# Examining the Effect of COVID-19 on Consumer Health Perception and Decision-Making Towards Organic Foods

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#### Abstract

Currently, a number of industries are concentrating on spreading the word about nature's goodness in order to save our ecosystem. One of the most significant among them is the organic industry because it not only concerns the protection of human health but also the health of the environment. The COVID-19 pandemic had a significant effect on public health awareness, which made it evident that the organic food industry would dominate. For anyone involved in the organic food industry, such as marketers, producers and politicians, understanding their viewpoints is essential. The goal of this review is to provide a thorough grasp of the subject by synthesising the existing research on consumer opinions about organic foods. The purpose of this article is to examine the effects of the coronavirus on such a thriving industry by evaluating the theories and opinions advanced by many writers in a number of significant research studies on customers' perceptions of the healthfulness of organic foods following COVID-19. A conceptual model has been framed based on the factors scrutinised from the works of literature reviewed in this article. This review research also provides tactics to marketers and producers of organic foods and suggestions that were made to the government in taking measures to improve the organic food sector based on the consumers health perception.

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#### Keywords

Buying behaviour, consumers perception, COVID-19, health perception, organic food, organic purchasing behaviour

#### Introduction

Since organic foods are healthier and less polluted than conventional foods, more and more people are choosing them. This buying behaviour can significantly influence consumers' attitudes and perceptions about buying organic food. Furthermore, difficulties, problems and key reasons are identified through a thorough review of previous studies. The COVID-19 epidemic has had a significant impact on overall consumer behaviour. According to the India Organic Food Market Report of 17 June 2020, 'The consumption of organic food and beverages in India has increased in recent years due to its advanced dividend demographics, growing spending power, and interest in certain organic foods. Increased interest in the health benefits of the product' (Chandra & Rosman, 2020). Organic foods support health by reducing exposure to pesticides and improving nutritional value. We need to look at the big picture to understand why organic food is so important. Without the harmful side effects of conventional farming, organic food not only keeps us alive, but it also keeps us healthy. According to numerous observational studies, people who eat organic foods are generally healthier than those who eat conventional foods. A recent five-year French study of 70,000 adults found that those who regularly ate organic foods had about 25% lower risk of developing cancer than those who never ate organic food. Food consumption is essential for human health; hence, it was crucial to look at this topic in terms of the COVID-19 influence (Asseo & Asseo, 2020). The Lancet's health definition of 2009, 'the ability of a body to adapt to new threats and infirmities', is more suitable for today's world that is combating the biggest challenging transformation ever because of the coronavirus (COVID-19) pandemic (Iorver, 2020). The pandemic has had significant effects on the expansion of the organic food sector in the foreseeable future, prompting the researcher to analyse previous studies in this field.

The objective of this article is to contribute to the literature and create a conceptual model. Previous studies have rarely focused on the relationship between consumer information similarity and organic purchasing behaviour. To fill this gap, using potentially advance research on organic consumption, this article explores the relationship between consumer information similarity and organic purchasing behaviour before and after COVID-19. To find pertinent research studies, a systematic review approach was used. Various academic databases were searched using the terms 'consumer opinions', 'organic foods' and 'consumer perceptions'. Within the last 10 years, studies that appeared in peerreviewed publications were considered. The study included more than 35 research articles that satisfied the inclusion requirements.

In this article, a conceptual model of consumers' perception has been framed based on important factors scrutinised from various literatures. The research has also investigated consumers' perception of those factors along with a few other unavoidable factors. The discussion part of this article provides insightful information on consumers' perception. These insights can be used to guide marketing plans, legislative choices and future research.

#### Literature Review

Existing research has found a number of variables that affect consumers' perceptions of their health when consuming food and has further divided them into intrinsic and extrinsic product attributes. The first category of factors included in the reviewed literatures pertains to the product itself and includes aspects of the food (such as whether it is healthy, tasty, of high quality, nutritious, fresh or has a long shelf life), none of which can be changed without changing the product. Conversely, extrinsic cues relate to the market (income and price), social attitudes and conventions (fashion, tradition and other customers' behaviour), environmental considerations (environmental protection and animal welfare), availability and buying location. Research has also found that consumers are strongly motivated to pick an organic product over a conventional one owing to the absence of pesticides and genetically modified organisms (GMOs). Studies have found that independent of the socio-demographic traits of the consumers, the intrinsic qualities of the products influence the decision to buy an organic product. Consumers around the world have put sensory qualities first on their priority lists, followed by health advantages and outstanding quality. Because of their environmental convictions and a diminished perception of the cost of these items as a barrier, better educated consumers and people with higher incomes are also likely to consume organic products.

The high quality and health benefits of these sorts of products continue to be generally acknowledged, despite a number of perception gaps around the use of organic foods. Came to the conclusion that rising interest in a sustainable lifestyle and worries about the sustainability of food both contributed to the increased use of organic goods (Azzurra et al., 2019). The opinion of customers and the variables influencing their choice of both organically certified and non-certified foods were also examined (Lang & Rodriguez, 2022). According to a study's findings, consumers are willing to pay more for organic products if certain criteria are met, including certification, the absence of GMOs and hormones, and sustainable agriculture practices (Malissiova et al., 2022). The cost of organic food may, however, be prohibitive for certain consumers. The higher price than other food products served as the main barrier for Polish consumers, but another study of respondents from Poland supported earlier findings regarding the quality requirements for organic products (healthiness, superior taste, quality and food safety considerations) (Bryła, 2016). Additionally, those with higher levels of education and money, as well as women, were more inclined to favour organic foods. These conclusions were supported by a research study carried out in Korean households, which found that 94.1% of Korean women had a high level of awareness of organic foods and that 71.7% of them routinely bought it. Despite

the fact that organic products are quite popular in Korean families, 95.9% of respondents said that the price of such products prevented them from being purchased (Han & Lee, 2022).

