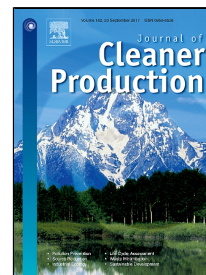


Accepted Manuscript

Factors influencing Indian consumers' actual buying behaviour towards organic food products

Anupam Singh, Priyanka Verma



PII: S0959-6526(17)31823-1
DOI: 10.1016/j.jclepro.2017.08.106
Reference: JCLP 10364
To appear in: *Journal of Cleaner Production*

Received Date: 28 November 2015

Revised Date: 12 August 2017

Accepted Date: 13 August 2017

Please cite this article as: Anupam Singh, Priyanka Verma, Factors influencing Indian consumers' actual buying behaviour towards organic food products, *Journal of Cleaner Production* (2017), doi: 10.1016/j.jclepro.2017.08.106

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Factors influencing Indian consumers' actual buying behaviour towards organic food products

Anupam Singh

Senior Research Fellow, Department of Management Studies, Maulana Azad National Institute of Technology (MANIT), Bhopal, India 462051, e-mail: mr.anupam123@gmail.com,

Mb# 7691913135

Priyanka Verma

Assistant Professor, Department of Management Studies, Maulana Azad National Institute of Technology (MANIT), Bhopal, India 462051, e-mail: drpriyankaverma@rediffmail.com,

Mb# 9826568670

Factors influencing Indian consumers' actual buying behaviour towards organic food products

ABSTRACT

The organic foods are perceived as more nutritious, healthy, and nature-friendly than conventional food. Consumers, therefore, are switching over to organic food products and are willing to pay a premium price. The purpose of this study is to examine the factors influencing the consumers' actual buying behaviour towards organic foods. For this purpose, a survey data were collected from 611 Indian consumers through a structured questionnaire. The data were analysed using various techniques like factor analysis, independent t-test, ANOVA multiple linear regression, and hierarchical multiple regression analysis. Results have confirmed four factors (health consciousness, knowledge, subjective norms, and price) that influence the consumer attitude towards organic food products. However, purchase intention towards organic foods is affected by these four factors along with one additional factor (i.e., availability). The results show that these five factors also influence the actual buying behaviour but attitude and purchase intention mediates the relationship. Further, socio-demographic factors (age, education and income) also found to have an impact on actual buying behaviour. This study provides a better understanding of consumers' attitude, purchase intention and actual buying behaviour towards organic food products. The findings have implications for companies of the organic food industry, retailers and market regulatory agencies. The study also provides guidelines and suggestions for retailers and marketers who are dealing with the organic foods and aim at expanding the organic food market.

Key Words: Organic Food products, Consumer Attitude, Purchase Intention, Actual Buying Behaviour, India

1. Introduction

Environmental awareness and increasing interest of consumers in organic foods and willingness to pay for organic features lead to corporate interest in organic marketing, initiating major changes and innovations (Peattie and Crane, 2005). The enhanced consciousness has a thoughtful effect on the consumer, with organic product market expanding at the decent rate (Bhaskaram et

al., 2006). The growth of organic product is seen as part of emerging marketing trends where consumers seek to know what an organic product can deliver before making purchase decisions (Thøgersen et al., 2016).

When India had low population, agriculture was almost organic and nearer to nature. The system of agriculture based on the traditional knowledge and practices handed down from generation to generation could not produce enough to feed the increasing population. During “green revolution” technological interventions in agriculture were widely adopted by farmers for maximizing the agriculture production to meet the demands of food of fast increasing population (Dholakia and Shukul, 2012). The green revolution paid a rich dividend by increasing the food grain production many folds. At the same time, this has led to increasing the use of chemical fertilizers and pesticides which cause serious damage to the environment and human health.

A very large number of consumers from all over the world are concerned with environmental problems (Dickmann and Franzen, 1999). Consumers who are concerned about the environment can be understood to be sensitive to the information regarding not only the environment itself but also to products, processing and brand that might affect it (Minton and Rose, 1997). Consumers are ever more aware of the seriousness of environmental degradation, resulting in more ecologically consciousness and desire to purchase organic products and services, favouring the businesses that complying with environmental practices (Laroche et al., 2001). This is because current environmental dreadful conditions are ever more menacing the consumer health and well-being (Ragavan and Mageh, 2013).

The present study is designed to explore the factors influencing consumers’ actual buying behaviour. Knowledge of these factors is essential for devising the effective marketing strategy for the development of the domestic organic market in India.

1.1 What is organic food?

The most common definitions of organically produced foods emphasize the technology or production practices and principle used, and/or the ‘organic philosophy’ (e.g., Bourn and Prescott, 2002; FAO, 1999). Some definitions highlight dimensions such as ‘biological’ or ‘natural production system’ (Klosky and Tourte, 1998) and ‘green’ or ‘environmental friendliness’ (Bhaskaran et al., 2006), while some other emphasize the limited use of artificial

chemicals in organic production (e.g., FAO, 1999; Yi, 2009), or its general philosophy (e.g., Torjusen et al., 1999). According to Yi (2009), organic foods are improved to maintain the food integrity, instead of artificial content, preservations and irradiation. Put it simply, the food which is produced/processed without using pesticides, mineral fertilizers or any other type of chemicals can be labelled as organic food. “In terms of food that come from living animals- meat, eggs and dairy, the animal must not be fed antibiotics or growth hormones” (Organic Food Production Act, 1990). Thus, organic foods are conventionally safe, produced using ecologically and environmentally sound methods that do not involve synthetic inputs such as pesticides and chemical fertilizers, do not contain genetically modified organisms (GMOs) and do not processed with irradiation, industrial solvents, or chemical food additives (Paul and Rana, 2012).

1.2 Organic food market in India

Despite significant spending on foods, the food retailing in India has been unorganized. Traditionally, Indian consumers used to spend 90% of their food spending on home food which has fallen down to 80%. This is mainly due to change in attitude and lifestyle of Indian consumers, where eating out is becoming more prevalent than ever before. And, these consumers do not mind paying a premium price for the food products which provide benefits of both food and health (Sondhi and Vani, 2007).

The organic food market in India is at a nascent stage of its development; most of the produce is exported to developed countries (APEDA, 2014). The domestic market for organic products is limited to mainly in the big cities of India, and the market is anticipated to grow at a significant rate of 40% to 45% in 2014–2017 (Oswald, 2013; Nandi et al., 2017). Currently, the market for organic agribusiness has crossed ₹2,500 crores, and the global trade is today at USD \$69 billion (₹360,000 crores approx) (ICCOA, 2014). Presently, in India, fruits and vegetables are the highest demanded organic food categories (Nandi et al., 2017).

India is having the highest number of organic producers in the world (Willer et al., 2013), and the majority (>80%) of them are small and marginal (<2 ha) (Dev, 2012). Smallholder farmers are being excluded from the export organic supply chains (Singh, 2009). Thus, the option left for smallholder farmers is the domestic market to sell their produce. In India, there are over 15,000 certified organic farms and the number is growing fast over the years (Kumar and Ali, 2011). To

date, there are more than 181 organic retail outlets in Bangalore alone (Devakumar, 2014). These organic retailers are not organized, and there are substantial differences in their pricing of the products. Despite this growth potential, one of the hindering factors for organic consumers is the high price for organic products. As reported by the Dholakia and Shukul (2012) organic consumer survey in north India, 71% of respondents cited that the high price as an obstruction to buying organic products. They expressed that the future of organic agriculture would, to a large extent, depend on consumer demand and their motive to pay an extra price for organically grown foods.

Consumer-oriented approach to understanding the market for the organic product is essential for pursuing better management of organic food market in India. This is a complex process, which is determined by some factors such as infrastructure, quality production, policies, certification, and market environment (Aryal, 2008). However, it is also very essential to understand consumer decision-making regarding organically produced foods and seek strategies about how consumptions are determined by consumers' beliefs, attitudes, and responses to organic products and willingness to pay a premium price (Dipeolu et al., 2009). A majority of previous studies were carried out in developed countries where knowledge and awareness of food are high. The consumer awareness and preferences for organic food products in the developing world is mostly unknown. Therefore, there is an urgent need to investigate the demand status of organic food particularly in developing countries like India. The investigation of consumers' attitude and behaviours towards organic food products may help both consumers of organic interest and marketers to drive growth in the organic food market.

2. Theoretical background and research hypotheses

The consensus of international research provides a clear picture of the same reasons why people buy organic food products. Although there may be differences in the order of preferences in the specific cultural and demographic factors, the main reasons, in order of priority, are health, product quality, and concern for the environment and environmental degradation. These were supported by previous studies years ago (Tregear et al., 1994) and have been consistently supported by subsequent studies too (Hughner et al., 2007).

