
**ASSESSING THE INFLUENCE OF FOOD SAFETY, NUTRITION ATTRIBUTES
VALUE ATTRIBUTES AND PACKAGE ATTRIBUTES ON CONSUMERS'
PURCHASE INTENTIONS OF ORGANIC FOOD PRODUCTS**

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ABSTRACT

The purpose of this study is to identify and examine that how consumers attach importance to food safety, nutrition attributes, value attributes and package attributes in attitude formation and intentions of purchase towards organic food products. The study applied both qualitative and quantitative research design comprising of 50 in-depth interviews and 580 surveys among the organic food consumers residing in Vijayawada City in Andhra Pradesh, India. Findings show that food safety, nutrition attributes, value attributes and package attributes of organic food have positive effects on consumers' attitude towards organic food products. The results further reveal that attitude towards organic food influence purchase intention significantly. This research offers empirical and theoretical implications by emphasising on the details of food safety, nutritional attributes, value attributes and package attributes consumers will perceive in attitude formation and purchase intention of organic food products.

Key words: Organic food, Food safety, Nutrition attributes, Value attributes, Package attributes, Attitude, Purchase intentions, India.

I. INTRODUCTION

In the recent years, the demand for healthier and nutritious foods has constantly increased as aspirational consumers are going back to nature and natural products to keep themselves physically, mentally and emotionally healthy (Nguyen et al., 2019; Wang et al., 2019). That's why, these days, organic food—free from pesticides and chemicals and considered to be safe, healthy and nutritious—has become quite popular and gaining more and more traction (Rana and Paul, 2020). It's scientifically proved that organic food is safe, natural and wholesome, and these are prepared, produced, and processed without using any sort of chemicals. The Indian market for organic products has shown impressive growth, accounting for US\$849.5 million in 2020. The market is further expected to grow at a CAGR of about 20.5% in the forecast period of 2021 and 2026 to reach a value of about US\$ 2601 million by 2026 due to its advanced

demographic dividend, improved purchasing power and increased interest for the perceived health and wellness benefits of certain organic products (USDA Report, 2020; Tandon et al., 2020). In addition to the growing domestic market, India is the second largest exporter of organic products in Asia after China (ASSOCHAM-EY Report, 2018). It shows that people continue to embrace the food-as-medicine trend and opt for organic food and beverage products that provide health benefits and true functionality. Therefore, the consumer behaviour in favour of organic food appears to have become more deeply entrenched and become a part of the consumer buying habit over a durable time horizon.

Several reasons have been proposed within the literature, from the studies in the UK, Europe, Australia and North America towards purchasing organic produce (Michaelidou and Hassaan, 2008). However, consumers' behaviour toward organic food products is a complex process that is influenced by many factors, such as consumer-related issues (demographics and psychographics), social-cultural factors (ethical-environmental concern), and organic food products related issues (such as sensory characteristics of taste, odour, texture, price, health benefits, food safety, labelling and certifications). Recent research has revealed that consumer motives (such as taste, nutritional value, health and safety, environment) influence consumers to buy organic food products (Molinillo et al., 2020; Kushwah et al., 2019; Janssen, 2018; Pham et al., 2018; Scalco, 2017; Lee and Yun, 2015; Hsu and Chen, 2014). Further, consumers' have positive attitudes toward organic foods in that they perceive them to be quality, healthier, harmless, and less destructive to the environment than traditionally grown foods (Mondelaers et al., 2009; Daniells, 2014; Yadav and Pathak, 2016; Maichum et al., 2017; Hansen et al., 2018; Basha and Lal, 2019). Various researchers have also evaluated the personal, environmental and health related factors influencing the purchase of organic foods (Lea and Worsley, 2008; Tung et al., 2015; Pham et al., 2019; Kushwah et al., 2019; Pacho, 2020). However, some researchers have refuted health, food safety and environmental factors are as predictors of attitude and purchase intentions towards organic food products. A few recent studies (Prentice et al., 2019; Dangi et al., 2020) have mentioned that there are other factors, such as nutritional values, certification, packaging, brand, and price that might influence consumers' shopping decisions.

However, literature review revealed that most consumers do not have reliable information about the characteristics of organic foods and always have suspicions about the ingredients of organic foods, although they are generally considered to be reliable foods (Pomsanam et al., 2014). Further, consumers cannot be sure of the quality of an organic product after purchase or consumption. Although demand for organic foods is growing, there is simultaneously doubt about ingredients and attributes of organic foods. Therefore, if consumer perceptions about the trust, credibility and transparency about food safety, nutrition attributes, value attributes and package attributes of organic foods can be determined, this will enable consumer attitudes towards organic food to be understood, thereby explaining organic food purchase intentions (Lin et al., 2020; Jose, Kuriakose, Koshy, 2020; Canova et al., 2020; Nuttavuthisit and Thogersen, 2017; Chen et al., 2014). Although several studies have attempted to understand the nuances of consumer behaviour pertaining to organic food in developed and emerging economies (e.g., Hempel and Hamm, 2016; Basha and Lal, 2019), few studies focus on the role of food safety, nutrition attributes, value attributes and package attributes as antecedents to consumers' attitude and purchase intention in emerging economies like India. As extant research suggests that Indian consumers may show a higher predisposition to adopt and purchase organic food (Kushwah et al., 2019), the distinct gap in the literature highlights the comprehensive understanding of the role of food safety, nutrition attributes, value attributes and package attributes that underlie the attitude and purchase intention towards the organic food products is still underdeveloped. To address this apparent gap, there is a need to probe the predictability of food safety, nutrition attributes, value attributes and package attributes towards purchase intentions of organic food products.

