does not consider the acceptance of consumers who are unaware of branded FFBs.

2. The primary data collected in the study was using consumer intercept survey. Hence, the study had not focused on the consumer behaviour of online shoppers of FFBs.

5.9 DIRECTION FOR FUTURE RESEARCH

Since FFB segment is an emerging market, there is a huge potential and promising future in Indian food market. To get better insight into the FFB marketing, the present study opens up new grounds for additional research.

Future research can shed light on the impact of various other contributing factors like consumer food neophobia, prior experience, perceived value, perceived risk etc. on consumer acceptance process with regards to branded FFBs.

Longitudinal research studies are required to gain more clarity about the effect of lifestyle interventions on consuming fortified foods and beverage products because consumer lifestyle may vary from time to time.

Healthy foods and beverages is an emerging segment of online shopping platforms and has a high potential in future. Due to this significant opportunity of growth in online shopping of food products, more research is required to assess the purchase behaviour of online consumers.

Final word

The tenet, "Let food be thy medicine and medicine be thy food" was embraced 2500 years ago by Hippocrates, the father of medicine. This principle is very much relevant in the present day as people are becoming more health conscious and follow 'special' diets to improve their health status.

Indian consumers have more inclination towards food and beverages which provides some functional or health benefits. Food industry is diversifying their product line with more options of healthy foods. FFBs are one of such major segment of healthy foods in India. Present study is an initial effort, aimed to propose a model for consumer acceptance of branded FFBs. The study extends the understanding of different factors affecting consumer decision to accept FFBs. The outcome of the research is aimed at serving as a guideline to know how marketing tools can be used in the field of health development of consumers through the promotion of FFBs acceptance among Indian consumers.

REFERENCES

Aaker, D. A., Kumar, V., Leone, R. P., and Day, G. S. (2013). *Marketing research: International student version*, New York, NY: John Wiley & Sons.

Adams, C. R. (1997). "An expanded rational expectations model of intention to consume an innovative food product in a restaurant setting." Doctoral dissertation, Texas Tech University.

Aertsens, J., Mondelaers, K., Verbeke, W., Buysse, J., and Van Huylenbroeck, G. (2011). "The influence of subjective and objective knowledge on attitude, motivations and consumption of organic food." *British food journal*, *113*(11), 1353-1378.

Afroz, R., Masud, M. M., Akhtar, R., Islam, M. A., and Duasa, J. B. (2015). "Consumer purchase intention towards environmentally friendly vehicles: an empirical investigation in Kuala Lumpur, Malaysia." *Environmental Science and Pollution Research*, 22(20), 16153-16163.

Aggelidis, V. P., and Chatzoglou, P. D. (2009). "Using a modified technology acceptance model in hospitals." *International journal of medical informatics*, 78(2), 115-126.

Aine McConnon, Janet Cade and Alan Pearman. (2002). "Stakeholder interactions and the development of functional foods." *Public Health Nutrition*, 5(3), 469–477 DOI: 10.1079/PHN2001268

Ajzen, I. (2015). "Consumer attitudes and behavior: the theory of planned behavior applied to food consumption decisions." *Italian Review of Agricultural Economics*, 70(2), 121-138.

Ajzen, I. (2002). "Perceived behavioral control, Self-Efficacy, locus of control, and the theory of planned Behavior1." *Journal of applied social psychology*, 32(4), 665-683. DOI: 10.1111/j.1559-1816.2002.tb00236.x

Ajzen, I. and Fishbein, M. (1975). "Belief, attitude, intention and behavior: an introduction to theory and research."

Ajzen, Icek. (1991). "The theory of planned behaviour." *Organizational Behavior and Human Decision Processes,* 50 (2): 179–211. DOI: 10.1016/0749-5978(91)90020-T.

Ajzen, Icek. (2011). "The theory of planned behaviour: reactions and reflections." 1113-1127.

Alba, J. W., and Hutchinson, J. W. (1987). "Dimensions of Consumer Expertise." *Journal of Consumer Research*, 13, 411-454.

Albayrak, T., Aksoy, Ş., and Caber, M. (2013). "The effect of environmental concern and scepticism on green purchase behaviour." *Marketing Intelligence & Planning*, 31(1), 27-39.

Ali, M. R. (2018). "Consumer Acceptance of Orange Juice Mixed with Water Mint Leave Extract." *Recent patents on food, nutrition & agriculture*, 9(1), 50-54.

Ali, T., Alam, A., and Ali, J. (2018). "Factors Affecting Consumers' Purchase Behaviour for Health and Wellness Food Products in an Emerging Market." *Global Business Review*, 0972150918795368.

Allen, C. T., Machleit, K. A., Kleine, S. S., and Notani, A. S. (2005). "A place for emotion in attitude models." *Journal of Business Research*, 58(4), 494-499.

Alvensleben, R. V., and Altmann, M. (1986). "Determinants of the demand for organic food in Germany (FR)." *In IX Symposium on Horticultural Economics*, XXII IHC 203, 235-242.

American Dietetic Association (ADA) (2009). "Position of the American Dietetic Association: Functional Foods." *Journal of the American Dietetic Association*, 109(4), 735–746. doi:10.1016/j.jada.2009.02.023

Anisimova, T., and Thomson, S.B. (2012). "Using multi-method research methodologies for more informed decision making." *Journal of Administration & Governance*, 7(1), 96-104.

Anne, E.P. (2004). "Heart disease and work." *Heart*, 90(9), 1077–1084. DOI: 10.1136/hrt.2003.029298

Annunziata, A. and Riccardo Vecchio. (2010). "Italian Consumer Attitudes Toward Products for Well-being: The Functional Foods Market." *International Food and Agribusiness Management Review,* 13(2).

Anttolainen, M., Luoto, R., Uutela, A., Boice, J.D. Jr, Blot, W.J., McLaughlin, J.K. and Puska, P. (2001). "Characteristics of users and nonusers of plant stanol ester margarine in Finland: an approach to study functional foods." *Journal of the American Dietetic Association*, 101 (11), 1365-1368. DOI: 10.1016/S0002-8223(01)00327-3

Ares, G., and Gámbaro, A. (2007). "Influence of gender, age and motives underlying food choice on perceived healthiness and willingness to try functional foods." *Appetite*, 49(1), 148-158.

Armitage C.J., and Conner M. (2001). "Efficacy of the Theory of Planned Behaviour: A meta-analytic review." *British Journal of Social Psychology*, 40(4), 471–499. DOI: 10.1348/014466601164939

Ashavaid, T. F., Todur, S. P., and Dherai, A. J. (2004). "Health status of Indian population-current scenario." *J. Assoc. Physicians India*, 52, 363-9.

ASSOCHAM, (2015). "Market report of The Associated Chambers of Commerce & Industry of India on packaged foods." http://www.assocham.org/newsdetail.php?id=4992 (June, 5, 2015)

Bagozzi, R. P., and Y. Yi (1988). "On the evaluation of structural equation models." *Journal of the academy of marketing science.* Vol. 16, No.1, pp. 74-94.

Bagozzi, R.P. (2007). "The legacy of the technology acceptance model and a proposal for a paradigm shift." *Journal of the Association for Information Systems*, 8 (4): 244–254.

Baron, R. M., and Kenny, D. A. (1986). "The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations." *Journal of personality and social psychology*, *51*(6), 1173.

Basha, M. B., and Lal, D. (2019). "Indian consumers' attitudes towards purchasing organically produced foods: An empirical study." *Journal of Cleaner Production*, 215, 99-111.

Bashir, A. M., Bayat, A., Olutuase, S. O., and Abdul Latiff, Z. A. (2019). "Factors affecting consumers' intention towards purchasing halal food in South Africa: a structural equation modelling." *Journal of Food Products Marketing*, 25(1), 26-48.

Bech-Larsen, T., Grunert, K.G. and Poulsen, J.B. (2001). "The acceptance of functional foods in Denmark, Finland and the United States." *MAPP Working Paper 73*. The Aarhus School of Business, Aarhus

Becker, M. H. and Maiman, L. A. (1975). "Sociobehavioral determinants of compliance with health and medical care recommendations." *Medical care*, 13(1), 10-24.

Behrens, J., Cecilia Martins, Nilda D. M. Villanueva, Tatiana P. Nunes and Mariza Landgraf. (2015). "Influence of Information on the Acceptance and Purchase Intention of an Irradiated Food: A Study With Brazilian Consumers." *Journal of Food Products Marketing*, 21(4). DOI: http://dx.doi.org/10.1080/10454446.2014.885861

BEUC, (2015). "Informed food choices for healthier consumers BEUC position on nutrition." (European Consumers' Organisation, Brussels, Belgium) http://www.beuc.eu/publications/beuc-x-2015-008_pca_beuc_position_paper_on_nutrition.pdf (June, 10, 2015)

Berger, I. E., Ratchford, B. T., and Haines Jr, G. H. (1994). "Subjective product knowledge as a moderator of the relationship between attitudes and purchase intentions for a durable product." *Journal of Economic Psychology*, 15(2), 301-314.

BestMediaInfo (2016). "Gold Winner aims to makes India vitamin D positive." http://bestmediainfo.com/2016/08/gold-winner-aims-to-makes-india-vitamin-d-positive/ (Sep., 20, 2018).

Bhattacharya, S G. (2013). "Bangalore a favourite market for debuting international brands." http://www.dnaindia.com/bangalore/report-bangalore-a-favouritemarket-for-debuting-international-brands-1877149/ (Sep. 19, 2018).

Bhushan, R. (2017). "AFTER A SIX-YEAR STINT- Kellogg India MD Pendurkar Quits." *The Economic Times*, http://epaperbeta.timesofindia.com/Article.aspx?eid=31818&articlexml=AFTER-A-SIX-YEAR-STINT-Kellogg-India-MD-21062017005008 (Jan. 2, 2017).

Bilgiç S. and Alev Yuksel (2012). "University Students' Perception and Attitudes towards Functional Foods in Istanbul." *Proceedings of the 2012 International Conference on Industrial Engineering and Operations Management Istanbul*, Turkey, July 3 – 6, 2012

Blackwell, R., Miniard, P. and Engel, J. (2006). *Consumer behaviour*, Mason, Thompson.

Bong Na, W., Marshall, R., and Lane Keller, K. (1999). "Measuring brand power: validating a model for optimizing brand equity." *Journal of product & brand management*, 8(3), 170-184.

Bogue J, Therese Coleman and Douglas S. (2005). "Determinants of consumers' dietary behaviour for health-enhancing foods." *British Food Journal*, 107(1), 4-16. DOI: http://dx.doi.org/10.1108/00070700510573168

Boone, H. N., and Boone, D. A. (2012). "Analyzing likert data." *Journal of extension*, 50(2), 1-5.

Bornkessel, S., Broring, S and Omta, S.W.F. (2011). "Consumer Acceptance of Functional Foods and Their Ingredients: Positioning Options for Innovations at the Borderline between Foods and Drugs." *Proceedings of the International*

Food and Agribusiness Management Association, 20-23 June 2011, Frankfurt, Germany. 12 - 26.

Bredahl, L. (2001). "Determinants of consumer attitudes and purchase intentions with regard to genetically modified food–results of a cross-national survey." *Journal of consumer policy,* 24(1), 23-61.

Brecic, R., Gorton, M. and Barjolle, D. (2014). "Understanding variations in the consumption of functional foods – evidence from Croatia." *British Food Journal*, 116(4), 662-675. DOI: http://dx.doi.org/10.1108/BFJ-05-2012-0133

Brodie, M., Foehr, U., Rideout, V., Baer, N., Miller, C., Flournoy, R., and Altman, D. (2001). "Communicating health information through the entertainment media." *Health Affairs*, 20, 192–199. doi:10.1377/ hlthaff.20.1.192

Bromage, S., Gonchigsumlaa, E., Traeger, M., Magsar, B., Wang, Q., Bater, J., Hewei Li, and Ganmaa, D. (2019). "Awareness and Attitudes Regarding Industrial Food Fortification in Mongolia and Harbin." *Nutrients*, 11(1), 201.

