



## **Exploring the Factors Affecting Organic Food Purchase as Immunity Booster during the Pandemic**

**Vajreshwari Domle <sup>a≡</sup>, Shiney Chib <sup>a\*ϕ</sup>, Ranjit Ambad <sup>b#</sup>  
and Roshan Kumar Jha <sup>ct</sup>**

<sup>a</sup> *Datta Meghe Institute of Management Studies, Nagpur, India.*

<sup>b</sup> *Department of Biochemistry, Datta Meghe Medical College, Shalinitai Meghe Hospital and Research Centre, Nagpur (Datta Meghe Institute of Medical Sciences, Sawangi (Meghe), Wardha), India.*

<sup>c</sup> *Department of Biochemistry, Jawaharlal Nehru Medical College, Datta Meghe Institute of Medical Sciences, Sawangi (Meghe), Wardha, India.*

### **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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## **ABSTRACT**

Organic food products are gaining popularity and are widely accepted by the consumers all over the world. As they are grown and processed without the use of chemicals, consumers feel that it is safe for consumption and does not have any health hazards. The ongoing pandemic situation, COVID-19 has also given a momentum to the acceptance level of these products, as producers are marketing their products with a tag, 'immunity booster'. This study was an effort to identify and validate the dimensions influencing organic food purchase by the consumers. Questionnaire having 45 questions was developed and administered to 750 respondents. Exploratory factor analysis was applied to explore the factors determining organic food purchase. Exploratory factor analysis yielded five-factor structure. Confirmatory factor analysis was used to verify and confirm, the five-factor structure. Multiple Regression Analysis was applied to identify the most prominent factor, which influenced the customer to make the purchase.

<sup>≡</sup> MBA Second Year;

<sup>ϕ</sup> Director;

<sup>#</sup> Associate Professor;

<sup>†</sup> Tutor.

\*Corresponding author: E-mail: [ambad.sawan@gmail.com](mailto:ambad.sawan@gmail.com);

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## 1. INTRODUCTION

The concepts of organic agriculture were developed in the early 1900s by Sir Albert Howard, F.H. King, Rudolf Steiner, and others. It referred to food raised, processed and stored processed without the use of chemicals, fertilizers, pesticides, growth hormones and generic modification [1]. Due to its nutrient value and non-involvement of chemicals, organic food are widely accepted by the consumers [2]. Consumers are in search of safe consumption, during this ongoing pandemic situation, and this consumer attitude has given momentum to organic food acceptance level [3]. Now a days organic food producers are promoting their products with the tag 'Immunity Boosters' and it is positively influencing the demand of organic food [4].

India is leading in organic food production with 835000 producers and Switzerland is leading in Organic Food Consumption per capita with \$325(healthcareer.co).

### 1.1 Literature Review

Compare to conventional food, organic food, is safer. This trust factor is dominating consumer perception (Rimal and Balasubramanian 2005). Factors like nutritional labels and consumer educational campaign are the main features which is leading to point of purchase of organic food among the consumers (Drichoutis, Lazaridis and Naygya 2006). S. Chib (2019) in her study derived a four-structure model and the influencing factors were nutrient value, accessibility & availability, consumer perception and consumer ideology [5,6]. Health concern, environmental care, chemical residues, pesticides, presence of nutrient and improved flavour and taste are the deciding factors as per Squires et al. (2001). Consumer's belief system consisting of dimensions like health concern, taste and chemical free is resulting their inclination towards organic food (Lea and Worsley,2005). Factors like expensiveness, limited availability and product confusion is preventing consumers to go for organic food (Fotopoulos and Krystallis, 2002). Difficulty in finding and lack of product clarity is also stopping the consumers to adapt organic food items (Baourakis, 2004). Factors like expected value and perceived value are the important deciding factor for organic food purchase (Zee-Sun Yun &

