



Consumer behavioural intention and perception towards organic foods in national capital of India

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ABSTRACT

Organic food products are gaining popularity among consumers because of improved awareness about health, and protection of the environment. Though the organic food market is keen today but to broaden it further, one must understand consumers' perception for organic products. In this study, consumers' behavioural intention and perception was studied towards purchase of organic food. Structured questionnaires were formulated and 1047 respondents residing in the urban sectors of Delhi were approached. The reliability analysis of questionnaires carried out using the Cronbach's Alpha test indicated that for the tested variables i.e. Attitude, Subjective norms and Perceived Behaviour Control (PBC), the value calculated was approx. 0.90. Further, theory of planned behaviour (TPB) applied to the study showed 78% variance amongst the above stated three variables towards the behavioral intention of the consumers for organic food, and PBC was the most impactful variable to affect the overall intention of the consumers' to purchase organic products. Price value, followed by the origin and freshness of the produce were some of the important factors contributing in decision making. Moreover, consumers prefer to purchase organic foods if they are not very expensive in comparison to the conventional ones. The results provided in-depth insight about the consumers' behavioural intentions, knowledge, perception and factors contributing to the purchase behavior of organic food commodities by the Indian urban population.

Key word: Behavioural Intention, Organic, Theory of planned behavior

Organic food is described as a product, both fresh and processed, obtained or made according to the standards of organic agriculture, i.e. free from any chemical pesticides, fertilizers, preservatives etc. These products fall into the concept of ethical consumption and their purchase depends on ones' personal beliefs and values such as safety, health, ecofriendly etc.

As per the recent statistics, the net sale of organic food worldwide accounted to approximately 90 billion U.S. dollars in 2016, which was about 80 billion U.S. dollars in 2015 (The Statistics Portal, 2018). Europe, United States and Asia including India are the prominent countries capturing marketability of organic food rapidly. There are

substantial data available of different countries, for instance Czech Republic (Zagata 2012), Thailand (Sriwaranun *et al.* 2014), Malaysia (Basha *et al.* 2015), Germany (Hempel and Hemm, 2016), Brazil (Hoppe *et al.* 2013), South Africa (Naidoo and Ramatsetse, 2016), Lithuania (Kavaliauske and Ubartaite, 2014), Romania (Oroian *et al.* 2017), about their consumer's belief and intention to purchase organic food. However, there is a dearth of such studies in the Indian context.

In context of India, reports indicated that India is experiencing an annual increase of about 20–22% every year in the production of organic crops (Dash *et al.* 2014). All over India, there are over 15000 certified organic farms and the number is growing fast year. Consumers' perception regarding acceptance of organic foods in our country is very limited, the states like Odisha (Dash *et al.* 2014), Maharashtra (Mehra and Ratna 2014) and Chennai (Rakshaa *et al.* 2016) have been studied but only taking a respondent size of not more than 300. Currently in India where people are demanding organic food, it becomes important to understand, the behavior intentions of consuming a certain level of organic food, how frequently they are buying, what motivates them to purchase, what is the level of their awareness about the organic food and what motivates them to change their consumption pattern. As per our best

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knowledge there is a complete lack of documentation about the behavioral intention of Indian urban population.

In lieu with that the present study was design to delineate the behavioral intentions, perception and knowledge of the urban population towards the organic food products specifically the buying behavior. The exploratory study was framed under the theory of planned behavior, which accounted for the consumers' intentions in accepting organic food by scrutinizing their attitude, subjective norms and perceived behavioral control. Additionally, the work dives into the underlying factors describing consumers' knowledge and willingness to pay for organic food.

MATERIALS AND METHODS

The locale of the study selected was in the urban areas of Delhi NCR regions, India. Random sampling method was employed and questionnaire were administered to the respondents by interview schedule technique. The sample size was 1047. The schedule has been designed in a manner to reveal the behavioral intention of urban consumers for organic food consumption. The questions were pre-tested for significance. The schedule encompasses the statements pertaining to knowledge of respondents about the organic food and their familiarity about the usage of the same. The statements have been divided into both 7 and 5 point continuum with responses strongly agreed to strongly disagreed. Demographic questions on gender and age were included at the end of the questionnaire.