Brown, M., Pope, N., and Voges, K. (2003). "Buying or browsing? An exploration of shopping orientations and online purchase intention." *European Journal of Marketing*, 37(11/12), 1666-1684.

Brown, T. A. (2006). *Confirmatory Factor Analysis for Applied Research*, Guilford Press. http://www.guilford.com/books/Confirmatory-Factor-Analysis-for-Applied-Research/Timothy-Brown/9781462515363

Brown, T. A., and Moore, M. T. (2012). "Confirmatory factor analysis." *Handbook of structural equation modeling,* Guilford Press, New York, 361-379.

Bruhn, C.M., (2007). "Enhancing consumer acceptance of new processing technologies." *Innovative Food Science & Emerging Technologies*, 8(4), Pages 555–558.

Bryman A. and Bell, E. (2015). *Business Research Methods*, Oxford University Press, p.27.

Business Wire (2018). "Global Health and Wellness Food Market 2018-2022." https://www.businesswire.com/news/home/20180723005413/en/Global-Health-Wellness-Food-Market-2018-2022-Adoption

Büyükkaragöz A, Murat Bas, Duygu Saðlam and Þaziye Ecem Cengiz. (2014). "Consumers' awareness, acceptance and attitudes towards functional foods in Turkey." *International Journal of Consumer Studies*, 38(6), 628–635.

Campbell, D. T., and Fiske, D. W. (1959). "Convergent and discriminant validation by the multitrait-multimethod matrix." *Psychological Bulletin*, 56, 81-105.

Campos, S., Doxey, J., and Hammond, D. (2011). "Nutrition labels on pre-packaged foods: a systematic review." *Public health nutrition*, 14(8), 1496-1506.

Carifio, J., and Perla, R. (2008). 'Resolving the 50-year debate around using and misusing Likert scales." *Medical education*, 42(12), 1150-1152.

Carpenter, C.J. (2010). "A meta-analysis of the effectiveness of health belief model variables in predicting behaviour." *Health Communication,* 25 (8): 661–669. doi:10.1080/10410236.2010.521906

Chan, K. (1998). "Mass communication and pro-environmental behaviour: waste recycling in Hong Kong". *Journal of Environmental Management*, 52(4), 317-325. DOI: http://dx.doi.org/10.1006/jema.1998.0189

Chapman K, Bridget Kelly and Lesley King. (2009). "Using a research framework to identify knowledge gaps in research on food marketing to children in Australia." *Australian and New Zealand Journal of Public Health,* 33(3), 253–257. DOI: 10.1111/j.1753-6405.2009.00384.x

Chen, A., Peng, N. (2012). "Green hotel knowledge and tourists' staying behaviour". *Res. Notes Rep./Ann.Tour.Res.* 39(4), 2203–2219. DOI: 10.1016/j.annals.2012.07.003

Chen, M. F. (2009). "Attitude toward organic foods among Taiwanese as related to health consciousness, environmental attitudes, and the mediating effects of a healthy lifestyle." *British Food Journal*, *111*(2), 165-178.

Chen, M. F. (2007). "Consumer attitudes and purchase intentions in relation to organic foods in Taiwan: Moderating effects of food-related personality traits." *Food Quality and Preference*, 18(7), 1008-1021.

Chien, T. Y., Chien, Y. W., Chang, J. S., and Chen, Y. (2018). "Influence of mothers' nutrition knowledge and attitudes on their purchase intention for infant cereal with no added sugar claim." *Nutrients*, 10(4), 435.

Childs, N.M. (1997). "Functional foods and the food industry: consumer, economic and product development issues." *Journal of Nutraceuticals, Functional and Medical Foods*, Vol. 1 No. 2, pp. 25-43.

Chin, W. W. (1998). "The partial least squares approach to structural equation modeling." *Modern methods for business research*, Vol. 295, No. 2, pp. 295-336.

Choo, H., Chung, J-E. and Pysarchik, D.T. (2004). "Antecedents to new food product purchasing behavior among innovator groups in India." *European Journal of Marketing*, Vol. 38 Nos 5/6, pp. 608-25.

Chrysochou, P. (2010). "Food health branding: the role of marketing mix elements and public discourse in conveying a healthy brand image." *Journal of Marketing Communications*, 16, 69–85.

Chu, K. (2018). "Mediating Influences of Attitude on Internal and External Factors Influencing Consumers' Intention to Purchase Organic Foods in China." *Sustainability*, 10(12), 4690.

Churchill, G. (1999). *Marketing Research: Methodological Foundations,* Orlando, USA: The Dryden Press.

Cohen, J. (1992). "A power primer." *Psychological bulletin*, 112(1), 155.

Cohen, P., West, S. G., and Aiken, L. S. (2014). *Applied multiple regression/correlation analysis for the behavioral sciences*, Psychology Press.

Colby SE, Johnson L, Scheett A, Hoverson B, (2010). "Nutrition marketing on food labels." *J Nutr Educ Behav.*, 42(2):92-8. doi: 10.1016/j.jneb.2008.11.002.

Cook, A. J., Kerr, G. N., & Moore, K. (2002). "Attitudes and intentions towards purchasing GM food." *Journal of Economic Psychology*, 23(5), 557-572.

Cooper D.R., and Pamela S. Schindler (2006). *Business research methods*, 9th ed, New York, NY - McGraw-Hill

Conner, M., Kirk, S. F., Cade, J. E., and Barrett, J. H. (2003). "Environmental influences: factors influencing a woman's decision to use dietary supplements." *The Journal of nutrition*, 133(6), 1978S-1982S

Contini, C., Casini, L., Stefan, V., Romano, C., Juhl, H. J., Lähteenmäki, L., and Grunert, K. G. (2015). "Some like it healthy: Can socio-demographic characteristics serve as predictors for a healthy food choice?." *Food quality and preference*, 46, 103-112.

Costell, E., Amparo Tarrega and Sara Bayarri (2010). "Food Acceptance: The Role of Consumer Perception and Attitudes." *Chemosensory Perception*, 3(1), 42-50. DOI: 10.1007/s12078-009-9057-1

Cotten, S. R., and Gupta, S. S. (2004). "Characteristics of online and offline health information seekers and factors that discriminate between them." *Social Science & Medicine,* 59, 1795–1806. doi:10.1016/j. socscimed.2004.02.020

Cowburn, G., and Stockley, L. (2005). "Consumer understanding and use of nutrition labelling: a systematic review." *Public health nutrition*, 8(1), 21-28.

Creswell, J. W. (1994). *Research design: Qualitative & quantitative approaches*, Sage Publications, Thousand Oaks, California, United States.

Crockett, R. A., Hollands, G. J., Jebb, S. A., and Marteau, T.M. (2011). "Nutritional labelling for promoting healthier food purchasing and consumption." The Cochrane Library. The Cochrane Library (9), 1-15. DOI:10.1002/14651858.CD009315

Cronbach, L. J. (1951). "Coefficient alpha and the internal structure of tests." *psychometrika*, 16(3), 297-334.

Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process*, Sage, London.

Cushman and Wakefield (2017). "THE GLOBAL FOOD & BEVERAGE MARKET What's on the Menu?." http://www.upa.it/static/upload/cw_/cw_global-food-and-beverage-report.pdf (Oct, 30, 2018)

Czarnacka-Szymani, J., and Jezewska-Zychowicz, M. (2015). "Impact of nutritional information on consumers' acceptance of cheese with reduced sodium chloride content." *International Dairy Journal*, 40, 47-53.

Daedal Research, (2012). "Market report on 'India Health Foods Market: Trends & Opportunities (2012-2017)." http://www.daedal-research.com/food-and-beverage/indian-health-foods-beverage-market-trends-opportunities-2012-2017 (Oct, 20, 2016)

Dagevos, H. (2005). "Consumers as four-faced creatures. Looking at food consumption from the perspective of contemporary consumers." *Appetite*, 45(1), 32–39.

Darmon N and Adam Drewnowski (2008). "Does social class predict diet quality?." *Am J Clin Nutr*, 87, 1107–17.

Davis, F. D. (1989). "Perceived usefulness, perceived ease of use, and user acceptance of information technology." *MIS quarterly*, 319-340. DOI: 10.2307/249008

Davis, F. D., Bagozzi, R. P., and Warshaw, P. R., (1989). "User Acceptance of Computer Technology: A Comparison of Two Theoretical Models." *Management Science*, 35(8), 982-1003.

Dawes, R. M. (1972). *Fundamentals of attitude measurement*, John Wiley & Sons Canada, Limited

Dean, M., Raats, M. M., and Shepherd, R. (2012). "The Role of Self-Identity, Past Behavior, and Their Interaction in Predicting Intention to Purchase Fresh and Processed Organic Food." *Journal of Applied Social Psychology*, 42(3), 669-688.

De Jong, N., Ocke, M. C., Branderhorst, H. A., and Friele, R. (2003). "Demographic and lifestyle characteristics of functional food consumers and dietary supplement users." *British Journal of Nutrition*, 89(2), 273-281. DOI: 10.1079/BJN2002772

Demartini, E., De Marchi, E., Cavaliere, A., Mattavelli, S., Gaviglio, A., Banterle, A. Richetin, J. and Perugini, M. (2019). "Changing attitudes towards healthy food via self-association or nutritional information: What works best?." *Appetite*, 132, 166-174.

Dharni K and Ketki Gupta, (2015). "Exploring antecedents of healthy food choices: an Indian experience." *International Journal of Consumer Studies*, ISSN 1470-6423. DOI: 10.1111/ijcs.12156

Diana, M., Quílez, J., and Rafecas, M. (2014). "Gamma-aminobutyric acid as a bioactive compound in foods: a review." *Journal of Functional Foods*, 10, 407-420.

Dillon, A., and Morris, M. G. (1996). "User acceptance of new information technology: theories and models." *In Annual review of information science and technology*. Medford, NJ: Information Today.

Diplock, A.T, (1999). "Scientific Concepts of Functional Foods in Europe Consensus Document." *British Journal of Nutrition*, 81(1), S1–S27

Dodds, W. B., Monroe, K. B., and Grewal, D. (1991). "Effects of price, brand, and store information on buyers' product evaluation." *Journal of Marketing Research*, 28(3), 307-319. DOI: http://dx.doi.org/10.2307/3172866

Dolgopolova I., Ramona Teuber and Viola Bruschi, (2015). "Consumers' perceptions of functional foods: trust and food-neophobia in a cross-cultural context." *International Journal of Consumer Studies*, 39(6), DOI: 10.1111/ijcs.12184

Dowd K, Burke K.J. (2013). "The influence of ethical values and food choice motivations on intentions to purchase sustainably sourced foods." *Appetite*, 69, 137–44. DOI: http://dx.doi.org/10.1016/j.appet.2013.05.024

Dutta, A. (2016). "Nestle takes another baby step." *Business Standard,* https://www.business-standard.com/article/companies/nestle-takes-another-baby-step-116081700663_1.html (Jan. 2, 2017).

Dutta-Bergman, M. J. (2004). "Primary sources of health information: Comparisons in the domain of health attitudes, health cognitions, and health behaviors." *Health Communication*, 16, 273–288. doi:10.1207/S15327027HC1603_1

Dutta-Bergman, M. J. (2005). "Developing a profile of consumer intention to seek out additional information beyond a doctor: The role of communicative and motivation variables." *Health Communication*, 17, 1–16. doi:10.1207/s15327027hc1701_1

Earl, R., and Thomas, P. R. (1994). *Opportunities in the nutrition and food sciences: research challenges and the next generation of investigators*, National Academy Press, Washington, DC.

Efthimia Tsakiridou , Asterios Tsioumanis , George Papastefanou and Konstadinos Mattas (2007). "Consumers' Acceptance and Willingness to Buy GM Food." *Journal of Food Products Marketing,* 13(2), 69-81, DOI: 10.1300/J038v13n02_05

Ehealth (2017). "Preventive healthcare awareness rising among Indians: Grow Fit study." http://ehealth.eletsonline.com/2016/11/preventive-healthcare-awareness-rising-among-indians-grow-fit-study/ (Dec. 15, 2017).

