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Organic food consumption and contextual factors: An attitude–behavior–context perspective

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Abstract

This study is grounded within the theoretical framework of attitude–behavior–context. The study examines how perceived health risk shapes both health and environmental attitudes, leading to organic food consumption. Further, we also assess the role of perceived effectiveness and green trust in moderating the proposed relationships. The data were collected from 461 consumers through Amazon Mechanical Turk platform. Our findings indicate that consumers' perception of health risk plays a significant role in developing positive environmental and health attitudes. Consequently, this leads consumers to adopt organic food. Further, this study confirms that there is an attitude–behavior gap, as both environmental and health attitudes seem to have a weak Cohen f^2 effect on organic food consumption. Though perceived effectiveness moderates the relationship of organic food consumption with perceived health risk and attitude, green trust does not bridge the attitude–behavior gap. This study may help organic food marketers, policy-makers, and retailers bridge the consumers' attitude–behavior gap.

KEYWORDS
COVID-19, environmental attitude, health attitude, organic food, perceived health risk

1 | INTRODUCTION

Since the onset of the COVID-19 pandemic, consumers' consumption habits have drastically changed to be more environmentally and health-friendly (Kursan Milaković, 2021; Nayal et al., 2021). This is evident from a Euromonitor (2021) report, which stated that global market value of organic food had increased by 13% in 2020 in comparison with 2019. Notably, organic food consumption in the Indian market was valued at about USD 1.36 billion in 2020, reflecting a stupendous growth of 26.5% from 2014 (Statista, 2021a). In fact, consumption of organic food has increased across the globe. More than 175 countries have been actively farming organic food (Willer et al., 2020). Of these, India stands at the ninth position in organic food production (Willer & Lernoud, 2019). However, despite such growth in production, the Indian market has been plagued with the issue of lower acceptance rate of organic food (Rana & Paul, 2020). For example, the per capita consumption of India is €0.1, which represents less than 1% of the world market share (Willer & Lernoud, 2018). Scholars in the past have both acknowledged and highlighted that the rise in demand for organic food on one hand and low consumption rates on the other hand have led them to focus on explaining consumers' decision-making and buying behavior (Mansoor & Paul, 2021; Sultan et al., 2021). As a result, this causes the attitude–behavior gap (Tandon et al., 2020a). Hence, it prompts for more research to understand the consumption patterns of organic foods, thereby identifying the underlying causes of the gap.

As a result, this study seeks to address the attitude–behavior gap. To understand how consumers make decisions about organic consumption, it is essential to identify the factors that drive those decisions. Hence, it would be valuable to study consumers' decision-making process in order to gain in-depth insights into economic and environmental sustainability, as well as bridging the attitude–behavior gap. Following an extensive review of extant literature on organic foods, this study focuses on consumer effectiveness, health-related

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risks, and attitudes. While perceived effectiveness has been used in previous studies to understand organic purchase behavior, perceived health risk and health attitude have largely been ignored. Although scholars such as Xie et al. (2020) and Liang and Lim (2021) have studied perceived health risks in the context of organic food, the role of perceived health risks in developing "health attitudes" has not been fully explored. In fact, according to our best knowledge, the concept of "health attitude" is yet to be investigated, especially under the ambit of consumers' interaction with organic food marketers and their promotional programs, which eventually goes on to influence consumers' decision-making process and consumption behavior.

In addition, as a result of COVID-19, consumers exhibited reluctance to consume unhealthy (inorganic) foods and preferred organic foods that are considered health-friendly (Kirmani et al., 2022). Importantly, perceptions of health risks influence consumer decision-making, motivating them to develop health attitudes. Furthermore, perceived effectiveness is a significant variable in the literature on organic purchase behavior, which helps consumers in decision-making process (Rafiq, Adil, & Sadiq, 2022) and reflects consumers' ability to solve their problem (Dhir, Talwar, et al., 2021). Hence, in the context of COVID-19, perceived health risks, health attitudes, and perceived effectiveness play an important role in understanding consumers' behavior toward organic food.

Specifically, we employ "perceived health risk, health attitude, environmental attitude, perceived effectiveness, and green trust" to investigate consumers' organic food consumption behavior during the COVID-19 pandemic. The underlying logical reason is that COVID-19 has had a significant impact on both psychological and contextual factors influencing consumption behavior (Laato et al., 2020; Mutum et al., 2021). With this backdrop, we propose the following research questions:

> **RQ1.** Does perceived health risk influence the environmental attitude, health attitude, and organic purchase behavior?

> **RQ2.** Does perceived effectiveness and green trust significantly bridge the attitude–behavior gap?

The theoretical underpinning of the attitude–behavior–context (ABC) framework (Guagnano et al., 1995) serves as the fulcrum to answer the above research questions. Notably, ABC framework is relevant to our context as it explains the inconsistent relationship between an individual's attitude and his behavior. As well, the ABC theory includes contextual factors, which are situation-specific factors that may explain why individuals' attitudes often do not translate into actions.

Our study makes significant contribution to organic food literature in two ways: (1) To the best of our knowledge, this is one of the leading studies that investigates the role of health attitude in explaining consumers' organic food purchase behavior. Prior scholars (Yadav, 2016; Yadav & Pathak, 2016) have examined only environmental attitudes toward organic food consumption decisions. Through health attitude, we seek to offer a new perspective on organic food consumption behavior. A notable aspect of the study is that it addresses the attitude–behavior gap by taking into account contextual factors—"perceived health risk," "green trust," and "perceived effectiveness." "Perceived health risk" is when consumers perceive uncertainty about their health under a given situation. Similarly, "perceived effectiveness" refers to how consumers perceive their performance in given circumstances. The degree to which consumers expect a positive relationship with eco-friendly brands may be defined as "green trust." Thus, this study offers valuable insights to organic food retailers, practitioners, academicians, and policymakers. Following the introduction section, the second section discusses the organic food market in India and the importance of the ABC theory. The research model and hypotheses are discussed in Section 3. In Sections 4 and 5, we explain the methodology followed by data analysis and its interpretation. Next section (Section 6) presents the findings and implications. The study concludes with limitations and potential future research directions in Section 7.

