



Facilitators and inhibitors of organic food buying behavior

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ABSTRACT

Consumption patterns across the globe indicate consumers' rising interest in purchasing organic food due to increasing personal-health consciousness. However, research on organic food shows a low translation of this interest into stated preferences for purchasing organic food. Limited academic research has explored this puzzling buying behavior of consumers, particularly in developed economies such as Japan. Our study addresses this gap by examining the factors that facilitate or inhibit Japanese consumers' buying behavior toward organic food. We use the Stimulus-Organism-Response framework, Innovation Resistance Theory, and Dual-Factor Theory to examine these factors by analyzing data collected from 928 consumers. We propose that health consciousness is a stimulus that has a positive impact on facilitators (natural content, nutritional content, and ecological welfare) as well as inhibitors (usage, risk, and value barriers). We further argue that stated buying behavior is the outcome of both facilitators and inhibitors. The findings confirm that health consciousness is positively associated with all facilitators and inhibitors. The analysis also reveals that all three facilitators and two inhibitors (value and risk barriers) are associated with stated buying behavior. Furthermore, buying involvement (BI) positively moderates the associations between stated buying behavior and nutritional content (facilitator) as well as risk barrier (inhibitor). Gender moderates the association of all facilitators and risk barrier with stated buying behavior.

1. Introduction

With global retail sales of organic food reaching 97 billion Euros in 2018 (Willer et al., 2020), consumers' interest in organic food has become evident (Molinillo et al., 2020). Scholars have attributed this growing interest in organic food to multiple reasons, the foremost of which is the adverse effect of chemically grown food on the environment and on consumers' personal as well as familial health (Kushwah, Dhir, Sagar, et al., 2019; Shin & Mattila, 2019; Tandon et al., 2020a, 2020b). According to conventional consumer beliefs, organic food is more environmentally friendly (Teng & Lu, 2016), naturally purer, and, therefore, healthier (Ditlevsen et al., 2019) than food grown with traditional, chemical means. Multiple studies have indicated that health consciousness (HC) is associated with consumers' positive attitude to

(Nguyen et al., 2019), willingness to pay for (Konuk, 2018), and purchase frequency of organic food (Anisimova et al., 2019; Molinillo et al., 2020). However, extant research indicates that the strength of the effect that HC exerts on consumers is inconsistent. For example, whereas Yadav and Pathak (2016) determined HC to be a strong predictor of intent to purchase organic food, other scholars have found the association to be comparatively weaker (e.g., Nguyen et al., 2019; Singh & Verma, 2017). Such inconsistencies have attracted scholarly attention, resulting in more research being directed at organic food consumption behavior.

Meanwhile, the last decade has witnessed a global impetus for regulating organic agriculture, with 68 countries having fully implemented, 17 being in the process of implementing, and 18 drafting the appropriate regulations (Molinillo et al., 2020; Willer et al., 2020).

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Japan is a country that has fully implemented organic agriculture regulations and has a budding market for organic food that had been valued at 597.4 million USD in 2017 (Statista Research Department, 2019). Japan has exhibited a growing focus on sustainable food production, which reduces consumers' perceived harmful effects of chemical, synthetic, or genetic manipulation (Graham, 2019). Despite such an emphasis, the growth of Japan's domestic organic market has followed a slow trajectory (Willer et al., 2020), indicating the need to understand the reasons for such slow growth. Furthermore, low purchase and adoption rates have been a consistent challenge for the organic food market, despite consumers' rising HC and positive attitude (Sultan et al., 2020). This discrepancy between consumers' positive attitude and purchase behavior has been demonstrated by prior research across multiple countries (Joshi & Rahman, 2015; Lee et al., 2019; Shamsi et al., 2020), and there is a need to focus on investigating the reasons for the existence of this discrepancy (Anisimova et al., 2019).

Scholars have indicated several factors that contribute to the evident discrepancy between attitude, intention, and stated and actual buying of organic products, such as consumers' price sensitivity, trust, availability of products, social norms, and consumers' compliance, among others (Chekima et al., 2019). Furthermore, prior research on organic food has suggested that consumers may face several barriers that inhibit their buying involvement (BI; Kushwah, Dhir, & Sagar, 2019b). However, prior literature indicates a limited understanding of how these barriers are processed by a health-conscious consumer who is motivated to buy organic products due to multiple reasons such as naturalness (Kareklas et al., 2014) and contribution to ecological welfare (Azzurra et al., 2019).