Harper and Makatouni (2002) and Chinnici et al. (2002) found that consumers have positive attitudes towards organic products where one of the most commonly mentioned reasons for purchasing organic products was consumers' perception about organic products as healthier than conventional alternatives. Vermeir and Verbeke (2004) found that consumers did not always buy sustainable products as outcome of environmental concern or to benefit the community or due to personal beliefs but mainly to give priority to health, to be part of the social group, to differentiate from others and to accomplish the need to try out new technologies.

The consumers' perception about organic food as healthier than conventional food is constantly strong in Asia Pacific Region and in emerging economies like India and China (Sheng et al., 2009). Indian consumers prefer organic food for their children (Chakrabarti, 2010). In both western and eastern world, consumers seem to be conscious of wider benefits of organic foods as a healthy food with the positive impact on the environment (Frewer and Van Trijp, 2007). Some studies revealed that consumers agree with the fact that organically grown foods have less chemical and microbial contamination than conventionally produced foods (e.g., Letourneau et al., 1996; Cayuela et al., 1997). Perceptions that organic foods are associated with less or no chemicals residues, for example, sometimes questioned because of the probability of contamination during processing and possibility of mixing organic and conventional products in food supply chain. There may also be chances of organic foods carrying the higher risk of microbial contamination than conventional foods because increased use of manure in agriculture can enhance the incidence of contamination from pathogens such as *Salmonella* species and *E. Coli* (Tauxe et al., 1997). However, such risks can be handled with proper management practices (Gagliardi and Karns, 2000).

2.1 Health consciousness (HC)

Previous findings show that health benefit is one of the prime reasons to the consumers for purchasing of organic foods. Liu (2007) found that health has a significant influence on consumer attitudes. Salleh et al. (2010) found that health variables have a positive effect on consumer attitude towards organic foods in Malaysia. Michaelidou and Hasan (2008) have shown similar results. Makatouni (2002) concluded that health factors are the most significant variables affecting consumers' willingness to purchase organic foods. Kim and Chung (2011) also mentioned that health awareness is a most essential factor in influencing consumers'

purchase behaviours, and also clarified that consumer purchase intentions were weak where health related awareness was low. Therefore, Hypothesis 1 is stated as follows-

H1: Health consciousness has a positive influence on the consumer attitude towards organic food products.

2.2 Consumers' knowledge of organic foods

The development of consumer behaviour was supported by the Theory of Reasoned Actions (TRA) by Fishbein and Ajzen (1975). This theory explores motivational influences on behaviour that is under the purview of an individual on his own will to provide a framework of consumer behaviour. Sheppard et al. (1988) stated that the TRA provides a relatively simple basis for prediction of attitude and prediction about behaviour. According to Liu (2007), the best theory to predict the behaviour of the consumer about organic food is TRA. Consumers have a need to know what they purchase to satisfy their needs and wants. Food knowledge is an important factor that can affect consumer behaviour in which knowledge is a cognitive learning (Sapp, 1991). Consumer purchase intention would be different if consumers have varying level of knowledge (Chiou, 1998). Purchase of environmental friendly product cannot be separated from knowledge of consumers about the environment and ecology (Soonthonsmai et al., 2001; Finisterra do Poco and Raposa, 2008) and knowledge of organic food (Gotschi et al., 2010; Saleki et al., 2012). Thus, awareness and knowledge about organically produced foods are essential in the consumer purchase decisions. The recent studies that investigated the level of consumers awareness and knowledge about organic food include Compagnoni et al. (2000), Environics (2001), Cunningham (2002), Demeritt (2002), Paul and Rana (2012). A critical review of findings of these studies indicates that there is a little consumer awareness about organic food around the world. This awareness is high especially in Europe where organic market is relatively well developed when compared to rest of world. Literature also suggests that consumers have inconsistent knowledge about what is 'organic'. For example, Jolly et al. (1989) found that respondents assumed organic produced is free from pesticides, no artificial fertilizer, no growth regulators, and residue free products. Similarly, in a survey study, respondents in UK perceived 'organic' farming to imply free from chemicals, the absence of growth hormones, and 'not intensively grown' or 'product grown naturally' (Hutchins and Greehalgh, 1997). In other words, both buyers of organic and non-organic food products perceived that organic products are free

from pesticides and chemical fertilizers, and are pure, natural and healthy. The study of Smith and Paladino (2010) found that consumers' knowledge of social and environmental issues positively affects their attitude and purchase behaviour towards organic food products. It is therefore hypothesised that:

H2: Consumers' knowledge of organic food has a positive influence on their attitude.

2.3 Subjective norm (SN)

A broad definition of the perceived or subjective norm is "the perceived social pressure to perform or not to perform the behaviour" (Ajzen, 1991, p. 188). Subjective norm is usually defined as an individual's perception or opinion about what important others believe the individual should do (Finlay et al., 1999). Chang (1998) tested the correlation between subjective norms and attitudes towards behaviour more thoroughly, and examined the causal link from norms to attitudes. The author found the path from subjective norms to attitudes towards behaviour significant. Sheppard et al. (1988), Shimp and Kavas (1984), and Bagozzi et al. (1992) found that the subjective norm impact the consumer purchase behaviour. Based on above discussion, Hypothesis 3 is stated as-

H3: Subjective norms will positively influence the attitude towards organic food products.

2.4 Consumer perception of price and availability

For a number of reasons, certified organic foods are generally more expensive than conventional products/foods. Thus, price becomes important in the organic food marketing. According to Gan et al. (2008), a higher price has an impact on consumers in buying behaviour. Their findings are consistent where higher price lead to negative impact on the likelihood of consumers purchasing the organic foods. D'Souza *et al.* (2006) found high price results in consumers switching to other products. Some consumer groups have a more positive attitude towards organic food and they show a willingness to pay the higher price (Radman, 2005). Low price sensitivity of consumers was found to positively affect green purchase behaviour (Aertsens et al., 2011). In contrast, the study of Smith *et al.* (2009) revealed the role of price in the purchase of organic food; results show that price does not have a significant effect on the intention to buy organic foods. That is

why we aim to test the relationship between consumer perception of price and consumer attitude about organic foods.

H4: Perceived price influences the consumer attitude towards organic food products.

A barrier to consumption of organic foods is availability itself (Makatouni, 2002). In many developing countries one of the main problems of organic product demand is the lack of access to markets and the market information (Zundel and Kilcher, 2007). The study of Young et al. (2010) reported that limited availability of a product had a negative influence on consumer attitude and purchase behaviour towards organic food products. Conversely, the study by Tarkiainen and Sundqvist (2005) noted that availability of a product had a positive relationship with green purchase intention and behaviour. Most studies showed that limited availability and difficulties in accessing organic food products are major barriers to purchasing environmentally sustainable products (Padel and Foster, 2005; Young et al., 2010). On the other hand, easy availability of the organic food products positively affected the purchase behaviour (Tarkiainen and Sundqvist, 2005). Consumers generally don't like to spend much time on searching for green products; they prefer products that are easily available (Young et al., 2010). Caldwell et al. (2009) explored the importance of access to the organic produce to increase consumption. Based on above discussion, hypothesis 5 is proposed as follows-

H5: Perception of availability positively influences the consumer attitude towards organic food products.

2.5 Purchase intention and actual buying behaviour

According to the theory of planned behaviour (TPB), the performance of behaviour is a combined function of intentions and perceived behavioural control. Evidence concerning the relationship between intentions and actions has been collected with respect to many different types of behaviours (Sheppard et al., 1988). It is observed that when behaviours pose no serious problems of control, they can be estimated from intentions with considerable accuracy (Ajzen, 1991). According to Ajzen (1991), intentions or willingness are significant predictors of actual buying behaviour (Ajzen, 1991). Then, intention to purchase organic food products is a prerequisite in order to results in the actual purchase. In addition, attitudes towards organic food

products have a positive and statistically significant effect on organic food purchases (Voon et al., 2011).

While exploring organic food purchase behaviour, studies have reported a discrepancy or “gap” between consumers’ expressed favourable attitudes and actual purchasing practices (Tanner and Kast, 2003; Vermeir and Verbeke, 2008). Hughner (2007) found that while many consumers showed a positive attitude towards purchases of organic food products (67%), only a less number of consumers (4%) actually purchased those products. Similarly, Defra (2006) found that 30% of the consumers in the UK have expressed their concern towards the environment, but rarely translated their concern into the actual purchase of green products. It is thus clear that there exists a gap between consumers’ thinking and actual actions (Wheale and Hinton, 2007). This discrepancy between consumers’ favourable attitude and actual purchase behaviour of organic products is referred to as ‘attitude-behaviour gap’. It indicates that consumer positive attitude towards organic products does not always translate into action. It is essential to examine why favourable attitudes have a weaker influence on purchase intention and actual purchase of organic food products; there might be possible factors such as price and availability of the product, and social influences among others that lead to the discrepancy among consumer attitude, purchase intention and actual buying behaviour. Therefore, we intend to test the effect of influencing factors (i.e., health consciousness, knowledge, subjective norm and price, and availability) on purchase intention and actual buying behaviour.