2 | THEORETICAL BACKGROUND

2.1 | India's organic food market

Marketers of organic foods have been facing a number of challenges in the form of concentrated demand from some specific regions (Testa et al., 2019). For instance, the contribution towards global retail sale of organic food of the United States along with other European nations in 2019 was about 42% and 28%, respectively. On the contrary, the consumption of organic food in developing nations (e.g., India) is quite low, as compared with its production capacity (i.e., over 80%) (Willer et al., 2020; Willer & Lernoud, 2019). According to Statista (2021b), India houses the largest number of organic food producers in the world. In 2018, Assocham and EY reported India's market value of organic food to be about USD 6 billion, expecting to cross USD 9 billion by 2025. India has been recognized as one of the largest organic food producers in the world. Its total export value for 2018–2019 was USD 757 million, a significant increase of 47% over the previous year (i.e., 2017–2018) (Sally, 2019). Furthermore, Yadav (2016), along with Sadiq et al. (2020), suggested that while the world does acknowledge India as among the leading organic food producers, yet its domestic sale is abysmally low. This effectively highlights that India's internal market in itself is still at its initial stage in terms of domestic consumption. The scenario is ironical given the fact that by and large, Indian consumers do tend to have high levels of environmental concern, as opposed to their counterparts from other developed nations, such as the United States (Paul et al., 2016). According to Basha and Lal (2019), metropolitan Indian consumers are more likely to buy organic foods since they have both access and availability. Moreover, previous scholars suggested that the demand for organic food may increase if marketers/producers have a better understanding of contextual factors and their role in consumers' adoption of the organic food (Basha & Lal, 2019) during COVID-19 pandemic.

2.2 | attitude–behavior–context theory

The attitude–behavior–context theory (ABC theory) was propounded by Guagnano et al. (1995). It posits that behavior is a function of both attitude and contextual factors. This theory states that, in case of "expensive or time-consuming products," such as organic food (Yadav, 2016), consumers' attitude does tend to have a weaker association with actual behavior (Ertz et al., 2016). According to Dhir, Sadiq, et al. (2021), attitude is unable to fully drive behavior. Contextual factors are therefore required to increase the predictability of the actual behavior. Scholars, such as Goh and Balaji (2016), along with Tandon et al. (2020a) suggested that consumers display a certain behavior to gain some benefits. Notably, such behavior can only be observed when consumers have a favorable attitude under the significant influence of contextual factors.

The ABC theory is the most appropriate for this study for the following reasons: (i) It is a well-established theory in consumer behavior literature. Particularly, it helps in understanding pro-environmental behavior (Ertz et al., 2016; Goh & Balaji, 2016). (ii) This theory helps researchers address the attitude–behavior gap, which is one of the prominent issues in pro-environmental behavior literature (Zhang et al., 2018). It is often observed that attitude does not fully translate into behavior, especially in the context of organic product purchase, as a result of which, there is an attitude–behavior gap (McNeill & Moore, 2015). Lastly, (iii) the theory sheds light on the significance of contextual factors, which are believed to be strong predictors of consumers' green decision-making process (Grimmer et al., 2016; Zhang et al., 2018). Recognizing the significance of contextual factors is imperative, as it increases the efficacy of an "attitude" in order to explain one's behavior (Belk, 1975). In case of pro-environmental behavior, Grimmer et al. (2016) concluded that purchasing situations (contextual factors) can influence consumers' actual purchases. In line with the above-mentioned discussion, this study employs perceived health risk, perceived effectiveness, and green trust as contextual factors in order to enhance the predictive capability of attitude to significantly determine organic consumption behavior. Notably, perceived health risk refers to perception of uncertainty related to the consumers' health under a given situation (Liang & Lim, 2021; Xie et al., 2020). Earlier studies suggested that consumers do tend to prefer organic products over conventional products, as organic food is free from chemicals, reducing thereby the health risk (Ditlevsen et al., 2019; Sadiq et al., 2020). Similarly, perceived effectiveness refers to consumers' perception of their efficacy in accomplishing a goal in a given situation (Dhir, Talwar, et al., 2021). Scholars such as Sharma and Jha (2017) and Taufique and Vaithianathan (2018) argued that perceived effectiveness does influence consumers' environmental belief (i.e., green trust) and their actual behavior. Green trust may be defined as the degree of consumer expectations to have a stable relationship with a particular eco-friendly brand (Dhir, Sadiq, et al., 2021). In other words, it is a contextual factor that plays a significant role in motivating consumers to adopt organic foods.

3 | HYPOTHESES AND RESEARCH MODEL DEVELOPMENT

3.1 | Perceived health risk, environmental attitude, health attitude, and organic food consumption

Perceived health risk is a function of consumers' perception of uncertainty about their health (Shin & Kang, 2020). As a result, consumers perceive negative health effects of purchasing a particular product, which drives their decision-making (Samper & Schwartz, 2013). Consumers, for example, used utmost precautions to avoid becoming infected during the ongoing COVID-19 pandemic. Consequently, consumers supported the concept of dealing with household waste (such as food waste) in an eco-friendly manner (Sadiq et al., 2020) and also opted for organic food to boost their immunity (Commodari & La Rosa, 2020). Herein, it may be noted that consumers tend to make purchase decisions more effectively when faced with perceived risks than perceived benefits (Liang & Lim, 2021). We therefore expect consumers to adopt an environmental attitude and consume organic food to minimize their perception of health risks.

Extant literature on perceived risk suggests that consumers' perception regarding the same, in terms of consuming any specific products, would effectively increase the likelihood of developing an attitude to avoid them (Kushwah et al., 2019; Tandon et al., 2020b). Therefore, this study infers from the given discussion that consumers' perception of health risk, especially because of COVID-19 would effectively motivate them to develop a pro-health attitude in order to remain safe and healthy. Thus, we propose:

H1a. Perceived health risk significantly increases organic food consumption.

H1b. Perceived health risk significantly influence environmental attitude.

H1c. Perceived health risk significantly influence health attitude.