A sizable German study examined the key channels that customers use to educate themselves about the nutritional content of the food they buy. As a result, the majority of respondents primarily consulted radio and television as well as experts in the field, such as doctors and chemists, to learn about nutrition. However, while making food purchase, a sizable portion of the respondents said that they listened to advice from their co-workers, acquaintances and other family members. Younger consumers have been found to typically support green living and to be more concerned in the environment and the effects that their actions have on it (Wortmann et al., 2018). Studies that explicitly link environmental concerns and attitudes with the intention to buy such products show that this further influences people's decisions to buy green and organic products. Additionally, they are more inclined to focus on the product's label more. Labelling provides consumers with some information about the various food characteristics, nutritional value and production process. The education level of consumers is particularly significant because a significant amount of research indicates differences in perception and purchase frequency related to organic products. Therefore, customers with less education likely to buy less organic food and show less interest in environmental sustainability, whereas those with a college degree are thought to buy organic items most frequently. A few marketing campaigns that raise the awareness of the effects food consumption has on the environment may also have an impact on consumers' attitudes towards healthy food and organic products, in particular. In this way, this research examined how 'green ad' campaigns affected respondents with various degrees of environmental awareness. The study came to the conclusion that a consumer's perception of an advertisement's efficacy increased with their level of interest in environmental issues (Mo et al., 2018).

With more people becoming concerned about their lifestyle and its impact on the environment, health worries during the COVID-19 epidemic have only grown. It is essential to examine the extent to which the pandemic has affected people's choices about food consumption, particularly with regard to organic products, in order to better comprehend this phenomenon. Because of the pandemic, there has been a surge in the consumption of organic products over the past several years, which has only served to accelerate this trend. Busch et al. (2021) conducted a study on German respondents regarding the impact of the epidemic on their purchasing behaviour, and they came to the conclusion that the stable shelf life of the items, along with the health benefits and geographical origin, have become more essential for the consumers. Additionally, more than 80% of the responders said that they had increased their organic food purchases since the outbreak. The following research questions have been developed in the light of the ones previously mentioned: What do consumers think about organic products in terms of their health? Before COVID-19, how did customers view organic foods in terms of their health? How much has the COVID-19 pandemic affected how people prefer organic foods in terms of their health?

## Motivation for the Review Survey

The health and economical effects of the COVID-19 pandemic are likely to cause the food security and nutritional status of the most vulnerable population groups to significantly deteriorate (Moss, 2023). According to a study from the National Institutes of Health, a portion of organic customers already practices food-related mitigation techniques like reducing meat consumption. The authors suggest that this can be taken into account in the development of organic farming because some customers think that eating organic food can help to slow down climate change (Ravn Heerwagen et al., 2014). Contrarily, private spending decreased on average by more than 3%. Health spending as a proportion of GDP in OECD countries increased to 9.7% in 2020 from 8.8% in 2019 as a result of the significant spending growth and the widespread economic slowdown (OECD, 2023). Importantly, this research makes an effort to predict some of the effects of the global pandemic caused by COVID-19 on food security and nutrition. However, it is crucial to understand that any assessment at this point is susceptible to a significant degree of uncertainty and should be regarded with caution given that the destruction that COVID-19 would inflict is still mostly unknown. Nutrition and food security are strongly related. Malnutrition can take many different forms because of food poverty. The food that people eat, more precisely the calibre of their diet, is a crucial component that explains this connection (FAO, 2020). Various global-level organisations conducted several international surveys such as above mentioned; the results of most of those surveys made clear that COVID-19 has influenced the consumption of organic foods. This made the researcher to conduct a comprehensive review survey on this topic.

## **Consumers' Health Perception and Decision-Making**

There are a variety of consumer perceptions on organic foods and their effects on health. Although many people hold the presumptive health advantages of organic foods in high regard, viewpoints differ, and other people express scepticism. The importance of understanding that scientific research into the health benefits of organic foods is ongoing and that dietary decisions should be based on a comprehensive approach to nutrition cannot be overstated. People can make educated judgements regarding their dietary choices and general health by emphasising a balanced diet, including a variety of whole foods, and seeking the advice of medical specialists or trained dietitians. Many people believe that organic foods are healthier than meals that are produced normally. They relate lower exposure to potentially hazardous compounds to organic farming practices, such as avoiding synthetic pesticides, herbicides and GMOs. Customers frequently believe that buying organic goods can help to improve their general health and well-being as a result of this notion. A sizable portion of people believe that eating organic foods has specific health advantages. They contend that the avoidance of industrial pesticides, herbicides and GMOs through the adoption of organic agricultural methods reduces exposure to potentially dangerous substances.

Consumers believe that a lower risk of adverse health effects, such as the buildup of pesticide residue in the body, results from this reduced exposure. Organic foods are seen as being healthier options because they are produced in a way that is more in line with natural processes. The review examines various health aspects, including perceptions, motivations, concerns and preferences of consumers regarding organic food products. The results show the wide range of perspectives that consumers hold and shed light on the variables affecting their decision-making.