Elseidi, R. I. (2018). "Determinants of halal purchasing intentions: evidences from UK." *Journal of Islamic Marketing*, 9(1), 167-190.

Engel, J.F., R.D. Kollat and P.W. Miniard. (1986). *Consumer Behavior*, Dryden Press, Hinsdale. p.5

Erickson., M.C, M. A. Bulgarelil, A. V. A. Resurreccion, R. A. Vendetti and K. A. Gates. (2007). "Consumer Differentiation, Acceptance, and Demographic Patterns to Consumption of Six Varieties of Shrimp." *Journal of Aquatic Food Product Technology*, 15(4), 35-51.

Euromonitor (2018). "Health and Wellness in India." https://www.euromonitor.com/health-and-wellness-in-india/report (Sep., 20, 2018).

Euromonitor (2018). "GLOBAL INDUSTRY OUTLOOK REPORT 2018." https://www.gulfood.com/__media/libraries/brochures/Gulfood-Global-Industry-Outlook-Report-2018.pdf

Exchange4media (2004). "'Sofit' For The Unfits." https://www.exchange4media.com/marketing/sofit-for-the-unfits_10877.html (Sep., 20, 2018).

Ezzati, M., and Riboli, E. (2013). "Behavioral and dietary risk factors for noncommunicable diseases." *New England Journal of Medicine*, 369(10), 954-964.

Faison, Edmund W. J. (1977). "The Neglected Variety Drive: A Useful Concept for Consumer Behavior," *Journal of Consumer Research*, 4, 172-175.

FICCI, (2015). "Unlocking the potential in the food and beverage services sector." http://ficci.in/spdocument/20589/F&B-Report.pdf (October, 25, 2015)

Figlobal (2017). Potential for functional foods in the Indian market, https://www.figlobal.com/india/visit/news-and-updates/potential-functional-foods-indian-market (Dec. 15, 2017).

Fila, S.A and Chery Smith (2006). "Applying the Theory of Planned Behavior to healthy eating behaviors in urban Native American youth." *International Journal of Behavioral Nutrition and Physical Activity,* 3(11) DOI: 10.1186/1479-5868-3-11

Finlay K.A, David Trafimow and Donna Jones. (1997). "Predicting Health Behaviors From Attitudes and Subjective Norms: Between-Subjects and Within-Subjects Analyses." *Journal of Applied Social Psychology*, 27(22), 2015–2031. DOI: 10.1111/j.1559-1816.1997.tb01638.x

Firstpost (2018). "Unhealthy India: The rise of lifestyle diseases in the country." https://www.firstpost.com/brands/unhealthy-india-the-rise-of-lifestyle-diseases-in-the-country-4402227.html (Sep. 13, 2018)

Fishbein, M., and Ajzen, I. (2011). *Predicting and changing behavior: The reasoned action approach*, Psychology Press.

Food and Agricultural Organization. (1995). "ANNEX 4 - Micronutrient Fortification of Food: Technology and Quality Control." http://www.fao.org/docrep/W2840E/w2840e0b.htm (December, 10, 2016)

Food Safety and Standards Authority of India (2006).

Food Safety and Standards Authority of India (2018). Fortified Food Categories, https://ffrc.fssai.gov.in/ffrc/home. (August, 10, 2018).

Food Safety and Standards Authority of India (2019). Food Fortification in India: Status and Road Ahead, https://ffrc.fssai.gov.in/ffrc/documents/doc/whats_new/niti_report.pdf

Food Safety and Standards Authority of India (2012). https://old.fssai.gov.in/Portals/0/Pdf/covering%20letter%20for%20draft%20regulation.pdf

Forbes (2018). "World's Largest Food And Beverage Companies 2018: Anheuser-Busch, Nestle And Pepsi Top The List." https://www.forbes.com/sites/maggiemcgrath/2018/06/06/worlds-largest-food-and-beverage-companies-2018-anheuser-busch-nestle-and-pepsi-top-the-list/#747f42891b08

Fornell, C., and Larcker, D. F. (1981). "Evaluating structural equation models with unobservable variables and measurement error." *Journal of marketing research*, 39-50.

Franz, A., and Nowak, B. (2010). "Functional food consumption in Germany: A lifestyle segmentation study." *Working paper No. 1003*.

Diskussionspapiere//Department für Agrarökonomie und Rurale Entwicklung.

Frewer L, Joachim Scholderer and Nigel Lambert (2003). "Consumer acceptance of functional foods: issues for the future." *British Food Journal*, Vol. 105 No.10 pp.714-731

Gardner, R. E., and Hausenblas, H. A. (2004). "Understanding Exercise and Diet Motivation in Overweight Women Enrolled in a Weight-Loss Program: A Prospective Study Using the Theory of Planned Behavior." *Journal of Applied Social Psychology*, 34(7), 1353-1370

Gary Scattergood (2018). "India's fortification drive: 'Chicken and egg' situation could be eased by manufacturer marketing." https://www.foodnavigator-asia.com/Article/2018/08/31/India-s-fortification-drive-Chicken-and-egg-situation-could-be-eased-by-manufacturer-marketing (March, 10, 2019).

Geisser, S. (1974). "A predictive approach to the random effect model." *Biometrika*, *61*(1), 101-107.

German Engineering Federation (VDMA) (2018). India to be world's 3rd-biggest packaged food market, http://www.fnbnews.com/Interview/india-to-be-worlds-3rdbiggest-packaged-food-market-43250

Ghosh, A. (1990). *Retail management,* Chicago: Drydden press

Gil, J.M., Gracia, A. and Sanchez, M., (2000). "Market segmentation and willingness to pay for organic products in Spain". *The International Food and Agribusiness Management Review,* 3(2), 207-226. DOI: http://dx.doi.org/10.1016/S1096-7508(01)00040-4

Gilbert, L. (2015). "The consumer market for functional foods." *Journal of Nutraceuticals, Functional and Medical Foods*, 1(3), 5-21. DOI: http://dx.doi.org/10.1300/J133v01n03_02

Giudice, T D., Nebbia, S., and Pascucci, S. (2012). "The "Young" Consumer Perception of Functional Foods in Italy." *Journal of Food Products Marketing*, 18(3), 222-241.

Godin, G., and Kok, G. (1996). "The theory of planned behavior: a review of its applications to health-related behaviors." *American journal of health promotion*, 11(2), 87-98.

Gould, S. J. (1988). "Consumer attitudes toward health and health care: A differential perspective." *Journal of Consumer Affairs*, *22*(1), 96-118.

Gould, S. J. (1990). Health consciousness and health behavior: the application of a new health consciousness scale." *American Journal of Preventive Medicine*, *6*(4), 228-237.

Grad, F. P. (2002). "The preamble of the constitution of the World Health Organization." *Bulletin of the World Health Organization*, 80, 981-982.

Grier SA, and Kumanyika SK, (2008). "The context for choice: health implications of targeted food and beverage marketing to African Americans." *Am J Public Health,* 98(9):1616–1629

Grimm P. E. (2005). "Ab Components" Impact on Brand Preferences." *Journal of Business Research,* 58; pp 508-5017.

Groth MV, Fagt S, Brondsted L. (2001). "Social determinants of dietary habits in Denmark." *Eur J Clin Nutr.*, (11):959-66. DOI: 10.1038/sj.ejcn.1601251

Gupta, D. (2013). "Bournvita Li'l Champs lauds mothers." *http://www.afaqs.com/news/story/36904_Bournvita-Lil-Champs-lauds-mothers* (Sep., 20, 2018).

Gupta, K., and Dharni, K. (2016). "Use and influence of nutrition labelling: an emerging market experience." *Nutrition & Food Science*, 46(3), 441-456.

Gupta, U., and Tandon, V. K. (2013). "Changing consumer preferences from unorganized retailing towards organized retailing: A study in Jammu." *Journal of emerging knowledge on emerging markets*, 4(1), 10.

197

Grunert, K.G. and Wills, J.M. (2007). "A review of European research on consumer response to nutrition information on food labels." *Journal of Public Health*, 15, 385–399. DOI: 10.1007/s10389-007-0101-9

Hair, J. F., G.T.M. Hult, C. Ringle, and M. Sarstedt (2013). *A Primer on Partial Least Squares Structural Equation Modelling,* Sage Publications, New York. p.328.

Hair, Jr., J. F., Black, W. C., Babin, B. J., and Anderson, R. E. (2010). *Multivariate Data Analysis: A global perspective, (*7th ed.) Upper Saddle River, NJ: Pearson Prentice Hall.

Hamdan, R., Muhammad, F., Razak, A. A., and Mahjom, N. (2018). "The Tendency to Use Sunnah Functional Food among Students in Malaysia." *International Journal of Academic Research in Business and Social Sciences*, 8(1), 750-764.

Ham, M., Pap, A., and Stanic, M. (2018). "What drives organic food purchasing?– evidence from Croatia." *British Food Journal*, 120(4), 734-748.

Han, H., Hsu, L. T. J., and Sheu, C. (2010). "Application of the theory of planned behavior to green hotel choice: Testing the effect of environmental friendly activities." *Tourism management,* 31(3), 325-334.

Hasler C.M, (2000). "The Changing Face of Functional Foods." *Journal of the American College of Nutrition*, 19(5), 499S–506S

Hasler, C. M., Bloch, A. S., Thomson, C. A., Enrione, E., and Manning, C. (2004). "Position of the American Dietetic Association: functional foods." *Journal of the American Dietetic Association*, 104(5), 814-826.

Hassan S.H. and Yanti Ameira Mustapha (2010). "Malaysian Consumer Knowledge and Preferred Information Sources in Selecting Functional Foods." *Journal of Agribusiness Marketing,* 3, 20-39. DOI: http://myrepositori.pnm.gov.my/handle/123456789/1730

Health Canada (2018). "Policy paper—Nutraceuticals/functional foods and health claims on foods." http://www.hc-sc.gc.ca/fn-an/labeletiquet/claims-reclam/nutra-funct_foods-trafonct_aliment-eng.php. (March 10, 2018).

Henseler, J., C.M. Ringle, and R.R. Sinkovics (2009). "The use of partial least squares path modelling in international marketing" *Advances in International Marketing,* Vol. 20, No. 1, pp. 277-319.

Henson S, Cranfield J and Herath D, (2010). "Understanding consumer receptivity towards foods and non-prescription pills containing phytosterols as a means to offset the risk of cardiovascular disease: an application of protection motivation theory." *International Journal of Consumer Studies,* 34(1), 28–37. DOI: 10.1111/j.1470-6431.2009.00829.x

Hieke S, N. Kuljanic, J. M. Wills, I. Pravst, A. Kaur, M. M. Raats, H. C. M. van Trijp, W. Verbeke and K. G. Grunert. (2015). "The role of health-related claims and health-related symbols in consumer behaviour: Design and conceptual framework of the CLYMBOL project and initial results." *Nutrition Bulletin*, 40, 66–72. DOI: 10.1111/nbu.12128

Hilliam, M. (1996). "Functional foods: the Western consumer viewpoint." *Nutrition Reviews*, 54(11), 189-94.

Hirogaki M (2012). "How Are Functional Foods Perceived in Japan? Empirical Study of Young Japanese Consumers' Behavior." I*nternational Journal of Management Cases, Special Issue: Papers from the 9th International CIRCLE Conference*, 185-199(15) DOI: https://doi.org/10.5848/APBJ.2012.00097

Hoefkens, C., Pieniak, Z., Van Camp, J., and Verbeke, W. (2012). "Explaining the effects of a point-of-purchase nutrition-information intervention in university canteens: A structural equation modelling analysis." *The International Journal of Behavioral Nutrition and Physical Activity*, 9(111).

Hong, H. (2009). "Scale development for measuring health consciousness: Re-conceptualization." *In 12th Annual International Public Relations Research Conference,* Holiday Inn University of Miami Coral Gables, Florida. http://www.instituteforpr.org/health-consciousness. (December, 10, 2016)

Hu, P. J., Chau, P. Y. K., and Sheng, O. R. L. (1999). "Examining the tehnoogy acceptance model using physician acceptance of telemedicine technology." *Journal of Management Information Systems,* 16 (2): 91–112

Husic-Mehmedovic, M., Arslanagic-Kalajdzic, M., Kadic-Maglajlic, S., and Vajnberger, Z. (2017). "Live, Eat, Love: life equilibrium as a driver of organic food purchase." *British Food Journal*, 119(7), 1410-1422.