H6: Influencing factors have a positive effect on purchase intention through mediating effect of attitude.

H7: Influencing factors have a positive effect on actual buying behaviour towards organic food products through mediating effects of attitude and purchase intention.

2.6 Socio-demographic factors

Various theories exist which state that attitude alone does not affect behaviour; there are other factors that not only influence behaviour, but also the strength of the attitude-buying behaviour relationship. Voon et al. (2011) found that socio-demographic attributes are the factors that influence the actual buying behaviour.

Previous studies have reported that gender influences the purchase behaviour towards organic food products. Lockie et al. (2004) found that a higher proportion of women than men possess positive attitudes towards organic foods. Stobbelaar et al. (2007) investigated that adolescent girls are more positive towards organic products than boys.

Cranfield and Magnusson (2003) found that younger consumers are more likely to pay over 6% higher premiums to ensure food products are pesticide free. Similarly, Van Doorn and Verhoef (2011) noted that younger household prefers organic foods more importantly and include it in their purchase. Besides these females with age 30-45, females having children and high disposable income prefer to go for organic foods (Dettmann and Dimitri, 2007). Rimal et al. (2005) found that older respondents were less likely to buy organic foods than younger respondents. It is also of interest to note the contradictory findings of Misra et al. (1991) that older individuals may be willing to deviate and switch to organic food products due to health-related reasons.

Usually, household income has a significant positive relationship with the organic food purchases (Voon et al., 2011). Higher income households buy organic produce more frequently (Govindasamy and Italia, 1990; Loureiro et al., 2001). According to findings of Cranfield and Magnusson (2003), wealthier households are more likely to spend, and even spend more on organic food products. Howie (2004) found that consumers with income less than \$50,000 are more likely to purchase organic foods. Due to these contradictory results, it is essential to examine the influence of demographic factors on the actual buying behaviour of consumers.

In demographic dividends of consumers, education is another factor considered important for influencing the purchase of organic foods (Aryal et al., 2009). Consumers with higher education were more interested in purchasing organic foods than those with less education (Dettmann and Dimitri, 2007). The majority of previous studies found a positive relation between education and organic food consumption (e.g., Cunningham, 2002; O'Donovan and McCarthy, 2002), a few studies have reported a negative relationship (e.g., Wilkins and Hillers, 1994; Thompson and Kidwell, 1998). Arbindra et al. (2005) found that the level of education has no statistically significant influence on organic food purchase patterns.

H8a: There is a significant difference between **age** variable towards actual buying behaviour of the organic food products.

H8b: There is a significant difference between **gender** variable towards actual buying behaviour of the organic food products.

H8c: There is a significant difference between **income** variable towards actual buying behaviour of the organic food products.

H8a: There is a significant difference between **education** variable towards actual buying behaviour of the organic food products.

The aforementioned hypotheses are formally presented by a conceptual model below. This model depicts health consciousness, knowledge of organic foods, subjective norms, perceived price and availability as factors influencing the consumer attitude towards organic food products. Attitude towards organic foods and purchase intention are predicted to be antecedents of actual buying behaviour. The model demonstrates that socio-demographic factors also influence the actual buying behaviour. The following sections discuss the methodology and findings of the study.

Insert Figure 1 here

3. Research methodology

3.1 Data source and measurement scale

To test the proposed hypotheses, empirical data has been collected through a structured questionnaire; the items in the questionnaire were adopted from previous studies such as Gil et al. (2000), Gracia & de Magistris (2007), Chen (2009), Chakrabarti (2010) and Effendi et al. (2015). Questions asked in the questionnaire were anchored on the 5-point scale. The socio-demographic profiles of the respondents were also recorded on the parameters such as gender, age, education level; occupation and household income (see Annexure A). The questionnaire was subsequently piloted with 32 consumers of organic foods to ensure that the questions and

response formats were clear. Minor amendments were made based on feedbacks received from the pilot study.

3.2 Sample and data collection procedure

A face-to-face survey was conducted in front of organic food outlets and departmental stores having organic food section in four major cities of India; Allahabad, Bhopal, New Delhi, and Mumbai. Random sampling method was used by approaching consumers who were coming out of the stores in the markets, shopping malls and food festivals. Respondents were gently asked about their willingness to participate in the study. Before surveying the respondents some preliminary questions were asked to check if they are aware of organic food products. Questionnaires were distributed to only those respondents who were aware of organic foods. A total of 650 questionnaires were distributed and 621 respondents participated in the survey. Finally, 611 completely filled and usable responses were received. A majority of the responses were collected from Bhopal city (43%), and rest were collected from the other three cities (57%). A high percentage of data were collected from Bhopal because large numbers of respondents were contacted in Bhopal food festival during 17th-26th April 2015. These respondents do not belong to Bhopal only as people from other places of India came to Bhopal to enjoy the food festival. Mumbai is the capital city of the Indian state of Maharashtra. It is the most populous city in India and the ninth most populous agglomeration in the world. It is one of the most populous urban regions in the world and the second most populous metropolitan area in India. People from all parts of India come to Mumbai either for education or for employments. The city New Delhi is the national capital and Bhopal is the capital city of Madhya Pradesh, fifth most populated state in the country. Allahabad, an educational hub, is a city in the Indian state of Uttar Pradesh. These cities (New Delhi, Bhopal and Allahabad) also represent the people from different regions of the country. Therefore, we assume that our sample includes the organic foods consumers belonging to different regions of India, cultures and backgrounds.

3.3 Data analysis

The responses were thoroughly checked and coded for the purpose of statistical analysis. The data was entered in Statistical Package for Social Sciences (SPSS) version 21. To examine the reliability of the empirical data, consistency analysis has been done using Cronbach's alpha

method. Cronbach's alpha is the measure of internal consistency i.e. how closely items are related in the construct. Various statistical methods and techniques such as factor analysis, ANOVA, independent t-test, multiple linear regression and hierarchical multiple regression analysis were used to analyze quantitative data collected through a structured questionnaire.

4. Results and discussion

4.1 Description of the sample

The demographic features of consumers were analysed and the summary is presented in Table 1. The results indicate that about 54% of the consumers were males while remaining 46% of the consumers were females. The majority of respondents were between 36 and 55 years of age; this counts around 49% of sample respondents. The majority of the consumers (46.48%) were graduates followed by post graduates (26.02%) and higher secondary education (12.60%). The sample analysis results also show that most of the respondents had an income in the ₹ 30,000 to ₹50,000 bracket and a majority and the highest proportion of respondents (51.39%) are living in five-person households; closely followed by a further 40.10% living in three to four person households. There was at least one child in 32% of the households.

Insert Table 1 here

4.2 Reasons for purchasing organic food

Those people who have already heard about 'organic' product were asked whether they had ever purchased such products. 55.6% answered positively, these "buyers" were asked further questions about their purchasing habits. 51.8% of them buy organic products every week, 26% purchase organic food at least once per month and 21.6% less than once per month. Respondents marked healthy content as the main reason as their answer for the purchase of organic food. However, the majority of respondents supported that benefits such as healthy content, lack of pesticides/lower contents of residues, fresh and environment-friendly etc. are the reasons to choose the organic foods (Figure 2). A total of 52% of the people agreed that healthy contents play an important role in making a purchasing decision. This confirms the response to the

previous results where respondents marked healthy content as the single largest individual reason for the purchase of organic food (52%).

Insert Figure 2 here

Principal Component Analysis (PCA) method with Varimax Rotation was performed to ascertain the factors influencing the consumer attitude towards organic food. Prior to factor analysis, suitability of data was checked using Kaiser-Meyer-Olin (KMO) and Bartlett's test of sphericity. KMO measure of sampling adequacy is 0.867 which exceeds the suggested cut-off value of 0.60 (Tabachnick and Fidell, 2001). The Bartlett's test of sphericity was significant ($\chi^2=2177$, $df=113$, $p=0.000$) showing that the inter-item correlations were sufficiently large for PCA. Thus, these statistical measures support the factorability of data (Tabachnick and Fidell, 2011). All the factors had a Cronbach's alpha (α) higher than the threshold value of 0.70 ensuring the scale reliability (Nunnally, 1978).

