

## Consumers Buying Behavior of Organic Food in Delhi-NCR : Mapping the Role of Demographic Factors

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### ABSTRACT

This paper investigates the underlying socio-economic determinants of organic food purchase dynamics in the context of an emerging economy like India. Exploring buying patterns through primary data collection, it attempts to explain the impact of various demographic factors on which a consumer's psychographics is based. A quantitative approach via face to face survey questionnaire was adopted ; 306 copies of usable questionnaires were collected from different areas of Delhi-NCR (national capital region) using purposive sampling. Consumer mapping was done using quantitative statistical methods like Welsh's t-test and Welsh's adjusted ANOVA. For improving validity Games-Howell post-hoc procedure was also used. The findings suggest that except gender other demographic factors like marital status, children in household, age, income and education influence Indian consumers buying behavior of organic food. The research could aid all stakeholders concerned with the organic food sector, particularly in emerging economics where organic market though nascent is rapidly growing. It could be an essential driver

to improve customer involvement and thus help to nudge them to consume organic food instead of conventional food.

**Keywords** Organic food, Consumer buying behavior, Demographic factors, Indian consumers, Emerging economy.

### INTRODUCTION

There has been a steady shift in food consumption across the world primarily due to health and environmental reasons (Euro Monitor International 2012, Bezawada and Pauwels 2013, Nasir and Karakaya 2014, Lin and Lin 2014, Feunekes et al. 2008). This has led to increase in production and consumption of organic food globally over the years (Lernoud and Willer 2018, Sahota 2018). The global food and drink market in 2016 was approximately estimated at 89.7 billion USD (Sahota 2018). However this growth is not evenly spread as it is mostly concentrated in developed economics particularly North America and Europe (Lernoud and Willer 2018). The USA is the largest organic food products market accounting for 46% of worldwide sales followed by the European Union at 39% in 2016 (Lernoud and Willer 2018). These two regions also have the top ten countries with the highest per capita national consumption of organic food (Lernoud and Willer 2018). The nation with the highest per capita consumption of organic food was Switzerland at 304 USD in 2016 (Lernoud

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and Willer 2018). Global per capita consumption of organic food was 12.1 USD in 2016 (Lernoud and Willer 2018). However, in India it is just at 1.18 USD (ASSOCHAM and EY 2018). However, emerging economies like India will see continuous growth in organic food consumption (Kapoor and Garyali 2012, ASSOCHAM and EY 2018).

Organic food consumption is determined by various internal and external factors. Internal factors include socio-demographic like age, gender, education, income and household composition. External factors include availability, accessibility and exposure to marketing stimuli like advertisement.

As the awareness about organic food is increasing, consumers find organic food as safe, healthy (Lea and Worsley 2005, Padel and Foster 2005, Chen 2009) and non-polluting compared to conventional food products (Bezawada and Pauwels 2013). However, often this interest is not transformed into purchase as different socio-economic and behavioral factors determine final purchase decision (Nasir and Karakaya 2014, Aertsens et al. 2009, Padel and Foster 2005). Thus intention to buy does not necessarily leads to actual purchase of organic food.

Past research has shown that access to information among consumers can reduce uncertainty in purchase by facilitating consumer involvement (Wier and Calverley 2002, Jinghan et al. 2007, Thøgersen 2007, Carrete et al. 2012). However, access to information will be only beneficial if the consumer is able to process the said information. This will depend upon consumers demographic factors like education and other skills set. Thus the impact of various factors during food purchase is unknown (Hepting et al. 2014).

Previous researchers from various countries have explored the factors behind the organic food consumption. However, despite existence of huge body of literature in the area, factors impacting organic food consumption show limited understanding and varied results, implying the need to advance the research. This area offers an interesting opportunity for research as they differ geographically and demographically. Moreover, India as an emerging market

for organic food has not been thoroughly researched from consumer's perspective. Given the huge potential for growth that exists in organic market, the study aims to explore the socio-economic determinants for purchase of organic food in Delhi-NCR region.