Hyde, K.F. (2000). "Recognising deductive processes in qualitative research." *Qualitative Market Research: An International Journal*, 3(2), 82–90 DOI: http://dx.doi.org/10.1108/13522750010322089

India Brand Equity Foundation (IBEF) (2017). "Indian Food Processing." https://www.ibef.org/industry/indian-food-industry.aspx

Indian Council of Medical Research (ICMR), Public Health Foundation of India (PHFI), and Institute for Health Metrics and Evaluation (IHME) (2017). "India: Health of the Nation's States- The India State-Level Disease Burden Initiative." ICMR, PHFI and IHME. New Delhi, India.

IFIC (2000). "Functional foods. Attitudinal research." Quantitative and Qualitative Summary, Washington, DC: International Food Information Council Foundation

International Food Information Council (IFIC) (2018). "Functional foods: Attitudinal research." http://www.ific.org/research/funcfoodsres02.cfm. (March 15, 2018)

International Life Sciences Institute (ILSI) (1999). "Safety assessment and potential health benefits of food components based on selected scientific criteria." *Critical Review in Food Science and Nutrition*, 39, 267-274.

Irene Goetzke, B., and Spiller, A. (2014). "Health-improving lifestyles of organic and functional food consumers." *British Food Journal*, 116(3), 510-526.

Jain S, Kirti Sharma, and Mansi Khadke (2014). "Consumer Behavior towards Functional Foods in India- A Study of Market Drivers & Challenges." *IOSR*

Journal of Business and Management (IOSR-JBM) e-ISSN: 2278-487X, p-ISSN: 2319-7668 PP 33-40

Jain, S., Mohammed Naved Khan, Sita Mishra, (2017). "Understanding consumer behavior regarding luxury fashion goods in India based on the theory of planned behaviour." *Journal of Asia Business Studies,* Vol. 11 Issue: 1, pp.4-21. https://www.emeraldinsight.com/doi/full/10.1108/JABS-08-2015-0118

Janz, N. K., and Becker, M. H. (1984). "The health belief model: A decade later." *Health education quarterly,* 11(1), 1-47.

Jayasree Krishnan, (2011). "Lifestyle – A Tool for Understanding Buyer Behavior." *International Journal of Economics and Management*, 5(1): 283 – 298

Jessie Mandle, Aviva Tugendhaft, Julia Michalow and Karen Hofman (2015). "Nutrition labelling: a review of research on consumer and industry response in the global South." *Global Health Action*, 8 DOI: http://dx.doi.org/10.3402/gha.v8.25912

Johnson, B., and Christensen, L. (2008). *Educational research: Quantitative, qualitative, and mixed approaches*, Sage, UK.

Jolly, D. (1991). "Differences between buyers and nonbuyers of organic produce and willingness to pay organic price premiums." *Journal of Agribusiness*, Vol. 9 No. 1, pp. 97-111.

Jonas M S and Suzanne C. Beckmann (1998). "Functional Foods: Consumer Perceptions in Denmark and England." *MAPP Working Paper No. 55*

Julita Szlachciuk, Irena Ozimek, (2017) "The reliability, use and evaluation of sources of information on foodstuffs." *British Food Journal*, 119 (3), pp.442-452, https://doi.org/10.1108/BFJ-03-2016-0107

Kajale D and Tilman C. Becker. (2014). "Factors Influencing Young Consumers' Acceptance of Genetically Modified Food in India." *Journal of Food Products Marketing*, 21(5), 461-481. DOI:10.1080/10454446.2013.845866

Kamarulzaman N.H, Kasazlinda Jamal, Gowri Vijayan and Siti Munirah Ab. Jalil (2014). "Will Consumers Purchase Stevia as a Sugar Substitute?: An Exploratory Study on Consumer Acceptance." *Journal of Food Products Marketing*, 20(1), 122-139, DOI: 10.1080/10454446.2014.921877

Kapoor, D., and Munjal, A. (2017). "Functional Foods: The New Secret of the Health Conscious Indian Women!!." *Global Business Review*, 18(3), 750–765. doi:10.1177/0972150917692196

Kapsak, W.R., Rahavi, E.B., Childs, N.M., and C. White. (2011). "Functional Foods: Consumer Attitudes, Perceptions, and Behaviors in a Growing Market." *Journal of the American Dietetic Association*, 111(6), 804-810. DOI: 10.1016/j.jada.2011.04.003.

Kearney J, (2010). "Food consumption trends and drivers." Phil. Trans. R. Soc. B,365, 2793–2807 DOI:10.1098/rstb.2010.0149

Kesari, B., and Atulkar, S. (2014). "A Review of customer preference towards organized retail stores." *International Journal of Multidisciplinary Research in Social and Management Sciences*, *2*(3), 24.

Khumalo, T. P., Schönfeldt, H. C., & Vermeulen, H. (2011). "Consumer acceptability and perceptions of maize meal in Giyani, South Africa." *Development Southern Africa*, 28(2), 271-281.

Kim, S., and Seock, Y. K. (2009). "Impacts of health and environmental consciousness on young female consumers' attitude towards and purchase of natural beauty products." *International Journal of Consumer Studies*, 33(6), 627-638.

King, W. R., and He, J. (2006). "A meta-analysis of the technology acceptance model." *Information & Management*, 43, 740-755.

Kish, Leslie (1965). *Survey Sampling,* John Wiley & Sons, Inc. New York, ISBN 0-471-10949-5.

Kivunja, C., and Kuyini, A. B. (2017). "Understanding and Applying Research Paradigms in Educational Contexts." *International Journal of Higher Education*, 6(5), 26-41.

Koen, N., Blaauw, R., and Wentzel-Viljoen, E. (2016). "Food and nutrition labelling: the past, present and the way forward." *South African Journal of Clinical Nutrition*, 29(1), 13-21.

Kotchen, M. J., and Reiling, S. D. (2000). "Environmental attitudes, motivations, and contingent valuation of nonuse values: a case study involving endangered species." *Ecological Economics*, 32(1), 93-107.

Kotler, P. (1994). *Marketing Management - analysis, planning, implementation, and control*, Prentice-Hall, New Jersey. p.173

Kotler, Philip. Armstrong, Gary. Wong, Veronica and Saunders, John. (2008). *Principles of Marketing*, Fifth European Edition, Pearson Education Limited.

Kucukemiroglu O. (1997). "Market segmentation by using consumer lifestyle dimensions and ethnocentrism: An empirical study." *European Journal of Marketing*, 33(5/6), 470 – 487. DOI: http://dx.doi.org/10.1108/03090569910262053

Kyle, T. K., and Thomas, D. M. (2014). "Consumers believe nutrition facts labeling for added sugar will be more helpful than confusing." *Obesity,* 22(12), 2481-2484.

Labrecque, J., Doyon, M., Bellavance, F., and Kolodinsky, J. (2006). "Acceptance of functional foods: A comparison of French, American, and French Canadian consumers." *Canadian Journal of Agricultural Economics*, 54(4), 647-661.

Laheri, V.K. (2017). "Impact of Demographic Variables for Purchase of Green Products." *Indian Journal of Commerce and Management Studies*, 7(1), DOI: 10.18843/ijcms/v8i1/11

Landström, E., Hursti, U. K. K., Becker, W., and Magnusson, M. (2007). "Use of functional foods among Swedish consumers is related to health-consciousness and perceived effect." *British Journal of Nutrition*, 98(5), 1058-1069.

Lapkin, S., Levett-Jones, T., and Gilligan, C. (2015). "Using the Theory of Planned Behaviour to examine health professional students' behavioural intentions in relation to medication safety and collaborative practice." *Nurse education today*, 35(8), 935-940.

Lau T C, Mei-Wan Chan, Hoi-Piew Tan and Choon-Ling Kwek (2013). "Functional Food: A Growing Trend among the Health Conscious." *Asian Social Science*, 9(1) DOI: 10.5539/ass.v9n1p198

Lazer and William. (1963). "Symbolism and Life Style, in Toward Scientific Marketing." (Ed.) Stephen A. Greyser American Marketing Association, Chicago, II, 140-149.

Lee, K., Conklin, M., Cranage, D. A., and Lee, S. (2014). "The role of perceived corporate social responsibility on providing healthful foods and nutrition information with health-consciousness as a moderator." *International Journal of Hospitality Management*, 37, 29-37.

Levis, P. and Chambers, E. (1997). "Influence of Healthy Concepts and Product Acceptance." *Journal of Food Products Marketing*, 3(4), 45-63. DOI: 10.1300/J038v03n04_05

Liang, T. P., and Huang, J. S. (1998). "An empirical study on consumer acceptance of products in electronic markets: a transaction cost model." *Decision support systems*, 24(1), 29-43.

Likert, R. (1932). "A Technique for the Measurement of Attitudes." *Archives of Psychology* 22(140).

Ling, C. Y. (2013). "Consumers' purchase intention of green products: An investigation of the drivers and moderating variable." *Elixir Marketing Management*, 1, 14503-14509.

Liu, R., Hoefkens, C., and Verbeke, W. (2015). "Chinese consumers' understanding and use of a food nutrition label and their determinants." *Food Quality and Preference*, 41, 103–111. DOI: http://dx.doi.org/10.1016/j.foodqual.2014.11.007.

Maerschand J. and Willaert M. 2018). Growing opportunities in the Indian Food Market, Flanders Investment & Trade, India. https://www.flandersinvestmentandtrade.com/export/sites/trade/files/market_studies/20180515GrowingOpportunitiesInTheIndianFoodMarket.pdf (Sep. 19, 2018).

Magnusson, M.K., Avrola, A., Hursti Koivisto, U.K., Aberg, L. and Sjoden, P.O. (2001). "Attitudes towards organic foods among Swedish consumers." *British Food Journal,* 103(3), 209–226.

Magnusson, M.K., Avrola, A., Hursti Koivisto, U.K., Aberg, L. and Sjoden, P.O. (2003). "Choice of organic foods is related to perceived consequences for human health and to environmentally friendly behaviour." *Appetite*, 40(2), 109–117.

Mahan, L. K., and Raymond, J. L. (2016). *Krause's food & the nutrition care process-e-book*, Elsevier Health Sciences.

Maharana, B., and Ladusingh, L. (2014). "Gender disparity in health and food expenditure in India among elderly." *International Journal of Population Research*, http://dx.doi.org/10.1155/2014/150105

Mahesh, N., (2013). "Consumer's Perceived value, Attitude and Purchase Intention of Green Products." *Management Insight*, 9(1).

Maichum, K., Parichatnon, S., and Peng, K. C. (2016). "Application of the extended theory of planned behavior model to investigate purchase intention of green products among Thai consumers." *Sustainability*, 8(10), 1077.

Maichum, K., Parichatnon, S., and Peng, K. C. (2017). "Factors affecting on purchase intention towards green products: A case study of young consumers in Thailand." *Young*, 16, 17.

Malek, L., Umberger, W. J., Makrides, M., and ShaoJia, Z. (2017). "Predicting healthy eating intention and adherence to dietary recommendations during pregnancy in Australia using the Theory of Planned Behaviour." *Appetite*, 116, 431-441.

Malhotra, N. K. (2012). *Basic marketing research: Integration of social media*, Pearson International, Boston.

Malviya, S. (2016). "Health foods market crosses Rs10,000 crore in revenue." The Economic Times, https://economictimes.indiatimes.com/industry/cons-products/food/health-foods-market-crosses-rs10000-crore-in-revenue/articleshow/54010260.cms (Sep., 20, 2018).

Markovina, J., Cacic, J., Gajdos, Kljusuric, J., and Kovacic D. (2011). "Young consumers' perception of functional foods in Croatia." *British Food Journal*, 113(1), 7-16. DOI: 10.3402/gha.v8.25912

Martirosyan, D. M. and Jaishree Singh (2015). "A New Definition for Functional Food by FFC: Creating Functional Food Products Using New Definition." *Functional Foods in Health and Disease*, Vol 5(6):209-223, DOI: 10.31989/ffhd.v5i6.183

May, T. (2011). *Social research*, McGraw-Hill Education, UK.