Insert Table 2 here

First, to test the hypotheses (H1-H5) multiple linear regression (MLR) analysis was performed. The regression model predicts the influence of health consciousness (HC), knowledge of organic foods (KOF), subjective norm (SN), perceived price (PP) and availability (AVA) on consumer attitude (ATT). Results of regression analysis revealed that these five factors (independent variables) account for 34% of explained variances for consumer attitude towards organic food products; $F(5, 178)= 33.62$, $p<0.001$, $R^2= 0.34$ (See Table 3). Results confirm that the hypotheses H1-H4 are in expected direction ($\beta=0.49$, $p=0.000$; $\beta=0.18$, $p=0.000$; $\beta=0.29$, $p=0.015$; $\beta=0.31$, $p=0.002$). Therefore, H1, H2, H3 and H4 are supported. H5 is not supported as it is not statistically significant ($\beta=0.13$, $p=0.107$). According to results obtained, it can be said that consumer attitude towards organic foods is influenced by health consciousness, knowledge of organic foods, subjective norm and perceived price. The availability factor does not influence consumer attitude towards organic food.

Insert Table 3 here

Second, hierarchical multiple regression was conducted to test the relationship between influencing factors (HC, KOF, SN, PP and AVA) and PI through the mediating effect of ATT (H6). To test the mediating effect, Baron and Kenny (1986) method is used. According to this method, to confirm mediating effect following conditions must be satisfied. First, the independent variable must predict the mediator in the first model; second, the independent variable must affect the dependent variable in the second model; and third, the mediator must affect the dependent variable in the third model. If all these conditions hold in the predicted direction, then the effect of the independent variable on the dependent variable must be less in the third model than in the second. Results show that HC ($\beta=0.18$, $p<0.05$), KOF ($\beta=0.22$, $p<0.05$), SN ($\beta=0.23$, $p<0.01$), PP ($\beta=0.37$, $p<0.01$), and AVA ($\beta=0.14$, $p<0.05$) positively influences the ATT. And, ATT mediated the relationship between influencing factors and PI as all the conditions proposed by Baron and Kenny (1986) is met (See Table 4). This model explained 48% of variances in PI caused by predictors. Thus, H6 is supported.

Insert Table 4 here

Finally, H7 was tested using another hierarchical multiple regression (Table 5). The hypothesis predicts that influencing factors have positive on effect on ABB through mediating effect of ATT and PI. The results shown in Table 5 (step 3) indicate that the regression coefficients of ATT ($\beta=0.23$, $p<0.05$) and PI ($\beta=0.16$, $p<0.05$) are positive and significant, which verifies that ATT and PI have a positive impact on the consumers' actual buying behaviour (ABB) toward organic foods products. However, ATT and PI mediate the relationship between influencing factors and ABB as the magnitude of corresponding regression coefficients of influencing factors (HC, KOF, SN, PP and AVA) have reduced when controlled for ATT and PI. The model explained 62% variance ($R^2_{\text{change}}=0.06$, $F_{\text{change}}=18.54$, $p<0.05$) when ATT is included, and 70% ($R^2_{\text{change}}=0.08$, $F_{\text{change}}=21.37$, $p<0.05$) when PI is included. Thus, H7 is supported.

Insert Table 5 here

4.3 Differences in the actual buying behaviour with respect to demographic variables

In this study, Independent t -Test was used to identify the significant differences in the actual purchase behaviour of organic food products according to the gender. As per Table 6, the P- value

(0.151) of the Levene's Test for gender was more than 0.05 which indicates that the variance is homogeneous. Hence, t-test for equal variance was employed in this study. As a rule of thumb, 2-tailed significance (0.086) that is greater than 0.05 suggests that the difference is statistically not significant. According to the equal variance assumed, the differences in the mean of 3.735 and 3.919 with the standard deviation of 0.637 and 0.449 for both gender on actual buying behaviour was not significant. The results confirm that both male and female have no significant differences in their buying behaviour towards organic food products. Thus, H8a is supported.

Insert Table 6 here

One-Way ANOVA test results in Table 7 (i) shows that respondent's age ($F=7.576$; Sig. = 0.000), had the significant impact on the purchase intention of organic food products. Therefore, H8b is supported. Based on the results of the least significant difference (LSD) test for respondent's age group in Table 7 (ii), the age group of 31-40 years old had the statistically higher score on the buying behaviour of organic food products than other age groups.

Insert Table 7(i) here

&

Insert Table 7(ii) here

Results in Table 8 (i) show that respondent's monthly income ($F=9.139$; Sig. = 0.000) had the significant impact on the purchase intention of organic food products. Therefore, H8c is supported. The results of LSD Test for respondent's monthly income in Table 8(ii) showed that respondents who have income level higher than ₹50,000 per month had the statistically significant higher score on actual purchase of organic food products than respondents from those lower than ₹50,000 per month.

Insert Table 8(i) here

&

Insert Table 8(ii) here

Based on Table 9 (i), results show that respondent's education level ($F=7.454$; $Sig. = 0.000$) had the significant impact on the purchase intention of organic food products. Therefore, H8d is supported. Furthermore, the results of LSD Test for respondent's education level in Table 9(ii) indicated that respondents who hold degree and master had the statistically significant higher score on the actual buying behaviour of organic food products than respondents who possess a high school or intermediate qualification. LSD test results show that MPhil/PhD holders had the statistically significant higher score on actual buying than any other group of respondents.

Insert Table 9(i) here

&

Insert Table 9(ii) here

5. Conclusions

The main objective of this study is to examine the mechanism behind consumers' actual buying behaviour towards organic food products. First, the study explores the factors influencing consumers' attitude towards organic foods. Second, the study provides the understanding of how influencing factors and attitude affect the purchase intention of consumers towards organic food products. Prior studies have reported that consumers' intention to purchase may not always convert into actual buying of organic foods. Therefore, the effect of socio-demographic factors on actual buying behaviour is also examined.

The results have revealed four factors (health consciousness, knowledge of organic foods, subjective norms and perceived price) that influence the consumer attitude towards organic food products. However, purchase intention towards organic foods is affected by these four factors along with one additional factor (i.e., availability). As store location matters to consumers while making purchase related decisions.

Results of hierarchical regression analysis show that the influencing factors i.e. health consciousness, knowledge of organic foods, subjective norms, perceived price and availability positively influences the actual buying behaviour but attitude and purchase intention mediates the relationship. As mentioned earlier, positive attitude and purchase intentions may not always

lead to actual buying of organic food products, the influence of socio-demographic factors (gender, age, income and education) is tested using independent t-test and ANOVA techniques. LSD test was employed to see which group in a demographic variable has the largest difference. Results of independent t-test show that gender does not influence the actual buying towards organic products. However, other three socio-demographic factors (age, income and education) have a significant influence on actual buying behaviour. LSD test results show that young consumers in the age group of 31-40 years are buying more organic food products than any other age groups. Income is another potential factor that influences the actual behaviour towards organic foods. Results of the study show that consumers with high income are more likely to buy organic foods. Results also suggest that highly educated consumers prefer to buy organic foods more than the less educated consumers.

6. Managerial Implications

The results of this study have implications for organic product companies, retailers and market regulatory agencies. Considering consumers' concerns about health safety and environmental concerns, it is required to develop an appropriate strategy. The strategy should focus specific consumer segments, increasing consumers' awareness and knowledge of organic food products by maintaining customer satisfaction and delight. Organic products are credence goods, consumers may not know whether a product produced using organic or conventional methods unless they are informed so. Therefore, consumers' awareness and knowledge about organically produced food pay a significant role in making purchase related decisions. This study provides guidelines and suggestions for retailers who are selling organic foods. Besides this, the study can be helpful for the organic food manufacturers to identify their target consumers by showing the influence of socio-demographic factors on organic food purchases. The study can provide insights for the health and wellness companies to reorient their production and marketing strategies to cater the increasing consumer demand for healthier food choices and to devise their growth and development plans effectively. Findings suggest the marketers of organic food products to segmenting their market cautiously and frame their marketing planning and strategy to convince these potential consumers about its benefits like healthy contents, pesticide free, freshness and environmental friendly. Additionally, consumers need to be informed about the

availability of organic produce as consumers believe limited availability of organic foods in the market.

Despite the significant finding of this study, there are some limitations that must be acknowledged while making interpretation of results. First, in the present study only some selected factors were considered to examine the influence on consumer attitude towards organic foods. Future research in this direction should incorporate the factors like the advertisement, government regulation and distribution while studying consumer attitude towards organic food products. Second, the study is conducted in India, a vast country. The sample size of 611 consumers may not be sufficient to generalise the results. Therefore, to expand the validity of the results more studies with high sample size should be conducted in this direction.