II. LITERATURE REVIEW

Over the past decade, there has been an increased demand for organic food which is perceived to be healthier and environmental friendly than conventionally grown foods (Williams and Hammitt, 2001; Lea and Worsley, 2005; Kapoor and Garyali, 2012). Consequently the consumer preferences have shifted from conventionally grown foods to organically produced foods (Ali et al., 2015). Issues such as quality, safety and health enhancing properties of food attract consumer interest and affect buying behaviour (Hansen, 2005; Jones et

al., 2006). Moreover, the awareness on the unsafe effects of these greatly pollutant contaminant food products are increasing among the consumers. As an alternative to these, more people are turning towards organic food products. Consumer interest in organic products is also growing alongside a diversification of the supply. The increased consumers' interest in organic food has been attributed among others to the developing demand for food products free from chemical residues and pesticides (Baltas, 2001; Fotopoulos and Krystallis, 2002). In order to serve consumers actual needs and wants regarding organic products, those involved in the market need to be informed about consumers' perception of organic products (Rosa Schleenbecker and Ulrich Hamm, 2013). In response to consumers' concerns about food safety, human health and the environment, the interest of consumers and public institutions in organically produced foods has increased in developed countries (Gracia and Magistris, 2007) and developing countries (Umali- Deininger and Sur, 2007). A variety of factors that can potentially effect organic food products consumption have been recognised in relevant literature. Concern for health, environmental protection, concern for the chemical residues in conventional food products, pesticides, nutritional concerns, as well as improved taste and flavour in organic products are some of the factors identified (Squires et al., 2001). The intention to purchase depends on attitudes and organic product knowledge.

Furthermore, consumers' attitudes towards environmental and health benefits provided by organic foods are the most important factors explaining, both, the attitude and intention to buying organic food products. Furthermore, organic knowledge positively influences the final decision to buy organic food products (Gracia and Magistris, 2007). However, the green concept and the developing of organic food are still in the infant stage in India. Therefore, there is a need to gain knowledge about the consumer's behaviour towards organic food products (Kapoor and Garyali, 2012). Since the Indian organic food market has experienced important growth during the recent years (Nandi et al., 2015) despite several challenges, consumer behaviour has spurred many scholars to conduct research (Kumar and Ali, 2011; Ramesh and Divya, 2015; Yadav and Pathak, 2016). Increased health consciousness and changes in life styles coupled with awareness about the benefits associated with wellness food have led to the significant changes in consumer behaviour towards health food consumption in

recent years (Crofton et al., 2013; Goetzke and Spiller, 20014). Previous research mentioned that health consciousness has been the significant predictor of consumers' attitude and purchase intention of organic foods (Michaelidou and Hassan, 2008).

Previous research (e.g., Lee and Yun, 2015) has identified an abundant range of organic product attributes associated with health, environmental protection, and animal welfare that are used to judge organic food consumption and intentions to purchase organic food. Torjusen et al (2001) found two types of organic food quality attributes: observation (e.g., appearance and freshness) and reflection traits (food quality attributes related to health, nutrition quality, environmentally friendly production, animal welfare, sensory appeal such as taste, appearance, texture, and odour and price attributes). Previous research documented that organic food product attributes such as quality (Smith and Paladino, 2010; Hamzaoui-Essoussi and Zahaf, 2012; Ergin and Ozsacmaci, 2011), better taste (Lockie et al., 2002; Hughner et al., 2007; Stolz et al., 2010), nutrition value and freshness (Fotopoulos and Chryssochoidis, 2000) have found to be influential in organic food consumption. The choice of organic versus inorganic food is significantly influenced by the perception of the health effect of organic foods.

Consumers perceive that conventional foods sold on the market may contain chemical substances, and one reason for purchasing organic foods is to avoid the chemical substances or pesticide residues that conventional foods might have (Velimirov and Lindenthal, 2012). Davies, et al (1995) revealed that organic food was perceived as food without 'chemicals' and 'hormones'. Consumers purchased organic food as they perceived it to contain lower pesticide and fertilizer residues. People believe that organic products do not have pesticide residue, do not contain common food additives, or were excessively processed and have a more positive view of organic than traditional food will increase their purchase intentions (Yee et al., 2005). According to the survey in the UK market by Hill and Lonchhaum (2002) perceive organic food products to be less contaminated and more nutritious compared to conventional ones, and there by healthier and safer in terms of product quality. Rongduo Liu et al (2013) mention that frequent food safety incidents have increased consumers' concern about food quality and safety.

Similarly, Ragavan and Mageh (2013) found that product safety concerns, environment friendliness and availability of product information were the major factors for purchase intention towards organic products. Food safety concern is referred to as the degree of consumers' anxiety regarding the quality of processed foods, food additives, and pesticide residues that could jeopardize their physical health. Thus, food safety is receiving more and more attention in developing countries, consumers' awareness of food safety information and the analysis of food demand are closely related (Obayelu et al., 2014). Hence, consumers are paying a lot of attention to health, quality, and the ingredients of what they consume (Suh et al., 2012). Product attributes associated with ecological welfare (i.e., environmental protection and animal welfare) also influence consumers perceptions of organic food (Padel and Foster, 2005). Lea and Worsley (2005) found that organic food is viewed as being more environmentally friendly than conventional food. In addition, organic food consumption has been perceived as a healthier eating habit by organic consumers, but so far there has not been a clear scientific confirmation (Seal and Brandt, 2007). Ali et al (2010) identified that consumers considered health to be more important factor over concern for environment in their purchase decisions. Their study depicted that perception towards organic food products and beliefs that such products were environmentally friendly did not have a strong correlation.

The consumers' perceived value of organic food is important, as previous studies showed a positive perception towards organic food products (Ahmad, 2010). Consumers are willing to pay more for organic food, as they believe it is healthier, safer and environment friendly. In this context, Hutchins & Greenhalgh (1997) found that majority of consumers are willing to pay a premium price for organic food. However, the organic foods were perceived to be more expensive and healthier than conventionally produced alternatives. In other words, if consumers do not have a good perception of organic food, they are less favourable towards purchase organic food. A major obstacle to the purchase of organic foods was reported to be premium prices (Magnusson et al., 2001). According to traditional economic theory, price is understood as a monetary sacrifice needed to make a purchase. The role of price as a measure of sacrifice appears to be a widespread view in purchasing organic food, perhaps

due to the belief that organic food is expensive (Padel and Foster, 2005). As a result, a high price is a major hindrance to purchasing organic food (Magnusson et al., 2001). Therefore, it is likely that the higher consumers perceive the cost of organic food to be, the less positive is their attitude toward the purchase of organic food. Another often cited obstacle is that organic foods have limited availability (Jolly, 1991). Moreover, Brunso and Scholderer (2001) revealed that the importance of healthiness in food choice is declining. Factors perceived to limit organic food choice are high price, limited availability, and satisfaction with conventional food, lack of trust and lack of perceived value (Davies et al., 1995; Fotopoulos and Krystallis, 2002). Against this background, the following hypotheses are posited:

H1: Consumers' perception of organic food products will positively affect attitude towards organic food products in relation to

H1a: Food safety;

H1b: Value attributes;

H1c: Nutrition attributes

H1d: package attributes

H2: Consumers' perception of organic food products has a positive influence on purchase intentions towards organic food products in relation to

H2a: Food safety;

H2b: Value attributes;

H2c: Nutrition attributes

H2d: package attributes

Attitude has always been considered a key component for behavioral intention and actual behavior in consumer research. Attitude is general and specific terms that consumers like and dislike when making product or service decisions. Attitude to organic food has been considered a key construct that effectively anticipates purchase intention and consumption behavior. Therefore, a consumer's purchasing behaviors regarding organic products can be accurately estimated from their attitudes (Lee and Goudeau, 2014). Recent studies have shown that an individual may contain a favorable attitude toward organic food products (Larson, 2018; Ahmed et al., 2020). Thus, a deeper insight into the individual consumer attitude toward organic food is important and helpful not only for producers and distributors, but also for policymakers who can aid to promote and encourage them to use or consume organic food products (Ashraf, 2021; Chekima et al., 2019). Furthermore, several studies (e.g., Saba and Messina,

2003) provided evidence that consumer attitudes towards organic food significantly influence their choice. In fact, personal attitudes are based on the beliefs that an individual possesses about a specific object coupled with attributes attached to that object (Ham et al., 2018). Several recent studies on the relationship between attitude and intention to buy organic food have consistently shown strong positive associations (Canova et al., 2020; Ashraf et al., 2019; Ham et al., 2018; Hsu, et al., 2016; Moser, 2015). In Indian Context, several studies (e.g., Gupta, 2009; Chakrabarti, 2010; Raghavan and Mageh, 2013) underscored that consumers' attitude as one of the important factors which influenced the purchase process of organic food consumers. However, some studies have shown weak relationship (e.g., Aertsens et al., 2009; Gupta and Ogden, 2009; Rodriguez-Barreiro et al., 2013). Some studies also reveal that people intend to purchase organic food due to their own personal benefits (Chih-Ching & Yu-Mei, 2015; Hsu et al., 2016). In this regard, Ajzen (1985) asserts that the more closely matching, reflective or corresponding the attitude to a particular product, the more predictive is the attitude toward the behavior. Hence, investigating the influence of consumer attitudes towards organic food products is very appropriate, because individuals consuming organic food are deemed highly involved with the product and express their actual attitude about the product rather than the perception that could result in potential bias (Chekima et al., 2019). Therefore, the following hypothesis is formulated.

H3: Attitude has a positive effect on consumers' purchase intentions for organic food.

The above mentioned hypotheses are graphically show by developing a conceptual model (Fig.1) The model describes that food safety, value attributes, nutrition attributes and package attributes as antecedents of attitude towards organic food products and intention to purchase of organic food products.

<See Figure 1>

III. METHODOLOGY

Given the limited amount of information available on consumer behaviour towards organic food products, this research was conducted in two phases. Both exploratory qualitative and quantitative research methods were used for this study. The initial exploratory research was undertaken through semi-structured,

personal interviews with fifty organic food consumers to obtain specific quantitative and qualitative information that help researchers to determine reasons encouraging and impeding consumers' buying behaviour towards organic food products. This exploratory information enables researchers to gain more understanding of a concept, and crystallise problem from perspective of retailers than what is available through existed literature and other survey methods. The exploratory interviews had identified perceptions about food safety, nutrition attributes, value attributes and package attributes, which are perceived to be affecting consumer attitudes and purchase intentions towards organic food products. In the quantitative (explanatory) research, survey method was used to investigate and test the formulated hypotheses. The primary data was collected by self administered questionnaire to the 580 actual organic food consumers, using convenience sampling technique, in Vijayawada city (population of 10, 34, 358 as per 2011 census) in the state of Andhra Pradesh in India. Data were collected during December 2020 and February 2021. The self-administered questionnaire was developed using scales from previous studies. The questionnaire used dichotomous, multiple choice, five-point Likert scale type statements, and open ended questions. All of the items were previously tested by other scholars, and have been employed in this study in an existing or slightly modified manner. Five-point scales were employed because previous research has suggested that a five-point scale is readily comprehensible to respondents and enable them to express their views.

IV. RESULTS and DISCUSSIONS

Organic food customers in the city of Vijayawada in Andhra Pradesh were invited to participate in the survey. A total of eight hundred customers were surveyed. Out of which, six hundred twenty were returned. This is an approximately eighty one per cent response rate. Out of this, five hundred and eighty questionnaires were usable and rest were rendered unusable due to incomplete data.

4.1 Respondents Socio-Economic and Demographic Attributes

All respondents were adult male and female organic food customers consisted of 310 female (53.4 per cent) and 270 male (46.6 per cent). The age group 30-40 years constitutes the largest proportion of the sample with 209 respondents (36.0 per cent), while —50 to 60 years| has the smallest number with 53 respondents

(9.1 per cent). The majority of the respondents (87.7 per cent) were married and a meagre 12.3 per cent were un-married. The major chunk of the respondents (58.4 per cent) had graduation as their educational qualification and least 20.2 per cent had SSC as their minimum qualification. In terms of occupation, employees with 273 respondents have the biggest share (47.1 per cent), 173 of the respondents (31.0 per cent) house wives and 91 (15.7 per cent) has their own business. Besides, 251 respondents (43.2 per cent) fall into the personal income group of earning more than rupees 50,000 per month, while rupees 20,000 to 30000 has the smallest number with 11.7 per cent. Yet, 240 respondents (41.4 per cent) indicated that their family size more than five members and 80.4 per cent of them belonged to higher socio-economic class. The results of respondent's demographic, socio-economic and geographic variables were summarised in table 1.