### **Literature review**

The role of various socio-demographic factors in consumer food choice has been mixed. Previous research on this aspect has been explored in context of other countries. In this section, we present the research in context to these factors.

#### ***Income***

Income is considered the prime decision-making factor affecting purchase of organic food since its expensive than conventional food (Gao et al. 2014, Carrete et al. 2012, Joshi and Hioki 2012). Price of organic food relates to affordability (Singh and Verma 2017, Maruyama and Trung 2007) since paying capacity is dependent on income. This is especially true in emerging economies. Its relation to affordability is evident as most of global organic food consumption is concentrated in regions with higher per capita income and tapers down along with a drop in income (Padel et al. 2009, Tully and Winter 2014). This explains higher popularity of organic food in developed countries compared to developing countries.

Income and young age were found to be positively related to willingness to pay (WTP) for organic products (Lagerkvist and Hess 2011). However, individuals in USA with annual income less than USD 50,000 constituted half of frequent organic food purchasers and African-Americans, Asian-Americans and Hispanics consume more organic products. Therefore Kleemann (2014) stresses on the need to conduct further research to determine correlation between income and organic food purchases.

#### ***Education and knowledge***

Information aids in purchase of any product and that holds true for organic food as well. As per Kotler

(2012), information search is the initial step in purchase decision process. Consumers can acquire information from various sources like print, digital media and others. Repeat purchase depends upon previous consumption experience, which apparently is more important than product attributes. Consumers tend to be somewhat loyal to premium quality brands (Gupta 2009, Euro Monitor International 2011, Kontogeorgos 2012). Further, consumers may gain knowledge about food attributes through labelling (Dimara and Skuras 2005), certifications (Valor et al. 2014, Scorzon et al. 2014, Gao et al. 2014, Karipidis and Tselempis 2014, Carrete et al. 2012), branding and advertisement (Pousa and Nuñez 2014) and peers. Often, terms such as natural (Amos et al. 2014) and organic are not fully understood by consumers in general. Thus, education (Baglione et al. 2012, Singh and Verma 2017) knowledge and awareness (Kirijini and Thivahary 2017) can steer sustainable behavioral choices.

Thus, awareness building can impact the growth of organic food industry (Lin et al. 2009). Socio-economic attributes like education (Nadia et al. 2014), age, or other technical skills can determine the ability of a consumer to seek and identify diverse appropriate information sources and the skill to process this information (Nasir and Karakaya 2014, Scholten et al. 2017).

### **Gender**

Studies on influence of gender on food related studies have been mixed. Hu et al. (2006) found that education and gender significantly influences consumer's responses to food labels. However, in another study in Belgium, gender and age were not seen as influential factors (Gellynck et al. 2006). But in two separate independent Taiwanese studies found that females are more likely to be health conscious and choose organic food than males (Lin and Lin 2014, Tung et al. 2012). Most studies in this area suggest that females have positive attitudes and are more likely to purchase organic food than males (Lin and Lin 2014, Nasir and Karakaya 2014, Tung et al. 2012, Krystallis et al. 2008, Onyango et al. 2007). Still, others contend that organic food purchase is not impacted by gender (Blanchard et al. 2009).

### **Age and presence of children in household**

Young and educated are more likely to buy organic food (Lin and Lin 2014). Age (Kim et al. 2013) and presence of children in household (Loureiro et al. 2001) can impact consumer attitudes towards organic food and their buying behavior (Gupta 2009). Singh and Verma (2017) found middle age consumers in India to be more likely to buy organic food.

### **Objective**

The main objective of this research study is to assess the impact of socio-economic demographic factors in consumer buying behavior.