#### Perception Prior to COVID-19

Awareness on organic foods among the population of the study is about 76% where the awareness level is greater amongst urban people. The key reasons for organic food intake are availability and credibility. Rising the level of awareness on organic products can increase the level of consumption of organic food products by cheering people to build their own organic yard (Rock et al., 2017b). This weighs against organic and conventional food production through factors essential en route for human health amid an accent on conditions of the European Union discussed about the possible result of management practices. A specific challenge is the reality that consumers who often purchase organic foods lean to prefer more vegetables, fruits, whole-grain products and less meat, and also to have healthier dietary outline, as shown in observational studies. Consumers those who frequently purchase organic foods are more physically active and also less likely to smoke. In children, a number of studies have stated a lesser prevalence of allergic reaction and/or atopic disease in families by a way of life involving the liking of organic food (Mie et al., 2017). The purchase objective of organic foods is influenced by these factors with an additional factor, that is, availability. The outcome shows that all these factors also influence the actual buying behaviour; however, attitude and purchase intension arbitrate the relationship. Additionally, socio-demographic factors also create an impact on real buying behaviour. In this study, the authors provide a good understanding on consumers' attitude, purchase objective and real buying behaviour on organic food products. The result inferences the organic food companies, retailers and market rigid agencies. This study also gives guidelines and marketers those who deal with the organic foods with an aim of extending the market of organic foods (Singh & Verma, 2017).

The implementation of organic production and its processing is well determined by market demand. As a result, it is revealed in consumers' perceptions and attitudes regarding organic food products' market share in the information existing and the awareness level of consumers. Results in this article are of vast significance because they have given valuable information regarding consumers in Bhopal city, which can be made use of by the policymakers in the field of organic farming at the national and local levels (Verma, 2016). Before executing organic foods on a wide scale disregarding the health point of view, economic, social and cultural factors, sensory attributes, food safety, environmental friendliness and nutritional factors also need to be considered. The present-day knowledge about the health impact of organic food is not clear. In this study, the authors have focused to get a combined knowledge on the health-oriented view of organic food. The recent knowledge on health effects of organic food evolved from the existing research studies is still primal and not enough to suggest organic food to the society (Rock et al., 2017a).

For a country like India, intake that is packed with flavoured and splashed in vats of oil and ghee has been conventional, with the tendency of eating healthy and organic is being rather gradual. It can be said that the attitude regarding healthy and organic eating has developed over the recent years. People have become increasingly aware of what the consumption of organic food truly entails, together with the mass benefits associated with it (Jajodia, 2019). Consumers in India have a positive awareness on organic foods. Also, they want to change or at least offer an attempt to organic foods, and they are assured easy and entire information and faith along with the value for price. Particularly, endeavours are made to inspect the awareness level of consumers and preferences about organic food products existing in the market. Although there is a rising consciousness among consumers in India on health and environment, the organic food market in North India is still at its emerging state and could be measured as immature (Batra, 2016). India has witnessed an increase in the demand level of the organic food products, as these products impart a healthier lifestyle choice for consumers. Because of the rising number of cases on food adulteration and steady increasing income, the awaked consumers in our country want to turn completely towards natural foods in their nutritious requirement; therefore, they are making organic food products as their preferred choice (Chokani, 2019).

Sales of organic foods are increasing, but the lion's share of the food market is still shatteringly controlled by conventional products. The best way to increase the sales and build regular customers can be done with creating awareness on required facts about organic food products completely among the consumers (Chait, 2019). The previous studies on consumer perception and behaviour are unclear regarding what is meant by 'health' to organic consumers, and what accurately drives consumers to select organic products is remained unclear because of that. Look into health from the point of view of consumers and explanations behind their preferences regarding consumption. This study reveals that when 'health' is introduced as an abstract term, it is easily understood in terms of nutrition (Ditlevsen et al., 2019).

#### Perception Post COVID-19

In 2019, there was a noticeable shift in customer preferences towards vegan and organic food. Many businesses with a focus on nutritious, farm-to-table vegan cuisine started operating in late 2019 and early 2020. But if COVID-19 spreads around the globe, a lot of people will surely start living this way in the years to come. Owing to its multiple health and immunity-boosting advantages, an organic, vegan diet is becoming more and more popular in the light of the number of coronavirus cases reported worldwide. More 'vegan-only' eateries and businesses promoting plant-based items are therefore projected to enter the market. Given that the majority of Indians consume vegan food, most customers are anticipated

to adjust rather quickly to this paradigm shift (IBEF, 2020). The COVID-19 pandemic has caused immense rethinking, especially about what we consume, where our foods come from, and how they are produced, prepared and stored. An increasing awareness towards the health benefits of a balanced diet along with natural foods has started boosting the demand for organic and sustainable food products. Since the popularity of organics is not new, numerous consumers are consuming organic food more than ever before (Desai, 2020). The Consumer Unity and Trust Society's (CUTS International) survey was conducted among the organic food sellers and consumers in Rajasthan's districts. In the survey, nearly 62% of sellers agreed that they were selling organic products together with conventional products, and about 86% of the consumers stated that the changing consumption pattern of organic foods should continue in the future (Singh, 2021). Consumer awareness has raised after COVID-19, specifically the awareness towards the relationship between health and nutrition. This has resulted in a surge in interest towards the products that benefit from a 'health halo', including functional foods, vegetables and fruits (Askew, 2020).

According to a study conducted by the Associated Chambers of Commerce and Industry of India (ASSOCHAM, 2018), the Indian organic market stood slightly above ₹12 billion last year and during the current year, the organic food market is anticipated to cross ₹20 billion because the corona contagion struck health consciousness. People are clinging on organic foods to the health intrinsic as these are free of chemicals and pesticides, which are not only considered to be safe but also healthy and nutritious that made the world and India to screaming for organic food products. As per the statistical report by the Agricultural and Processed Food Products Export Development Authority, Indian organic products exports reached ₹51.51 billion last year, and it is anticipated to get doubled in the upcoming year (Goyal, 2020). In India, demand for organic and natural products was on the rise even before the pandemic. Products grown by natural systems and organic foods have increased manifold. This is evidenced by the steep growth in the market share of natural products and by the competing trend with MNCs (Padhee & Kane-Potaka, 2020). Consumable cereals, wheat and pasta had seen the biggest increases after the pandemic, which changed the composition of commercially available organic foods. The proportion of organic food consumption in total food consumption also changed. Increased consumer concern about their health as well as the fear of the COVID-19 pandemic can be said to be the reasons for changes in the percentage of internet buying as well as the type and volume of organic food consumption. This study provided information on just one aspect of online purchases of organic food by customers. Although it is outside the scope of this study, an investigation of the factors that influence consumers' use of online shopping platforms, in general, and that of organic food, in particular, offers important advice for future research (Cirić et al., 2020).