<See Table 1>

4.2 Respondents Shopping Behaviour towards Organic Food Products

The results show that about 188 respondents (32.4%) buy organic food products monthly followed by occasionally (28.60 per cent), weekly (20.5 per cent), daily (15.20 per cent) and fortnightly (3.30 per cent). It is inferred that the majority of consumers buy organic food products monthly which indicate the consumption of organic food has not yet become a usual practice for general consumers. The respondents shopping behaviour for organic food products were presented in the table 2.

<See Table 2>

4.3 Type of Organic Food Products for Purchase

The purchase of organic food products by the consumers was analyzed, and the results are presented in table3. The results indicate that about 40.00 per cent of respondents purchase organic fruits followed by organic vegetables (27.40 per cent), organic milk and milk products (7.90 per cent), organic meat and meat products (7.60 per cent) and organic pulses (4.30 per cent), organic beverages (4.00 per cent), organic spices (2.80 per cent), organic cereals (2.60 per cent), organic cooking oils (1.90 per cent) and organic sugar products (1.60 per cent). It is inferred that the majority of consumers purchase organic fruits.

<See Table 3>

4.4 Consumer's Attitude towards Organic Food Products

Organic food consumers were asked about the attitudes towards organic food and the result is presented in table 4. I prefer organic food because it is processed without any chemicals| scores the highest mean of 4.01. The lowest means of 3.12, 3.13 and 3.19 are scored by the views that I believe organic foods have better quality, organic products have natural flavor and Organic products are high price respectively. Generally speaking, the respondents have a positive attitude towards organic food.

<See Table 4>

4.5 Intention to Purchase of Organic Food Products

The table5 has shown respondents' purchase intention towards organic food products which explicitly say that respondents have very high purchase intention towards organic food products. I plan to buy organic food products in regular basics| has scored highest mean of 4.50 and I intend to buy organic food products because they are more environmentally friendly| scored lowest mean score of 3.83. It implies that, respondents have strong positive intention to purchase organic food products.

<See Table 5>

4.6 Factor Analysis for Consumers' Perception of Organic Food Products

Twenty five statements concerning list of consumer perception of organic food products, were submitted to factor analysis with varimax rotation. Three factors with eigenvalue greater than 1 emerged explaining 80.5 per cent of the variance with a Kaiser -Meyer - Olkin (KMO) measure of sampling adequacy of 0.916, which is considered acceptable as it is near to 1. The application of Barlett's test of shpericity clearly revealed that these factors are related at significance level 0.000. The scree plot also resulted in the acceptance of three factors with total variance of 80.5 percent. Factor one was labelled as Food Safety, factor two was labelled Value Attributes and factor three was labelled Nutrition Attributes and factor four labeled as packing attributes. Results of the individual loadings, Cronbach's alpha and variance explained with factor labels for perception of organic food products were summarized in table 6.

<See Table 6>

4.7 Results of Hypothesis Testing

H1: Consumers' perception of organic food products will positively affect attitude towards organic food products in relation to

H1a: Food safety;

H1b: Value attributes;

H1c: Nutrition attributes

H1d: package attributes

To test the above hypothesis, stepwise multiple linear regressions analysis (MLRA) was used. The resulting regressing models and their significance including distinct predictors at varying 'α' levels were presented in the following paragraphs.

The regression models shown in table7 contributed significantly and predicted 56.0 percent variation (adjusted R²) by food safety perception in mode-1, 67.8 percent variation (adjusted R²) by food safety (FS) & value attributes (VA) in model-2, 69.4 percent variation (adjusted R²) by food safety (FS), value attributes (VA) & nutrition attributes (NA) in model-3, and 69.7 percent variation (adjusted R²) by food safety (FS), value attributes (VA), nutrition attributes (NA) & package attributes (PA) in model-4 towards intention to purchase of organic food products. The four evolved regression models for attitudes towards purchase of organic food products yielded a significant statistic (F=737.092, p=0.000; F=611.642, p=0.000, F=439.001, p=0.000 and F=334.664, p=0.000) with food safety (β= 0.749, t= 27.149, p=0.000), food safety and value attributes (β= 0.547, t= 20.036, p=0.000 & β= 0.400, t= 14.637, p=0.000), food safety, value attributes and nutrition attributes (β= 0.527, t= 19.628, p=0.000; β= 0.377, t= 14.009, p=0.000 & β= 0.133, t= 5.542, p=0.000), and food safety, value attributes and nutrition attributes and package attributes (β= 0.516, t= 19.087, p=0.000; β= 0.380, t= 14.188, p=0.000; β= 0.128, t= 5.370, p=0.000 & β= 0.063, t= 2.699, p=0.007) as its significant predictors shown in table 8. It indicated that independent variables such as food safety, value attributes, nutrition attributes and package attributes were related to dependent variable i.e., attitudes towards organic food products. The positive and high value of beta (β) which depicts that consumer perception of organic food products explains high levels of attitude towards organic food products and generates the following regression equation:

$$Y = 1.292 + 0.749X1 \quad (1)$$

$$Y = 0.143 + 0.547X_1 + 0.400X_2 \quad (2)$$

$$Y = 0.796 + 0.527X_1 + 0.377X_2 + 0.133X_3 \quad (3)$$

$$Y = 0.989 + 0.516X_1 + 0.380X_2 + 0.128X_3 + 0.063X_4 \quad (4)$$

Whereas, Y= Attitude towards organic food products; X1=Food safety; X2 = value attributes; and X3=Nutrition attributes and X4 = Package attributes.

Results: Null hypotheses: H10a, H10b, H10c and H10d were disproved. Therefore, alternative hypotheses: food safety (H1a), value attributes (H1b), nutrition attributes (H1c) and package attributes (H1d) were proved to be the significant predictors of attitude towards purchase of organic food products.

<See Table 7>

<See Table 8>

H2: Consumers' perception of organic food products will positively affect intention to purchase of organic food products in relation to

H2a: Food safety;

H2b: Value attributes;

H2c: Nutrition Attributes H2d: package attributes

To test the above hypothesis, stepwise multiple linear regressions analysis (MLRA) was used. The resulting regressing models and their significance including distinct predictors at varying ' α ' levels were presented in the following paragraphs.