Menrad, K. (2003). "Market and marketing of functional food in Europe." *Journal of Food Engineering*, 56, 181–188.

Mesanovic E, Selma Kadic-Maglajlic, and Muris Cicic. (2013). "Insights into Health Consciousness in Bosnia and Herzegovina." *Procedia - Social and Behavioral Science*, 81(28), 570–575. DOI: http://dx.doi.org/10.1016/j.sbspro.2013.06.478

Michaelidou, N., and Hassan, L. (2014). "New advances in attitude and behavioural decision-making models." *Journal of Marketing Management*, Vol. 30, Nos. 5–6, 519–528, http://dx.doi.org/10.1080/0267257X.2014.884368

Michaelidou, N., and Hassan, L. M. (2008). "The role of health consciousness, food safety concern and ethical identity on attitudes and intentions towards organic food." *International Journal of Consumer Studies*, 32(2), 163-170.

Miles S., Oydis Ueland, Lynn J. Frewer, (2005). "Public attitudes towards genetically modified food." *British Food Journal*, 107(4), 246-262. DOI: http://dx.doi.org/10.1108/00070700510589521

Million Insights (2019). "Food Premix Market to be Driven by Rising Demand for Food Fortification by 2023." https://www.prnewswire.com/news-releases/food-premix-market-to-be-driven-by-rising-demand-for-food-fortification-by-2023--million-insights-300797738.html (March, 10, 2019).

Ministry of Food Processing Industries (MoFPI) (2017). "High-Growth Segments of Indian Food and Beverage Industry, Ernst & Young LLP (EY) and Confederation of Indian Industry (CII)." https://foodprocessingindia.co.in/pdf/high-growth.pdf (Sep., 20, 2018).

Ministry of Home Affairs (2011). "Office of the Registrar General & Census Commissioner, census data 2011."

Ministry of Personnel, Public Grievances and Pension (2014). "Sixth Central Pay Commission Classification of Cities."

Ministry of Statistics & Programme Implementation (2017). "YOUTH IN INDIA 2017."
http://mospi.nic.in/sites/default/files/publication_reports/Youth_in_India-2017.pdf (Sep., 20, 2018).

Mitra, S. (2015). "Tata Salt revamps packaging, distribution." Livemint, https://www.livemint.com/Companies/i7rfRCMPGjaf6M06l8GJCI/Tata-Salt-revamps-packaging-distribution.html (Sep., 20, 2018).

Mohr, P., Harrison, A., Wilson, C. Baghurst, K. I., and Syrette, J. (2007). "Attitudes, values, and socio-demographic characteristics that predict acceptance of genetic engineering and applications of new technology in Australia." *Biotechnology Journal*, 2, 1169–1178

Moons, I., Barbarossa, C., and De Pelsmacker, P. (2018). "The Determinants of the Adoption Intention of Eco-friendly Functional Food in Different Market Segments." *Ecological Economics*, 151, 151-161.

Moorman, C., and E. Matulich. (1993). "A model of consumers' preventive health behaviors: the role of health motivation and health ability." *Journal of Consumer Research*, 20(2), 208–28. DOI: http://dx.doi.org/10.1086/209344

Monica Behura, M. (2017). "Smoking Out Its FMCG Counterparts, Businessworld." http://businessworld.in/article/Smoking-Out-Its-FMCG-Counterparts/11-07-2017-121868/ (Sep. 11, 2017)

Monneuse, M.O., Bellisle, F. and Koppert, G. (1997). "Eating habits, food and health related attitudes and beliefs reported by French students." *European Journal of Clinical Nutrition,* 51(1), 46-53.

Motadi, S. A., Mbhatsani, V., and Shilote, K. O. (2016). "Food fortification knowledge in women of child-bearing age at Nkowankowa township in Mopani District, Limpopo Province, South Africa." *African Journal of Primary Health Care and Family Medicine,* 8(2), 1-5.

Mullan, B. A., Wong, C., and Kothe, E. J. (2013). "Predicting adolescents' safe food handling using an extended theory of planned behavior." *Food Control,* 31(2), 454-460.

Myers, D.G. and Smith, S.M. (2012). *Exploring social psychology*, McGraw-Hill, New York.

National Family Health Survey (NFHS-4) (2016). "States fact sheets, Ministry Of Health And Family Welfare." http://www.indiaenvironmentportal.org.in/content/424110/national-family-health-survey-2015-16-nfhs-4-states-fact-sheets/

Naylor, R. W., Droms, C. M., and Haws, K. L. (2009). "Eating with a purpose: Consumer response to functional food health claims in conflicting versus complementary information environments." *Journal of Public Policy & Marketing*, 28(2), 221-233.

Neha Deshmukh Patel (2018). "New trends, opportunities, challenges in Indian Food Industry." http://www.nuffoodsspectrum.in/column/37/3643/new-trends-opportunities-challenges-in-indian-food-industry.html (March, 10, 2019)

Newsom, J. T., McFarland, B. H., Kaplan, M. S., Huguet, N., and Zani, B. (2005). "The health consciousness myth: implications of the near independence of major

health behaviours in the North American population." *Social Science & Medicine*, 60, 433-437.

Nielsen (2016). "INDIA ACQUIRES A TASTE FOR HEALTH AND WELLNESS." https://www.nielsen.com/content/dam/corporate/in/docs/reports/2016/nielsen-featured-insights-india-acquires-a-taste-for-health-and-wellness.pdf (Sep., 20, 2018).

Nishi Rath (2011). "Coca-Cola eyes packaged juice market." *India Today,* https://www.indiatoday.in/business/story/coca-cola-the-worlds-biggest-beverage-maker-launches-minute-maid-at-the-food-forum-india-2011-131330-2011-03-31 (Sep., 20, 2018).

Niva, M. and Makela J, (2007). "Finns and functional foods: socio-demographics, health efforts, notions of technology and the acceptability of health-promoting foods." *International Journal of Consumer Studies,* 31(1), 34–45. DOI: 10.1111/j.1470-6431.2005.00482.x

Niva M, (2006). "Can we predict who adopts health-promoting foods? Users of functional foods in Finland." *Scandinavian Journal of Food and Nutrition*, 50 (1), 13-24. DOI: 10.1080/11026480600655378

Noomene, R. J., and Gil, M. (2006). "Extent of knowledge and attitudes of Spanish consumers to genetically modified foods." *Spanish Magazine of Agrosocial and Fisheries Studies*, 201, 87–114.

Norman, G. (2010). "Likert scales, levels of measurement and the "laws" of statistics." *Advances in health sciences education*, 15(5), 625-632.

Nuffoods Spectrum, (2017). "Nutraceutical, Functional Foods, and Dietary Supplements Industry Market in Asia." https://nuffoodsspectrum.asia/analysis/34/47/nutraceutical-functional-foods-and-dietary-supplements-industry-market-in-asia.html (Dec. 15, 2017).

Nunnally, J. C., and I.H. Bernstein (1994). "The assessment of reliability." *Psychometric Theory*, Vol. 3, No. 1, pp. 248-292.

Nunnally, J. C. (1978). *Psychometric theory*, McGraw-Hill. Retrieved from https://books.google.co.in/books/about/Psychometric_theory.html?id=WE59A AAAMAAJ&pgis=1

Nysveen, H., and Pedersen, P. E. (2005). "Search mode and purchase intention in online shopping behaviour." *International Journal of Internet Marketing and Advertising*, 2(4), 288-306.

O'brien, R. M. (2007). "A caution regarding rules of thumb for variance inflation factors." *Quality & Quantity*, 41(5), 673-690.

O'Connor, E. L., and White, K. M. (2010). "Willingness to trial functional foods and vitamin supplements: The role of attitudes, subjective norms, and dread of risks." *Food Quality and Preference*, 21(1), 75-81.

O'guinn, T., Allen, C., Semenik, R., and Scheinbaum, A. C. (2014). *Advertising and integrated brand promotion*, Nelson Education.

Ophuis, P. O. (1989). "Measuring health orientation and health consciousness as determinants of food choice behavior: Development and implementation of various attitudinal scales." *In Proc. 18th Ann. Conf. Eur. Marketing Academy: Marketing thought and practice in the 1990's*, EMAC, Athens (pp. 1723-1725).

Orlikowski, W. J., and Baroudi, J. J. (1991). "Studying information technology in organizations: Research approaches and assumptions." *Information systems research*, 2(1), 1-28.

Osswald, N., and Dittrich, C. (2012). *Sustainable Food Consumption and Urban Lifestyles: The Case of Hyderabad/India*, BoD–Books on Demand, Hyderabad, India.

Pandey, S., and Rai, V. C. (2014). "Consumer Behavior towards Retail Outlets in India-Literature Review." *International Journal of Engineering and Management Research*, 4(2), 228-231.

Panghal, A., Yadav, D. N., Khatkar, B. S., Sharma, H., Kumar, V., and Chhikara, N. (2018). "Post-harvest malpractices in fresh fruits and vegetables: food safety and health issues in India." *Nutrition & Food Science*, 48(4), 561-578.

Park, C. W., Mothersbaugh, D. L., and Feick, L. (1994). "Consumer knowledge assessment." *Journal of Consumer Research*, 21(1), 71–82.

Park, O. H., Hoover, L., Dodd, T., Huffman, L., and Feng, D. (2011). "The effectiveness of the modified expanded rational expectations model to explore adult consumers' functional foods consumption behaviour." *16th Graduate Student Research Conference*, 6–8 January, Houston, Texas. Retrieved from http://scholarworks.

Paul, J., Modi, A., and Patel, J. (2016). "Predicting green product consumption using theory of planned behavior and reasoned action." *Journal of retailing and consumer services*, 29, 123-134.

Pavlou, P. A. (2003). "Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model." *International journal of electronic commerce*, 7(3), 101-134.

Peter, J. P. and Olson, J. C. (1996). *Consumer Behavior and Marketing Strategy*, Chicago, Irwin

Pikkarainen, T., Pikkarainen, K., Karjaluoto, H., and Pahnila, S. (2004). "Consumer acceptance of online banking: an extension of the technology acceptance model." *Internet research*, 14(3), 224-235.

Plummer, J.T., (1975). "The concept and application of life style segmentation." *Journal of Marketing,* 38(1), 33-37. DOI: http://dx.doi.org/10.2307/1250164

Poulsen, J.B (1999). "Danish Consumers Attitudes towards Functional Foods." *MAPP Working Paper No.62,* MAPP, Aarhus, Denmark

Pratap, A. (1988). "Trend setter- Best city for test-marketing." http://indiatoday.intoday.in/story/bangalore-emerges-as-best-city-for-testmarketing/1/329266.html (Sep. 19, 2018).

Pring, R. (2000). "Philosophy of educational research." *British Journal of Educational Studies*, 50 (2):281-283.

Putrevu, S. and Lord, K.R., (1994). "Comparative and non-comparative advertising: Attitudinal effects under cognitive and affective involvement conditions". *Journal of Advertising*, 23(2), 77-91. DOI: http://www.jstor.org/stable/4188929

PwC-FICCI (2013). "Imperatives for growth The wellness industry." *5th Annual Wellness Conference.* https://www.pwc.in/assets/pdfs/publications/2013/imperatives-for-growth-the-wellness-industry.pdf (July, 25, 2015)

Qi, X., and Ploeger, A. (2019). "Explaining consumers' intentions towards purchasing green food in Qingdao, China: The amendment and extension of the theory of planned behavior." *Appetite*, 133, 414-422.

Rajiv Singh (2014). "PediaSure bets on young & smart moms to take on the big boys." The Times of India, https://economictimes.indiatimes.com/pediasure-bets-on-young-smart-moms-to-take-on-the-big-boys/articleshow/38022192.cms (Sep., 20, 2018).

Ramayah, T., Lee, J. W. C., and Mohamad, O. (2010). "Green product purchase intention: Some insights from a developing country." Resources, Conservation and Recycling, 54(12), 1419-1427.