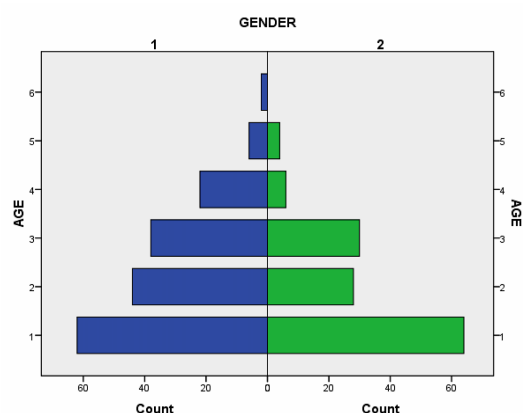
### **MATERIALS AND METHODS**

The paper is based on primary data collected in Delhi-NCR (national capital region) from organic consumers. Data were collected through a structured pen and paper questionnaire (PAPI) from the state of Delhi and areas adjoining Delhi - Faridabad and Gurgaon (in the state of Haryana) and Ghaziabad, Noida and Greater Noida (in the state of Uttar Pradesh). Organic consumers were defined as those who had consciously purchased organic food at least once in the last one month. The respondents chosen were 18 years old and above. Thus, the sampling unit in this study is households in Delhi-NCR who consciously buy organic food at least once a month.

To avoid bias, respondents were sampled from different locations at different times. The sampling technique was criteria sampling, a sub-set of purposive sampling. The survey methodology was intercept of consumers at the exit of the organic food retail points. The respondents were asked to fill self-administered PAPI questionnaire. For this research, 650 questionnaires were distributed out of which a total of 411 respondents filled in their responses giving a healthy response rate of 63.2%. Post scrutiny, only 353 questionnaires were considered as others were outside the sampling frame since the discarded questionnaires belonged to consumers who bought organic food less than once a month. Further, out of 353 questionnaires, another 47 questionnaires were removed due to various kinds of response errors. The

**Table 1.** Demographic variables - frequency and percentage. #Rs = Rupees (Indian currency). \*LPA = Lacs per annum, 1 LAC = 1,00,000.

Demographic variable	Frequency (%)
<b>Gender</b>	
Male	174 (57%)
Female	132 (43%)
<b>Marital status</b>	
Single	148 (48%)
Married	158 (52%)
<b>Age group</b>	
18–25 years	126 (41%)
26–35 years	72 (23%)
36–45 years	68 (22%)
46–55 years	28 (9%)
56–65 years	10 (3%)
Above 60 years	2 (< 1%)
<b>Employment status of the respondent</b>	
Full time	184 (60%)
Part-time / Casual	16 (5%)
Home duties	20 (7%)
Student	78 (26%)
Retired	4 (1%)
Unemployed	4 (1%)
<b>Highest education</b>	
Matriculate-10 <sup>th</sup> class	12 (4%)
High School–12 <sup>th</sup> class	26 (8%)
Diploma	12 (4%)
Graduation (BA, Bcom)	100 (33%)
Graduation (Professional) (B Tech, MBBS)	44 (14%)
Post-Graduation (MA)	34 (11%)
Post-Graduation (Professional) (MBA, MD, ME)	56 (18%)
PhD	20 (7%)
Post-Doc	2 (<1%)
<b>Annual household income range</b>	
Rs # 5–10 LPA*	124 (41%)
Rs 11–15 LPA	92 (30%)
Rs 16–20 LPA	32 (11%)
Rs 21–25 LPA	28 (9%)
Rs 26–30 LPA	26 (8%)
Above Rs 30 LPA	4 (1%)
<b>Number of children living in household</b>	
Nil	180 (59%)
1	68 (22%)
2	54 (18%)
3	4 (1%)
<b>Number of children below 5 years</b>	
1	44 (96%)
2	2 (4%)
<b>Number of children from 5-11 years</b>	
1	56 (85%)
2	10 (15%)
<b>Number of children from 12-17 years</b>	
1	42 (78%)
2	12 (22%)



**Fig. 1.** Age range spread across gender (1-Male / 2-Female).

final sample size of 306 organic consumers (43% female, 52% married) were considered for data analyses. Statistical analyses of the data for objective were done through t-tests and ANOVA.

## RESULTS

Respondents had diverse demographic backgrounds. Thus it was important to understand the profile of respondent's demographic profile through analysis. Table 1 highlights the frequency and or percentage of various variables related to organic food buying behavior of respondents for N = 306.