Dawn Thorndyke Pysarchik, 2010). In India, acceptance level is the highest among the Gen-Y (Gen Y, or Millennials- born between 1981 and 1994/6 and are currently between 24-39 years old) consumers (Choo, HoJung; Chung, Jae-Eun; Dawn Thorndike Pysarchik, 2004). Factors like consumer innovativeness, perceived risk and demographic factors influenced organic food purchase ( Somnath Chakrabarti and Rajat K Baisya ,2009). Rising per capita income, urbanization and globalization are the deciding factors for organic food purchase intention (Pratap S. Birthal, P. K. Joshi , Ashok Gulati 2006). Mehra S., Ratna P.A., (2014), factors like cleanliness, quality, variety and availability throughout the years motivates the customer to go for organic food [7,8]. According to Mukherjee D, (2012), the most prominent reason for the purchase of organic food was value for money. Money spent by the customer and the benefits obtained as per their expectations played the main role in deciding the purchase of organic food. Oroian C. E., (2017), made the comparison between the different players of diffusion of innovation namely innovators and early adopters. He found that income was the most dominating parameter [9]. Bordeanu B. M. (2017), concluded that organic food purchase was more amongst the innovators group. Chandrashekar H.M., (2014) explained that determinants of organic food was quality of of the food, its taste, variety and availability [10]. Value for money and availability were the secondary factors. According to him dimensions like, promotional offers were having hardly any role and they have not influenced the customers in their purchase decision. Ahmed R., Rahman K. (2015), parameters like personal influence and demographic factors like income and education level influenced the customer about organic food purchase. Baladhandapani K.,Sivalingam N (2017), was of the view that factors encouraging organic food purchase was disposable income, urbanization and globalization. Change in the consumption pattern also helped in the purchase of organic food in the developing countries [11-18].

### 1.2 Objective of the Study

The objectives of the study are as follows:

1. To study the awareness level with respect to organic food among the people in Nagpur.

2. To check whether demographic variable have an influence on organic food consumption.
3. To explore and validate the dimensions of organic food consumption.
4. To identify the most prominent factor out of the derived factor.

Number of demographic questions	4
Number of questions related to awareness of organic food products	2
Number of questions related to purchase intention of organic food	2
Number of topic related questions	37
<b>Total</b>	<b>45</b>

### 1.3 Hypothesis

1	Null Hypothesis	Respondents were not aware of organic food.
	Alternate Hypothesis	Respondents were aware of organic food.
2	Null Hypothesis	Demographic variables has no influence on organic food consumption.
	Alternate Hypothesis	Demographic variables has an influence on organic food consumption.

Data Analysis was done by using Jamovi 1.2.24.0 software. Jamovi is an open source “3rd generation” statistical spreadsheet designed from the ground up to be easy to use. (<https://www.jamovi.org/>)

### 3. DEMOGRAPHIC ANALYSIS AND DISCUSSION

Table below depicts the demographic profiling of the respondents. This study considered 4 demographic variables namely gender, age, qualification and monthly household income.

Cross tabulation was performed to analyse the awareness level of the organic food among the respondents. Out of 359 male respondents, all the 348 respondents were aware of organic food and 11 were not aware of organic food. So the awareness percentage among the male respondents was 96.94 %. Out of 377 female respondents, 327 were aware of and 50 were not aware of organic food products. Awareness percentage among female was 86.74 %. Out of 736 respondents, 675 were aware of organic food products. Percentage of awareness about the organic food products among the respondent was 91.71 %. This study proves, ‘Awareness Level with respect to Organic Food is high among the Respondents’.

## 2. RESEARCH METHODOLOGY

Study was conducted from March 2020 to October 2020. It was conducted in two parts. Part I dealt with in-depth review of literature. It helped, in identifying the various determinants of organic food consumption and thus formulating the questionnaire for data collection. Part II included identification of factors influencing Organic Food Consumption through Exploratory Factor Analysis (EFA). It was followed by Confirmatory Factor Analysis (CFA) to validate the derived factor structure through EFA. Multiple Regression Model was used to identify the most influencing factor, out of the derived factor structure.

### 2.1 Sample Selection and Questionnaire Administration

Both Online and Offline method was adopted to collect the data and response rate was 98.13%. 750 questionnaires were administered. 736 was found completely and correctly filled. 14 questionnaires were having ambiguity, hence dropped from further analysis.