Rao, A.R. and Monroe, K.B. (1988). "The moderating effect of prior knowledge on cue utilization in product evaluations." *Journal of Consumer Research*, Vol. 15 (2), 253-264.

Red seer (2018). "Health Food Drinks (HFD) Market In India – On A Road To Transition." http://redseer.com/reports/health-food-drinks-hfd-market-in-india-on-a-road-to-transition/ (Oct, 13, 2018)

Research and Markets (2016). "India Breakfast Cereal Market Outlook, 2022." https://www.researchandmarkets.com/reports/3999208/india-breakfast-cereal-market-outlook-2022 (April, 10, 2017)

Reteesh S. and Mallick, A. (2014). Market report on "The Health Food Market Booms in India." Jan 23/ http://www.indiaretailing.com/ (April, 10, 2017)

Rezai, G., Kit Teng, P., Mohamed, Z. and Shamsudin, M.N., (2014). "Structural equation modeling of consumer purchase intention toward synthetic functional foods." *Journal of Food Products Marketing*, 20(1), 13-34. DOI: http://dx.doi.org/10.1080/10454446.2014.921868

Rezai, G., Teng, P. K., Mohamed, Z., and Shamsudin, M. N. (2012). "Functional food knowledge and perceptions among young consumers in Malaysia". *World Acad. Sci. Int. J. Bio. Vet. Agri. Food Eng*, 6, 207-312.

Rezai, G., Teng, P. K., Shamsudin, M. N., Mohamed, Z., and Stanton, J. L. (2017). "Effect of perceptual differences on consumer purchase intention of natural functional food." *Journal of Agribusiness in Developing and Emerging Economies,* 7(2), 153-173.

Riebl, S. K., MacDougal, C., Hill, C., Estabrooks, P. A., Dunsmore, J. C., Savla, J., and Davy, B. M. (2016). "Beverage choices of adolescents and their parents using the theory of planned behavior: a mixed methods analysis." *Journal of the Academy of Nutrition and Dietetics*, 116(2), 226-239.

Rifnaz, M.B.M., Jayasinghe-Mudalige, U.K., Guruge, T.P.S.R., Udugama, J.M.M., Herath, H.M.L.K. and Edirisinghe, J.C. (2016). "Perceived health status of consumers and incorporation of functional ingredients into their diet." *Procedia Food Science*, 6, 56-59. DOI: http://dx.doi.org/10.1016/j.profoo.2016.02.011

Rogers, E. M. (2010). "Diffusion of innovations." Simon and Schuster.

Rogers, Everett M. (1962). *Diffusion of innovations,* Free Press of Glencoe, New York.

Rogers, Everett M. (1983). *Diffusion of innovations*, Free Press of Glencoe, New York.

Rojas-Mendez J.I, Manon Le Nestour and Michel Rod (2015). "Understanding Attitude and Behavior of Canadian Consumers Toward Organic Wine." *Journal of Food Products Marketing,* 21(4), 375-396, DOI: 10.1080/10454446.2014.885869

Rojas-Mendez J.I, Sadrudin A. Ahmed, Rodrigo Claro-Riethmuller and Achim Spiller, (2012). "Acceptance of Genetically Modified Foods with Health Benefits: A Study in Germany." *Journal of Food Products Marketing*, 18(3), 200-221. DOI: http://dx.doi.org/10.1080/10454446.2012.666453

Roos E, Lahelma E, Virtanen M, Prattala R, and Pietinen P. (1998). "Gender, socioeconomic status and family status as determinants of food behavior." *Soc Sci Med.,* 46(12), 1519–1529.

Rosenstock, Irwin (1974). "Historical Origins of the Health Belief Model." *Health Education Behavior,* 2 (4): 328–335. doi:10.1177/109019817400200403

Saaksjarvi M., Maria Holmlund and Nina Tanskanen, (2009). "Consumer knowledge of functional foods." *The International Review of Retail, Distribution and Consumer Research*, 19(2), 135-156, DOI: 10.1080/09593960903109469

Sabbe S, Verbeke W, Deliza R, Matta V and Van Damme P. (2009). "Effect of a health claim and personal characteristics on consumer acceptance of fruit juices with different concentrations of açai." *Appetite*, 53(1), 84-92. DOI: 10.1016/j.appet.2009.05.014

Sae-Eaw A, Chompreeda P, Prinyawiwatkul W, Haruthaithanasan V, Suwonsichon T, Saidu JE and Xu Z. (2007). "Acceptance and purchase intent of US consumers for nonwheat rice butter cakes." *J Food Sci.,* 72(2), S92-7. DOI: 10.1111/j.1750-3841.2006.00256.x

Salmerón Gómez, R., García Pérez, J., López Martín, M. D. M., and García, C. G. (2016). "Collinearity diagnostic applied in ridge estimation through the variance inflation factor." *Journal of Applied Statistics,* 43(10), 1831-1849.

Samudranil (2017). "5 commonest lifestyle diseases in India." MyIndia, https://www.mapsofindia.com/my-india/india/5-commonest-lifestyle-diseases-in-india (Sep. 4, 2017)

Sandmann, A., Amling, M., Barvencik, F., König, H. H., and Bleibler, F. (2017). "Economic evaluation of vitamin D and calcium food fortification for fracture prevention in Germany." *Public health nutrition*, 20(10), 1874-1883.

Sanjeev, U. (2016). "Lifestyle Diseases Swallows India." *International Journal of Cardiovascular Nursing*, 1(1), 32-32.

Santanu Mandal and Rik Paul (2012). "Consumer Perception of Genetically Modified Food: Empirical Evidence From India." *Journal of International Food & Agribusiness Marketing*, 24(2), 169-183. DOI: 10.1080/08974438.2012.665793

Sapp, S. G. (1991). "Impact of nutritional knowledge within an expanded rational expectations model of beef consumption." *Journal of Nutrition Education*, 23(5), 214-222.

Saunders, M., Lewis, P., and Thornhill, A. (2009). *Research methods for business students,* Pearson education. Financial Times Prentice Hal. pp. 165-196.

Seechurn D, Harris Neeliah and Shalini A Neeliah, (2009)." Functional foods in Mauritius: A consumer survey." *Journal of Development and Agricultural Economics*, 1(9), 204-211

Schiffman, L., Hansen H. and Kanuk L. (2007). *Consumer Behaviour: A European Outlook*, Pearson Education, London.

Schiffman, Leon G. and Leslie Lazer Kanuk (2008). *Consumer Behaviour*, 8th ed., Prentice Hall of India Pvt. Ltd.: New Delhi, p no. 238

Schivinski, B. and Dąbrowski, D. (2014). "The consumer-based brand equity inventory: scale construct and validation." *GUT FME Working Paper Series A*, Gdansk University of Technology, Faculty of Management and Economics, 22(4).

Scotland J. (2012). "Exploring the Philosophical Underpinnings of Research: Relating Ontology and Epistemology to the Methodology and Methods of the Scientific, Interpretive, and Critical Research Paradigms." *English Language Teaching*, 5(9). URL: http://dx.doi.org/10.5539/elt.v5n9p9

Shan, L. C., Henchion, M., De Brún, A., Murrin, C., Wall, P. G., and Monahan, F. J. (2017). "Factors that predict consumer acceptance of enriched processed meats." *Meat science*, 133, 185-193.

Shao, Chris Y., Julie B., & Wagner, Judy A. (2004). "The Effects of Appropriateness of Services Contact Personnel Dress on Customer Expectations of Involvement and Gender." *Journal of Business Research*, 57, 1164-1176. http://dx.doi.org/10.1016/S0148-2963 (02)00326-0

Sharma, M., and Majumdar, P. K. (2009). "Occupational lifestyle diseases: An emerging issue." *Indian journal of occupational and environmental medicine*, 13(3), 109.

Sharma, M and Shweta Garg, (2013). "Functional Foods: Marketing 'Health' To Modern India." *International Journal of Innovative Research & Development*, Vol 2 Issue 5, ISSN: 2278 – 0211

Shashidhar, A. (2016). "The Rs 80,000 crore milk business." Business Today, https://www.businesstoday.in/magazine/cover-story/indian-dairy-market-is-on-a-tear-due-to-new-players/story/232545.html (Sep., 20, 2018).

Shaw, D.S. and Shiu, E. (2002). "The role of ethical obligation and self-identity in ethical consumer choice." *International Journal of Consumer Studies*, 26, 109–116.

Shepherd, R. (1989). "Handbook of the Psychophysiology of Human Eating." Factors influencing food preferences and choice, In: Shepherd (ed.),. pp. 3–24. John Wiley and Sons Ltd, Chichester, UK.

Shepherd, R. (1999). "Social determinants of food choice." *Proceedings of the Nutrition Society*, 58(4), 807-812

Shimizu T. (2003). "Health claims on functional foods: the Japanese regulations and an international comparison." *Nutr. Res. Rev.*, 16(2):241-52. doi: 10.1079/NRR200363.

Shin, J., and Mattila, A. S. (2019). "When organic food choices shape subsequent food choices: The interplay of gender and health consciousness." *International Journal of Hospitality Management*, 76, 94-101.

Shin, Y. H., Im, J., Jung, S. E., and Severt, K. (2018). "The theory of planned behavior and the norm activation model approach to consumer behavior regarding organic menus." *International Journal of Hospitality Management*, 69, 21-29.

Siegrist M. (2008). "Factors influencing public acceptance of innovative food technologies and products." *Trends in Food Science & Technology*, 19(11), 603–608. DOI: http://dx.doi.org/10.1016/j.tifs.2008.01.017

Shukla, R. and Sharma, V. (2018). "INDIAN YOGURT STORY." http://www.technopak.com/files/indian-yogurt-market.pdf (Sep., 20, 2018)

Singh, A., and Verma, P. (2017). "Factors influencing Indian consumers' actual buying behaviour towards organic food products." *Journal of Cleaner Production*, 167, 473-483.

Singh, R. and Raghavan, P. (2018). "Whoever buys Horlicks must reckon with better informed consumers in a Rs 7,000 crore market." The Economic Times, https://economictimes.indiatimes.com/industry/cons-products/food/whoever-buys-horlicks-must-reckon-with-better-informed-consumers-in-a-rs-7000-crore-market/articleshow/63560169.cms (Sep., 20, 2018).

Singleton R. A., and Straits B. C. (2009). *Approaches to social research*, Oxford University Press, New York.

Siro I, Emese Ka´polna, Bea´ ta Ka´polna, and Andrea Lugasi. (2008). "Functional food. Product development, marketing and consumer acceptance—A review." *Appetite*, 51, 456–467

Slovin, E. (1960). "Slovin's formula for sampling technique." (May, 26, 2015)

Solomon, M., Bamossy, G., Askegaard, S., and Hogg, M.K. (2006). *Consumer Behaviour: A European Perspective.* Fourth Edition. Harlow: Prentice Hall.

Sparks, P., Shepherd, R. and Frewer, L.J. (1995). "Assessing and structuring attitudes towards the use of gene technology in food production: the role of perceived ethical obligation." *Basic and Applied Social Psychology*, 16, 267–285.

Stallworth, P. (2008). *Consumer behaviour and marketing strategic*, online, p.9.

Statista (2018). Global health and wellness food market value 2016-2021. https://www.statista.com/statistics/502267/global-health-and-wellness-food-market-value/ (Oct, 14, 2018)

Statista (2019). Food & Beverages, https://www.statista.com/outlook/253/119/food-beverages/india (March, 10, 2019)

Stefanie A Fila and Chery Smith, (2006). "Applying the Theory of Planned Behavior to healthy eating behaviors in urban Native American youth." *International Journal of Behavioral Nutrition and Physical Activity*, 3:11 doi: 10.1186/1479-5868-3-11

Steven A. Taylor, Gary L. Hunter, and Timoty A. Longfellow (2006). "Testing an Expanded Atttitude Model of Goal Directed Behaviour in Loyalty Context." *Journal of Consumer Satisfaction, Dissatisfaction and Complaning Behaviour*, 19, pp. 18-39.