### Descriptive statistics

Socio-economic demographic profile of the sample for this study has been illustrated in Table 1. The chosen demographic variables illustrate sample characteristics. The sample constituted of 57% male and 43% female respondents above 18 years of age (Fig. 1). The marital status of respondents was nearly half - 52% married and 48% single. 86% of respondents belonged to the 18–25 years, 26–35 years and 36–45 years age groups cumulatively.

The bulk of respondents had tertiary education (88%). Most respondents were full time employed (60%); 26% of respondents were currently students enrolled for different tertiary education courses. The highest primary employment category of respondent household was service-private (67%). Annual income

household range showed a receding trend with from Rs 5–10 lacs being highest at 41% to lowest at 1% for above Rs 30 lacs for the sample. Two annual household income categories of Rs 5–10 lacs and Rs 11 lacs–15 lacs conjointly held 71% of the sample distribution ; 126 households (41%) out of 306 had children. The majority were having 1 child.

### Impact of demographic factors

The impact of demographic factors were analyzed using t-test and ANOVA. Four dependent variables were used against each demographic variable. t-test was conducted for those with dichotomous independent variables like gender, marital status and presence of children in household. For others ANOVA was used for analysis : Frequency of purchase. Percentage of organic food purchased. WTP (Willingness to pay premium prices over non-organic food). Intention to purchase.

Frequency of purchase, purchase of organic food purchased and WTP were measured with one items each. Intention was measured by three items. The dependent variable intention was computed by standardizing their values through z-scores followed by their mean. This allowed the respective weightage of individual items in the final intention dependent variable used in inferential statistical analysis.

As per (Azjen 1991), past purchase is related to intention and often reflects future behavior. For this reason other dependent variables were also included along with intention. One of the assumptions of student's t-test is approximately equal variance among

**Table 2.** Independent samples t-tests. \*Welch's t-test.

Dependent variable	Statistic	t-value	df	p
Intention	Student's t	-1.6527*	243	0.100
Frequency of purchase	Student's t	1.6448	304	0.101
WTP	Student's t	0.8193	304	0.413
Percentage	Student's t	-0.0680	304	0.946

two groups. In case of dissimilar variance, p-value reported is not accurate and hence not valid. In such a scenario, Welch's t-test is recommended. Accordingly, Welch's t-test was used instead of student t-test where unequal variance was observed in the respective test variable (s).

### Gender

An independent sample t-test was performed on Gender against was tested for all four above stated dependent variables. No significant difference was found among male and female respondents with respect to intention, frequency of purchase, WTP and percentage of organic food as none of their p-values were significant as per independent samples t-test and Welch t-test (for intention) (Table 2).

### Marital status

There was a significant difference in the scores among singles (M=2.93, SD=0.82) and married (M=3.13, SD=1.01) respondents as per Welch's t-test  $t(298) = -1.97, p = 0.049$  (Table 3).

**Table 3.** Results from t-test for marital status. \* Welch's t-test.

Independent variable	Dependent variable (Test variable)	Intention		WTP		Percentage of organic food		Frequency of purchase	
		M	SD	M	SD	M	SD	M	SD
Marital status	Single (n = 146)	-0.067	0.779	1.289	1.289	2.93	0.821	3.44	1.050
	Married (n = 152)	0.062	0.792	1.5511	1.551	3.13	1.014	3.66	1.127
	df	304		304		298		304	
	t-value	-1.44		-1.80		-1.97*		-1.91	
	p	0.150		0.073		0.049		0.057	