References

- Aertsens, J., Mondelaers, K., Verbeke, W., Buysse, J., 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.
- APEDA., 2014. National programme for organic production. Retrieved from apeda.gov.in/apedawebsite/organic/Organic_Products.htm. Accessed on 12 July 2015.
- Arbindra, P.R., Moon, W., Balasubramanian, S., 2005. Agro-biotechnology and organic food purchase in the United Kingdom. *British Food Journal* 107(2), 84-97.
- Aryal, K.P., 2008. General perceptions of producer, traders and consumers about organic products in Kathmandu valley, in P. Chaudhary; K. Aryal and D. Tharu (ed.), Proceedings of International Workshop on Opportunities and Challenges of Organic Production and Marketing in South Asia, NPG, Kathmandu, Nepal, pp 120-124.
- Aryal, K.P., Chaudhary, P., Pandit, S., Sharma, G., 2009. Consumers Willingness to Pay for organic Products: A case from Kathmandu Valley. *The Journal of Agriculture and Environment*. 10 (June), 12-22.
- Bagozzi, R. P., Baumgartner, H., Yi, Y., 1992. State versus action orientation and the theory of reasoned action: An application to coupon usage. *Journal of Consumer Research* 18(4), 505-518.

Baron, R. M., 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), 1173-1182.

Bhaskaran, Polonsky, M., Cary, J., Fernandez, S., 2006. Environmentally Sustainable Food Production and Marketing. *British food Journal* 108 (8), 677-690.

Bonti-Ankomah, S., Yiridoe, E., 2006. Organic and Conventional Food: A Literature Review of the Economic Consumer Perceptions and Parameters. Retrieved from [researchgate.net/publication/229051543](https://www.researchgate.net/publication/229051543). Accessed on 9 October 2015.

Bourn, D., Prescott, J., 2002. A comparison of the nutritional value, sensory qualities and food safety of organically and conventionally produced foods. *Critical Reviews in Food Science and Nutrition* 42(1), 1-34.

Caldwell, E. M., Kobayashi, M. M., DuBow, W. M., Wytinck, S. M., 2009. Perceived access to fruits and vegetables associated with increased consumption. *Public Health Nutrition* 12(10), 1743–1750.

Cayuela, J.A., Vidueira, J.M., Albi, M.A. Gutiérrez, F., 1997. Influence of the ecological cultivation of strawberries on the quality of the fruit and on their capacity for conservation. *Journal of Agriculture and Food Chemistry* 45(5), 1736-1740.

Chakrabarti, S., 2010. Factors influencing organic food purchase in India – expert survey Insights. *British Food Journal* 112 (8), 902-15.

Chang, M.K., 1998. Predicting unethical behaviour: a comparison of the theory of reasoned action of the theory of planned behaviour. *Journal of Business Ethics* 17 (16), 1825-33.

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. DOI: 10.1108/00070700910931986

Chinnici, G., D'Amico, M., Pecorino, B., 2002. A Multivariate Statistical Analysis on the Consumers of Organic Products. *British Food Journal* 104(3/4/5), 187-199.

Chiou, J. S., 1998. The effects of attitude, subjective norm, and perceived behavioural control on consumers' purchase intentions: The moderating effects of product knowledge and attention to social comparison information. *Proceedings of the National Science Council* 9(2), 298-308.

Cranfield, J.A., Magnusson, E., 2003. Canadian consumers' willingness-to-pay for pesticide free food products: An ordered probit analysis. *International Food and Agribusiness Management Review* 6(4), 14-30.

Cunningham, R., 2001. The organic consumer profile: Not only who you think it is! (Alberta: Strategic Information Services Unit, Agriculture, Food and Rural Development).

Cunningham, R., 2002. Who is the Organic Consumer? A Paper presented at Growing Organic Conference, Red Deer, Alberta, March 11-12.

Demeritt L., 2002. All Things Organic 2002. A Look at the Organic Consumer. The Hartman Group, Bellevue, WA.

Department for Environment, Food and Rural Affairs and the Forestry Commission., 2006. Sustainable Consumption and Production: Encouraging Sustainable Consumption. Retrieved from archive.defra.gov.uk/corporate/about/reports/documents/2006deptreport.pdf. Accessed on May 2015.

Dettmann, R., Dimitri, C., 2007. Who's buying organic vegetables? Demographic characteristics of US consumers. *Journal of Food Distribution Research* 16(1), 49-62.

Dev, S. M., 2012. Small farmers in India: Challenges and opportunities. Mumbai, India: Indira Gandhi Institute of Development Research.

Devakumar, N., 2014. Organic farming stakeholders directory of Karnataka. Bangalore, India: Karnataka State Department of Agriculture.

Dholakia, J., Shukul, M., 2012. Organic food: An assessment of knowledge of homemakers and influencing reasons to buy/not to buy. *Journal of Human Ecology* 37, 221(3)–227.

Diekmann, A., Franzen, A., 1999. The Wealth of Nations and Environmental Concern. *Environment and Behaviour* 31(4), 540-549.

Dipeolu, A.O., Philip, B.B., Aiyelaagbe, I.O.O., Akinbode, S.O., Adedokun, T.A., 2009. Consumer awareness and willingness to pay for organic vegetables in S.W. Nigeria. *Asian Journal of Food and Agro-Industry*. S57-S65 (Special Issue).

D'Souza, C., Taghian, M., Lamb, P., 2006. An empirical study on the influence of environmental labels on consumers. *Corporate Communications: An International Journal* 11(2), 162-173.

Effendi, I, Ginting, P. Lubis, A.N., Fachruddin, K.A., 2015. Analysis of Consumer Behaviour of Organic Food in North Sumatra Province, Indonesia. *Journal of Business and Management* 4(1), 44-58.

Ekelund, L., 1990. Vegetable consumption and consumer attitudes towards organically grown vegetables – the case of Sweden. *Acta Horticulturae*. 259, 163-172.

FAO 1999. Guidelines for the production, processing, labeling and marketing of organically produced foods. Joint/WHO Food Standards Program Codex Alimentarius Commission, Rome, CAC/GL 32, 49.

Finisterra do Poco, A. M., Raposo, M. L. B., 2008. Determining the characteristics to profile the “green” consumer: An exploratory approach. *International Review on Public and Nonprofit Marketing* 5(2), 129-140.

Finlay, K. A., Trafimow, D., Moroi, E., 1999. The Importance of Subjective Norms on Intentions to Perform Health Behaviours. *Journal of Applied Social Psychology* 29(11), 2381-2393.

Fishbein, M., Ajzen, I., 1975. *Belief, attitude, intention, and behaviour: An introduction to theory and research*. Reading, Massachusetts: Addison Wesley Publishing Company.

Frewer, L., Van Trijp, H., 2007. *Looking to the future: Understanding Consumers of Food Products*, Woodhead Publishing, Cambridge, 643-9.

Gagliardi J.V., Karns, J. S., 2000. Leaching of *Escherichia coli* 0157: in diverse soils under various agricultural management practices. *Applied and Environmental Microbiology* 66(3), 877-883.

Gan, C., Wee, H. Y., Ozanne, L., Kao, T. H., 2008. Consumers' purchasing behaviour towards green products in New Zealand. *Innovative Marketing*. 4(1), 93-102.

Gil, J.M., Gracia, A., Sanchez, M., 2000. Market segmentation and willingness to pay for organic products in Spain. *The International Food and Agribusiness Management Review* 3 (2), 207-26.

Gotschi, E., Vogel, S., Lindenthal, T., Larcher, M., 2010. The role of knowledge, social norms, and attitudes toward organic products and shopping behaviour: Survey results from high school students in Vienna. *The Journal of Environmental Education* 41 (2), 88-100.

Govindnasamy, R., Italia, J., 1990. Predicting willingness to pay a premium for organically grown fresh produce. *Journal of Food Distribution Research* 30 (2), 44-53.

Gracia, A., de Magistris, T., 2007. Organic food product purchase behaviour: a pilot study for urban consumers in the South of Italy. *Spanish Journal of Agricultural Research* 5(4), 439-51.

Hair, J.F., Anderson, E.R., Tatham, L.R., Black, C.W., 1998. *Multivariate Data Analysis*, 5th ed., Prentice-Hall, London.

Harper, G.C., Makatouni, A., 2002. Consumer Perception of Organic Food Productions and Farm Animal Welfare. *British Food Journal* 104(3/4/5), 287-299.

Hill, H., Lynchehaun, F., 2002. Organic milk: Attitudes and consumption patterns. *British Food Journal* 104(7), 526-542.

Howie, M., 2004. Research roots out myths behind buying organic foods. *Feedstuffs*, March 29.