The regression models shown in table 9 contributed significantly and predicted 44.0 percent variation (adjusted R²) by food safety perception in mode-1, 57.4 percent variation (adjusted R²) by food safety (FS) & value attributes (VA) in model-2, 58.0 percent variation (adjusted R²) by food safety (FS), value attributes (VA) & nutrition attributes (NA) in model-3, and 58.4 percent variation (adjusted R²) by food safety (FS), value attributes (VA), nutrition attributes (NA) & package attributes (PA) in model-4 towards intention to purchase organic food products. The four evolved regression models for intention to purchase of organic food products yielded a significant statistic (F=455.547, p=0.000; F=390.933, p=0.000, F=267.212, p=0.000 and F=204.000, p=0.000) with food safety (β = 0.505, t= 14.055, p=0.000), food safety and value

attributes ($\beta = 0.413$, $t = 10.422$, $p = 0.000$ & $\beta = 0.2001$, $t = 5.063$, $p = 0.000$), food safety, value attributes and nutrition attributes ($\beta = 0.400$, $t = 10.231$, $p = 0.000$; $\beta = 0.178$, $t = 4.518$, $p = 0.000$ & $\beta = 0.155$, $t = 4.380$, $p = 0.021$), and food safety, value attributes and nutrition attributes and package attributes ($\beta = 0.380$, $t = 9.724$, $p = 0.000$; $\beta = 0.145$, $t = 3.650$, $p = 0.000$; $\beta = 0.161$, $t = 4.605$, $p = 0.000$ & $\beta = 0.134$, $t = 3.704$, $p = 0.021$) as its significant predictors shown in table 10. It indicated that independent variables such as food safety, value attributes, nutrition attributes and package attributes were related to dependent variable i.e., intention to purchase of organic food products. The positive and high value of beta (β) which depicts that consumer perception of organic food products explains intention to purchase of organic food products and generates the following regression equations:

$$Y = 2.55 + 0.505X1 \quad (1)$$

$$Y = 2.221 + 0.413X1 + 0.200X2 \quad (2)$$

$$Y = 1.851 + 0.400X1 + 0.178X2 + 0.155X3 \quad (3)$$

$$Y = 1.163 + 0.380X1 + 0.145X2 + 0.161X3 + 0.134X4 \quad (4)$$

Whereas, Y= Intention to purchase of organic food products; X1=Food safety; X2 = value attributes; and X3=Nutrition attributes and X3 = Package attributes.

Results: Null hypotheses: H20a, H60b, H20c and H20d were disproved. Therefore, alternative hypotheses, food safety (H2a), value attributes (H2b), nutrition attributes (H2c) and package attributes (H2d) were proved to be the significant predictors of intention to purchase of organic food products.

<See Table 9>

<See Table 10>

H3: Consumers' positive attitude towards organic food products will have influence on their intention to purchase of organic food products.

To test this hypothesis, simple Regression technique was used to examine the effect of respondents' positive attitudes on their intention to purchase of organic food products. The regressing model for dependent variable was presented in the following paragraphs.

The regression model for purchase intentions towards organic food products shown in table 11 is contributed significantly and predicted with an adjusted R2 value of 51.3 percent variation by positive attitude towards organic food products. The ANOVA results generated (as shown in table 11) in this test also revealed a significant probability value ($p = 0.000$) and signifies that the independent variable is related to dependent variable with a significant statistic $F(1, 578) = 611.731, p=0.000$. The results confirmed that the relationship between consumers' positive attitudes towards organic food products and intention to purchase organic food products is significant. The coefficient summary for regression models shown in table 12 revealed that positive attitudes towards organic food products ($\beta=0.717, t=27.733, p=0.000$) was the significant predictor for intention to purchase organic food products. The positive and high value of beta (β) which depicts that consumer's positive attitudes towards organic food products explains high degree of intention to purchase of organic food products and generates the following regression equation:

$$Y = 0.354 + 0.717 X$$

Whereas, Y = Intention to purchase organic food products, X= positive attitude towards organic food products

Results: Alternate hypothesis H3 was supported and a positive attitude towards organic food products was proved to be the significant predictor of intention to purchase organic food products. This indicates that consumers who have positive attitudes towards organic products will exhibit intention to purchase organic food products.

<See Table 11>

<See Table12>

V. DISCUSSION OF RESULTS AND IMPLICATIONS

5.1 Discussion

The present study makes several contributions to the existing literature on consumer behaviour in the purchasing of organic foods. The proposed model explores and examines the influence of food safety, product attributes, nutrition attributes and package attributes of organic food on attitude and purchase intentions directly related to behaviours in buying organic products. The

findings from multiple regression analysis indicated that the consumers' perception of organic food products have significant positive influence on attitude towards organic food products and intention to purchase of organic food products. The findings of the study are in line with previous studies (Massey et al., 2018; Rana and Paul, 2017) by reporting health, food safety and several other product characteristics such as nutritive value, taste, freshness, appearance, color and other sensory characteristics influence consumer preferences towards organic food products. The results implied that product taste (i.e. flavor), freshness and shelf life are other characteristics that shoppers consider in their purchase decisions. There is contrasting empirical evidence on the role that taste, freshness and storage life play in consumer decisions. In general, the empirical evidence supports the hypothesis that product quality characteristics affect consumers' preferences for organic food; with the most important including nutritional value, economic value, freshness, flavor or taste, ripeness, and general appearance, especially of fruits and vegetables (Øystein et al., 2001; Demeritt, 2002; O'Donovan and McCarthy, 2002). This findings are consistent with the findings of earlier studies, which stated that, generally, consumers perceive organic food to be more nutritious and safer than conventionally produced food products (Lockie et al., 2004; Padel and Foster, 2005; Shafie and Rennie, 2012).

The findings from simple regression technique indicated that consumers who have positive attitude towards organic food products will exhibit intention to purchase and exhibit moderate actual purchase towards organic food products. The attitude of consumers towards organic food products is very important for preference and buying of organic food products. Majority of the consumers agreed that organic foods have better quality and they feel healthy when they eat organic foods and they think organic foods are fresher, and these findings are in consistent with the findings of Magnusson (2004) and Umamaheshwari and Chandrasekar (2015) as that the organic consumers consider that organic fruits and vegetables are healthy, more tasty and nutritious and have positive attitude. However, the findings are in contrast to the previous research (Radman, 2005; Briz and Ward, 2009; Dash et al., 2014). The research findings in general reveal that proposed consumer buying behaviour towards organic food products is tenable in the context of India. This empirical study provides comprehensive

understanding of the determinant attributes that impact consumers buying behaviour towards organic food products. Research findings underline the existing body of knowledge about determinants of purchase intention of organic food products. The findings of this study can provide guidance for marketers in communicating with their consumers using nonverbal methods, such as through their perception.