**Table 4.** Results from t-test for children in household. \* Welch's t-test.

Independent variable	Dependent variable		Intention		WTP		Percentage of organic food		Frequency purchase	
			M	SD	M	SD	M	SD	M	SD
Children<18 years	1 Child (n=42)		0.015	0.69	1.38	0.90	2.81	0.74	3.52	1.01
	2 Children (n=12)		0.30	0.78	2.17	1.40	3.83	0.38	4.50	1
	t-value		-1.251		-2.322		-6.389*		-2.941	
	p		0.216		0.024		<0.001		0.005	
Children<12 years	1 Child (n=56)		0.20	0.775	1.93	1.475	2.89	0.947	3.61	1.021
	2 Children (n=10)		0.16	0.500	1.60	0.516	3.20	0.789	3.60	1.430
	t-value		0.185		1.283		-0.965		0.019	
	p		0.854		0.207*		0.338		0.985	
Children<5 years	1 Child (n=44)		0.0545	0.977	2.41	2.149	2.77	0.912	3.59	1.245
	2 Children (n=2)		0.44	0	1	0	4	0	4	0
	t-value		-0.564		4.349*		-8.931*		-2.180*	
	p		0.576		<0.001		<0.001		0.035	

### Children in household

*Households with children below 18 years (12–17 years age group)* (Table 4): There was a significant difference in WTP (of organic food) scores among households with one child below 18 years (M=1.38, SD = 0.90) and households with two children below 18 years (M = 2.17, SD= 1.40) as per student's t-test  $t(52) = -2.32$ ,  $p = 0.024$ .

There was a significant difference in percentage (of organic food purchased) scores among households with one child below 18 years (M=2.81, SD=0.74) and households with two children below 18 years (M=3.83, SD=0.38) as per Welch's t-test  $t(35.4) = -6.38$ ,  $p < 0.001$ .

There was a significant difference in frequency of purchase (of organic food) scores among households with one child below 18 years (M=3.52, SD=1.01) and households with two children below 18 years (M=4.50, SD=1) as per student's t-test  $t(52) = -2.94$ ,  $p = 0.005$ . Intention was not found significant.

*Households with children below 12 years (5–11 years age group)* (Table 4) : There was no significant difference in intention, WTP, frequency of purchase (of organic food), percentage of organic food among households with one child below 12 years and

households with two children below 12 years as per student's t-test.

*Households with children below 5 years* (Table 4) : There was a significant difference in WTP (of organic food) scores among households with one child below 5 years (M=2.41, SD=2.14) and households with two children below 5 years (M=1, SD=0) as per Welch's t-test  $t(43) = 4.34$ ,  $p < 0.001$ .

There was a significant difference in percentage (of organic food purchased) scores among households with one child below 5 years (M=2.77, SD=0.912) and households with two children below 5 years (M=4, SD=0) as per Welch's t-test  $t(43) = -8.93$ ,  $p < 0.001$ .

There was a significant difference in frequency of purchase (of organic food) scores among households with one child below 5 years (M=3.59, SD=1.245) and households with two children below 5 years (M=4, SD=0) as per Welch's t-test  $t(43) = 2.180$ ,  $p = 0.035$ . Intention was not found significant.

### Age

ANOVA was performed on the following variables as there were more than 2 groups. There was a statistically significant difference between age groups with

**Table 5.** Results from ANOVA and Welch's ANOVA for age.

Vari-ables	F	df1	df2	P	Post hoc
Frequ-ency	1.720	5	300	0.130	N/A
Percen-tage	1.488	5	300	0.193	N/A
WTP	6.206	5	300	0.000	H2>H1, H3, H4
Inten-tion	2.742	5	300	0.019	H3>H1

respect to WTP for organic food as determined by one-way ANOVA  $F(5,300) = 6.206, p < 0.001$  (Table 5). Tukey HSD post-hoc test revealed that WTP for organic food was statistically significantly higher in 26–35 years ( $2.64 \pm 1.794$ ) age group compared to 18–25 years ( $1.60 \pm 1.233, p < 0.001$ ), 36–45 years ( $1.85 \pm 1.296, p = 0.011$ ) 46–55 years ( $1.36 \pm 0.731, p = 0.001$ ) age group.

There was a statistically significant difference between age groups with respect to intention to purchase organic food as determined by one-way ANOVA  $F(5, 300) = 2.742, p = 0.019$  (Table 5). Tukey HSD post - hoc test revealed that to intention to purchase organic food was statistically significantly higher in 36–45 years ( $0.250 \pm 0.734, p = 0.040$ ) age group compared to 18–25 years ( $-0.094 \pm 0.756$ ). No statistically significant difference was found between age groups with respect to frequency and percentage of organic food by one-way ANOVA (Table 5).