Hughner, R., McDonagh, P., Prothero, A., Shultz, J., Stanton, J., 2007. Who are organic food consumers? A compilation and review of why people purchase organic food. *Journal of Consumer Behaviour* 6(2/3), 94–110.

Hutchins, R.K., Greenhalgh, L.A., 1997. Organic confusion: Sustaining competitive Advantage. *British Food Journal* 99(9), 336-338.

ICCOA. 2014. National Conference on Sustainability Organic Villages Markets. Retrieved from www.iccoa.org/images/events/national-conference.pdf. Accessed on 2 February 2015.

Jolly, D.A., Schutz, G.H., Diaz-Knauf, K.V., Johal, J., 1989. Organic foods: Consumer attitudes and use. *Food Technology* 43(11), 60-63.

Kim, H. Y., Chung, J. E., 2011. Consumer purchase intention for organic personal care products. *Journal of Consumer Marketing* 28(1), 40–47.

Laroche, M., Bergeron, J., Barbaro-Forleo, G., 2001. Targeting Consumers Who Are Willing To Pay More For Environmentally Friendly Products. *Journal of Consumer Marketing* 18 (6), 503–520.

Lockie, S., Lyons, K., Lawrence, G., Grice, J., 2004. Choosing organics: a path analysis of factors underlying the selection of organic food among Australian consumers *Appetite* 43(2), 135-146.

- Loureiro, M., McCluskey, J., Mittlehammer, R., 2001. Assessing consumer preferences for organic, eco-labeled, and regular apples. *Journal of Agricultural and Resource Economics* 26(2), 404-416.
- Letourneau, D.K., Drinkwater, L.E., Shennan, C., 1996. Effects of soil management on crop nitrogen and insect damage in organic versus conventional tomato fields. *Agriculture, Ecosystems and Environment* 57, 179-187.
- Liu, M., E. 2007. U.S. college students' organic food consumption behaviour. Dissertation in Hospitality Administration, Texas Tech University. Retrieved from repositories.tdl.org/ttu-ir/handle/2346/16263?show=full. Accessed on 12 March 2015.
- Makatouni, A., 2002. What motivates consumers to buy organic food in the UK? Results from a qualitative study. *British Food Journal* 104(3-5), 345-352.
- Michaelidou, N., Hasan, 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.
- Minton, A.P. & Rose, R.L., 1997. The Effect of Environmental Concern on Environmentally Friendly Consumer Behaviour: An Exploratory Study. *Journal of Business Research* 40, 37-48.
- Misra, S. K., Huang, C.L., Ott. S.L., 1991. Consumer willingness to pay for pesticide-free fresh produce. *Western Journal of Agricultural Economics* 16 (2), 218–227.
- Nandi, R., Bokelmann, W., Gowdru, N. V., Dias, G., 2017. Factors Influencing Consumers' Willingness to Pay for Organic Fruits and Vegetables: Empirical Evidence from a Consumer Survey in India. *Journal of Food Products Marketing* 23(4), 430-451.
- Nunnally, J., 1978. *Psychometric Theory*. McGraw-Hill, New York, NY.

- O'Donovan, P., McCarthy, M., 2002. Irish consumer preference for organic meat. *British Food Journal* 104(3/4/5), 353-370.
- Oswald, N., 2013. Organic food markets in urban centers of India. Bangalore, India: International Competence Centre for Organic Agriculture (ICCOA).
- Padel, S., Foster, C., 2005. Exploring the gap between attitudes and behaviour: Understanding why consumers buy or do not buy organic food. *British food journal* 107(8), 606-625.
- Paul, J., Rana, J., 2012. Consumer behaviour and purchase intention for organic food. *Journal of Consumer Marketing* 29 (6), 412 – 422.
- Peattie, K., Crane, A., 2005. Green Marketing: Legend, Myth, Farce or Prophecy? *Qualitative Market Research: An International Journal* 8(4), 357-370.
- Radman, M., 2005. Consumer consumption and perception of organic products in Croatia. *British Food Journal* 107(4), 263-273.
- Ragvan, N. Mageh, R., 2013. A study on Consumer Purchase Intentions towards Organic Products. *Paripex-Indian Journal of Research* 2(1), 111-114.
- Rimal, A. P., Moon, W., Balasubramanian, S., 2005. Agro-biotechnology and organic food purchase in the United Kingdom. *British Food Journal* 107(2), 84-97.
- Saleki, Z. S., Seyedsaleki, S. M., Rahimi, M. R., 2012. Organic food purchasing behaviour in Iran. *International Journal of Business & Social Science* 3(13), 278-285.
- Salleh, M. M., Ali, S. M., Harun, E. H., Jalil, M. A., Shaharudin, M. R., 2010. Consumer's perception and purchase intention toward organic food products: Exploring attitude among academician. *Canadian Social Science* 6(6), 119-129.
- Sapp, S. G., 1991. Impact of nutritional knowledge within an expanded rational expectations model of beef consumption. *Journal of Nutrition Education and Behaviour* 23(5), 214-222.

Sheppard, B. H., Hartwick, J., Warshaw, P. R., 1988. The theory of reasoned action: A meta-analysis of past research with recommendations for modifications and future research. *Journal of Consumer Research* 15(3), 325-343.

Sheng, J., Shen, L., Qiao, Y., Yu, M., Fan, B., 2009. Market trends and accreditation systems for organic food in China, *Trends in Food Science & Technology* 20(9), 396-401.

Shimp, T. A., Kavas, A., 1984. The theory of reasoned action applied to coupon usage. *Journal of Consumer Research* 11(3), 795-809.

Singh, S., 2009. Organic produce supply chains in India: Organisation and governance. New Delhi, India: Allied Publishers.

Smith, T. A., Huang, C. L., Lin, B.-H., 2009. Does price or income affect organic choice? Analysis of U.S. Fresh Produce Users. *Journal of Agricultural and Applied Economics* 41(3), 731-744.

Smith, S., Paladino, A., 2010. Eating clean and green? Investigating consumer motivations towards the purchase of organic food. *Australasian Marketing Journal* 18(2), 93-104.

Sondhi, N., Vani, V., 2007. An Empirical Analysis of the Organic Retail Market in the NCR. *Global Business Review* 8 (2), 283-302.

Soonthonsmai, V., 2001. Prediction intention and behaviour to purchase environmentally sound or green products among Thai consumers: An application of the theory of reasoned action. PhD Dissertation in Nova Southeastern University. Retrieved from 202.28.199.34/multim/3012840.pdf. Accessed on 24 July 2015.

Stobbelaar, D. J., Casimir, G., Borghuis, J., Marks, I., Meijer, L., Zebeda, S., 2007. Adolescents' attitudes towards organic food: a survey of 15 to 16 year old school children. *International Journal of Consumer Studies* 31(4), 349-356.

Tauxe, R., Kruse, H., Hedberg, C., Potter, M., Madden, J., Wachsmuth, K., 1997. Microbial hazards and emerging issues associated with produce: A preliminary report to the National

Advisory Committee on Microbiologic Criteria for Foods. *Journal of Food Protection* 60(11), 1400-1408.

Tabachnick, B.K., Fidell, 2001. *Using Multivariate Statistics*, Allyn and Bacon, Boston, MA.

Tanner, C., Wölfling Kast, S., 2003. Promoting sustainable consumption: Determinants of green purchases by Swiss consumers. *Psychology & Marketing* 20(10), 883-902.

Tarkiainen, A., Sundqvist, S., 2005. Subjective norms, attitudes and intentions of Finnish consumers in buying organic food. *British Food Journal* 107(11), 808- 822.

Thøgersen, J., Zhou, Y., Huang, G., 2016. How stable is the value basis for organic food consumption in China? *Journal of Cleaner Production* 134 (October), 214-224.

Thompson, G.D., 1998. Consumer demand for organic foods: what we know and what we need to know. *American Journal of Agricultural Economics* 80, 1113-1118.

Torjusen, Nyberg, Wandel, 1999. *Organic Food; Consumers' Perceptions and Dietary Choices*. SIFO-Report No. 5-1999 (Norway). Retrieved from sifo.no/english/publications/environment. Accessed on 12 December 2014.

Tregear, A., Dent, J., McGregor, M., 1994. The demand for organically grown produce. *British Food Journal* 96(4), 21–25.

Van Doorn, J., Verhoef, P.C., 2011. Willingness to pay for organic products: differences between virtue and vice foods. *International Journal of Research in Marketing* 28(3), 167-180.

Van Elzakker, B., Parrott, N., Chola Chonya, M., Adimdao, S., 2007. *Organic Farming In Africa* in H. Willer and M. Yousseffi (Eds.) *The World of Organic Agriculture: Statistics and Emerging Trends*. Bonn, IFOAM, 96-106.