Stone, M. (1974). "Cross-validatory choice and assessment of statistical predictions." *Journal of the royal statistical society. Series B (Methodological)*, 111-147.

Sullivan, G. M., and Artino Jr, A. R. (2013). "Analyzing and interpreting data from Likert-type scales." *Journal of graduate medical education*, 5(4), 541-542.

Sun, Y. H. C. (2008). "Health concern, food choice motives, and attitudes toward healthy eating: the mediating role of food choice motives." *Appetite*, 51(1), 42-49.

Sutar, N., Namrata Sutar, P.P. Sutar and Debabandya Mohapatra (2010). "New Horizons In Functional Food Sector: New Horizons In Functional Food Sector: An Indian Perspective." *J. Dairying, Foods & H.S.,* 29 (3/4), 166- 172.

Sweeney, J., and Soutar, G. (2001). "Consumer perceived value: the development of multiple item scale". *Journal of Retailing*, 77(2), 203-220. DOI: http://dx.doi.org/10.1016/S0022-4359(01)00041-0

Tan, C. L., Gan, V. B., Saleem, F., and Hassali, M. A. (2016). "Building intentions with the Theory of Planned Behaviour: the mediating role of knowledge and expectations in implementing new pharmaceutical services in Malaysia." *Pharm Pract* (Granada), 14(4).

Tanuja, Bisht (2018). "11 Lifestyle Diseases in India That You Should Take Seriously" https://blog.gomedii.com/health-care/11-lifestyle-diseases-in-india/

Tarkiainen, A., and Sundqvist, S. (2005). "Subjective norms, attitudes and intentions of Finnish consumers in buying organic food." *British food journal*, 107(11), 808-822.

Taro, Y. (1967). *Statistics: An Introductory Analysis,* 2nd Edition, New York: Harper and Row.

Taylor, S., and Todd, P. (1995). "An integrated model of waste management behavior: A test of household recycling and composting intentions." *Environment and behavior*, 27(5), 603-630.

Tenenhaus, M., Vinzi, V. E., Chatelin, Y. M., and Lauro, C. (2005). "PLS path modelling." *Computational statistics & data analysis*, 48(1), 159-205.

Teo, T.S.H. and Pok, S.H. (2003). "Adoption of WAP-enabled mobile phones among internet users." *The International Journal of Management Science*, Vol. 31 No. 6, pp. 483-498.

The Business Research Company (2018). "Food And Beverages Global Market Report 2018." https://www.thebusinessresearchcompany.com/report/food-and-beverages-global-market-report-2018 (Oct, 12, 2018).

The Economic Times (2014). "Green tea market to touch Rs 400 crore in FY'15: Tata Global." https://economictimes.indiatimes.com/industry/cons-products/food/green-tea-market-to-touch-rs-400-crore-in-fy15-tata-global/articleshow/45011353.cms (Sep., 20, 2018).

The Hartman Group (2015). *Consumer Trends in Health and Wellness*, https://www.forbes.com/sites/thehartmangroup/2015/11/19/consumer-trends-in-health-and-wellness/#59937930313e (Dec. 15, 2015).

The Hindu (2012). "Amul to speed up Rs 3,000-cr expansion plan." https://www.thehindubusinessline.com/economy/amul-to-speed-up-rs-3000-cr-expansion-plan/article20426258.ece1 (Sep., 20, 2018).

The Times of India (2018). "ITC's Aashirvaad becomes Rs 4,000 cr brand, forays into new segments." http://timesofindia.indiatimes.com/articleshow/63188451.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst (June, 10, 2018).

Thompson, B. (2004). "Exploratory and confirmatory factor analysis: Understanding concepts and applications." *American Psychological Association*, Washington, DC, US. http://dx.doi.org/10.1037/10694-000

Thompson, B. (2007). "Food-based approaches for combating iron deficiency." *Nutritional anemia,* 337.

Trading Economics (2018). "India Total Disposable Personal Income." https://tradingeconomics.com/india/disposable-personal-income (SEP, 5, 2018).

Transparency Market Research (TMR) (2017). "Fortified Food Market - Global Industry Analysis, Size, Share, Growth, Trends, and Forecast 2016 – 2024, United States." http://www.transparencymarketresearch.com/fortified-food-market.html (March, 5, 2017).

Trappey A.F, C. E. Johnson and P. W. Wilson. (2007). "Consumer Acceptance of Mayhaw Juice Blended with Muscadine Grape." *International Journal of Fruit Science*, 6(3), 271-281. DOI: 10.1300/J492v06n03_05

Trauth, E.M. (2005). "Qualitative Methods in IS Research." *Encyclopedia of Information Science and Technology*, 3171-3173, IGI Global, USA.

Union Minister for Commerce & Industry (2018). http://www.businessworld.in/article/Indian-Food-Market-Expected-To-Cross-USD-540-Billion-By-2020-Suresh-Prabhu-Union-Minister-For-Commerce-Industry/18-01-2018-137731/ (SEP, 5, 2018).

Urala N, Howard Schutz, and Julie Spinks (2011). "Consumer Perceptions of "Functional Food" in the United States." *Journal of Food Products Marketing*, 17:407–419.

Urala, N. and Lisa Lahteenmaki (2003). "Reasons behind consumers functional food choices." *Nutrition & Food Science,* 33(4), 148-158.

USDA (2016). "Food Composition Databases, United States Department of Agriculture." *Agricultural Research Service*. https://ndb.nal.usda.gov/ndb/search/list (June, 10, 2016)

Van Huy, L., Chi, M. T. T., Lobo, A., Nguyen, N., and Long, P. H. (2019). "Effective Segmentation of Organic Food Consumers in Vietnam Using Food-Related Lifestyles." *Sustainability*, 11(5), 1237.

Vella M.N., Laura M Stratton, Judy Sheeshka and Alison M Duncan (2014). "Functional food awareness and perceptions in relation to information sources in older adults." *Nutrition Journal*, 13(44), DOI: 10.1186/1475-2891-13-44

Venkatesh, V. and Bala, H. (2008). "Technology Acceptance Model 3 and a Research Agenda on Interventions." *Decision Sciences*, 39(2), 273–315, doi:10.1111/j.1540-5915.2008.00192.x

Venkatesh, V. and Davis, F. D. (2000). "A theoretical extension of the technology acceptance model: Four longitudinal field studies." *Management Science* 46 (2): 186–204, doi:10.1287/mnsc.46.2.186.11926

Venkatesh, V., Morris, M. G., Davis, G. B., and Davis, F. D. (2003). "User acceptance of information technology: Toward a unified view." *MIS Quarterly,* 27 (3): 425–478

Venkatesh, V., Thong, J. Y., and Xu, X. (2012). "Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology." *MIS quarterly,* 157-178.

Verbeke W, (2005). "Consumer acceptance of functional foods: socio-demographic, cognitive and attitudinal determinants." *Food Quality and Preference*, 16 (1), 45-57. DOI: http://dx.doi.org/10.1016/j.foodqual.2004.01.001

Verdurme, A. and Viaene, J., (2003). "Consumer beliefs and attitude towards genetically modified food: basis for segmentation and implications for communication". *Agribusiness,* 19(1), 91-113. DOI: 10.1002/agr.10045

Vijayasarathy, L.R., (2004). "Predicting consumer intentions to use on-line shopping: the case for an augmented technology acceptance model." *Information and Management archive,* Volume 41(6), 747 – 762.

Walters, C. G. (1974). *Consumer behavior: Theory and practice*, R.D. Irwin. p7

Wandel, M., and Bugge, A. (1997). Environmental concern in consumer evaluation of food quality. *Food quality and preference*, *8*(1), 19-26.

Wang, Y. (2017). "Promoting Sustainable Consumption Behaviors: The Impacts of Environmental Attitudes and Governance in a Cross-National Context." *Environment and Behavior,* 49(10), 1128-1155.

Wang, Y., Wiegerinck, V., Krikke, H., and Zhang, H. (2013). "Understanding the purchase intention towards remanufactured product in closed-loop supply chains." *International Journal of Physical Distribution & Logistics Management*, 43(10), 866–888. doi:10.1108/ijpdlm-01-2013-0011

Watson, J. (2006). "Middle Class India Joins Global Organic Food Wave." http://www.terradaily.com/reports/Middle_Class_India_Joins_Global_Organic _Food_Wave.html (Sep., 20, 2018).

Wee, C. S., Ariff, M. S. B. M., Zakuan, N., Tajudin, M. N. M., Ismail, K., and Ishak, N. (2014). "Consumers perception, purchase intention and actual purchase

behavior of organic food products." *Review of Integrative Business and Economics Research*, 3(2), 378.

Wells, W. D., Tigert, D. J., and Activities, I. (1971). "Opinions." *Journal of advertising research,* 11(4), 27-35.

Weststrate, J. A., Van Poppel, G., and Verschuren, P. M. (2002). "Functional foods, trends and future." *British Journal of Nutrition*, 88(S2), S233-S235.

Wetzels, M., Odekerken-Schröder, G., and Van Oppen, C. (2009). "Using PLS path modeling for assessing hierarchical construct models: Guidelines and empirical illustration." *MIS quarterly*, 177-195.

Willett, W. C., Koplan, J. P., Nugent, R., Dusenbury, C., Puska, P., and Gaziano, T. A. (2006). "Prevention of chronic disease by means of diet and lifestyle changes."

Williams, P. R., and Hammitt, J. K. (2001). "Perceived risks of conventional and organic produce: pesticides, pathogens, and natural toxins." *Risk analysis*, 21(2), 319-330.

Wong, S. L., Hsu, C. C., and Chen, H. S. (2018). "To buy or not to buy? Consumer attitudes and purchase intentions for suboptimal food." *International journal of environmental research and public health*, 15(7), 1431.

World Health Organization (2015) "Global Status Report on Noncommunicable Diseases 2014: Attaining the nine global noncommunicable diseases targets; a shared responsibility." https://reliefweb.int/report/world/global-status-report-noncommunicable-diseases-2014-attaining-nine-global (Dec, 10, 2015)

World Health Organization (2017). "Food Fortification: Global Mapping Study 2016." https://ec.europa.eu/europeaid/food-fortification-global-mapping-study-2016_en (Sep., 20, 2018).

Wu, J. H. and Wang, S C. (2005). "What drives mobile commerce? An empirical evaluation of the revised technology acceptance model." *Information and Management*, 42 (5): 719–729

Yadav, R., and Pathak, G. S. (2016). "Young consumers' intention towards buying green products in a developing nation: Extending the theory of planned behavior." *Journal of Cleaner Production,* 135, 732-739.

Yazdanpanah, M., and Forouzani, M. (2015). "Application of the Theory of Planned Behaviour to predict Iranian students' intention to purchase organic food." *Journal of Cleaner Production*, 107, 342-352.

Yeon Kim, H., and Chung, J. E. (2011). "Consumer purchase intention for organic personal care products." *Journal of consumer Marketing*, 28(1), 40-47.

Yun Z.S , Swati Verma , Dawn Thorndike Pysarchik , Jong-Pil Yu and Shahana Chowdhury (2008). "Cultural influences on new product adoption of affluent consumers in India." *The International Review of Retail, Distribution and Consumer Research*, 18(2), 203-220, DOI: 10.1080/09593960701868464

Yusoff, Y. M., Ramayah, T., and Othman, N. Z. (2015). "Why examining adoption factors, HR role and attitude towards using E-HRM is the start-off in determining the successfulness of green HRM." *J. Adv. Manag. Sci*, 3.

Zhou, Y., Thøgersen, J., Ruan, Y., and Huang, G. (2013). "The moderating role of human values in planned behavior: the case of Chinese consumers' intention to buy organic food." *Journal of Consumer Marketing*, 30(4), 335-344.

Zhu, X., and Xie, X. (2015). "Effects of knowledge on attitude formation and change toward genetically modified foods." *Risk Analysis*, 35(5), 790-810.

Appendix- A

I am **Shamal S** from **National Institute of Technology Karnataka, Surathkal**. I am doing Ph.D. in the area of "A Study on Consumer Acceptance of Branded Fortified Foods & Beverages in India". I will be very much grateful for your valuable time and effort that you will be putting while filling the questionnaire. I am very much thankful to you for your co-operation and valuable inputs.