The questionnaire prepared was validated using SPSS 17.0 version. Cronbach's alpha coefficient was estimated for each TPB instrument. The Cronbach's alpha coefficient (Table 1) was found to be above 0.85 for each parameter which indicated high level of internal consistency which in turn showed that questionnaire was both reliable and valid.

In order to determine the individual's principle towards living their life, a value based (Schwartz value) analysis was done following the methodology given by Schwartz (1992 & 1994). The ten value domains under the scale of 0-7 were used as a criteria to understand the respondent's credence towards lifestyle-related values. The Cronbach's alpha coefficient calculated for the scale was 0.94, indicated the high level of internal consistency.

In order to assess the attribute/factors that influences the purchase behavior, Diffusion of innovation theory was applied as per given by Rogers (1995). The theory basically provided a useful framework for studying the perceived attributes of innovation, viz. Relative advantage, Compatibility, Complexity and Trialability, for a particular subject. The scale was also analyzed for its reliability test and the Cronbach's alpha value obtained was 0.86.

All the data from responses of each participant were coded numerically and were analyzed statistically using the Statistical Package for Social Sciences AMOS (version 17.0). A number of statistical tests were performed to assess the validity and reliability of the questionnaire Cronbach's alpha coefficient. Pearson correlation was one to analyze the data as well as the underlying factors that explain the

Table 1 Reliability analysis of the questionnaire for behavioral intention

Theory of Planned Behaviour Instrument	Cronbach's Alpha Based on Standardized Items
Attitude	.941
Subjective norms	.901
Perceived behavior control	.878

pattern of correlations within between the set of variables, i.e. consumers' attitude, behavioral intention, subjective norms and perceived behavior control towards purchasing the organic food.

RESULTS AND DISCUSSION

We need to understand the consumers' background in order to explore their understanding for the organic and safe food consumption. Results in Fig 1 represents the details on the demographic profiling of the 1047 respondents selected for the study. It was observed that high percentage of female (60.4%) took interest in the survey as compared to the male respondents (39.6%). The same trend was observed by Hempel and Hemm (2016) when they studied the consumer preferences for organic food amongst the population of country, Germany. The plausible reason could be the fact that majority of the women are habitually more into the grocery shopping than men. Consequently, the higher percentage value obtained for women respondent in present study was quite expected in Indian regions too. Furthermore, it has also been reported that knowledge and awareness about the contamination of food commodities is high amongst the women with respect to the more education and income (McIntosh *et al.* 1994. Torjusen *et al.* 2001; Stobelaar *et al.* 2006). Moreover, in our study majority of the respondents were youth (68.2%), i.e. in between the age group of 13–35 years, followed by the middle age group (27.1%) and old age group (4.7%). In contrast, Rakshaa *et al.* (2016) reported that out of the 300 respondents chosen for the study in Chennai, India 53% of the respondents were male and 47% were female. Also, a study conducted in Germany emphasized that the highest surveyed population (36.3%) were from the mean age of 44.5 years i.e. middle age group (Hempel and Hemm 2016). On the other hand, Ueasangomsate and Santiteeraku (2016) reported during the survey conducted in Thailand, people from age group of 31–40 years showed maximum interest becoming the part of the study.

Since, organic foods are safe and nutritious, hence it is important to understand the underlying values of consumers particularly towards health. As shown in Fig 2, the surveyed population was found to be more concerned about being healthy with a high mean score value of 6.13. Hence, the metro consumers value health the most and there is large scope for the organic and nutritious product's. Besides the value for health they were also revealing the importance of the significant others (friends, relatives and family) with a mean score of 5.75. Talking about the values, such as