5.2 Implications

The outcome of the study generates a number of valuable implications for both academia and organic food industry. The results contribute to theory by confirming the significant influence of organic food safety, product attributes, nutrition attributes, and package attributes of organic food on consumers' attitude towards organic food, in turn, impact purchase intention significantly. The findings of this study shed some insight to organic food producers and marketers to develop marketing campaigns that will create positive perceptions towards organic food products. Based on the results, it is imperative that organic food providers need to understand the important predictors that influence the consumers' intention to purchase organic food, which might prompt the actual purchase of the products. Good and positive perceptions motivate the consumers' purchasing intention and their repeated purchase of organic food products. The important factor that contributes to this study is that the intention to purchase organic food is highly dependent on the consumers' perceived value towards organic food, health factors, and environmental concerns. The findings indicated that positive value perceptions tend to influence the purchase intention towards organic food products. Thus, practitioners could use the results as a basis to develop strategic marketing plans concerning the most effective communication message to promote organic food, as communication and sources of information significantly affect the consumer behaviour and perception (Hassan and Mustapha, 2010). In addition, the communication message could educate consumers about the benefits of consuming organic food, in as much as organic food consumption helps in enhancing one's health and in preserving the environment. Health aspects should be more emphasized in organic food's advertisements instead of environmental related factors. Moreover, information about the products should be widespread in public through various

ways of social media in order to increase the consumer knowledge of organic food products.

Results implied that level of awareness, availability and visual quality and performance seem to have an effect on consumers' attitudes and purchasing patterns. Perhaps, the better quality information on natural content would contribute to improve labeling as suggested by McFadden and Huffman (2017). With respect to organics' performance, quality has been seen as the single most important attribute. A quality improvement and a smaller price differential between conventional and organic foods would seem to be essential in order to increase the proportion of regular organic food buyers. Price should not be appeared as potential barrier which limits consumers' actual intention to purchase and actual purchase behaviour. These perceived benefits should be highlighted when marketing organic food products to consumers. Therefore, a quality improvement and a smaller price differential between conventional and organic foods would seem to be essential in order to increase the proportion of regular organic food buyers. The findings of this study suggest that creating a positive attitude toward buying intentions of organic food products may be a significant consideration for retailers to increase consumers' actual purchase behaviour for the organic food products. The more positive the attitude is in regard to behaviour, the stronger is the individual's intention to perform the behaviour under consideration (Tarkiainen and Sundqvist, 2005). Additionally, their positive attitude is determined by the consumer belief that organic food is good for health. This study suggests that organic food retailers develop effective marketing strategies emphasizing good virtues of organic food products which satisfy the values of potential consumers. The results also confirm that organic food marketers develop an effective integrated marketing communications strategy to create awareness and eliminate negative beliefs of organic food products as they are widely perceived as premium products, unaffordable to buy and false safety certifications. Therefore, in order to increase the degree of consumers' trust towards organic vegetables, it is necessary to establish labeling and certification for products.

VI. LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

This research has some limitations that should be considered in future studies. The major limitations of this study are that it did not focus on any specific

organic product category. The purpose of the research is to explore and examine the consumer perceptions of organic food in relation to organic food safety, product attributes, nutrition attributes and package attributes as antecedents of attitude and purchase intention of organic food. Future research might focus on specific organic food (such as organic milk, fruits and vegetables, cereals). Further, there may well be other variables that should be considered as antecedents in future research, such as consumer knowledge, health benefits, environmental motives, and influence of reference groups. The present study is a cross sectional one, and used convenience sampling technique. Future research might conduct longitudinal study, and using random sampling technique to improve the representativeness of the research results. The future direction of further research following the present study is to widen the sample to cover other populations in the big cities of India. In addition, the research findings could be enriched by expanding the study with analyses of the possible effects of moderators (e.g. gender, marital status, education, income, perceived behavioural control, and lifestyles) and mediator (subjective knowledge). The study is also limited to measuring intention to purchase of organic foods in general rather than the actual organic food purchase behaviour. Additional statistical analyses should be conducted in future research in order to identify segments of consumers according to their perceptions of organic food with related to the explored and examined antecedents of attitude and purchase intentions of organic food.

VII. CONCLUSIONS

This research demonstrates the roles of organic food safety attributes, product attributes, nutrition attributes and package attributes on attitude towards organic food, and purchase intention of organic food. The study re-confirms positive effect of food safety concern on attitude towards organic food and purchase intentions. Besides, the research results prove the considerable influence of nutrition attributes and package attributes on consumer buying behaviour towards organic food products. These two factors have not been examined extensively in past research in organic food consumption in Indian context. The perceived value of organic food products shows positive influences on attitude and purchase intention of organic food. The research results suggest that retail companies selling organic food need to launch contemporary

marketing strategies on organic food, emphasizing on the details of nutritional values and health benefits and improvements consumers will acquire upon consuming their organic products. The results also suggest that companies need to ensure the packaging contains the authentic details on the production process, scientific evidence and the government's quality certification so as to target all segments of potential customers. Lastly, the policy makers and government bodies need to enforce awareness and education programmes for potential organic food consumers.