The primary goals of the study were to evaluate how consumers felt about organic products and to pinpoint the key variables affecting this behaviour. They also looked into how the COVID-19 pandemic affected how frequently this kind of product is consumed. Irrespective of their socio-demographic background, consumers roughly tend to focus on the same organic product owing to its intrinsic qualities, according to the study. Additionally, factors such as income and the education level affect the decision-making process when it comes to the extrinsic qualities of the products, such as price, brand and labels (Brata et al., 2022). The analysis of consumer traits, attitudes towards organic food items and changes in consumer behaviour during the COVID-19 pandemic in the Republic of Serbia are the topics of this essay. Even though currently customer confidence is low, as the organic market in our nation grows, with the gain in knowledge and awareness about organic products, an additional increase in the consumption of these products may possibly be witnessed because of more educated and informed consumers. The success in this industry depends on marketing effectiveness and specialised marketing strategies for this niche market, especially in times of the COVID-19 pandemic. Socio-demographic characteristics might provide additional insights into a profile of organic consumers. The study supported the notion that customers' buying intentions are highly influenced by concerns about food safety, health consciousness, nutritional content, premium price and attitude. Concerns about food safety, health awareness, nutritional value, natural ingredients and premium price are all found to be strongly correlated with attitudes towards healthy foods. The factors that influence consumers' propensity to purchase healthy foods in Malaysia during the COVID-19 epidemic were examined, and the findings showed that the association between the purchase intention and food safety worries, health consciousness and nutritional content is strongly moderated by food safety trust (Alam et al., 2022).

Most of the respondents reported that their habit of green food consumption was influenced significantly by the COVID-19 pandemic. Majority of the participants perceived that the upsurge in their purchasing intentions of green foods was a result of their rising concerns about health during pandemic. Respondents were willing to spend money on health and also to increase their purchase percentage of green foods consequently. An investigation was performed on the changes in consumers' habits and behaviour towards food consumption in the pandemic period. The results of the investigation confirmed that the changes in consumers' habits and behaviour towards food consumption, especially after COVID-19, were based on preference towards organic foods, concerns of food pricing, packaging and access, awareness towards food waste, and excessive and safety along with stockpiling (Güney & Sangün, 2021). ASSOCHAM and EY jointly reported that the local consumption of organic produce in India is only 1% in spite of being one of the largest exporters of organic food products. After COVID-19, the organic food market in India became the newest trend because of its nutritious worth, as it helps in the improvement of the immune system which in turn acts as a preventive measure against COVID-19. After the COVID-19 pandemic, a huge opportunity has been created in the Indian organic market as there is a clear shift of the local consumers to organic food from conventional food (Chaturvedi et al., 2021). According to a survey by CUTS International, at least 91% of organic retailers and 89% of shoppers in Rajasthan alone said that sales and consumption of organic products had increased significantly during the pandemic. This expansion is the result of a number of factors, including increased awareness, e-commerce accessibility, innovation and increased exports (Chokhani, 2021). According to a

mid-April Ecovia report and the 2020 Q1 Organic Produce Performance Report by the Organic Produce Network, the sales of organic food were grasping a boost from coronavirus as the consumers were likely to adopt healthier eating habits. There was another crucial shift in the sales of natural products. From around 3% of dollars spent by each buyer during the late January 2020 to nearly 15% in April 2020 was noted in the sales of natural products, which is more of online sales (Wiley, 2020).

# **Conceptual Model of Factors Influencing**

Purchase decisions are greatly influenced by consumer perception, especially when it comes to organic foods. Consumers frequently believe organic foods to be advantageous for numerous elements of their health, including immunity boosters, the absence of additives, increased nutritional content, and food safety, health and environmental concerns. Organic foods are frequently associated with health and well-being.

## Immunity Boosting

Most consumers think that consuming organic food can strengthen the immune system. This notion stems from the idea that organic agricultural methods forgo the use of synthetic pesticides, GMOs and other possibly dangerous materials. Customers link these behaviours to a lower body toxic load, which they believe supports a greater immune response (Mie et al., 2017). Although there is less scientific evidence particularly associating organic foods with immune improvement, people looking for natural and holistic approaches to health continue to hold this belief (Dangour et al., 2010).

# No Additives Added

A key element influencing customer choices is the idea that organic foods are free of additives. The possible negative health impacts of synthetic additives, such as artificial colours, flavours and preservatives, are causing consumers to become more and more concerned (Zhong et al., 2018). Customers believe that they can prevent exposure to these additives by buying organic goods, which will result in a healthier diet. This impression is consistent with the preference for whole, less processed meals, which are thought to be healthier generally and more natural (Gundala & Singh, 2021).

# Nutritional Value

Consumers believe that organic foods are more nutritious than foods grown in a traditional manner. While it is generally accepted by scientists that organic and conventionally cultivated foods have equivalent nutrient contents, several studies have found that some organic crops may have slightly higher concentrations of specific nutrients and antioxidants (Mancombu, 2022). Consumers link these nutritional variations to organic agricultural methods that put emphasis on biodiversity, natural fertilisers and soil health. The idea that organic foods can deliver the vital vitamins, minerals and antioxidants required for a healthy immune system is supported by the idea that they have a better nutritional value (Mie et al., 2017).