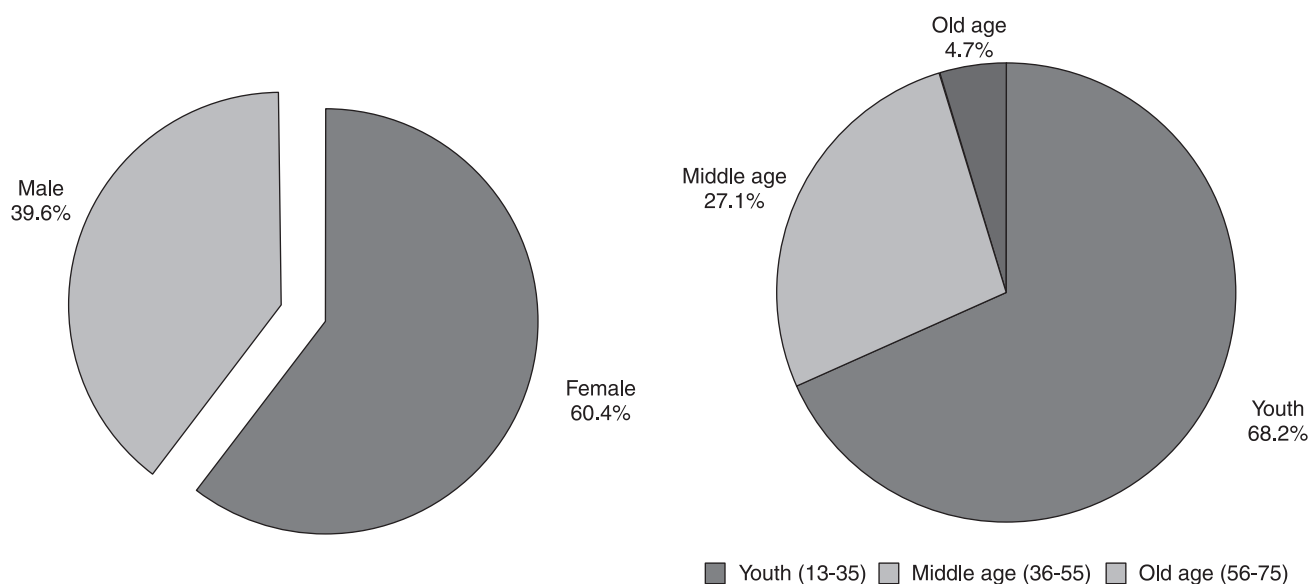


Fig 1 Demographic profiling of the respondents (N=1047).

positivity and ambition, both scored a good mean score of 5.72 and 5.60 respectively, followed by traditional values (5.55). The least scored principle value were gratifying, exciting and being prestigious.

Since health was the prime value/driver, further insight were sought into the health consciousness of the urban consumers. A seven point continuum scale was used ranging from very well to not at all to screen out their cognizance towards health. Table 2 reveals that the urban consumers were highly reflective and concerned about their health as the highest mean scored, i.e. 5.82 was obtained for this statement only followed by the statement 2 stating very health consciousness. A Malaysian study also indicated that maximum consumers are concerned about their health consciousness and consequently have a positive attitudes toward green food (Salleh *et al.* 2010)

The Theory of Planned Behavior (TPB; Ajzen, 1985) is an extension of the Theory of Reasoned Action (TRA; Ajzen and Fishbein 1980) which is basically measures intentions predict behaviors. Specifically, the TPB suggests that intentions are predicted by attitudes toward the behavior,

subjective norms about the performance of the behavior, and extends the TRA to include perceived behavioral control (PBC; Huchting *et al.* 2017). In our study TPB may contributes to the structuring of a framework for understanding the consumer's intention to purchase organic foods. The theory was applied to the current study and a structure model was created with the help of SPSS-AMOS (Fig. 3). The structural model included one latent variable i.e. behavioral intention whereas, indicator variables were represented by the direct measures of Attitude (A) which basically describes an individual's learned personality to behave in a consistent manner for the given objects, Subjective Norm (S) that shows the supposed social pressure to perform or not to perform the task and third the Perceived Behavioral Control (PBC) which reflects the individual's self-control beliefs in taking a decision. Core parameters in the model were analyzed by Root Mean Square Error of Approximation (RMSE) which constructed the direct linkages between the assessed variables. RMSE value for the model was 78% and it was observed that the behavioral intention of the consumers' to purchase the

organic food items was primarily governed by the variable, PBC (0.58) followed by A (0.32) and S(0.31). In concern with the inter-relation amongst the 3 variables, data revealed that PBC had high correlation with the variable S, inferring that the consumers' somewhere gets highly influenced by their significant ones while purchasing the organic foods. Further, as per the Schwartz's value best-worst survey also, the respondents scored good ranking towards their principle to be humble with