### 2.2 Development of Instrument

Literature review paved the way to develop the questionnaire having 45 questions. They were classified into four parts as below:

Our study shows that, demographic variable is not having any influence on customer intention buy organic food. The significance value obtained is more than 0.05 in the demographic variables namely age, gender, education and income. Conclusion of this study is, ‘There is sufficient evidence to accept Null Hypothesis.’ Hence the study proves: Demographic variable has no influence on the organic food consumption.

**Table 1. Demographic Analysis**

<b>Demographic characteristics of the Respondents</b>		
Variables and categories	N=736	%
<b>Age</b>		
Below 25 years	72	9.78
25-30	192	26.09
31-35	217	29.48
36-40	88	11.96
41-45	67	9.10
46-50	53	7.20
Above 50	47	6.39
	736	100%
<b>Gender</b>		
Male	359	42.934
Female	377	43.75
	736	100%
<b>Qualification</b>		
Undergraduate	72	9.24
Graduate	421	50.41
Postgraduate	162	18.07
Doctorate	81	8.97
	736	100%
<b>Monthly Income</b>		
Less than 30000 Rs	189	27.99
300001-40000	171	23.23
40001- 50000	117	9.38
50001-60000	72	5.84
60001-70000	67	6.39
70001-80000	54	5.29
Above 80000	66	8.56
	736	100%

**Objective 3: To explore and validate the dimensions of organic food purchase.**

significance value of less than 0.05 (.001). It ensured the appropriateness of factor analysis.

#### **4. ANALYSIS AND RESULTS**

#### **4.2 Factor Extraction and Total Variance Explained**

##### **4.1 Exploring the Deciding Factors of Organic Food Consumption [12-14]**

Exploratory Factor Analysis (EFA) was applied to identify the deciding factors of organic food consumption. Reliability test (Cronbach's Alpha) was done to check the internal reliability. Before applying EFA, Kaiser-Meyer-Olkin(KMO) and Bartlett's Test values was obtained. This test confirms the adequacy and sphericity of the data set. KMO score obtained was 0.907. Value obtained was above the recommended value of 0.5. Bartlett's Test of Sphericity exhibits

Factors were explored using the Eigen value criteria and under that, factors with Eigen value greater than 1.0, are considered. Principal Component Analysis and Varimax Rotation were considered for obtaining a component matrix. Related Jamovi output is listed below. In the starting total, 37 items were considered for study. Items namely, S4, S5, S9, S14, S18, S19, S20, S21, S25, S27, S28 and S32 were dropped, due to the redundancy in items. In total 26 items were considered for the final study. These 26 items converged into 5 factors as depicted below.

### 4.3 Predicted Model

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Purchase Intention = 0.5565 – 0.0729(Nutrient Value) + 0.9985 (Consumer Perception) + 0.3294 (Consumer Ideology) - 0.1423 Perceived Risk – 0.0787 (Trust)

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### 5. CONCLUSION

This study proved that, awareness level about the organic food was very high among the respondents and the percentage was 91.71%. Awareness percentage among male was 96.94% and in female, 86.74%. This study showed that, demographic variables were not having any role in deciding the organic food consumption. Male were Study explored the determinants of organic food consumption, using Exploratory Factor Analysis and it converged into 5 factors. The factors thus derived was named as Nutrient Value, Customer Perception, Customer Ideology, Perceived Risk and Trust. Derived five factors together explained 74.5 % variance. To validate the results of EFA, confirmatory factor analysis (CFA) was used. Result of CFA demonstrate that, the five factor model is appropriate and has adequate reliability to explain the organic food consumption aspect. Multiple Regression Model helped to the predict the influence of the identified factor and also helped to identify the most prominent factor. Most important emerged from this study was Consumer Perception and its role was 99.85 % which was almost 100. This study confirmed the fact that 'Consumer Perception', plays a key role in consumer behaviour.

#### 5.1 Managerial Implications

This study will help organic food producers and marketers to plan their promotional strategies effectively. It will also help the companies to formulate pricing strategies, which will help them to enhance their market share.

#### 5.2 Limitation of the Study and Future Research

Sample size was very small, and the study covered about organic food consumption only. This study can be extended with more sample size and also to other related areas like medical, agriculture, biotechnology, food technology and health sector.

### CONSENT

It is not applicable.

### ETHICAL APPROVAL

It is not applicable.

### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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