## Food Safety Concern

Consumers believe that organic foods are more nutritious than foods grown in a traditional manner. While it is generally accepted by scientists that organic and conventionally cultivated foods have equivalent nutrient contents, several studies have found that some organic crops may have slightly higher concentrations of specific nutrients and antioxidants (Mancombu, 2022). Consumers link these nutritional variations to organic agricultural methods that put emphasis on biodiversity, natural fertilisers and soil health. The idea that organic foods can deliver the vital vitamins, minerals and antioxidants required for a healthy immune system is supported by the idea that they have a better nutritional value (Liu & Zheng, 2019).

## Health Concern

The study examines how consumers view the effects of consuming organic foods on their health. It examines consumer perceptions that organic foods are healthier, safer and contain more nutrients, as well as how they affect consumers' overall well-being (Kamboj et al., 2023). Correlations between organic farming practices and better health outcomes, such as a lower chance of developing chronic diseases, may be studied. It could investigate if customers believe that organic food promotes a healthy lifestyle and what factors led them to choose organic food in the first place (Wojciechowska-Solis & Barska, 2021).

#### Environmental Concern

The study examines how consumers view sustainably produced meals in relation to the environment. It explores consumer perceptions of the lower environmental effects of organic agricultural methods, including less soil erosion, water pollution and greenhouse gas emissions (Thomas et al., 2021). The study might look into whether people support biodiversity and soil health through organic farming. Given their worries about the negative environmental effects of conventional agriculture, including the use of synthetic fertilisers and intensive agricultural practices, it might investigate why consumers choose organic foods (Cachero-Martínez, 2020).

It is important to note that, despite popular belief, the scientific study on the precise effects of organic food on immunological function, additives and nutritional value is still in its early stages. Given that the food is organically

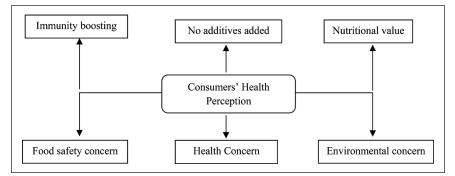


Figure 1. Conceptual Model Framed Based on the Factors Scrutinised from the Literatures Reviewed.

grown, the entire quality of a person's diet, including elements such as diversity, balance and overall nutrient intake, is essential for sustaining a robust immune system.

# **Other Influencing Factors Scrutinised**

While studying particularly about consumers' health perception there are also some other factors like avoidance of antibiotics and hormones, micro-biome support, reduced chemical exposure, enhanced antioxidant content, supply chain transparency, trust and certification, sustainable practice and mitigating safety concerns that were also scrutinised by various pieces of literatures which cannot be neglected completely.

## Avoiding Antibiotics and Hormones

Antibiotics and growth hormones are not allowed in organic animal rearing. Consumers can prevent exposure to these chemicals, which may have effects on general health and immunological function, by eating organic animal products (The Cornucopia Institute, n.d.).

## Support for the Micro-biome

Organic farming methods frequently place a high priority on soil health and biodiversity, which can encourage a more varied and advantageous microbial community in the soil (Lori et al., 2017). According to several studies, using organic agricultural practices may increase the microbial diversity of organic products. Because the gut micro-biota is so important in controlling immunological responses, a diverse gut micro-biome is linked to the enhanced immune function (Wu & Wu, 2012).

## Reduced Chemical Exposure

Organic food is a good option for those who want to reduce their exposure to synthetic chemicals and pesticides. Consumers think that abstaining from consuming these substances, their immune system will improve and they will not have to deal with many potentially hazardous things (*Better Health Channel*, n.d.). Organic crops are cultivated without the use of artificial fertilisers, pesticides and herbicides. Customers can limit the exposure to these potentially dangerous compounds by buying organic products. This may lessen the body's overall toxic load and promote the immune system for optimal performance (Benbrook et al., 2021).

## Enhanced Antioxidant Content

It is good knowledge that organic fruits and vegetables contain more antioxidants. By scavenging the body's dangerous free radicals, antioxidants help to promote immunological function. It is possible that some customers believe organic foods to be superior in this regard and to be good for immune function (Fatkullin et al., 2021).

## Supply Chain Transparency

Consumers are curious about the origins and production processes of the food they eat. If they become certain that organic food was grown and prepared without the use of synthetic pesticides, herbicides and fertilisers, they more likely trust it (Gundala & Singh, 2021).

## Packaging and Handling

Organic food should be handled carefully and packed to reduce the chance of contamination. Packaging that is intended to prevent cross-contamination should be used because consumers are concerned about the possibility of cross-contamination with regular produce (Jose & Koshy, 2019).

## Trust and Certification

Customers must have confidence that the organic food they purchase is indeed organic. For this reason, it is critical that organic food be certified by a trustworthy agency. Consumers are reassured by certification that the food has complied with specified production and processing standards (FAO, 2000).

## Sustainable Practices

Concerns over how food production affects the environment are growing among consumers. If consumers think that organic food is produced sustainably, they are

more likely to choose it. This entails adopting methods that preserve natural resources while also protecting the soil, water and air (Sastre et al., 2022).

#### Mitigating Safety Concerns

Organic food raises various safety issues, such as the possibility of higher concentrations of germs and heavy metals. However, with rigorous production and handling procedures, these dangers can be reduced. Organic farmers, for instance, can check their soil for heavy metals and take action to lower their levels. Additionally, they can employ strategies to lessen the possibility of bacterial infection, like washing products properly before consumption (Murali et al., 2023).