3.2 | Environmental attitude and organic food consumption

The environmental attitude refers to the cognitive processes that decide whether a behavior is favorable or unfavorable (Paul et al., 2016). In fact, it is environmental attitude that drives consumers to buy eco-friendly goods, such as organic foods (Kautish et al., 2019; Rana & Paul, 2020; Yadav & Pathak, 2016). Extant literature on eco-friendly consumer behavior suggests that consumers who are high on environmental attitude are more likely to consume eco-friendly products (Cheung & To, 2019; Dhir, Sadiq et al., 2021). Thus, we consider consumers' environmental attitude as a strong determinant of organic food consumption (Yadav, 2016). Scholars such as Chekima et al., (2017) and Schäufele and Janssen (2021) have argued that consumers'

attitudes do not always translate into actual behavior, leading to an attitude–behavior gap. Thus, there seems to be some inconsistencies in the findings, which essentially led us to investigate the relationship between environmental attitude and organic food consumption. Given the fact that consumers' orientation to save the environment is high, we assume a positive association between environmental attitude and organic food consumption. As a result, we propose:

H2. Environmental attitude has a significant influence on organic food consumption.

3.3 | Health attitude and organic food consumption

Health attitude refers to as "the degree an individual feels capable of effectively influencing his or her personal health outcomes" (Lee & McCleary, 2013, p. 265). According to Dempsey et al. (2018), health attitude reflects consumers' beliefs about the outcomes (i.e., favorable or unfavorable) of a targeted behavior. In addition, existing literature indicates that consumer health attitude plays a significant role in motivating them to lead a healthy lifestyle (Blake et al., 2017; Chen, 2009). For instance, Chang (2017) noted that health attitude is strongly related to the consumers' consumption of healthy food, such as organic foods. Interestingly, some scholars (e.g., Harris et al., 2018; Prestwich et al., 2011) have noted that even with a "pro-health" attitude, consumers sometimes consume unhealthy food, thereby resulting in attitude–behavior gap.

Hence, this growing body of literature shows several inconsistencies in consumers' attitudes towards healthy living. For example, Torres-Ruiz et al. (2018) demonstrated that attitudes toward healthy food have a significant influence on healthy food consumption. In contrast, Asif et al. (2018) found that attitudes are weakly associated with healthy food consumption intentions. Due to these inconsistencies/mixed reporting in the literature, we decided to investigate the relationship between health attitude and organic food consumption. One of purposes of this research is to provide marketers and policymakers with in-depth insights.

Further, the study also considers a general notion that health attitude is positively correlated with healthy eating habits (Lee & McCleary, 2013), such as organic food consumption. We argue that consumers are motivated to consume healthy food (organic food) because of their strong attitude towards their health, especially in light of COVID-19. Hence, we hypothesize:

H3. Health attitude does have a significant influence on organic food consumption.

3.4 | Mediating role of environmental and health attitudes

Consumers' attitude is a key determinant of eco-friendly decisions (Taufique et al., 2017). This motivated us to understand its mechanisms within the ambit of eco-friendly decision-making process. Prior scholars such as Delistavrou et al. (2021), Dhir, Sadiq, et al. (2021), and Taufique et al., 2017 have examined how attitude mediates eco-friendly behavior, concluding that attitude often does not translate into eco-friendly purchases, creating an attitude–behavior gap. In light of this, Wiederhold and Martinez (2018) emphasized that this phenomenon certainly calls for further investigation. We replicate the attitude–behavior gap from two perspectives, namely, the health and environmental attitudes related to organic food consumption. We consider the mediating role of environmental and health attitudes between perceived health risk and organic food consumption. Notably, the proposed mediating associations are grounded in extant literature on eco-friendly behavior, including Chang (2017) studies. As a result of perceived risk, people tend to develop an attitude that avoid uncertainties about the consequences of a particular behavior, which ultimately leads to actual behavior, such as consuming organic food to avoid environmental or health degradation in an attempt to avoid the uncertainty. Accordingly, we argue that consumers did intend to increase their immunity by consuming organic foods with a positive attitude towards health and the environment due to the perceived risk they perceived due to COVID-19. Further, we propose:

H4a. Environmental attitude significantly mediates the association between perceived health risk and organic food consumption.

H4b. Health attitude significantly mediates the association between perceived health risk and organic food consumption.

3.5 | Moderating role of perceived effectiveness

Perceived effectiveness refers to as consumers' contextual perception of their efficacy to handle an issue (Becker, 2021). Perceived effectiveness has a significant influence on consumers' eco-friendly choice behavior (Taufique & Vaithianathan, 2018). For instance, consumers who believe that their contribution will help solve the problems at hand are more likely to act on those beliefs to assist with the solution (Yarimoglu & Binboga, 2019). Several studies (for instance, Coelho et al., 2017; Taufique & Vaithianathan, 2018) have examined consumers' eco-friendly behavior by considering perceived effectiveness as a predictor of attitude and behavior. On the other hand, Sharma and Jha (2017) and Higueras-Castillo et al. (2019) considered perceived effectiveness as a moderator between attitude and actual behavior. Sharma and Jha (2017) noted that consumer attitude towards eco-friendliness is translated into eco-friendly behavior at a faster rate when perceived effectiveness is high. As a result, we argue that consumers with high perceived effectiveness are likely to adopt organic food due to their attitude towards both the environment and health. Considering extant literature on perceived effectiveness, it is argued that consumers with high self-belief (i.e., strong perception)

are more likely to adopt organic food to avoid health risks. Hence, we propose:

> **H5a–c.** Perceived effectiveness significantly moderates the relationship of organic food consumption with perceived health risk, environmental attitude and health attitude, such that high perceived effectiveness increases the influence of perceived health risk, environmental attitude, and health attitude on organic food consumption.

3.6 | Moderating role of green trust

Green trust may be defined as the degree of consumers' expectations to have a stable relationship with a particular eco-friendly brand (Dhir, Sadiq, et al., 2021). Higueras-Castillo et al. (2019) posited that a stable relationship of a consumer with a brand per se depends upon the manufacturers' ability to fulfill the promise made in terms of product attributes. Notably, the trust factor is particularly important in nascent markets (such as India and Indonesia) where organic food cultivation and sales are not regulated. Also, consumers' lack of awareness of a green product affects their trust in it (Dhir, Sadiq, et al., 2021). Consequently, low awareness among consumers limits their ability to differentiate between organic and non-organic food (Tandon et al., 2020b), leading to skepticism towards them (Sadiq et al., 2021a). As a result, prior studies (Hwang, 2016; Siriattakul et al., 2019) have demonstrated that consumers are often skeptical about adopting organic foods. It is, therefore, trust that reduces consumers' skepticism and influences their attitudes and behaviors toward organic food (Tandon et al., 2020a). We thereby propose:

> **H6a–c.** Green trust significantly moderates the relationship of organic food consumption with perceived health risk, environmental attitude and health attitude, such that high green trust increases the influence of perceived health risk, environmental attitude, and health attitude on organic food consumption.