### Income

There was a statistically significant difference between income groups with respect to frequency of organic food purchase as determined by one-way ANOVA  $F(5, 300) = 2.58, p = 0.026$  (Table 6). Tukey HSD post-hoc test revealed that frequency of purchase was statistically significantly higher in above Rs 30 LPA ( $5.00 \pm 1.155, p = 0.29$ ) income group compared to Rs 11–15 LPA ( $3.30 \pm 1.046$ ) income group.

There was a statistically significant difference between income groups with respect to percentage

**Table 6.** Results from ANOVA and Welch's ANOVA for income. \* Welch's adjusted statistic. \*\*Games - Howell post-hoc test.

Vari-ables	F	df1	df2	P	Post-hoc
Frequ-ency	2.58	5	300	0.026	H6>H2
Percen-tage	10.39	5	300	<0.001	H1>H2, H2>H4, H6>H1
WTP	1.89	5	300	0.095	-H5
Inten-tion	5.06*	5	27.41	0.002	N/A H4, H3> H2**

of organic food as determined by one-way ANOVA ( $F(5, 300) = 10.39, p < 0.001$ ). Tukey HSD post-hoc test revealed that percentage of organic food was statistically significantly higher in above Rs 30 LPA ( $5.50 \pm 0.577, p < 0.001$ ) income group compared to all other income groups. In addition, Rs 5–10 LPA ( $3.16 \pm 0.830, p = 0.003$ ) income group was statistically significantly higher than Rs 11–15 LPA and Rs 11–15 LPA ( $2.72 \pm 0.856, p = 0.030$ ) income group was statistically significantly higher than Rs 21–25 LPA ( $3.29 \pm 1.049$ ) income group with respect to percentage of organic food.

No statistically significant difference between income groups with respect to WTP for organic food as determined by one-way ANOVA  $F(5, 300) = 1.89, p = 0.095$ . Due to lack of significant main effects, post-hoc tests were not conducted.

Since assumption of homogeneity of variance was not met for intention dependent variable, Welch's adjusted F statistic was used instead of Fisher's F statistic. For post-hoc, Games-Howell post procedure was used instead of Tukey HSD.

There was a statistically significant difference between income groups with to intention to purchase organic food as determined by one-way Welch's  $F(5, 27.41) = 5.06, p = 0.002$ . Games-Howell post-hoc test revealed that intention to purchase organic food was statistically significantly higher in Rs 16–20 LPA ( $-0.239 \pm 0.779, p = 0.027$ ) and Rs 21–25 LPA ( $0.377 \pm 0.723, p = 0.002$ ) income groups compared to Rs 11–15 LPA ( $-0.286 \pm 0.873$ ) income group.

**Table 7.** Results from ANOVA and Welch's ANOVA for education. \*\*Games-Howell post-hoc test.

Variables	F	df1	df2	P	Post-hoc
Frequency	3.244	8	297	0.001	H6>H3, H8, H4>H3, H9<H1-H8*
Percentage	2.376	8	297	0.017	–
WTP	2.606	8	297	0.009	H9<H4, H5, H7, H8, H3<H5, H7*
Intention	1.521	8	297	0.149	N/A

### Education

There was a statistically significant difference among highest education groups of respondents with respect to frequency of organic food purchase as determined by one-way ANOVA  $F(8, 297) = 3.24, p = 0.001$  (Table 7). Games-Howell post-hoc test revealed that frequency of purchase was statistically significantly higher in Post Graduation ( $3.94 \pm 1.127, p=0.012$ ) group compared to Diploma ( $2.83 \pm 0.718$ ) and PhD ( $3 \pm 0.795, p = 0.020$ ) group. Similarly, Graduation ( $3.66 \pm 1.037, p=0.046$ ) is statistically significantly higher to Diploma ( $2.83 \pm 0.718$ ). In addition, Post-Doc ( $2.00 \pm 0.00$ ) group is lower than all the other education groups.