Vermeir, I., Verbeke, W., 2004. *Sustainable Food Consumption: Exploring the Consumer Attitude-Behaviour Gap*. Working Paper No. 121 (Ghent University, Belgium), 65-78.

- Vermeir, I., Verbeke, W., 2008. Sustainable food consumption among young adults in Belgium: Theory of planned behaviour and the role of confidence and values. *Ecological Economics* 64(3), 542-553.
- Voon, J. P., Ngui, K.S., Agrawal, A., 2011. Determinants of Willingness to Purchase Organic Food: An Exploratory Study Using Structural Equation Modeling. *International Food and Agribusiness Management Review* 14(2), 103-120.
- Wilkins, J. L., Hillers, V. N., 1994. Influences of pesticide residue and environmental concerns on organic food preference among food cooperative members and non-members in Washington State. *Journal of Nutrition Education* 26 (1), 26–33.
- Willer, H., Lernoud, J., Kilcher, L., 2013. The world of organic agriculture: Statistics and emerging trends 2013. Frick, Switzerland: Research Institute of Organic Agriculture (FiBL) & Bonn: International Federation of Organic Agriculture Movements (IFOAM).
- Yi, L.K., 2009. *Consumer behaviour towards Organic Food Consumption in Hong Kong: An Empirical Study*. Unpublished Honours Degree Project, Hong Kong Baptist University, Hong Kong.
- Yin, S., W, L., Du, L., Chen, M., 2010. Consumers' purchase intention of organic food in China, *Journal of the Science of Food and Agriculture* 90 (8), 1361-1367.
- Young, W., Hwang, K., McDonald, S., Oates, C. J. 2010. Sustainable consumption: green consumer behaviour when purchasing products. *Sustainable Development* 18(1), 20-31.
- Zundel, C., Kilcher, L. 2007. Issues paper: Organic agriculture and food availability. In N. Scialabba (Ed.), *Organic agriculture and food availability*. Paper presented in International Conference on Organic Agriculture and Food Security during May 3-5, 2007, (pp. 1-25). Rome, Italy: FAO.

Section B: Survey questions

Rate your level of agreement (1-strongly disagree; 5-Strongly agree)

Health Consciousness (HC) (5-point Likert scale)

I am concerned about the type and amount of nutrition in the food that I consume daily

Organic food is good for the health

I am prepared to leave a lot, to eat as healthy as possible

Knowledge of organic foods (KOF) (5-point Likert scale)

I know the food is organic or non-organic

I know the process of organic products

I know that organic foods are safer to eat

Subjective Norms (SN) (5-point Likert scale)

My close friends and family consume organic food

My loved ones expect me to purchase more organic food for them

Many people persuade me that I should buy organic products in order to better lives

Perceived Price (PP) (5-point Likert scale)

Organic foods are expensive

The price of organic food is in accordance with benefits

Availability (AVA) (5-point Likert scale)

Organic products are easily obtained in the market

I can buy organic product online

Attitude (ATT) (5-point Likert scale)

I believe organic food is very useful to meet the nutritional needs

Organic food products have higher quality than conventional ones

I am convinced the consumption of organic food is a reasonable action

Purchase Intention (PI) (5-point Likert scale)

I intend to consume organic products in the future

I am always interested in buying more organic food for the family's needs

I always intend to look for organic foods, although outside the city

Actual Buying Behaviour (ABB) (5-point Likert scale)

I have been a regular buyer of organic foods

I still buy organic food even though conventional alternatives are on sale

I never mind paying premium price for organic products

Table 1

Socio-demographic profile of respondents

Variables	Non-consumers/little knowledge	Habitual consumers/well-informed	Occasional consumers/well-informed	Total (%)
Gender				
Male	66	169	94	53.85
Female	54	147	81	46.15
Age (years)				
18-30	19	44	32	15.55
31-40	42	76	63	29.62
41-50	37	72	54	26.68
51-60	26	66	36	20.95
>60	13	15	16	7.20
Household size (Persons)				
1-2	68	95	82	40.10
3-4	71	116	127	51.39
≥5	7	31	14	8.51
Education				
High School	12	31	19	10.15
Secondary School	14	37	26	12.60
Graduation	54	131	99	46.48
Post Graduation	28	74	57	26.02
MPhil/PhD	7	10	12	4.75
Family Income (₹)				
<10,000	9	29	15	8.67
10,001-30,000	17	58	31	17.35
30,001-50,000	32	51	40	20.13
50,001-70,000	22	53	38	18.49
70,001-90,000	29	53	35	19.15
>90,000	18	49	32	16.20
Occupation				
Student	31	71	39	23.08
Employee	62	103	59	36.66
Professional	21	49	34	17.02
Self-employed	18	43	32	15.22
Unemployed	12	26	11	8.02

Table 2

Constructs, observable items and factor loadings

Construct	Indicator	Factor Loadings (λ)	Cronbach's α	Variance (%)
Health Consciousness (HC)	HC1	0.921	0.793	39.130
	HC2	0.824		
	HC3	0.738		
Knowledge of organic food (KOF)	KOF1	0.831	0.770	6.671
	KOF2	0.789		
	KOF3	0.761		
Subjective Norm (SN)	SN1	0.846	0.873	5.392
	SN2	0.819		
	SN3	0.703		
Perceived Price (PP)	PP1	0.826	0.831	4.890
	PP2	0.818		
Availability (AVA)	AVA1	0.873	0.827	3.871
	AVA2	0.869		
Attitude (ATT)	ATT1	0.851	0.847	3.438
	ATT2	0.783		
	ATT3	0.762		
Purchase Intention (PI)	PI1	0.887	0.893	2.931
	PI2	0.873		
	PI3	0.927		
Actual Buying Behaviour(ABB)	ABB1	0.918	0.779	1.890
	ABB2	0.890		
	ABB3	0.883		

Table 3

Multiple regression analysis predicting attitude toward buying organic food

Predictor	Min	Max	Mean	SD	β	Regression Analysis			Collinearity	
						SE	t	Sig	TOL	VIF
HC	1	5	4.11	1.24	0.49	0.07	6.94	0.000	0.94	1.06
KOF	1	5	3.73	1.32	0.18	0.03	5.98	0.000	0.68	1.47
SN	1	5	3.45	1.11	0.29	0.08	3.62	0.015	0.95	1.05
PP	1	5	4.09	1.11	0.31	0.05	6.14	0.002	0.64	1.54
AVA	1	5	3.54	1.41	0.19	0.13	1.41	0.107	0.75	1.32

Notes: R²=0.34, F (5, 178) =33.62**Table 4**

Hierarchical regression analysis results predicting purchase intention of organic foods (H6)

Predictor	Step 1			Step 2			Collinearity	
	β	t	sig	β	t	sig	TOL	VIF
HC	0.21	6.54	0.00	0.18	4.54	0.01	0.44	2.28
KOF	0.35	4.12	0.01	0.22	2.13	0.03	0.74	1.35
SN	0.31	3.19	0.00	0.23	2.19	0.00	0.77	1.29
PP	0.47	6.79	0.00	0.37	7.19	0.00	0.53	1.89
AVA	0.25	7.57	0.02	0.14	3.57	0.03	0.69	1.45
ATT				0.39	4.13	0.01	0.57	1.75
R ²	0.48			0.32				

Table 5

Hierarchical regression analysis results predicting actual buying behaviour towards foods (H7)

Predictor	Step 1		Step 2		Step 3		Collinearity	
	β	t	β	t	β	t	TOL	VIF
HC	0.11	4.38*	0.61	5.53*	0.21	6.54*	0.46	2.17
KOF	0.27	4.15*	0.34	4.27*	0.35	4.12*	0.67	1.49
SN	0.38	5.18*	0.24	2.36*	0.31	3.19*	0.71	1.41
PP	0.49	6.57*	0.54	6.21*	0.47	6.78*	0.63	1.59
AVA	0.57	0.32*	0.28	4.91*	0.25	7.57*	0.59	1.69
ATT			0.37	5.2*	0.23	6.79*	0.57	1.75
PI					0.16	7.57*	0.53	1.89
ΔR^2	0.56		0.06		0.08			
ΔF	118.37		18.54		21.37			

Note: * $p < 0.05$; ** $p < 0.0$

Table 6

Independent t-Test for Gender

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2- tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances Assumed	2.342	.151	-1.113	609	.086	-.184	.0662	-.317	-.011
Equal variances not assumed			-1.074	587.45	.079	-.184	.0783	-.319	-.008

Table 7 (i)