3.7 | Socio-demographic variables as control variables

Controlling the effect of undesirable/unwanted factors has been well-explained in literature of eco-friendly behavior. Previous studies have shown that socio-demographic variables, such as gender, age, and household income, have a significant effect on the purchase of eco-friendly products (Dhir, Sadiq, et al., 2021; Khare, 2015; Paul & Rana, 2012). For example, Nguyen et al. (2017) observed that men are less likely to consume eco-friendly products as opposed to their women counterparts. Similarly, age (i.e., young versus old consumers) significantly differs in preferring eco-friendly product. According to Wang et al. (2018), young consumers tend to be inclined more towards eco-friendly products, as opposed to those that are old. Further, consumers with a higher income are more likely to purchase eco-friendly products, such as organic foods (Hwang, 2016).

There are, however, numerous inconsistencies related to socio-demographic variables' influence on eco-friendly behavior in existing literature. For instance, scholars (Hwang & Chung, 2019; Khare, 2015; Sreen et al., 2018) have found that household income, age, and gender do not significantly impact consumers' purchasing behavior of eco-friendly products. Following Cheung and To (2019) and Sadiq et al., (2021b), we used age, gender, and household income as control variables in the current study. Hence, to test the aforementioned hypotheses, the study proposes a research model (Figure 1).

4 | METHODS

4.1 | Data collection

Before performing the final data collection, we developed an e-questionnaire with two sections, that is, A and B. Section A covered items related to the variables considered under the conceptual model. For instance, we adopted four-item scales to measure perceived health risk (Liang & Lim, 2021) and health attitude (Lee & McCleary, 2013). We also used a three-item scale to measure environmental attitude (Dhir, Sadiq, et al., 2021), along with a two-item scale each to measure perceived effectiveness (Dhir, Talwar, et al., 2021) and green trust (Dhir, Sadiq, et al., 2021). We followed a five-point Likert scale, where 1 and 5 were coded as *Strongly Disagree* and *Strongly Agree*, respectively. Lastly, we collected the organic food consumption on a 5-point scale (where 1 = *never* and 5 = *always*) (Nuttavuthisit & Thøgersen, 2017). Section B comprised questions that collected information related to the socio-demographic profile (age, gender, and household income) of the respondents.

The data were collected using Amazon Mechanical Turk (MTurk) platform using a single cross-sectional approach. In recent years, MTurk has gradually gained acceptance among social science researchers (e.g., Dogra & Adil, 2022; Rafiq, Adil, & Wu, 2022; Sadiq, Bharti, et al., 2021). Despite prior studies suggesting that data collected through the MTurk platform provide reliable information (Dogra et al., 2022; Rafiq, Adil, & Sadiq, 2022), other researchers have highlighted that sometimes MTurk data are not just unreliable but also of poor quality (Matherly, 2019; Sadiq et al., 2022). Therefore, to overcome the challenges of MTurk and ensure data quality, we employed two inclusion criteria—(i) the respondent must have an acceptance rate of at least 98%, and (ii) the respondent must have been in India during the COVID-19 pandemic. Additionally, we also asked respondents to answer a screening question—"did you consume organic food in the last 6 months?" Respondents who responded "YES" could only complete the survey. Following the suggestions of Sadiq et al. (2022) and Rafiq, Chishty, and Adil (2022), demographic inclusion criteria have been set for this study, namely, (i) respondents must be of Indian origin, and (ii) respondents must be at least 18 or

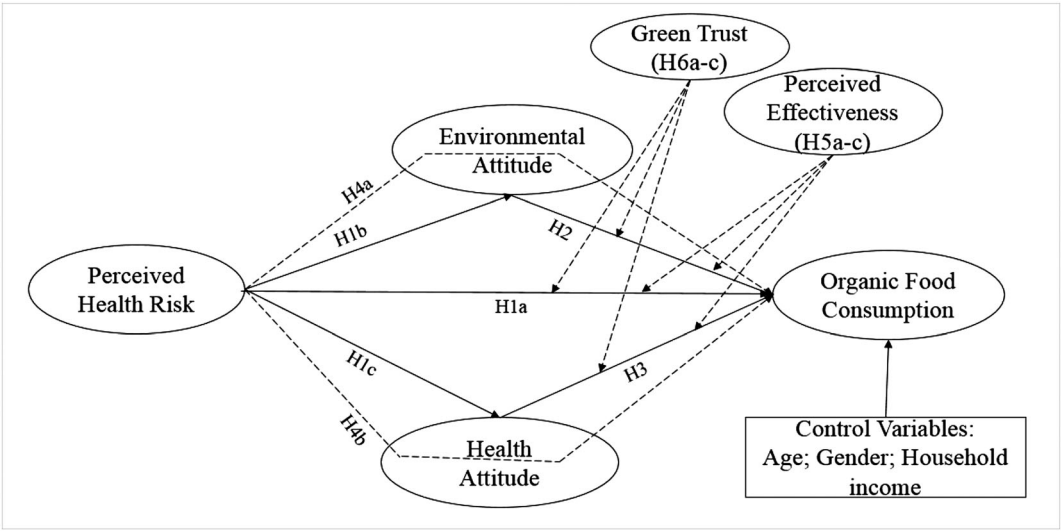


FIGURE 1 Research model

old, since green behavior terminologies are not easy to comprehend for young audiences (i.e., below 18 years).

Our focus on Indian consumers was specifically motivated by two factors: (a) Globally, India was the second most affected country by COVID-19 (Statista, 2021c). As a result, Indian consumers were perceived as having higher health risks (Nasir et al., 2021); (b) according to the Greendex report, Indian consumers are more environmentally conscious than their counterparts in developed nations like the United States (Paul et al., 2016).