There was a statistically significant difference among highest education groups of respondents with respect to percentage of organic food purchased as determined by one-way ANOVA  $F(8, 297) = 2.37, P=0.017$  (Table 7). Tukey HSD post-hoc test did not specify statistically significant difference among various education groups of respondents.

There was a statistically significant difference among highest education groups of respondents with respect to WTP for organic food as determined by one-way ANOVA  $F(8, 297) = 2.60, p = 0.009$  (Table 5.28). Games-Howell post-hoc test revealed that WTP for organic food was statistically significantly higher in Graduation ( $1.70 \pm 1.259, p<0.001$ ), Graduation (Professional) ( $2.09 \pm 1.582, p = 0.001$ ), Post-Graduation (Professional) ( $2.29 \pm 1.681, p<0.001$ ) and PhD ( $2.60 \pm 1.957, p = 0.035$ ) group compared to Post-Doc ( $1.00 \pm 0.00$ ).

Similarly, Graduation (Professional) ( $2.09 \pm 1.582, p=0.024$ ) and Post-Graduation (Professional) ( $2.29 \pm 1.681, p = 0.001$ ) group is statistically

significantly higher compared to Diploma ( $1.17 \pm 0.389$ ) group.

### DISCUSSION

The prime objective of this research was to explore the role of demographic factors in impacting the purchase of organic food products in the national capital region of India i.e. Delhi - NCR. The findings suggest that except gender other demographic factors like marital status, children in household, age, income and education influence Indian consumers buying behavior of organic food.

The results show that gender does not impact consumer buying behavior of organic food similar to some previous studies (Manucheher 2016, Blanchard et al. 2009, Gellynck et al. 2006, Peters - Texeira and Badrie 2005). However in many studies, gender, especially females (Valor et al. 2014, Vehapi and Dolićanin 2016, Grubor and Djokic 2016, Kirijini and Thivahary 2017, Chen 2007, Fotopoulos and Krystallis 2002, Lockie et al. 2004, Lea and Worsley 2005, Onozaka and Mcfadden 2011, Onyango et al. 2007, Tung et al. 2012) was found to be significantly impacting organic food purchase.

Married consumers were also found to be more likely to buy a higher percentage of organic food compared to unmarried consumers. Grubor and Djokic (2016) too found marital status to be impacting organic food purchase where in married females were more likely to purchase organic food compared to unmarried ones.

Further, it was found that households with children impact consumer buying behavior. However, the results showed that only households with children <18 years and children <5 years are more likely to have a higher WTP, percentage of organic food compared



to non-organic and frequency of purchase. It seems that the children in adolescent age group (<18 years) i.e. 12–17 years are affecting purchase decision in households. Thus there appears to be some influence from children in this age group for food choices. This perhaps could be due to increasing empowerment and knowledge among younger generation. For households with children <5 years old, it appears to be their parents desire to give them a healthier option.

Presence of children in households have also been seen to be significantly impacting organic food buying behavior in previous studies across developing (Vehapi and Dolićanin 2016, Grubor and Djokic 2016, Kirijini and Thivahary 2017) and developed countries (Dimara and Skuras 2005, Chen 2007).

Like previous studies, age (Onozaka and Mcfadden 2011, Onyango et al. 2007, Tung et al. 2012, Vehapi and Dolićanin 2016, Grubor and Djokic 2016, Kirijini and Thivahary 2017) was also found to be significantly impacting organic food purchase behavior. It was found that respondents in the age group 26–35 years are most likely to have a higher WTP for organic food compared to 18–25 years, 36–45 years and 46–55 years. Respondents within age group 36–45 years age group are most likely to have a higher intention to purchase compared to 18–25 years age group. So it appears that the respondents belonging to organic food consuming households from 26 to 45 years are likely to be most favorable for organic food purchase. One reason could be respondents in this age group have seen the growth of organic food market and are more aware of its importance. Secondly, they appear to have more disposable income than perhaps, the younger or older age group respondents due to its correlation with income and career graph. Very young consumers are in their initial career phase with less income. On the other hand, older age group may be either retired and or may have to constantly attend to expenses for a larger family size with children reaching adulthood.