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List of Tables

Table 1 Respondents' Demographic Profile

Variable	Description	Frequency	Percent	Mean	S.D
Gender	Male	270	46.6	-	-
	Female	310	53.4		
Age	20-30 years	172	29.7	34	8.96
	30-40	209	36.0		
	40-50	146	25.2		
	50 – 60	53	9.1		
Marital Status	Married	509	87.7	-	-
	Un-married	71	12.3		
Education	SSC/Diploma	117	20.2	-	-
	Degree	339	58.4		
	PG & above	124	21.4		
Occupation	House wife	180	31.0	-	-
	Employment	273	47.1		
	Business	91	15.7		
	Others	36	6.2		
Monthly Household Income	Rs 20000-30000	68	11.7	Rs 32000	Rs 8650
	Rs 30000-40000	127	21.9		
	Rs 40000-50000	134	23.1		
	Rs 50000 & above	251	43.2		
Family size	1-3	178	30.7	2.5	0.862
	3-5	162	27.9		
	5 & more	240	41.4		
SEC	A1	302	52.0	-	-
	A2	164	28.4		
	B	114	19.6		

Source: Primary data)

Table 2 Respondents Shopping Behaviour towards Organic Food Products

Sl. No.	Buying Frequency	Number of Consumers	Percentage
1.	Daily	88	15.2
2.	Weekly	119	20.5
3.	Fortnightly	19	3.3
4.	Monthly	188	32.4
5.	Occasionally	166	28.6
	Total	580	100.00

Source: Primary Data

Table 3 Type of Organic Food Products for Purchase

Sl. No.	Organic Food Products	Number of Consumers	Percentage
1.	Vegetables	159	27.4
2.	Fruits	232	40.0
3.	Meat and Meat Products	44	7.6
4.	Milk and Milk Products	46	7.9
5.	Cereals	15	2.6
6.	Pulses	25	4.3
7.	Beverages	23	4.0
8.	Cooking Oils	11	1.9
9.	Spices	16	2.8
10.	Sugar Products	09	1.6
	Total	580	100.00

Source: Primary Data

Table 4 Attitude towards Organic Food Products

S. No	Attitude	Mean	Standard Deviation
1.	I prefer organic food because it is processed without any chemicals	4.01	0.902
2.	I prefer organic food products because it is more nutritious than nonorganic food	3.32	0.990
3.	Organic products have natural flavour	3.13	0.123
4.	I believe in organic foods Eco-Labels	3.17	0.643
5.	Buying organic food is Value for money	3.71	0.621
6.	I prefer organic food because it taste better than nonorganic food	3.84	0.732
7.	I believe organic foods have better quality	3.12	0.747
8.	Organic products are high price	3.19	0.835
9.	It is exciting to me to buy organic food products	3.90	0.932

Source: Primary Data

Table5 Intention to Purchase of Organic Food Products

S. No	Intention to Purchase	Mean	Standard Deviation
1.	I would buy organic food products in the near future.	4.40	0.818
2.	I plan to buy organic food products in regular basics.	4.56	0.916
3.	I intend to buy organic food products for my long term health benefits.	3.98	0.960
4.	I intend to buy organic food products because they are more concern about food safety.	3.83	0.921
5.	I intend to buy organic food products because they are more environmentally friendly.	3.71	0.712
6.	I would also recommend other to buy organic food products	4.24	0.915

Source: Primary Data

Table 6 Factor Analysis for Consumers’ Perception of Organic Food Products

Factor label	Statements	Factor Loadings	Cronbach ‘α’	Variance explained
Food Safety	Organic food products have no adulteration	0.824	0.51	26.3 %
	Organic food does havenod chemical residues	0.782		
	Food additives	0.771		
	Organic foods are free from Naturally occurringtoxins	0.725		
	Veterinary residues	0.685		
Value Attributes	Organic farming is the most convincing way offood safety.	0.756	0.725	22.6 %
	Organic food productsare safer to eat.	0.710		
	Organic foods are goodin taste, quality and size	0.683		
	Organic foods productshave good Band Image	0.654		
	Organic foods are morefreshness	0.621		
Nutrition Attributes	Organic foods are superior quality	0.714	0.713	16.8%
	Organic food has Nutrient Contents	0.689		
	Calories, Fibre, and Sodium are adequate in organic foods	0.638		
Packing Attributes	Organic food have Vitamins and Minerals	0.689	0.703	14.8%
	Freshness	0.634		
	I believe in the information on organicfood packaging	0.610		
	Organic foods have goodBrand Name			
	I like Nature of attractivePackaging			

a. Extraction Method: Principle Components Analysis, Rotation Method: Varimax with Kaiser Normalisation, variance explained 80.5 %, p=0.001

Table7 Summary regression models for effect of perception of organic food products on attitude towards organic food products

Dependent variable	Model	R	R ²	S. E of Estimate	Regression Model	Sum of Squares	df	Mean Square	F-value	Sig. (p-value)
Attitude towards organic food products .	1.	0.749 ^a	0.560	0.800	Regression	471.60	1	471.601	737.09	0.000 ^a
					Residual	369.81	578	0.640		
					Total	841.41	579			
	2.	0.824 ^b	0.679	0.684	Regression	571.73	2	285.868	611.642	0.000 ^a
					Residual	269.67	577	0.467		
					Total	841.41	579			
	3.	0.834 ^c	0.696	0.667	Regression	585.38	3	195.129	439.00	0.000 ^c
					Residual	256.02	576	0.444		
Total					841.41	579				
4	0.836 ^d	0.700	0.663	Regression	588.59	4	147.148	334.66	0.000 ^d	
				Residual	252.82	576	0.440			
				Total	841.41	579				

a. Predictors: (Constant), FS b. Predictors: (Constant), FS, VA c. Predictors: (Constant), FS,VA & NA
d. Predictors: (Constant), FS,VA, NA & PACA

Source: Primary Data

Table 8 Predictor effects and beta estimates for perception of organic food products on attitude towards organic food products.