We aim to consider this discrepancy in the Japanese context by proposing a novel approach that examines the dual influence of factors that may encourage and inhibit behavior and decision-making processes of Japanese consumers. We argue that a complete understanding of consumers' disposition is possible by considering the net outcome of the factors that increase the adoption behavior (facilitators) and the factors that impede the said behavior (inhibitors). We propose that these facilitators and inhibitors are the outcomes of motivators that initially attract consumers toward organic food.

We use the Stimulus-Organism-Response (SOR) framework (Jacoby, 2002), Innovation Resistance Theory (IRT; Kaur et al., 2020; Talwar et al., 2020a, 2020b), and Dual-Factor Theory (DFT; Herzberg et al., 1996) to theoretically ground our propositions. SOR enables us to hypothesize facilitators and inhibitors as organisms (O) that are influenced by a stimulus (S), specifically HC and, in turn, influence the response (R), specifically stated buying behavior (SBB). Furthermore, we draw upon the organic food literature to identify three facilitators representing the organism: ecological welfare (EW), nutritional content (NTC), and natural content (NC). Similarly, we draw upon IRT to identify three inhibitors representing the organism: value barrier (VB), usage barrier (UB), and risk barrier (RB). IRT is a key theory that discusses the sources of consumer resistance to adoption and is, therefore, a suitable basis for identifying the inhibitors of SBB. Finally, DFT provides the basis for including both facilitators as well as inhibitors as the antecedents of SBB. Additionally, we examine BI and gender as potential moderators for the proposed associations while controlling for the socio-demographic variables of age, household, and personal income.

The hypothesized framework was tested with data collected from 928 adult Japanese consumers (both high- and low-frequency buyers of organic food, i.e., with varying levels of BI) aged between 30 and 65. The findings confirmed HC's association as a stimulus with both the facilitators and the inhibitors of organic food purchase behavior. All three facilitators (EW, NTC, NC) were also found to be statistically significant, suggesting SBB to be driven by consumers' concerns for EW, nutrition, and the naturalness of food. By comparison, only two inhibitors, the value and risk barriers, were found to significantly influence SBB. Additionally, gender exerted a negative moderating influence on facilitators and had a positive impact on one of the inhibitors, namely, usage

barrier and SBB.

The novelty of our study comes from its four key contributions: First, the study contributes to the literature on organic food consumption behavior by combining three key theories, namely SOR, IRT, and DFT, thereby offering a novel perspective for the examination of consumer behavior in terms of organic food items. While SOR has been utilized in prior organic food research (Anisimova et al., 2019; Konuk, 2019; Lee et al., 2019), scholars have called for exploring additional constructs that could add to current knowledge on organic food-related consumer behavior (Konuk, 2019), such as environmental factors (Hempel & Hamm, 2016). Furthermore, IRT has been scarcely used for studying organic food consumption (Kushwah, Dhir, & Sagar, 2019b; Kushwah, Dhir, Sagar, et al., 2019) and, to the best of our knowledge, DFT has not been previously used in the context of organic food research. The simultaneous use of these three theories is unprecedented and constitutes a key contribution of this study. We argue that this theoretical approach can lead to the development of nuanced insights into organic food consumption and can significantly add to the existing knowledge.

Second, the study expands the current geographic scope of research in context of organic food by examining the behavior of Japanese consumers, who have several unique characteristics, such as economic prosperity, eclecticism, collectivism, image consciousness, and substantial aversion to risk (Synodinos, 2001). However, Japanese consumers have received limited scholarly attention in the past. Furthermore, the literature indicates that Japanese consumers may be very conscious of food safety risks and have previously demonstrated resistance to genetically-modified-organism (GMO) food products (Reiher & Yamaguchi, 2017). It is interesting to note that, despite such food-related consciousness and an evident shift to sustainable lifestyles as a measure of maintaining environmental and consumption sustainability (Graham, 2019; Reiher & Yamaguchi, 2017), Japan is still exhibiting low adoption of organic food (Graham, 2019; Willer et al., 2020). This study contributes to advance existing knowledge by providing insights into the potential barriers to organic food adoption. Third, our study attempts to better elucidate the decision-making behind organic food purchases by delineating the dual and concurrent influences of the facilitating and inhibiting factors.

2. Theoretical underpinnings

The present study uses the conceptual framework discussed earlier that is based on a combination of DFT, IRT, and SOR. While the research model is based on the SOR paradigm, its components include DFT and IRT.