We conducted the survey on September 9, 2021, with a target of 500 responses. Upon reaching that number, we terminated the survey within 48 h. Next, a frequency test was conducted to test for missing values, and the results indicate that 32 respondents gave incomplete responses, which were removed from the dataset. Thus, the final sample size was 461, of which 268 (58.1%) were men and 193 (41.9%) were women. A majority of the respondents were young, with 44.6% and 28.9% belonging to the 19–27 and 28–37 age groups, respectively. Last but not the least, most of the respondents came from families with a monthly income between INR 60,001 (808.41 USD) and 80,000 (1077.87 USD). Additionally, prior studies that examined Indian consumers' purchases and consumption of organic food had sample sizes ranging from 300 to 500 (see Kushwah et al., 2019; Sadiq et al., 2021a; Tandon et al., 2020a; Yadav, 2016), which offered a reliable and valid conclusion. Consequently, the sample size of 461 was deemed adequate to provide a reliable conclusion and an accurate picture of organic food consumers in India.

4.2 | Statistical analysis tools

This study has primarily been quantitative in nature; thus, we applied "covariance based structural equation modeling" (CB-SEM), using AMOS 23.0 software and Process Macro using IBM SPSS 26.0 to analyze the proposed hypotheses, following Dash and Paul (2021). Further, we performed a preliminary analysis of missing values, normal distribution and outliers, using a frequency test, Cook's distance, and normality (skewness and kurtosis) in IBM SPSS 26.0. Lastly, we tested the common method bias (CMB) to determine if the data were free of any bias.

5 | RESULTS

5.1 | Descriptive statistics and common method bias

First, a frequency test was conducted to test for missing values, and results indicate that 32 respondents gave incomplete responses. Next, we performed Cook's distance to verify that the dataset was free of outliers. According to Sadiq et al., (2021b), Cook's distance should be less than 1, if not, then the dataset contains an outlier. As a result, we found that the value for Cook's distance for seven responses were greater than 1, indicating them as outliers. Therefore, 39 responses were excluded from the data set due to incomplete responses and outliers. Further, we also tested the dataset for normal distribution through skewness and kurtosis. The result indicated that the values of skewness and kurtosis were between $+3$ and -3, which showed that the dataset has no normality issues (George & Mallery, 2021).

Next, we conducted the CMB test in three steps to avoid the CMB issue: *First*, we assured the respondents that their identity would be kept anonymous, and that there is no right or wrong answers. Further, we used reversed questions in the survey to evaluate respondents' alertness and seriousness. *Second*, we applied "Harman's single factor" test in SPSS 26.0 through "exploratory factor analysis" to test the CMB issue. As a result, 29.16% of variance explained was reported by a single factor which is less than the recommended value (i.e., 50%). *Third*, we also employed "the marker variable method." The results indicate that the regressed value in marker variable test is less

TABLE 1 Reliability and convergent validity

Variables	Item code	FL	AVE	CR	α
Perceived health risk	PHR1	0.797	0.66	0.88	0.83
	PHR2	0.86			
	PHR3	0.816			
	PHR4	0.768			
Environmental attitude	EA1	0.88	0.78	0.91	0.86
	EA2	0.887			
	EA3	0.877			
Health attitude	HA1	0.856	0.70	0.90	0.85
	HA2	0.826			
	HA3	0.841			
	HA4	0.814			
Organic food consumption	OFC1	0.751	0.55	0.83	0.75
	OFC2	0.754			
	OFC3	0.738			
	OFC5	0.728			

Abbreviations: AVE, average variance extracted; CR, composite reliability; FL, factor loadings; α, Cronbach's alpha.

TABLE 2 Discriminant validity

Variables	PHR	EA	HA	OFC
PHR	*0.81*			
EA	0.41	*0.88*		
HA	0.43	0.48	*0.83*	
OFC	0.27	0.26	0.33	*0.74*

Abbreviations: EA, environmental attitude; HA, health attitude; OFC, organic food consumption; PHR, perceived health risk.

TABLE 3 Hypotheses results

Hypothesis	Path	β	*P*	Supported?
H1a	PHR → OFC	0.177	<0.01	Yes
H1b	PHR → EA	0.532	<0.001	Yes
H1c	PHR → HA	0.537	<0.001	Yes
H2	EA → OFC	0.125	<0.05	Yes
H3	HA → OFC	0.387	<0.001	Yes

than the common latent factor technique, thus confirming that the dataset is free from CMB.

5.2 | Measurement model

While analyzing the proposed research model, one of the items (i.e., OFC4) reported a factor loading of 0.41, which was less than the recommended value of 0.50 and was therefore excluded from further analysis. Model indices indicate a good fit for the model (CMIN/DF = 2.07; CFI = 0.93; TLI = 0.94; RMSEA = 0.047). Further, using Cronbach's alpha (α) and composite reliability (CR), scales were tested for reliability. The results showed that Cronbach's alpha and composite reliability scores were above the cut-off point of 0.7, indicating high internal consistency among constructs (Hair et al., 2017). As a further measure of convergent validity, we calculated the average variance extracted (AVE), where the recommended value is 0.5 or above (see Table 1), thereby establishing the convergent validity. Lastly, all correlations between the constructs were smaller than the square root of AVE (see Table 2), leading to the establishment of discriminant validity (Fornell & Larcker, 1981).

5.3 | Hypotheses testing

After testing the reliability and validity of the scale, we tested the hypotheses. The structural model showed a good fit (CMIN/DF = 2.16; CFI = 0.91; TLI = 0.93; RMSEA = 0.052). According to the results, perceived health risk influences organic food consumption positively and significantly (H1a: $\beta = 0.177$; $P < 0.01$), environmental attitude (H1b: $\beta = 0.532$; $P < 0.001$), and health attitude (H1c: $\beta = 0.537$; $P < 0.001$). Therefore, hypotheses H1a, H1b, and H1c were supported. As shown in Table 3, organic food consumption is strongly influenced by environmental attitude (H2: $\beta = 0.125$; $P < 0.05$) and health attitude (H3: $\beta = 0.387$; $P < 0.001$), thus supporting H2 and H3. Based on the SEM analysis, perceived health risk explained 28.3% and 28.8% of environmental attitudes and health attitudes, respectively. It is noteworthy that the perceived health risk, environmental attitude, and health attitude explained 36.8% of variance in organic food consumption.