Income has often been related to organic food purchase since it relates to affordability. The study similarly concluded that income impacts household's decision for frequency, percentage of organic food purchased and intention to buy organic food.

Households with an income above Rs 30 LPA are having higher frequency of purchase and percentage of organic food compared to all the other income groups. However, households with income groups Rs 5–10 LPA are more likely to have higher percentage of organic food compared to households having Rs 10–15 LPA and Rs 20–25 LPA income. This could be because either those households comprised of unmarried younger age group individuals or small nuclear families with very young children. Such households seem to be aware of the importance of organic food for themselves and their children. In addition, unmarried individuals can also have higher disposable income compared to households with middle aged individuals. But with respect to intention, households falling within Rs 20–25 LPA income range were seen to have a higher intention compared to Rs 15–20 LPA followed by Rs 10–15 LPA households.

Thus the findings suggest that generally high income households of Indian organic consumers are likely to buy it more frequently, purchase higher percentage of organic food and possess higher intention to buy organic food. However, households comprising of young unmarried individuals or small nuclear families with very young children are likely to purchase higher percentage of organic food compared to middle income households.

Similar results were also reported previously (Chen 2012, Dimara and Skuras 2005, Gracia and Magistris 2007, Lockie et al. 2004, Onozaka and Mcfadden 2011, Padel and Foster 2005, Tung et al. 2012, Zhu et al. 2013, Vehapi and Dolićanin 2016, Kirijini and Thivabary 2017) where income was seen to be significantly impacting organic food purchase.

Earlier studies also pointed out the significant positive impact of education (Chen 2012, Fotopoulos and Krystallis 2002, Kathryn et al. 2014, Krytallis et al. 2006, Tung et al. 2012, Valor et al. 2014, Zhou et al. 2013, Zhu et al. 2013, Vehapi and Dolićanin 2016, Grubor and Djokic 2016, Kirijini and Thivahary 2017) on organic food purchase. Intention was not statistically significant. Organic consumers who possess graduate, graduates (professional), post-graduate, post-graduate (professional) and PhD degrees are more likely to be higher consumers of organic

food. They are also more favorable pay higher price of organic food compared to school pass outs, diploma holders and post-doc. One reason could be increased awareness due to better ability to access (Wier and Calverley 2002, Jinghan et al. 2007, Thøgersen 2007, Carrete et al. 2012) and process information from various sources. Thus higher education helps in organic food purchase.

## CONCLUSION

Indian organic market is in nascent stage compared to developed world, yet it is poised for growth. Although, domestic organic market is growing, currently, most of the organic food production in India is geared for export markets.

The results support the significance of understanding the underlying factors like demographics for assessing the consumer decision making. The study found that except gender, all the other factors have impacted past purchase and or impact potential organic food purchase decisions. Marketers need to promote it to married households with higher income and households with children in the toddler age group or with teenage children. This shows that children have been nudging and influencing their parents, especially in teenage years and impacting the food purchase patterns in household. Teenagers can also be targeted directly as they can influence the buying behavior. Promoting the type of organic food liked and sought by children can be considered as a good positioning strategy. Packed organic food is one such option. More educated consumers are more likely to be more favorable towards organic food purchase. Younger people with a tertiary qualification were seen to be having higher WTP for organic food. This shows that they are less likely to see price premium of organic food as a barrier. Further, consumer's upto middle age group are seen more favorable for organic food purchase.

Predicting organic food purchase behavior consumers in Delhi-NCR, can guide food retailers and producers for effective consumer involvement strategies. This can help them in targeting, segmenting and positioning their organic products in a specific market.

Future research can consider specific organic product (s) rather than general organic products and compare the findings that could differ across various organic food products. Additionally, the longitudinal approach can be part of the research method for future studies to ascertain the change of attitude and purchase intention over a course of time. Since organic food is also differentiated through eco-labels, its role in positively impacting purchase can be explored from an emerging economy perspective as well. Furthermore, it would also be prudent to consider the relationship of values and lifestyle of consumers with organic food purchase.

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