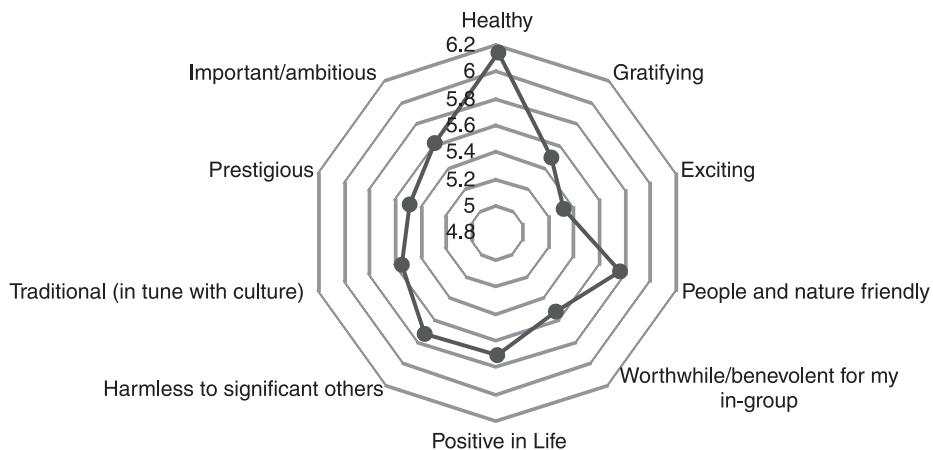


Fig 2 Scale of ranking as per the Schwartz's value best-worst survey.

Table 2 Health consciousness: Perception of consumers

Category	Very well		Not at all (Frequency)					Mean	SD
I am reflective and concerned about my health a lot	392 (37.4)	286 (27.3)	231 (22.1)	89 (8.5)	36 (3.4)	7 (0.7)	6 (0.6)	5.82	1.21
I am very health conscious	218 (20.8)	417 (39.8)	233 (22.3)	115 (11.0)	42 (4.0)	20 (1.9)	2 (0.2)	5.56	1.17
I usually give attention to my inner feelings about my health	177 (16.9)	449 (42.9)	226 (21.6)	116 (11.1)	47 (4.5)	26 (2.5)	6 (0.6)	5.47	1.22
I regularly examine my health status	147 (14.1)	345 (33.0)	258 (24.7)	166 (15.9)	77 (7.4)	37 (3.5)	16 (1.5)	5.14	1.37
I notice changes in my health immediately	145 (13.9)	381 (36.4)	240 (22.9)	165 (15.8)	80 (7.6)	27 (2.6)	8 (0.8)	5.22	1.30
Usually I am aware of my health	163 (15.6)	385 (36.8)	255 (24.4)	144 (13.8)	54 (5.2)	35 (3.3)	11 (1.3)	5.30	1.31
I am conscious of my state of health on a daily basis	118 (11.3)	380 (36.3)	267 (25.5)	156 (14.9)	59 (5.6)	32 (3.1)	35 (3.3)	5.10	1.41
I notice my feelings of physical state during daily hours	127 (12.1)	356 (34.0)	243 (23.2)	175 (16.7)	73 (7.0)	53 (5.1)	20 (1.9)	5.05	1.42
I am very involved about my health issues	156 (14.9)	362 (34.6)	244 (23.3)	156 (14.9)	67 (6.4)	51 (4.9)	9 (0.9)	5.19	1.37

* The values depicted in brackets denotes the percentage of the respondents.

the society and to be influenced by their family, friends, relatives etc. (Fig 2). The Pearson correlation coefficients illustrated in Table 3 further documented that consumers who purchase organic food were mainly driven by their positive perceived Behavioral Control with an r^2 value of 0.85.

Consumers' knowledge is an important determinant that helps in forming their attitude towards purchasing organic food. So, it was worthy to collect the information of the knowledge about the organic food amongst the Indian population residing in the urban areas. The knowledge test was pre tested upon 42 individual who were not included in the final test to avoid pre testing effect. Difficulty index, discrimination index and point biserial correlation

co-efficient was calculated for inclusion of items in the knowledge test. So, on the basis of above mentioned criteria four questions were screened out due to not having acceptable values. Out of total 26 knowledge items, 22 items were selected based on difficulty index ranging from 30–80, discrimination index exceeding 0.20 and significant bi-serial correlation coefficient. The data for knowledge test reflected that only 16 percent were completely aware of the term 'organic food' whereas, majority of the consumers (59%) said that they were moderately familiar with the term while 25 percentage of the respondents had low level of knowledge about the same (Fig 4). It was postulated that although the organic food is catching its pace, but lack of proper knowledge is the reason that currently market penetration of organic food in India is low and therefore the major portion of the produce is being exported out of the country (Mehra and Ratna 2014). Thus, creating awareness amongst the consumers can play an important role in up gradation of organic food marketing in our country. Secondly, it