In addition, we followed Gaskin (2012) to calculate Cohen f^2 size effect between the variables. The Cohen f^2 scores for perceived health risk with environmental attitude, health attitude, and organic food consumption were $f^2 = 0.20$, $f^2 = 0.22$, and $f^2 = 0.07$, respectively. Next, we tested the relationship between organic food

TABLE 4 Mediation results

Path	Indirect effect	LLCI at 95%	ULCI at 95%	Direct effect	Type
PHR → EA → OFC	0.089	0.022	0.138	0.168	Partial mediation
PHR → HA → OFC	0.105	0.093	0.277	0.197	Partial mediation

TABLE 5 Moderation results

		β	T	P	LLCI	ULCI	Moderation?
Perceived effectiveness							
H5a	PHR → OFC	0.18	4.713	0.015	0.132	0.407	Yes
H5b	EA → OFC	0.02	0.649	0.541	−0.013	0.158	No
H5c	HA → OFC	0.24	6.952	0.002	0.220	0.531	Yes
Green trust							
H6a	PHR → OFC	0.08	1.624	0.105	−0.017	0.175	No
H6b	EA → OFC	0.03	0.771	0.441	−0.044	0.101	No
H6c	HA → OFC	0.06	1.194	0.374	−0.024	0.128	No

consumption and environmental attitude ($f^2 = 0.08$), and health attitude ($f^2 = 0.12$). Based on the f^2 values, the effect size of organic food consumption with environmental attitude, health attitude, and perceived health risk is weak (Cohen, 1992). Similarly, a medium effect size (between 0.15 and 0.35) was also found when perceived health risk was related to environmental attitude and health attitude.

5.4 | Mediation analysis

We used process macro of SPSS software to test the mediation effect of "health attitude" and "environmental attitude." The indirect effect of perceived health risk on organic food consumption via environmental attitude (H4a: $\beta = 0.089$; $P < 0.05$) was significant (see Table 4). Since perceived health risk influenced organic food consumption ($\beta = 0.168$; $P < 0.01$) positively and significantly, environmental attitude was found partially mediating. Further, the bootstrap analysis indicated that health attitude significantly moderated the relationship between perceived health risk and organic food consumption (H4b: $\beta = 0.105$; $P < 0.01$), thus resulting in partial mediation. Consequently, partial mediation is warranted as the direct effect of perceived health risk on organic food consumption was significant ($\beta = 0.197$; $P < 0.01$).

5.5 | Moderation analysis

To test the hypotheses concerning the moderating effect of perceived effectiveness and green trust, we used Model 1 of Process Macro in SPSS 26.0. The results in Table 5 reveal that perceived effectiveness has a moderating effect on the link between organic food consumption → perceived health risk and organic food consumption → health attitude (see Figures 2 and 3), supporting both H5a and H5c. In addition, perceived effectiveness did not moderate the relationship between environmental attitude and organic food consumption significantly, hence H5b is unsupported. Moreover, we investigated the role of green trust in moderating the relationships of organic food consumption with perceived health risk, environmental attitude, and health attitude. The results demonstrated that since green trust did not exert any significant moderating influence on the tested relationships, none of the hypotheses (H6a, H6b, or H6c) were supported.

6 | DISCUSSION

This research model is grounded in the ABC theory, which examines individuals' attitudes in the formation of actual behavior, but then considers contextual factors as they relate to bridging the attitude–behavior gap. A notable aspect of our study was that we examined five direct, two indirect, and six moderating relationships to examine consumers' organic food consumption behavior in the backdrop of COVID-19 pandemic.

We examined how perceived health risks contribute to the development of environmental and health attitudes, which in turn influence the consumption of organic foods. In the process, we extend support to H1a ($\beta = 0.177$; $P < 0.01$), which posits a significant and positive influence of perceived health risks on organic food consumption. It is interesting to note that this finding aligns with that of Liang and Lim (2021), who suggested that consumers who have health risks prefer organic foods. A possible explanation could be that consumers' perception of health risks effectively motivates them to avoid eating unhealthy foods such as fast foods and fertilizer-grown foods. For example, we noted that consumers were reluctant to consume inorganic (not healthy) food during the peak of the first and second waves of the COVID-19 pandemic, fearing that it might reduce their immunity levels and make them more susceptible to getting infected (Chou et al., 2020). Therefore, it could be affirmed that consumers who

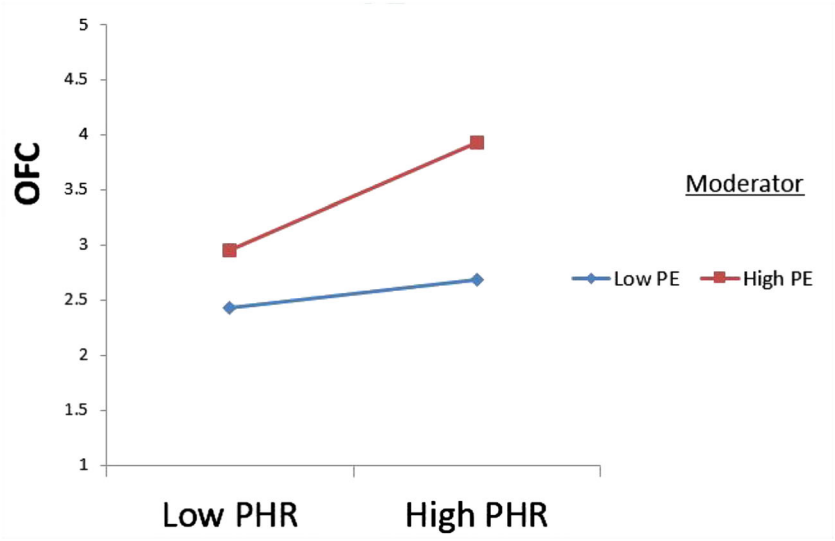


FIGURE 2 Moderating effect of perceived effectiveness (PE) on the relationship between perceived health risk (PHR) and organic food consumption (OFC)