Dependent variable	Model	Unstandardised Coefficients Beta (β)	Std. Error	Standardised coefficients Beta (β)	t-value	Sig. (p-value)
Attitude towards organic food products	1. (Constant) Food Safety	1.292	0.082	-	15.770	0.000
		0.735	0.027	0.749	27.149	0.000**
	2. (Constant) Food Safety Value Attributes	0.143	0.105	-	1.360	0.174
		0.537	0.027	0.547	20.036	0.000**
		0.450	0.031	0.400	14.637	0.000**

Dependent variable	Model	Unstandardised Coefficients Beta (β)	Std. Error	Standardised coefficients Beta (β)	t-value	Sig. (p-value)
	3. (Constant)	0.796	0.156	-	5.096	0.000
	Food safety	0.518	0.026	0.527	19.628	0.000**
	Value Attributes	0.425	0.030	0.377	14.009	0.000**
	Nutrition Attributes	0.143	0.026	0.133	5.542	0.000**
	4. (Constant)	0.989	0.171	-	5.782	0.000**
	Food Safety	0.507	0.027	0.516	19.087	0.000**
	Value Attributes	0.428	0.030	0.380	14.188	0.000**
	nutrition Attributes	0.138	0.026	0.128	5.370	0.000**
	Package Attributes	0.066	0.024	0.063	2.699	0.007*

Note: * $\alpha < 0.05$, ** $\alpha < 0.001$; Source: Primary Data

Table9 Summary regression models for effect of perception of organic food products on intention to purchase of organic food products

Dependent variable	Model	R	R ²	S. E of Estimate	Regression Model	Sum of Squares	Df	Mean Square	F-value	Sig. (p-value)
Intention to purchase of organic food	1.	0.664 ^a	0.441	0.823	Regression Residual	308.864 391.888	1 578	308.86 0.678	455.547	0.000 ^a
					Total	700.752	579			
	2.	0.759 ^b	0.575	0.718	Regression Residual	403.199 297.552	2 577	201.60 0.516	390.933	0.000 ^b
					Total	700.752	579			
	3.	0.763 ^c	0.582	0.713	Regression Residual	407.762 292.990	3 576	135.92 0.509	267.212	0.000 ^c
					Total	700.752	579			
	4	0.766 ^d	0.587	0.710	Regression	411.081	4	102.77	204.000	0.000 ^d
				Residual	289.671	576	0.504			

<i>Dependent variable</i>	<i>Model</i>	<i>R</i>	<i>R²</i>	<i>S. E of Estimate</i>	<i>Regression Model</i>	<i>Sum of Squares</i>	<i>Df</i>	<i>Mean Square</i>	<i>F-value</i>	<i>Sig. (p-value)</i>
					Total	700.752	579			
a. Predictors: (Constant),FS					b. Predictors: (Constant),FS, VA					
c. Predictors: (Constant), FS,VA & NA					d. Predictors: (Constant), FS,VA, NA & PACA					

Note: * $\alpha < 0.05$, ** $\alpha < 0.001$; Source: Primary Data

Table 10 Predictor effects and beta estimates for perception of organic food products on Intention to purchase of organic food products.

<i>Dependent variable</i>	<i>Model</i>	<i>Unstandardised Coefficients Beta (β)</i>	<i>Std. Error</i>	<i>Standardised coefficients Beta (β)</i>	<i>t-value</i>	<i>Sig. (p-value)</i>
Intention to purchase of organic food	1. (Constant)	2.555	0.095	-	26.95	0.000
	Food safety	0.440	0.031	0.505	14.05	0.000**
	2. (Constant)	2.221	0.114	-	19.50	0.000
	Food Safety	0.360	0.035	0.413	10.42	0.000**
	Value attributes	0.192	0.038	0.200	5.06	0.000**
	3. (Constant)	1.851	0.140	-	13.19	0.000
	Food Safety	0.349	0.034	0.400	10.23	0.000**
	Value Attributes	0.170	0.038	0.178	4.51	0.000**
	Nutrition Attributes	0.169	0.039	0.155	4.38	0.000**
	4. (Constant)	1.613	0.153	-	10.54	0.000
	Food safety	0.331	0.034	0.380	9.72	0.000**
	Value Attributes	0.139	0.038	0.145	3.65	0.000**
	Nutrition Attributes	0.176	0.038	0.161	4.605	0.000**
	Package Attributes	0.135	0.036	0.134	3.704	0.000**

Note: * $\alpha < 0.05$, ** $\alpha < 0.001$; Source: Primary Data

Table 11 Summary Regression Models for Effect of Positive Attitude towards Organic Food Products on Intention to Purchase of Organic Food Products

<i>Dependent variable</i>	<i>Model</i>	<i>R</i>	<i>R²</i>	<i>S. E of Estimate</i>	<i>Regression Model</i>	<i>Sum of Squares</i>	<i>Df</i>	<i>Mean Square</i>	<i>F-value</i>	<i>Sig. (p-value)</i>
Intention to purchase of organic food products	1	0.717 ^a	0.51	0.905	Regression	500.80	1	500.8	611.73	0.000 ^a
					Residual	473.19	578	0.81		
					Total	974.00	579			

a. Predictors: (Constant), positive attitude

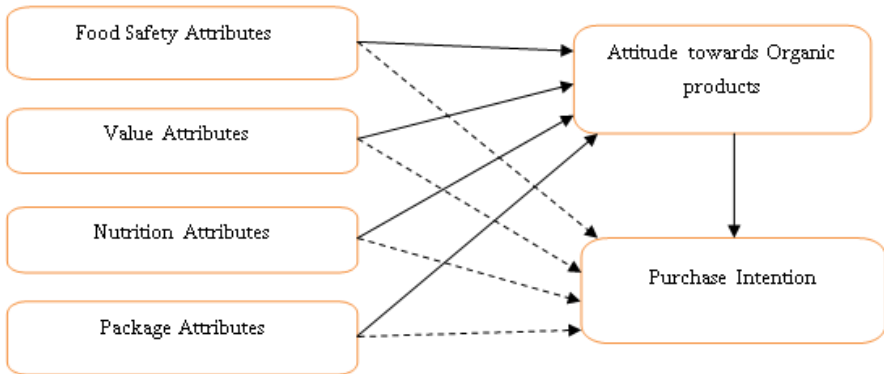
Table 12 Predictor Effects and beta Estimates for Positive Attitude towards Organic Food Products on Intention to Purchase of Organic Food Products.

<i>Dependent variable</i>	<i>Model</i>	<i>Unstandardised Coefficients Beta (β)</i>	<i>Std. Error</i>	<i>Standardised coefficients Beta (β)</i>	<i>t-value</i>	<i>Sig. (p-value)</i>
Intention to purchase of organic food products	1. (Constant)	0.354	0.113	-	3.122	0.002
	Positive Attitude	0.787	0.032	0.717	24.733	0.000 [*]

Note: * $\alpha < 0.001$; Source: Primary Data

List of figure:

Figure 1: Conceptual Model



Author Profile

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