Fortified Foods & Beverages (FFBs) are foods or food products to which extra nutrients have been added it includes packaged food and beverages to which healthy ingredients (e.g. calcium, omega3) have been actively added (PwC-FICCI, 2013).

Section 'A' General Information

1.   Did you consume any of the Fortified Foods & Beverages? 1 ☐ Yes 2 ☐ No

1a, if 'yes' please ☑ the products you have consumed from the following:

1 ☐ Minute Maid Original Fortified Orange Juice 2 ☐ Bournvita Lil Champs

3 ☐ Sofit Soya Milk 4 ☐ Kellogg's Special K Breakfast Cereals

5 ☐ Aashirvaad Fortified Atta 6 ☐ Tata Salt Plus

7 ☐ Britannia Fortified Flavoured Yogurt 8 ☐ PediaSure Grow & Gain

9 ☐ Horlicks Lite 10 ☐ Gold Winner Fortified Sunflower Oil

11 ☐ Tetley Green Tea 12 ☐ Amul PRO

13 ☐ Nestle Cerelac Infant Cereal 14 ☐ Amul Calci+ Milk 15 ☐ Others...

2.   Location of Residence: 1 ☐ Delhi 2 ☐ Bengaluru
3 ☐ Hyderabad 4 ☐ Ahmedabad

3.   Gender: 1 ☐ Male 2 ☐ Female

4.   Age Group: 1 ☐ 18-24 years 2 ☐ 25-35 years 3 ☐ 36-45 years
4 ☐ 46-55 years 5 ☐ Above 55years

5. Marital Status: 1 ☐ Married   2 ☐ Unmarried

6. Employment status: 1 ☐ Employed   2 ☐ Unemployed

    5a, if employed: 1 ☐ Private sector 2 ☐ Government sector

    3 ☐ Self-employed 4 ☐ Other……..

7. Family monthly income (in INR):

    1 ☐ 25,000 and below   2 ☐ Between 25001- 50000

    3 ☐ Between 50001- 75000 4 ☐ Between 75001- 100000

    5 ☐ Above 1,00,000

8. Education: 1 ☐ Up to 12th Standard   2 ☐ Graduate

    3 ☐ Post graduate 4 ☐ PhD

    5 ☐ Others (ITI & Diploma Courses)

9. Present Health Status: 1 ☐ No health problems

    2 ☐ Having at least any one of the lifestyle disease
        (Heart Related Issues, Obesity, Blood Pressure, Diabetes etc.)

10. From which of the following store do you purchase FFB?

    1 ☐ Hypermarkets   2 ☐ Medical store   3 ☐ Online store

    4 ☐ Retail outlets   5 ☐ Supermarkets

11. From which of the following source you are getting information about
Fortified Foods & Beverages?

    1 ☐ Health Professionals   2 ☐ Friends and Family

    3 ☐ Nutritional Labels   4 ☐ Newspapers

    5 ☐ Television   6 ☐ Internet/ Social media

12. Please rank any 3 of the following information source you believe is most reliable?

1 ☐ Health Professionals   2 ☐ Friends and Family

3 ☐ Nutritional Labels   4 ☐ Newspapers

5 ☐ Television   6 ☐ Internet/ Social media

Section 'B' Factors Influencing Consumer Acceptance of Fortified Foods & Beverages

Please indicate your level of agreement or disagreement with the following statements given below:

Note: SD (1): Strongly Agree, D (2): Disagree, SD (3): Slightly Disagree, N (4): Neutral
SA (5): Slightly Agree, A (6): Agree, SA (7): Strongly Agree

		SD (1)	D (2)	SD (3)	N (4)	SA (5)	A (6)	SA (7)
13	I know at least one product of Fortified Foods & Beverages							
14	I easily recognize Fortified Foods & Beverages among other products							
15	The *fssai* logo helps me to buy FFBs							
16	I recognize the nutrition labels of Fortified Foods & Beverages							
17	The information provided on the nutrition label is very much understandable							
18	Nutrition label helps me to buy Fortified Foods& Beverages							
19	I am well aware about the benefits of Fortified Foods & Beverages							
20	Consumption of Fortified Foods& Beverages helps to prevent lifestyle diseases							
21	Consumption of Fortified Foods& Beverages leads to a healthy lifestyle							

227

		SD (1)	D (2)	SD (3)	N (4)	SA (5)	A (6)	SA (7)
22	Buying Fortified Foods & Beverages is a good idea							
23	Fortified Foods & Beverages are healthier							
24	Fortified Foods & Beverages have superior quality							
25	Fortified Foods & Beverages are more tasty							
26	Fortified Foods & Beverages are better than the traditional ones							
27	Fortified Foods & Beverages are low-priced than traditional ones							
28	I am confident that consuming FFBs will benefit me to solve my health problems							
29	Fortified Foods & Beverages have no harmful effects							
30	Fortified Foods & Beverages are important for a healthy lifestyle							
31	My family & friends think that I should buy Fortified Foods & Beverages							
32	People whose opinion I value prefer that I should buy Fortified Foods & Beverages							
33	TV programs help me to eat healthy							
34	Newspapers help me to eat healthy							
35	The public health organizations (FSSAI, IPHA etc.) think I should engage in healthy eating							
36	My doctors suggest me to engage in healthy eating							
37	My family and friends would rather buy FFBs rather than traditional food products							

		SD (1)	D (2)	SD (3)	N (4)	SA (5)	A (6)	SA (7)
38	To buy or not to buy Fortified Foods & Beverages is entirely up to me							
39	I am confident that if I want, I can buy Fortified Foods & Beverages							
40	I have money and time to buy Fortified Foods & Beverages							
41	I think it is easy for me to buy Fortified Foods & Beverages							
42	I believe I have the ability to purchase Fortified Foods & Beverages							
43	I see myself as capable of purchasing Fortified Foods & Beverages in future.							
44	I have plenty of health reasons to purchase FFBs							
45	I am self-conscious about my health							
46	I chose food carefully to ensure better health							
47	I consider myself as a health conscious consumer							
48	I think often about health related issues							
49	I only worry about my health when I get sick							
50	Living life without disease and illness is very important to me							
51	Living life in the best possible health is very important to me							
52	My health depends on how well I take care of myself							
53	I am alert to changes in my health							
54	I am concerned about my health all the time							
55	I take responsibility for the state of my health							

		SD (1)	D (2)	SD (3)	N (4)	SA (5)	A (6)	SA (7)
56	I actively try to prevent disease or illness							
57	I am willing to buy Fortified Foods & Beverages while shopping							
58	I will make an effort to buy Fortified Foods & Beverages in the near future							
59	I would recommend Fortified Foods & Beverages to friends or relatives							
60	I intend to purchase Fortified Foods & Beverages if they are available for purchase							
61	I would recommend others consumption of Fortified Foods & Beverages							
62	I would prefer to buy Fortified Foods & Beverages than prepare them at home							
63	I intend to continue using Fortified Foods & Beverages							
Thank you								

Appendix B

Market Penetration of FFBs Brands Considered for the Study

Product Category	Fortified Foods and Beverage Brands	Source of Reference
1. Fortified Cereals and Cereal based products	• Kellogg's Special K Breakfast Cereals • Aashirvaad Fortified Atta	• Bhushan (2017) • The Times of India (2018)
2. Infant Formulas	• Nestle Cerelac Infant Cereal • PediaSure Grow & Gain	• Dutta (2016) • Rajiv Singh (2014)
3. Fortified Milk and Milk Products	• Sofit Soya Milk • Britannia Fortified Flavoured Yogurt • Amul Calci+ Milk	• Exchange4media (2004) • Shukla and Sharma (2018) • Shashidhar (2016)
4. Fortified Fats and Oils	• Gold Winner Fortified Sunflower Oil	• BestMediaInfo (2016)
5. Accessory Food Items	• Tata Salt Plus	• Mitra (2015)
6. Fortified Tea and Other Beverages	• Minute Maid Original Fortified Orange Juice • Tetley Green Tea	• Nishi Rath (2011) • The Economic Times (2014)
7. Malted Health Drinks	• Bournvita Lil Champs • Horlicks Lite • Amul PRO	• Gupta (2013) • Singh and Raghavan (2018) • The Hindu (2012)

Source: Review of Literature

<div align="center">**BIO-DATA**</div>

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ACADEMIC QUALIFICATION

M.Com   Department of Commerce and Management, Dr. Gafoor Memorial MES Mampad College (University of Calicut) with specialisation in **Financial Management** during the academic years 2009-2011 with **75.9%** of marks.

B.com   St.Mary's College Puthanangadi, under University of Calicut, with specialisation in **Co-operation** during the academic years 2006- 2009 with **69.8%** of marks.

INTERMEDIATE GGHSS Perinthalmanna, under Kerala State Higher Secondary Board, Kerala, during the Academic years 2004-2006 with **68%** of marks.

ELIGIBILITY

- Qualified **UGC – NET** by University Grant Commission (UGC), New Delhi (November -2011).

WORKSHOPS/FDP's ATTENDED

- Participated in a **Faculty Development Programme (FDP)** on **Multivariate Data Analysis** conducted by Indian Institute of Management Kozhikode.

- Participated in a **Short Term Course** on **Data Analysis for Research in Social Sciences and Management** conducted by National Institute of Technology Tiruchirappalli.

- Participated in a **Faculty Development Programme (FDP)** on **Multivariate Data Analysis using SPSS and AMOS – A Publication Focus** conducted by TAPMI, Manipal.

- Participated in **Global Initiative of Academic Networks 5 days Course** on **Environmental Economics and Sustainable Development: Theory and Methodology for Valuation** conducted by School of Management, National Institute of Technology Karnataka, Surathkal.

- Participated in a **National Workshop on Data Analysis & Advanced Statistical Techniques using SPSS & AMOS** conducted by VIT University, Vellore.

- Participated in **"R" Training workshop** on **Qualitative research** Conducted by Christ University Nodal Office, Trivandrum.

- Participated in a **National Workshop** on **Services Marketing and Persuasive Communication to B2B Customers** conducted by National Institute of Technology Karnataka, Surathkal**.**

- Participated in a **National Workshop** on **Big data analytics** conducted by School of Management, National Institute of Technology Karnataka, Surathkal.

- Participated in a **National Workshop** on **Mobile Health** conducted by School of Management, National Institute of Technology Karnataka, Surathkal.

- Participated in a **National Workshop** on **Intellectual Property Rights** conducted by TEQIP III, National Institute of Technology Karnataka, Surathkal.

LIBRARIES VISITED

- Indian Institute of Management **Ahmedabad**

- Indian Institute of Management **Kozhikode**

PUBLICATION DETAILS

Publications in Journals

- Shamal, S., and Mohan, B. C. (2017). "Consumer behaviour in fortified food choice decisions in India." *Nutrition & Food Science,* 47(2), 229-239. (3 Citations)

Publications in Conference Proceedings

- Shamal, S., and Mohan, Bijuna. C. (2017). "Consumer Acceptance of Branded Fortified Foods & Beverages in India: Potential for Healthy Marketing." *Proceedings of the IIM-NASMEI Summer Marketing conference, Indian Institute of Management Indore.*

- Shamal, S., and Mohan, Bijuna. C. (2016). "Branded Health Foods & Beverages: Need for a Consumer Acceptance Model." *Proceedings of the Conference on Brand Management, Indian Institute of Technology Delhi.*

- Shamal, S., & Mohan, B. C. (2015). "Functional Food Acceptance in India: Socio-Demographic and Lifestyle Determinants." *Proceedings of the 1st IIMA International Conference on Advances in Healthcare Management Services at Indian Institute of Management Ahmedabad.* (3 Citations)

Publications in Magazine

- Shamal, S., and Bijuna C. Mohan. (2015). "Lifestyle Change of Consumers: Need for Functional Foods in India." *Ingredients South Asia (ISA) magazine*, 16-31.

Publications under Review

- Shamal, S., and Mohan, Bijuna. C. (2018). "Consumer Acceptance of Branded Fortified Foods and Beverages in India." *Indian Journal of Marketing*