2.1. Dual Factor Theory (DFT)

DFT (Herzberg et al., 1996) explains the concurrent influence of dual factors, namely facilitators and inhibitors, on consumers' adoption process (Rey-Moreno & Medina-Molina, 2020). DFT suggests that consumers faced with adopting a new behavior, or changing an existing one, may be swayed by two sets of influences. These influences consist of facilitators, which may promote the adoption of behavior, and inhibitors, which may prompt consumers to resist it (Rey-Moreno & Medina-Molina, 2020). Although in prior research this theory is mainly employed in the context of technology use (Rey-Moreno & Medina-Molina, 2020), in our study we extend its applicability to understanding organic food purchase decisions.

2.2. Innovation Resistance Theory (IRT)

IRT is a popular theory that hypothesizes various barriers that represent consumer resistance (Kaur et al., 2020; Talwar et al., 2020a, 2020b). The theory proposes two broad classes of barriers, namely functional (to do with changes in consumption patterns) and psychological (attributed to conflicts between consumers' beliefs and specific

products; Kushwah, Dhir, Sagar, et al., 2019). There are three functional barriers—usage, risk, and value—and two psychological barriers—namely, image and tradition. We used this theory to identify the inhibitors that may cause consumers to resist buying organic food and examined the influence of functional barriers as they relate to definitive factors that can impede consumers' buying processes for organic food (Kushwah, Dhir, & Sagar, 2019b; Kushwah, Dhir, Sagar, et al., 2019). Psychological barriers have not been included in the hypothesized framework because the simultaneity of consumers' concerns for preserving bio-diverse ecology and sustaining personal health as well as their belief that these concerns can be addressed by consuming organic food has been thoroughly discussed in existing literature (e.g., Birch, Memery, & De Silva Kanakaratne, 2018; Shamsi et al., 2020; Van Doorn & Verhoef, 2015).

We chose IRT based on the fact that although there has been increasing acceptance of the benefits of organic food in general (Rizzo et al., 2020), some consumers still remain skeptical of its proclaimed benefits (Kushwah, Dhir, Sagar, et al., 2019). This skepticism may be attributed to the multitude of issues faced by consumers that inhibit the buying process. Prior research indicates that premium prices (the value barrier) of organic food are a significant barrier that may reduce consumers' perceived value derived from consumption of organic food (Kushwah, Dhir, Sagar, et al., 2019). Similarly, consumers may lack trust (the risk barrier) in the authenticity of available organic food products and perceive a significant risk in purchase and use of such products (Nuttavuthisit & Thøgersen, 2017). Finally, another major barrier perceived by consumers pertains to the lack of convenience and difficulty in finding organic food or information related to it (Smith & Paladino, 2010). This use-related barrier may be further compounded by the limited in-store availability of organic food (Pham et al., 2019). Thus, our study has presented the usage, risk, and value barriers as the three factors that inhibit the purchase of organic food.

2.3. The Stimulus-Organism-Response (SOR) framework

The SOR framework is a neo-behavioristic approach for understanding the process through which individuals decide to enact positive (approach) or negative (avoidance) behavior in response to a specific stimulus (Jacoby, 2002). The SOR framework explains individuals' behavioral responses (R) by considering the influences of environmental stimuli (S) on their internal states (O), leading to the activation of cognitive or affective processes. These processes culminate in the development of attitudes and inclinations and information-seeking and decision-making outcomes. The value of the SOR paradigm rests in its holistic consideration of the emotional, cognitive, and affective processes that an individual undergoes while considering the adoption of a particular behavior. The SOR framework has been used by researchers to explain the differences in decision-making processes in various milieus, including tourism (Kim, Lee, & Jung, 2020) and in-service encounters (Gupta et al., 2019).

Scholars have also used the SOR framework to explain consumers' reasoning processes for buying organic food (Konuk, 2019; Lee & Yun, 2015; Rödiger & Hamm, 2015). Prior studies have investigated the associations between multiple antecedents, or stimuli, and consequent consumer responses toward organic food. Some studies have also analyzed the effect of consumers' personal factors and evaluation of attributes of purchased products that may be considered as internal processes (for organism) for consumption of organic food. For instance, Konuk (2019) employed the SOR framework to study the influence of factors (S), such as food quality, perceived value, and fair pricing, on consumer satisfaction (O) and, consequently, consumers' intentions (revisit and word of mouth) as responses (R) in relation to restaurants serving organic food. Other studies used SOR paradigm to study the roles of other factors, such as prices (Rödiger & Hamm, 2015) and communication clarity (Anisimova et al., 2019), along with trust-related factors (Lee et al., 2019) concerning the purchase of organic food.