#### Discussion

The key reason is that the primary motivation for purchasing organic food was to improve one's health consciousness. The majority of those who prefer organic food do so because they believe it is healthier. As a result, those who are producing and marketing organic food items must discover strategies to increase consumer trust in order to increase purchase intent. The appearance of COVID-19 is likely to encourage consumers to buy organic products. The primary motivation for purchasing organic food was to improve one's health. It was also discovered that psychological elements such as perception, attitude and purchase intention had a significant impact on organic food customers' purchasing intentions. To address the shift in the purchasing behaviour of consumers for organic food items among urban inhabitants, organic food marketers must be imaginative and dynamic. Research on consumer perception adds to the body of knowledge in the fields of sustainable agriculture, consumer behaviour and nutrition. It closes knowledge gaps and directs future research by providing empirical evidence on consumer perceptions, attitudes and behaviours connected to organic foods. This study can enlighten public conversation on the subject and produce recommendations that are supported by facts. It is suggested that organic food marketers must think out of the box and should be able to adapt to changing purchasing patterns among city dwellers for organic food items. Governments should also enact more stringent sustainability and environmental protection policies than those now in place. Although sustainability goals and objectives were already in place, COVID-19 acted as a catalyst for environmental protection. This review research study has mentioned the insightful information on consumers' opinions about organic agricultural practices in terms of environmental sustainability, correlations between organic foods and better health outcomes, and attitudes regarding the safety of organic foods. In order to meet the requirements and expectations of customers in the organic food market, these insights can be used to guide marketing plans, legislative choices and future research.

# **Suggestions and Limitations**

## Suggestions

Marketers and producers in the organic food sector must work on their tactics to reflect the changing preferences of consumers considering the changing trends in consumers' behaviour towards organic foods. Some strategies that they can use are as follows:

- 1. *Consider the advantages of organic food for consumers' health.* Marketers should emphasise the advantages of organic food in their marketing strategies as consumers' interest in the health benefits of organic food is growing.
- 2. *Stress the security of organic food*. Marketers should emphasise the safety of organic food because these days consumers are worried about food safety.
- 3. *Be open and honest about your procedures*. Be open and honest about your methods, and let customers know that you are dedicated to providing high-quality, organic food.
- 4. *Facilitate the purchase of organic food by customers*. Organic food should be simple to locate and buy for consumers.

Governments should set control over the application of fertilisers and pesticides in conventional agriculture. This can lessen the negative effects of conventional agriculture on the environment and increase farmers' interest in organic farming. And the awareness of organic food through public relations activities should be raised. By educating about the advantages of consuming organic food, people can be encouraged to by organic foods.

## Limitation of This Review Survey

Different techniques, such as surveys, interviews or focus groups, may have been used in the research studies included in the review. As a result, different approaches to data collecting and analysis may have been used. These methodological variations may affect the consistency and comparability of the results between research studies. This research has framed a conceptual model based on the factors scrutinised from the reviewed works of literatures; these factors have yet to be proven statistically only in the future extension of this research work.

# Conclusion

Consumer behaviour is a vital factor in the case of the organic food market. Organic food consumption was highly restricted to the metropolitan cities and their neighbouring regions only. Rural areas of India were quite still not properly aware of organic food products. Customers must be increasingly adamant in their requests for food goods to be easily accessible as they pass through various production processes from farm to plate. The emergence of COVID-19 is probably going to make people buy more organic goods. This is due to a rise in environmental consciousness brought on by the pandemic's success in reducing pollution. Purchasing organic food was mostly done to advance one's health. In order to create effective marketing strategies, respond to customer concerns and encourage informed decision-making, players in the organic food sector must have a thorough understanding of these viewpoints. It is necessary to conduct further studies to examine customer opinions in various cultural, demographic and socioeconomic circumstances. Additionally, it was found that psychological factors, including perception, attitude and buying intention, had a big impact on buyers' inclinations to buy organic food and health remnants inadequately documented in the studies of epidemiology.

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#### References

- Alam, S. S., Wang, C. K., Lin, C. Y., Masukujjaman, M., & Ho, Y. H. (2022). Consumers' buying intention towards healthy foods during the COVID-19 pandemic in an emerging economy. *Cogent Business & Management*, 9(1), 2135212.
- Askew, K. (2020, May 6). Organic food's coronavirus boost: 'Health crises have a longterm impact on consumer demand'. *Food Navigator*. https://www.foodnavigator.com/ Article/2020/05/06/Organic-food-gets-coronavirus-boost#
- Asseo, L., & Asseo, T. (2020, January 7). Organic tips for eating better in 2020. Organic Grower. https://organicgrower.info/news/organic-tips-for-eating-better-in-2020/
- Azzurra, A., Massimiliano, A., & Angela, M. (2019). Measuring sustainable food consumption: A case study on organic food. *Sustainable production and consumption*, 17, 95–107. https://doi.org/10.1016/j.spc.2018.09.007
- Batra, R. (2016). Consumer behaviour and purchase intension in Indian Organic Food Market, *Amity Business Review*, 17(2), 60–77.
- Benbrook, C., Kegley, S., & Baker, B. (2021). Organic farming lessens reliance on pesticides and promotes public health by lowering dietary risks. *Agronomy*, 11(7), 1266.
- Better Health Channel. (n.d.). *Pesticides and other chemicals in food*. https://www. betterhealth.vic.gov.au/health/healthyliving/food-pesticides-and-other-chemicals
- Brata, A. M., Chereji, A. I., Brata, V. D., Morna, A. A., Tirpe, O. P., Popa, A., Arion, F. H., Banszki, L. I., Chereji, I., Popa, D., & Muresan, I. C. (2022). Consumers' perception

towards organic products before and after the COVID-19 pandemic: A case study in Bihor County, Romania. *International Journal of Environmental Research and Public Health*, *19*(19), 12712.