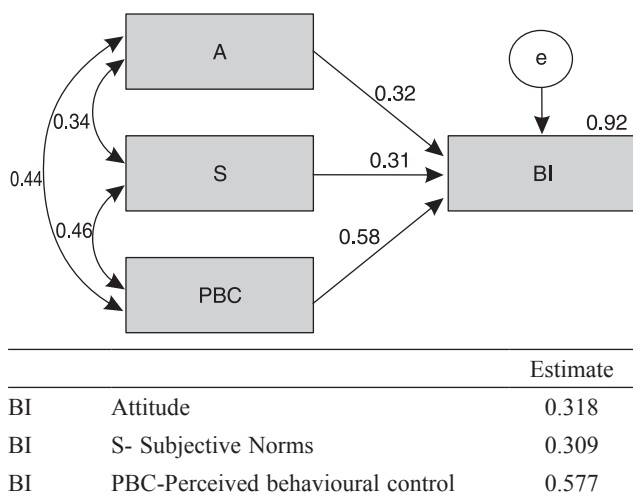


Fig 3 Structural equation model of Theory of Planned Behaviour Denoted by the relationship between latent variable (BI) and indicator variables A, S, PBC. RMSEA = 0.78

Table 3 Correlation amongst the Attitude, Subjective norms, Perceived Behavioural Control and behavior Intention

	Attitude	Subjective Norm	Perceived Behavioural Control	Behavioural Intention
Attitude	1	0.341**	0.442**	0.678**
Subjective Norm	0.341**	1	0.456**	0.680**
Perceived Behavioural Control	0.442**	0.456**	1	0.858**
Behavioural Intention	0.678**	0.680**	0.858**	1

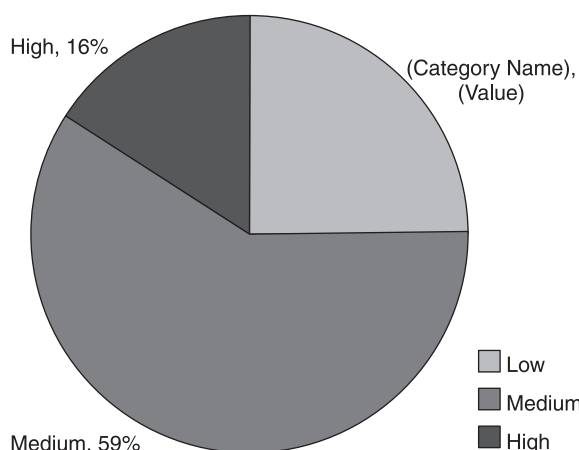


Fig 4 Consumer knowledge towards organic food.

was perceived that there is lack of proper certification, labelling and branding of such commodities which limits the consumer's understanding about the organic food concepts. Rakshaa *et al.* (2016) also reported that scientific evidences, government regulations and brand awareness helps to create a level of trust on purchase of organic food products. In order to expand the organic food sectors, institutions and NGOs in collaboration with branding companies have to take an initiative to promote and support the consumers for their better understanding about the concept of organic food.

The perception of consumers about the organic food was also assessed by using a series of question on a 5 point scale continuum ranging from strongly agreed to strongly disagreed. From the results (Table 4), it was found that the maximum consumers strongly agreed that organic foods are safer in comparison to the conventional ones with a highest score of 4.38, followed by their positive perception towards their nutrition and chemical free nature, which drive their willingness to buy organic food items. In line with the values (Fig 2), overall it was observed that the consumers perceive organic food healthy, nutritious and environment friendly. A Indian study conducted by Paul and Rana (2012) also reported that majority of respondents, i.e. 50.8% in their study supported the fact that overall benefit, i.e. healthy content, environment friendly and environment friendly technology are some of the key benefits consumers are

seeking from organic foods. Similarly, Bourn and Prescott (2002) revealed that for consumer's nutritive, sensory and food safety are prime points of comparison between organic and inorganic food.