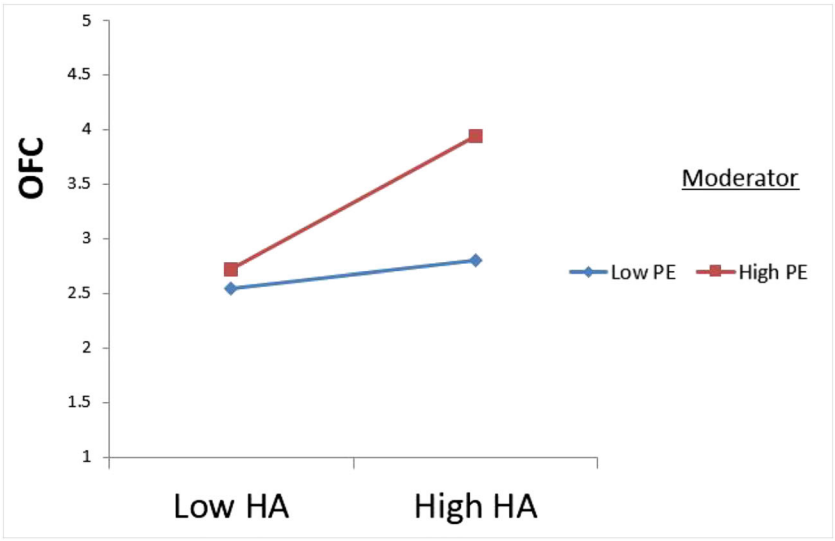


FIGURE 3 Moderating effect of perceived effectiveness (PE) on the relationship between health attitude (HA) and organic food consumption (OFC)

perceive health risks consume organic food in order to reduce the possibility of being infected. The hypotheses (H1b and H1c) discuss the development of environmental and health attitudes. The result indicates that H1b ($\beta = 0.532$; $P < 0.001$) is supported. According to the hypothesis, perceived health risk positively and significantly influences environmental attitude. This is possibly one of the first studies of its kind investigating the role of perceived health risk in developing environmental attitudes. Thus, this limits the study to comparisons with existing literature. The possible explanation for the H1b finding may be that consumers who perceive health risks tend to reduce food waste and consume products that are environmentally friendly. For example, Peluso et al. (2021) argue that consumers have become more informed and sustainable in their response to COVID-19. Additionally, consumers demand clean air as it lowers their chances of getting infected Wu et al. (2020).

Our results also support H1c ($\beta = 0.537$; $P < 0.001$), which held that perceived health risk is positively and significantly correlated with health attitude. It is interesting that these results concur with those of Palau-Saumell et al. (2021), who argue that consumers with fear of COVID-19 become more likely to eat healthy foods. There is evidence that consumers with perceived health risk do tend to have a positive attitude toward health (Febian et al., 2021).

It should be noted that attitude is considered as one of the stable antecedents of organic food consumption (Yadav, 2016). To confirm this, we investigated the role of environmental attitude (H2) and health attitude (H3) in driving consumers' organic food consumption. This study found support for H2 ($\beta = 0.125$; $P < 0.05$), which held that environmental attitude has a significant and positive influence on organic food consumption. The results of this study are consistent with those of Chekima et al. (2017), Sadiq et al. (2020), and Tandon et al. (2020a), where the authors argued that environmentally conscious consumers are more likely to take actions that reduce the negative impact on the environment; for example, organic food consumption. Further, H3 ($\beta = 0.387$; $P = 0.001$) demonstrated that health attitude positively influences consumers' organic food consumption. This result concurs with the observations of Asif et al.

(2018) and Yadav (2016), which showed that consumers with a high concern for health (Chekima et al., 2017) tend to consume organic food. Additionally, we also confirmed the existence of attitude–behavior gap, as the findings of both H2 and H3 reflect a weak Cohen's effect between attitude (environmental: Cohen $f^2 = 0.08$ and health: Cohen $f^2 = 0.12$) and organic food consumption. As a result, consumers' attitudes toward health and the environment partly influence their actual behavior, that is, consumption of organic food.

Further, we tested H4a and H4b to determine whether environment and health attitudes affect perceived health risk and organic food consumption, where both the hypotheses were partially supported. In other words, even after taking environmental and health attitudes into account as mediators between perceived health risk and organic food consumption, the direct relationship remains significant. Furthermore, the positive and significant influence of perceived health risk and organic food consumption can also be explained by environmental and health attitudes. The findings are quite expected following COVID-19, in which consumers were extremely concerned with boosting their immunity, leading to wider acceptance and consumption of organic foods (Asif et al., 2018; Sadiq et al., 2021a).

We also examined the moderating role of perceived effectiveness and green trust in bridging the attitude–behavior gap in organic food marketing literature. In this study, we tested H5a–c (perceived effectiveness) and H6a–c (green trust) on the links organic food consumption → perceived health risk, organic food consumption → environmental attitude, and organic food consumption → health attitude. Our findings extend support to both the hypotheses, that is, H5a and H5c. Notably, our study is possibly among the first to examine the moderating effect of perceived effectiveness on the links organic food consumption → perceived health risk and organic food consumption → health attitude. The Chou et al. (2020) and Liang and Lim (2021) studies might be of relevance herein as they showed that consumers with perceived health risk do not consume harmful food products such as inorganic food. As a result, consumers' self-efficacy may actually assist them in avoiding such products, and instead consume organic foods in order to remain healthy. Similarly, according to H5c, consumers who have a positive attitude towards health and high perceived effectiveness of their actions are more likely to consume organic foods. This implies that consumers who consume organic foods believe that they are solving a problem in hand, like health degradation. Furthermore, H5b did not support the finding that perceived effectiveness moderates the association between environmental attitude and organic food consumption. Given this, the finding contradicts with those of Sharma and Jha (2017). One of the possible justifications for H5b could be that there may be a sense among consumers that their individual efforts to consume organic foods are not enough to mitigate the environmental harm done on a larger scale.

Furthermore, we find that "green trust" did not significantly moderate relationships of organic food consumption with perceived health risks (H6a), environmental attitudes (H6b), or health attitudes (H6c). There could be several reasons for such results, including unethical practices and misleading marketing claims employed by organic food marketers (Nguyen, Yang, Nguyen, Johnson, & Cao, 2019). In fact, these findings indicate that the COVID-19 situation has made consumers extra vigilant about what is being offered by the marketers and what they purchase. Today, consumers tend to be skeptical of organic food because of the growing number of green-washed products flooding the marketplace. They are also skeptical about whether organic food can actually be beneficial to their health. The lack of consumers' trust towards organic food results in an attitude–behavior gap. Due to the surprising nature of these findings, proper justifications must be provided. It would be prudent to test these relationships on a diversified sample and in a variety of contexts before drawing any logical conclusions.