- Bryła, P. (2016). Organic food consumption in Poland: Motives and barriers. Appetite, 105, 737–746. https://doi.org/10.1016/j.appet.2016.07.012
- Busch, G., Bayer, E., Iweala, S., Mehlhose, C., Risius, A., Rubach, C., Schütz, A., Ullmann, K., & Spiller, A. (2021). Einkaufs-und Ernährungsverhalten sowie Resilienz des Ernährungssystems aus Sicht der Bevölkerung: Eine Studie während der Corona-Pandemie im November 2020. Ergebnisse der dritten Befragungswelle. Diskussionsbeitrag.
- Cachero-Martínez, S. (2020). Consumer behaviour towards organic products: The moderating role of environmental concern. *Journal of Risk and Financial Management*, 13(12), 330.
- Chait, J. (2019, November 20). Why Consumers Should Buy Organic Food, the balance small business. *Liveabout dotcom*. https://www.liveabout.com/reasons-to-buy-organicfood-2538039
- Chandra, A., & Rosman, M. (2020, June 15). Indian organic foods market report [Report no. IN2020-0064]. Global Agricultural Information Network (GAIN). https://apps.fas. usda.gov/newgainapi/api/Report/DownloadReportByFileName=Indian%20 Organic%20Foods%20Market%20Report New%20Delhi India 06-08-2020
- Chaturvedi, A., Rashid Chand, M., & Rahman, M. (2021). Impact of the COVID-19 on consumer behaviour towards organic food in India. In P. K. Khosla, M. Mittal, D. Sharma, & L. M. Goyal (Eds.), *Predictive and preventive measures for COVID-19 pandemic* (pp. 127–148). Springer.
- Chokani, R. (2019, August 8). Organic food startups: Massive opportunity, but high costs remain a challenge. *The NEWS Minute*. https://www.thenewsminute.com/article/ organic-food-startups-massive-opportunity-high-costs-remain-challenge-106841
- Chokhani, R. (2021, April 29). Despite cost, Indian consumers now shifting to organic food. "Health Tips." *Outlook India*. https://www.outlookindia.com/website/story/ opinion-indian-consumer-not-shying-to-shell-extra-for-organic-food/381556
- Cirić, M., Ilić D. S., Ignjatijević S. D., & Brkanlić S. D. (2020). Consumer behaviour in online shopping organic food during the Covid-19 pandemic in Serbia. *Food and Feed Research*, 47(2), 149–158.
- Dangour, A. D., Lock, K., Hayter, A., Aikenhead, A., Allen, E., & Uauy, R. (2010). Nutrition-related health effects of organic foods: A systematic review. *The American Journal of Clinical Nutrition*, 92(1), 203–210.
- Desai, S. (2020, July 08). Organic food gets a Covid-19 boost. *The Times of India*. https:// timesofindia.indiatimes.com/life-style/health-fitness/diet/organic-food-gets-a-covid-19-boost/articleshow/76850772.cms#:~:text=As%20people%20are%20searching%20 for,per%20standards%20of%20organic%20farming
- Ditlevsen, K., Sandøe, P., & Lassen, J. (2019). Healthy food is nutritious, but organic food is healthy because it is pure: The negotiation of healthy food choices by Danish consumers of organic food. *Food Quality and Preference*, 71, 46–53. https://doi. org/10.1016/j.foodqual.2018.06.001
- Fatkullin, R., Naumenko, N., Popova, N., Ruskina, A., Kalinina, I., & Potoroko, I. (2021). Explaining consumer intentions for foods with antioxidant properties: Predictors of choice and purchase barriers. *International Journal of Food Science*, 2021, 9971425. https://doi.org/10.1155/2021/9971425
- Food and Agriculture Organization [FAO]. (2000, July 24–28). *Food safety and quality as affected by organic farming* [Conference session]. Twenty Second FAO Regional Conference for Europe, Porto, Portugal. https://www.fao.org/3/X4983e/X4983e.htm

- FAO. (2020). The state of food security and nutrition in the world 2020. https://www.fao. org/3/ca9692en/online/ca9692en.html#chapter-1\_1
- Goyal, S. (2020, May 21). Future shock: 25 health & wellness trends post COVID-19. *Economic Times–Brand Equity*. https://brandequity.economictimes.indiatimes.com/ news/marketing/future-shock-25-health-wellness-trends-post-covid-19/75859294
- Gundala, R. R., & Singh, A. (2021). What motivates consumers to buy organic foods? Results of an empirical study in the United States. *PLOS ONE*, 16(9), e0257288.
- Güney, O. I., & Sangün, L. (2021). How COVID-19 affects individuals' food consumption behaviour: A consumer survey on attitudes and habits in Turkey. *British Food Journal*. https://pesquisa.bvsalud.org/global-literature-on-novel-coronavirus-2019-ncov/ resource/pt/covidwho-1105077?lang=en
- Han, S., & Lee, Y. (2022). Analysis of the impacts of social class and lifestyle on consumption of organic foods in South Korea. *Heliyon*, 8(10), e10998.
- IBEF. (2020, December 3). Future of Indian food and beverage industry post-pandemic. https://www.ibef.org/blogs/future-of-indian-food-and-beverage-industry-postpandemic
- Iorver, T. R. (2020). Assessment of utilization of health information resources by diabetic patients in Benue state Nigeria. *Library Philosophy and Practice (e-journal)*. 4390. https://digitalcommons.unl.edu/libphilprac/4390
- Jajodia, S. J. (2019, August 19). India's organic food sector is out of its segregated niche. *The Sunday Guardian*. https://sundayguardianlive.com/lifestyle/indias-organic-foodsector-segregated-niche
- Jose, H., & Koshy, M. P. (2019). Factors affecting organic fruits and vegetables buying behaviour of consumes in Kerala [Doctoral dissertation]. Cochin University of Science and Technology.
- Kamboj, S., Matharu, M., & Gupta, M. (2023). Examining consumer purchase intention towards organic food: An empirical study. *Cleaner and Responsible Consumption*, 9, 100121. https://doi.org/10.1016/j.clrc.2023.100121
- Lang, M., & Rodrigues, A. C. (2022). A comparison of organic-certified versus noncertified natural foods: Perceptions and motives and their influence on purchase behaviours. *Appetite*, 168, 105698. https://doi.org/10.1016/j.appet.2021.105698
- Liu, C., & Zheng, Y. (2019). The predictors of consumer behaviour in relation to organic food in the context of food safety incidents: Advancing hyper attention theory within an stimulus-organism-response model. *Frontiers in Psychology*, 10, 2512. https://doi. org/10.3389%2Ffpsyg.2019.02512
- Lori, M., Symnaczik, S., Mäder, P., De Deyn, G., & Gattinger, A. (2017). Organic farming enhances soil microbial abundance and activity—A meta-analysis and metaregression. *PLOS ONE*, 12(7), e0180442.
- Malissiova, E., Tsokana, K., Soultani, G., Alexandraki, M., Katsioulis, A., & Manouras, A. (2022). Organic food: A study of consumer perception and preferences in Greece. *Applied Food Research*, 2(1), 100129.
- Mancombu, R. S. (2022, August 3). Organic food market size likely to top \$2.6 billion by 2026. *The Hindu Business Line*. https://www.thehindubusinessline.com/economy/agribusiness/organic-food-market-size-likely-to-top-26-billion-by-2026/article65720090. ece
- Mie, A., Andersen, H. R., Gunnarsson, S., Kahl, J., Kesse-Guyot, E., Rembiałkowska, E., Quaglio, G., & Grandjean, P. (2017). Human health implications of organic food and organic agriculture: A comprehensive review. *Environmental Health*, 16(1), 111.
- Mo, Z., Liu, M. T., & Liu, Y. (2018). Effects of functional green advertising on self and others. *Psychology & Marketing*, 35(5), 368–382.