In the current study, it was also attempted to evaluate the general factors that contributes towards purchasing the food commodities by a five point continuum scale ranging from not at all important to extremely important. Interestingly, it was found that the first thing that affect consumers is the price value of food product. Data represented that (Table 5) people surveyed opted the category of 'low price' as an extremely important factor while choosing their food products. In line with this attribute, the affordability calculated was also found to be the extremely important factor for the consumers while choosing their food products. As reported by the Dholakia and Shukul (2012) survey in north India indicated that 71% of consumers mentioned a high price as a hindrance to purchase organic products. However, for other related factors, the mean score found was in the decreasing order of price > organically produced > freshness > brand name > packaging, that strongly influences their perception while purchasing and selecting the food products. Whereas, it was noticed that the consumers' were least bothered about the fat percentages of the commodities. Furthermore, Table 5 part B indicated that the consumers prefer to purchase organic foods only if they are beneficial to them, for instance factors such as personal benefits in terms of health, nutrition, prestige amongst the peer group etc. followed by the ease in cooking with a mean value of 2.82. Besides this, in order to seek in depth understanding about the factors that strongly influences the food preferences (taste, safe and nutrition) were also analyzed by the ranking method and it was found that food safety was the prime factor contributing towards the consumption of organic foods followed by the nutrition and taste of the food items.

Since 'price' emerged as an important consideration for consumers as revealed in Table 5 part A, the Willingness to pay (WTP) for organic foods was also calculated. The concept of WTP is defined as the maximum price a given consumer accepts to pay for a product or service (Sriwaranun *et al.* 2014). In the current study also the WTP of the Delhi consumers towards purchasing organic

Table 4 Consumer perception for organic food items

Category	Strongly agreed		Strongly disagreed (Frequency)		Mean	SD
Organic food is safer than conventional one	479 (45.75)	508 (48.52)	47 (4.49)	7 (0.67)	6 (0.57)	4.38 0.65
More nutritious than the traditional food.	392 (37.44)	503 (48.04)	111 (10.60)	32 (3.06)	9 (0.86)	4.18 0.80
Organic farming results in sustainable environment for living	323 (30.85)	500 (47.76)	183 (17.48)	34 (3.25)	7 (0.67)	4.05 0.81
We should depend on organic food for good health	232 (22.16)	452 (43.17)	233 (22.25)	106 (10.12)	24 (2.29)	3.73 0.99
Organic food production is eco-friendly	302 (28.84)	529 (50.53)	142 (13.56)	57 (5.44)	17 (1.62)	4.00 0.88
Organic food is natural	357 (34.10)	511 (48.81)	132 (12.61)	41 (3.92)	6 (0.57)	4.12 0.81
Organic foods are on the healthy food system	366 (34.96)	491 (46.90)	136 (12.99)	44 (4.20)	10 (0.96)	4.11 0.85

* The values depicted in brackets denotes the percentage of the respondents.

Table 5 Consumers' attributes towards buying food

Factors	Not at all important		Extremely important		Frequency	Mean	SD
<i>A</i>							
Organically produced	22(2.1)	80(7.7)	64(6.1)	723(69.1)	153(14.6)	3.86	.82
Low price	86(8.2)	52(5.0)	96(9.2)	209(20.0)	600(57.5)	4.14	1.26
Brand name	83(8.0)	86(8.2)	819(78.5)	50(4.8)	5(0.5)	2.81	0.65
Freshness	120(11.5)	159(15.3)	70(6.7)	118(11.3)	574(55.1)	3.83	1.49
Packaging	90(8.6)	182(17.5)	722(69.4)	16(1.5)	31(3.0)	2.73	0.76
Fat %	112(10.4)	716(68.8)	167(16.8)	41(3.9)	5(0.5)	2.15	0.67
<i>B (Diffusion of innovation theory)</i>							
Relative Advantage	69(6.6)	121(11.7)	239(23.6)	608(58.6)	1(0.1)	3.34	0.93
Simple to use/cook	78(7.5)	134(12.8)	732(70.2)	98(9.4)	1(0.1)	2.82	0.70
Can be tried/experimented	637(61.1)	130(12.5)	241(23.1)	31(3.8)	4(0.4)	1.70	0.95
Compatibility with custom/ food habits	40(3.9)	250(24.1)	358(34.5)	357(34.4)	33(3.2)	3.09	0.93
<i>C (Opinion)</i>							
Availability	131 (12.5)	343 (32.7)	332 (31.7)	192 (18.3)	49(4.6)	3.08	1.05
Accessibility	25(2.3)	194(18.5)	616(58.8)	185(17.6)	27(2.5)	2.99	0.74
Affordability	40(3.82)	130(12.41)	464(44.31)	307(29.32)	106(10.12)	3.29	0.94