6.1 | Theoretical implications

The study offers some important theoretical implications that contribute to the existing literature in organic food marketing. First, to the best of our knowledge, this is the first study that investigates the role of health attitude in understanding organic food consumption. Researchers have previously examined the impact of environmental attitude on consumers' organic food consumption decisions (for example, Chekima et al., 2019; Kusumaningsih et al., 2019); however, the present research adds a new angle to the study by explaining consumers' organic food consumption behavior through health attitude. The finding indicates that in contrast to environmental attitude, health attitude has a greater impact on organic food consumption. Hence, the study provides a significant insight for researchers and academicians that consumers are increasingly placing a high priority on their health in light of the COVID-19 crisis (Smith et al., 2021). Second, prior research models in organic food marketing literature have mostly focused on understanding consumers' purchase intentions (e.g., Asif et al., 2018; Tandon et al., 2020b; Yadav, 2016), resulting in a gap between intention and behavior. Consequently, previous studies were limited in their generalizability because they focused on consumers' purchase intentions (Sharma et al., 2022). As a result, we extended the existing literature by measuring the "actual consumption behavior." Thus, it would be possible to gain a deeper understanding of how organic food is consumed by consumers. Further, this study is one of the first to investigate the influence of perceived health risk in organic food marketing. This study explores both the direct and indirect impact of perceived health risks on organic food consumption. In spite of previous researchers acknowledging that perceived health risk plays an important role in crises such as the COVID-19 pandemic (Commodari & La Rosa, 2020; Shin & Kang, 2020), organic food marketing literature has not examined indirect relationships between perceived health risk and organic food consumption through environmental and health attitudes. Also, it is important to identify mediating (indirect) effects, because they provide a theoretical context for why the independent variables influence the dependent variables (Adil, 2021).

Third, this study offers a macro view of organic food consumption behavior among different consumer segments. Prior studies have

largely focused on a single consumer segment (Sadiq et al., 2020; Yadav, 2016); on the other hand, this study differentiates consumers based on their perceived effectiveness (high versus low) and green trust (high versus low). Hence, by addressing the attitude–behavior gap (Tandon et al., 2020a), this study contributes significantly to the organic food literature.

6.2 | Managerial implications

This study provides three significant managerial implications. First, the findings reveal that consumer perceptions of health risk lead them to adopt a positive environmental and health attitude. This in turn encourages them to consume organic food. These findings reflect the existence of an attitude–behavior gap that can be reduced by devising tailor-made promotional strategies focusing on consumers' health benefits after consuming organic foods. This will stimulate consumers' perception of health risks, which will ultimately motivate them to purchase organic food to avoid becoming infected with COVID-19. Second, this study differentiates consumers based on their perceived effectiveness (high versus low) related to organic food consumption. According to the study, perceived health risk and health attitude were more influential when consumers perceived effectiveness was high. In other words, these findings reveal consumers' self-belief that eating organic would mitigate the harm done to their health and thereby reduce their health risks. In addition, retailers and policymakers should draft marketing strategies and promotional messages highlighting the importance of everyone's action in improving consumer health. As an example, marketers could show consumers that organic foods are "nutritious, safer, and healthier" than non-organic foods, thus significantly boosting their immunity.

Third, the study found that green trust failed to significantly moderate the relationship of organic food consumption with perceived health risk, environmental attitude, and health attitude. The findings associated with green trust indicate that consumers do tend to have high skepticism towards organic food because of marketers' and retailers' green-washing act. Therefore, marketers and retailers are encouraged to improve the image of their products or brands. In this endeavor, they might adopt a "customer-centric" approach in their promotional strategies by offering transparency in the cultivation process and supply chain. Further, marketers and retailers are suggested to provide more reliable information on the "eco-label." By doing so, consumers might be more likely to trust organic food, thereby reducing skepticism, which leads to the bridging attitude–behavior gap.

6.3 | Limitations and future research opportunities

Like other empirical studies, this study also suffers from some limitations. *First*, the study's scope is limited to India, which in turn, does have a unique consumption culture that differs significantly from other nations such as the United States, the United Kingdom, Australia, China, Vietnam, and Indonesia. As a result, the findings may not be applicable to developed, and possibly even some developing nations. Future researchers are urged to replicate this study in other cultural settings in order to confirm the robustness of the proposed research model. *Second*, data were collected using single cross-sectional approach. Since consumers tend to change their behavior over time, the findings associated with the attitude–behavior gap may not be generalizable. Future researchers are suggested to use a longitudinal research technique to capture and explain the changes in consumers' attitude and/or behavior during a certain period. Additionally, a causal research design could also be adopted to better understand the discrepancies between attitude and pro-environmental behavior (Govind et al., 2019).

Lastly, this study adopted a nonprobability-based sampling method, so the data are likely to be biased by researchers' selection. Future researchers would need to select a probability-based sampling method in order to rule out this possibility. Additionally, future researchers could also use additional contextual factors, such as "institutional factors, socio-economic characteristics, and communication strategies," which may further enhance the understanding of consumers' attitude and actual behavior in the context of organic food marketing.

7 | CONCLUSION

This study examined the relationship of perceived health risk with attitudes (environmental and health) and organic food consumption to understand consumers' eco-friendly behavior, especially during the ongoing COVID-19 crisis. We also studied the moderating role of perceived effectiveness and green trust in bridging the attitude–behavior gap. It is one of the first studies to examine perceived effectiveness, health attitude, and perceived health risk in organic food marketing literature. We propose a research model based on the attitude–behavior–context theory. The results support all the direct hypotheses. For instance, consumers' perception of health risk plays a significant role in developing favorable environmental and health attitudes towards organic foods. Despite COVID-19, consumers' environmental and health attitudes partially translate into organic food consumption, resulting in attitude–behavior gaps. In addition, perceived effectiveness as a moderator significantly bridges the health attitude–behavior gap. Furthermore, these findings have some insightful implications for organic food retailers, marketers, academicians, and policymakers.

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