- Moss, M. (2023, May 11). 75 years of WHO: The World Health Assembly considers what's next for the global health agency. *United Nations Foundation*. https://unfoundation. org/blog/post/75-years-of-who-the-world-health-assembly-considers-whats-next-forthe-global-health-agency/
- Murali, A. P., Trząskowska, M., & Trafialek, J. (2023). Microorganisms in organic food-issues to be addressed. *Microorganisms*, 11(6), 1557. https://doi.org/10.3390/ microorganisms11061557
- Organic Beef. The Cornucopia Institute. https://www.cornucopia.org/organic-beef/
- Padhee, A. K., & Kane-Potaka, J. (2020). COVID-19 calls for renewed focus on eating right and natural. *DownToEarth*. https://www.downtoearth.org.in/blog/food/covid-19calls-for-renewed-focus-on-eating-right-and-natural-71334
- Ravn Heerwagen, L., Mørch Andersen, L., Christensen, T., & Sandøe, P. (2014). Can increased organic consumption mitigate climate changes?. *British Food Journal*, 116(8), 1314–1329.
- Rock, B., Puhalenthi, K., Vishnupriya, S., Pavithra, R., Supriya, A., & Gayathri, K. (2017a). A study on awareness of organic food products in Trichy district. *International Journal* of Community Medicine and Public Health, 4, 4490.
- Rock, B., Suriyan, J., Vijay, B., Thalha, N., Elango, S., Rajajeyakumar, M. (2017b). Organic food and health: A systematic review. *Journal of Community Medicine & Health Education*, 7, 532. https://doi.org/10.4172/2161-0711.1000532
- Sastre, R. M., de Paula, I. C., & Echeveste, M. E. S. (2022). A systematic literature review on packaging sustainability: Contents, opportunities, and guidelines. *Sustainability*, 14(11), 6727.
- Singh, A. (2021, January 14). Organic food products' consumption is a growing trend in Rajasthan amid pandemic: Survey, *Timesnownews.com—Health*. https://www. timesnownews.com/health/article/organic-food-products-consumption-is-a-growingtrend-in-rajasthan-amid-pandemic-survey/707073
- Singh, A., & Verma, P. (2017). Factors influencing Indian consumers' actual buying behaviour towards organic food products. *Journal of Cleaner Production*, 167, 473–483. https://doi.org/10.1016/j.jclepro.2017.08.106
- The Cornucopia Institute. (n.d.). Organic beef. https://www.cornucopia.org/organic-beef/
- Thomas, C., Maître, I., Picouet, P. A., & Symoneaux, R. (2021). Organic consumers' perceptions of environmental impacts of food overlap only partially with those considered by life cycle assessment. *Journal of Cleaner Production*, 298, 126676. https://doi.org/10.1016/j.jclepro.2021.126676
- Verma, N. (2016, May). Consumption of organic food and consumers awareness [Conference session, pp. 689–694]. Proceedings of the 4th International Conference on Science, Technology and Management, India International Centre, New Delhi.
- Wiley, C. (2020, June 22). Effects of Covid-19 on natural products market. *Food Industry Executive*. https://foodindustryexecutive.com/2020/06/effects-of-covid-19-on-the-natural-products-market/
- Wojciechowska-Solis, J., & Barska, A. (2021). Exploring the preferences of consumers' organic products in aspects of sustainable consumption: The case of the Polish consumer. *Agriculture*, 11(2), 138.
- Wortmann, L., Enneking, U., & Daum, D. (2018). German consumers' attitude towards selenium-biofortified apples and acceptance of related nutrition and health claims. *Nutrients*, 10(2), 190.
- Wu, H. J., & Wu, E. (2012). The role of gut microbiota in immune homeostasis and autoimmunity. *Gut Microbes*, 3(1), 4–14.
- Zhong, Y., Wu, L., Chen, X., Huang, Z., & Hu, W. (2018). Effects of food-additiveinformation on consumers' willingness to accept food with additives. *International Journal of Environmental Research and Public Health*, 15(11), 2394.