ANOVA Test for respondent's age group

Actual Buying Behaviour	Sum of Squares	df	Mean Square	F	Sig
Between Groups	8.785	4	3.361	7.576	.000**
Within Groups	158.134	607	.412		
Total	166.919	611			

Note: * p<0.05; ** p<0.01

Table 7 (ii)

LSD Test for respondent's age group

Dependent Variable	Respondent's age		Mean Difference	Sig.
	(I)	(J)	(I-J)	
Actual Buying Behaviour	31-40 years	18-30 years	0.371*	0.020
		41-50 years	0.410**	0.000
		51-60 years	0.443**	0.000
		above 60 years	0.451**	0.000

Note: * $p < 0.05$; ** $p < 0.01$ **Table 8 (i):** ANOVA Test for respondent's monthly income

Actual Buying Behaviour	Sum of Squares	df	Mean Square	F	Sig
Between Groups	17.148	5	4.258	9.139	.000**
Within Groups	147.357	606	.349		
Total	164.505	611			

Table 8 (ii)

LSD Test for respondent's monthly income

Dependent Variable	Respondent's monthly income		Mean Difference (I-J)	Sig.
	(I)	(J)		
Actual Buying Behaviour	₹ 50,001- ₹70,000	<₹10,000	0.573**	0.000
		₹ 10,001- ₹ 30,000	0.431*	0.011
		₹ 30,001- ₹ 50,000	0.393**	0.000
		₹ 50,001- ₹70,000	0.341**	0.000
	₹ 70,001- ₹90,000	<₹10,000	0.614**	0.000
		₹ 10,001- ₹ 30,000	0.441**	0.000
		₹ 30,001- ₹ 50,000	0.460**	0.000
		₹ 50,001- ₹70,000	0.424**	0.000
	above ₹ 90,000	<₹10,000	0.603**	0.000
		₹ 10,001- ₹ 30,000	0.533**	0.000
		₹ 30,001- ₹ 50,000	0.471**	0.000
		₹ 50,001- ₹70,000	0.413*	0.030

Note: * p<0.05; ** p<0.01

Table 9 (i)

ANOVA Test for respondent's education level

Actual Buying Behaviour	Sum of Squares	df	Mean Square	F	Sig
Between Groups	12.981	4	4.755	7.454	.000**
Within Groups	139.357	607	.381		

Total	152.338	611			
-------	---------	-----	--	--	--

Table 9 (ii)

LSD Test for respondent's education level

Dependent Variable	Respondent's education level		Mean Difference (I-J)	Sig.
	(I)	(J)		
Actual Buying Behaviour	Graduation Degree	High School	0.573**	0.000
		Intermediate	0.431*	0.013
	Post-graduation Degree	High School	0.614**	0.000
		Intermediate	0.441**	0.020
	MPhil/PhD	High School	0.603**	0.000
		Intermediate	0.533*	0.210
		Graduation	0.471**	0.000
		Post graduation	0.413*	0.030

Note: * p<0.05; ** p<0.01

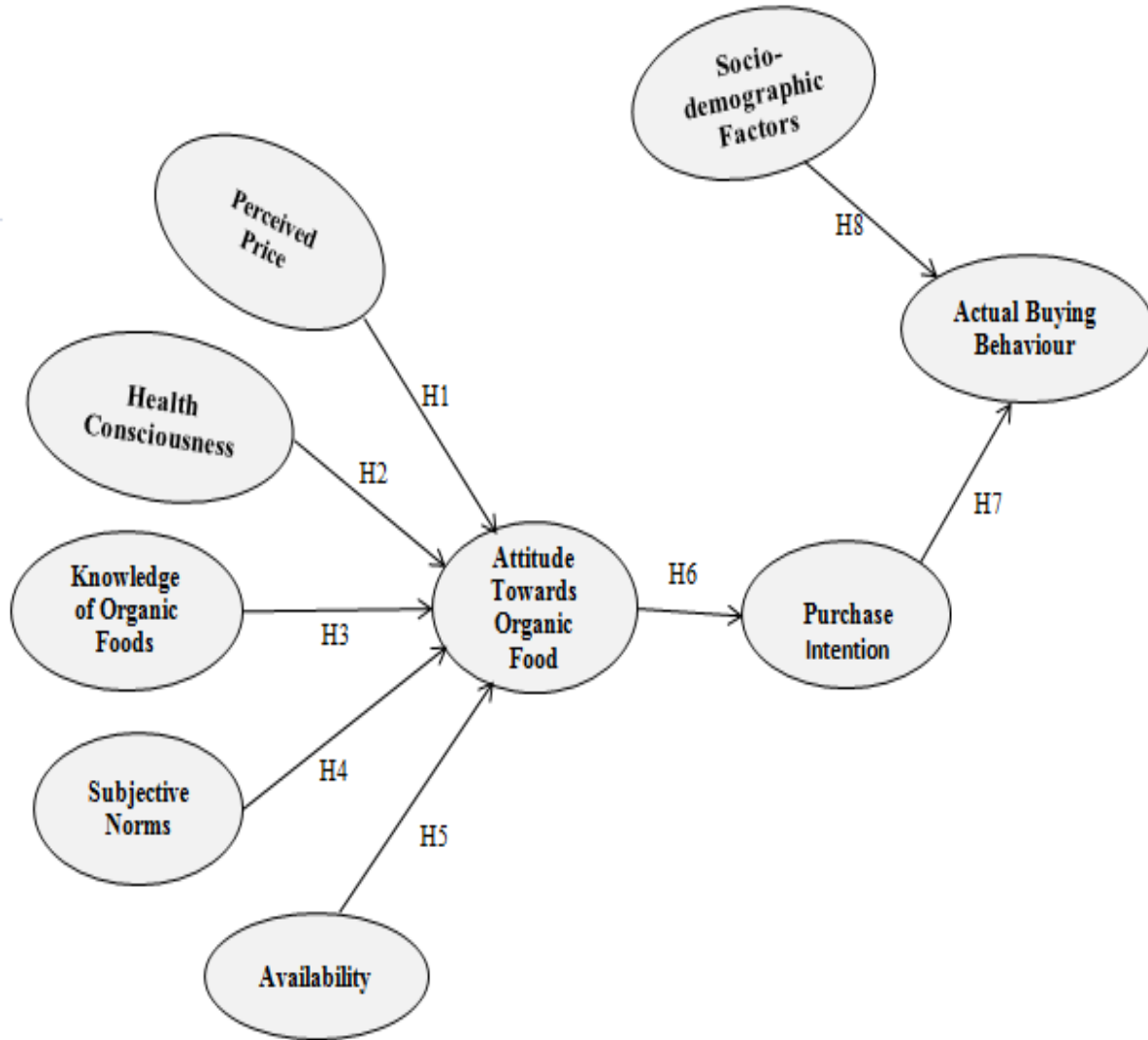


Figure 1: Conceptual model

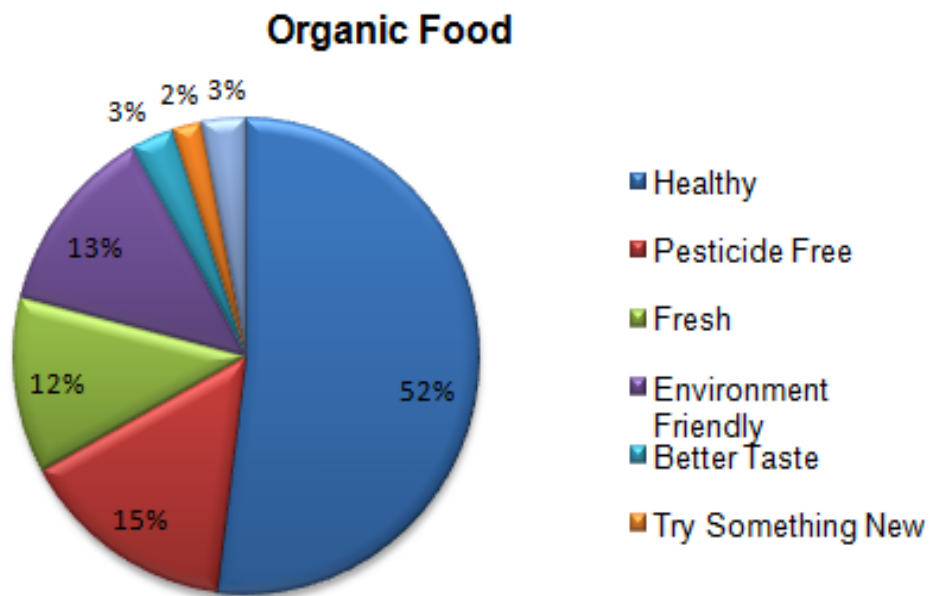


Figure 2: Reasons for Organic Food Purchasing