* The values depicted in brackets denotes the percentage of the respondents.

food products was calculated (Table 6). Data pertaining to the same signified that majority of the respondents, i.e. mean value of 5.63 (on a scale of 1–7) answered that they can only consider buying organic foods if they are cheaper than non-organic commodities. On the other side, slightly lesser value, i.e. 5.43 average of the surveyed population replied they only tend to buy organic products when they are more or less same in price. Whereas, a good number of respondents adhere on their decision of affording organic food products even if they are expensive in comparison to the non-organic or conventional food products. Earlier studies specified that WTP of consumers' depends on their socio-demographic profiling (Canavari *et al.* 2002, Sriwaranun *et al.* 2014 and Hutchins and Greenhalgh 1997). The fact has also been established by a study conducted

by Aertsens *et al.* (2009) saying that significant differences exist in attitudes towards organic food between people living in rural or urban areas. Additionally, surveys conducted pertaining to WTP indicated that level of education, income status, marital status and residence location are some other prospects which significantly affect a individuals perception in purchasing organic food (Bonti-Ankomah and Yiridoe 2006, Krystallis and Chryssohoidis 2005). In contrast, there are reports suggesting that income and socio-demographic characteristics of the consumers' hardly affect the consumption rate (Lockie *et al.* 2004 and Gil *et al.* 2000). A Norwegian study on consumers' willingness to pay for organic food, also found no significant effect of income or occupation towards the interest of consuming organic food (Wandel and Bugge 1996).

Table 6 WTP estimated for all organic product

Category	Strongly agreed			Frequency		Strongly disagreed		Mean	SD
Buy or consider buying organic foods if they are low priced than non-organic	322 (31.7)	317 (30.3)	184 (17.8)	151 (14.4)	34 (3.2)	15 (1.4)	14 (1.3)	5.631	1.34
Buy or consider buying organic foods if they are more or less the same price as non-organic	233 (22.3)	377 (36.0)	198 (18.9)	148 (14.1)	51 (4.9)	23 (2.2)	17 (1.6)	5.435	1.36
Buy or consider buying organic foods EVEN if they are slightly more expensive than non-organic products	91 (8.7)	191 (18.2)	382 (36.5)	216 (20.6)	87 (8.3)	33 (3.2)	47 (4.5)	4.71	1.41
Buy or consider buying organic foods EVEN if they are significantly more expensive than non-organic products	57 (5.4)	155 (14.8)	171 (16.3)	318 (30.4)	105 (10.0)	132 (12.6)	109 (10.4)	3.96	1.67

* The values depicted in brackets denotes the percentage of the respondents.

Current data signified that inspite of knowing the positive health prospects of the organic food product, their high price value was one major factor to limits their hand in purchasing. It was believed that this prevailing gaps between the cost of conventional/local and organic food should be reduced in order to increase its consumption amongst the masses (Gil *et al.* 2000).

Conclusion

This study on the behavioural intention of the Delhi consumers about the organic food reveals that there is tremendous potential in this sector and farmers can earn by producing organic food. The theory of planned behavior (TPB) applied to the study indicated that the TPB model constructed was under moderate fit indicating the positive intention of the surveyed population towards organic food. Further, it was found that behavioral intention to purchase the organic food was majority governed by the perceived behavioural control, i.e. self-control. It was found that female involvement was high in taking participation in the study and purchasing the organic food commodities, which could be due to the fact they are more into the grocery shopping and considered to be health consciousness in comparison to the males. Further, it was perceived that organic food is capturing the market rapidly but improper knowledge and awareness are significant factors making high impact on consumption of organic food items. However, increasing price is barrier and a major issue for the extending marketing. The stimulated growth of the organic food reduction in the price value and proper certification, labelling and branding are some of the key points that needs attention at policy.

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