2.3.1. Extending the SOR paradigm to the present study

Our study uses SOR to explicate the influence of consumers' HC (S) (Gould, 1988), on stated organic food buying behavior (R) (Singh & Verma, 2017). We consider HC to be a stimulus because prior research indicates that individuals have become increasingly concerned about personal and familial health due to the rising number of food-related scandals and incidents (Kareklas et al., 2014). Scholars argue that health-conscious individuals may be driven to purchase organic food as these products are produced without artificial or synthetic additions (Eisinger-Watzl et al., 2015; Pham et al., 2019). Such a tendency would be stronger for individuals who prefer organic food due to issues related to the adverse impact of modern agricultural practices on the environment (Hansen, Sørensen, & Eriksen, 2018). Thus, we argue that HC may be induced by concerns related to an individual's external environment and acts as a stimulus for organic food purchases.

Regarding the organismic state (O) of individual consumers, we posit a duality of factors that concurrently influence consumers, as suggested by DFT. Consequently, we consider two dimensions of an individual's organismic state. The first dimension pertains to the facilitators. We identify three different factors that act as facilitators of organic food buying behavior, namely EW (Lee & Yun, 2015), NC, and NTC of organic food (Molinillo et al., 2020; Schrank & Running, 2018). These factors are considered as organismic states rather than stimuli because prior studies have pointed out their influence as motivational factors for organic food purchase. For instance, prior studies suggest that consumers' perception of naturalness or natural content can motivate them to use organic food (Sobhanifard, 2018). Similarly, NTC is one of the main sources of functional value derived from organic food consumption (Escobar-López et al., 2017; Kushwah, Dhir, Sagar, et al., 2019). We also argue that these facilitators' influence is contingent on the degree of personal importance attributed by consumers to these factors.

The second dimension pertains to the inhibitors of organic food purchases. As argued in the preceding discussion on IRT, we utilized the following three barriers as inhibitors—the usage, risk, and value barriers (i.e. UB, RB and VB). Our choice of barriers is in line with prior studies. For instance, Kushwah et al. (2019) argued that the barriers associated with value, usage, and especially risks of consuming organic food, are significant factors that need scholarly attention. Such knowledge could assist in policy-making and the determination of positive marketing communications for organic food.

Our study considers SBB as a response (R) to the stimulus and organismic states of individual consumers discussed in the preceding section. Purchase intentions are considered to be a preceding step to purchase (Fleseriu et al., 2020), and they may not always indicate consumers' buying behavior. Therefore, we consider SBB to be a more appropriate measure of response than purchase intentions. Prior studies have investigated buying behavior as a consequence of a myriad of antecedents related to organic food purchases. For instance, Tariq et al. (2019) studied the antecedents to an online impulse purchase of organic food. In contrast, Singh and Verma (2017) examined the antecedents of organic food buying behavior among Indian consumers. Similarly, Birch et al. (2018) determined the specificity of factors that influence higher organic food procurement frequencies. Table 1 provides the operational description of all seven SOR constructs used in our study.

3. Research model and hypotheses development

The hypothesized framework postulates HC as the antecedent of EW, NTC, NC, UB, RB, and VB, influencing the SBB toward organic food. Additionally, this study investigates whether gender and BI moderate the association of all facilitators and inhibitors with SBB, with the socio-demographic factors controlled for. Fig. 1 illustrates the proposed research model.

Table 1
Operational description of study measures.

Framework	Factor	Definition	References
Stimulus	Health consciousness	Consumers' readiness as well as the desire to identify and undertake actions that may promote individual health	Gould (1988), Hansen et al. (2018)
Organism (Facilitators)	Ecological welfare	Consumers' concern for environmental protection and animal welfare during the food production process	Teng and Lu (2016)
	Nutritional content	Consumers' concern for and degree of importance given to the nutritional value and content of food in terms of vitamins, minerals, and so on	Escobar-López et al. (2017),
	Natural content	Consumers' concern for and degree of importance given to the absence of chemical or synthetic additives and genetic manipulation in food cultivation and production	Kareklas et al. (2014)
Organism (Inhibitors)	Value barrier	Consumers' reticence to buy organic food due to the premium prices and the value for money derived from consumption in relation to the time and effort invested in the purchase	Kushwah, Dhir, Sagar, et al. (2019), Laukkanen (2016)
	Risk barrier	Consumers' uncertainty regarding the authenticity of available products as well as lack of trust in their certification and production processes	Kushwah, Dhir, Sagar, et al. (2019), Laukkanen (2016)
	Usage barrier	Consumers' reticence in buying organic food due to the incongruence with their requirements for accepting a product and the inconvenience in terms of information or product availability	Kushwah, Dhir, Sagar, et al. (2019), Laukkanen (2016)
Response	Stated buying behavior	Consumers' continued preference for organic food despite conventional alternatives and premium prices	Singh and Verma (2017)

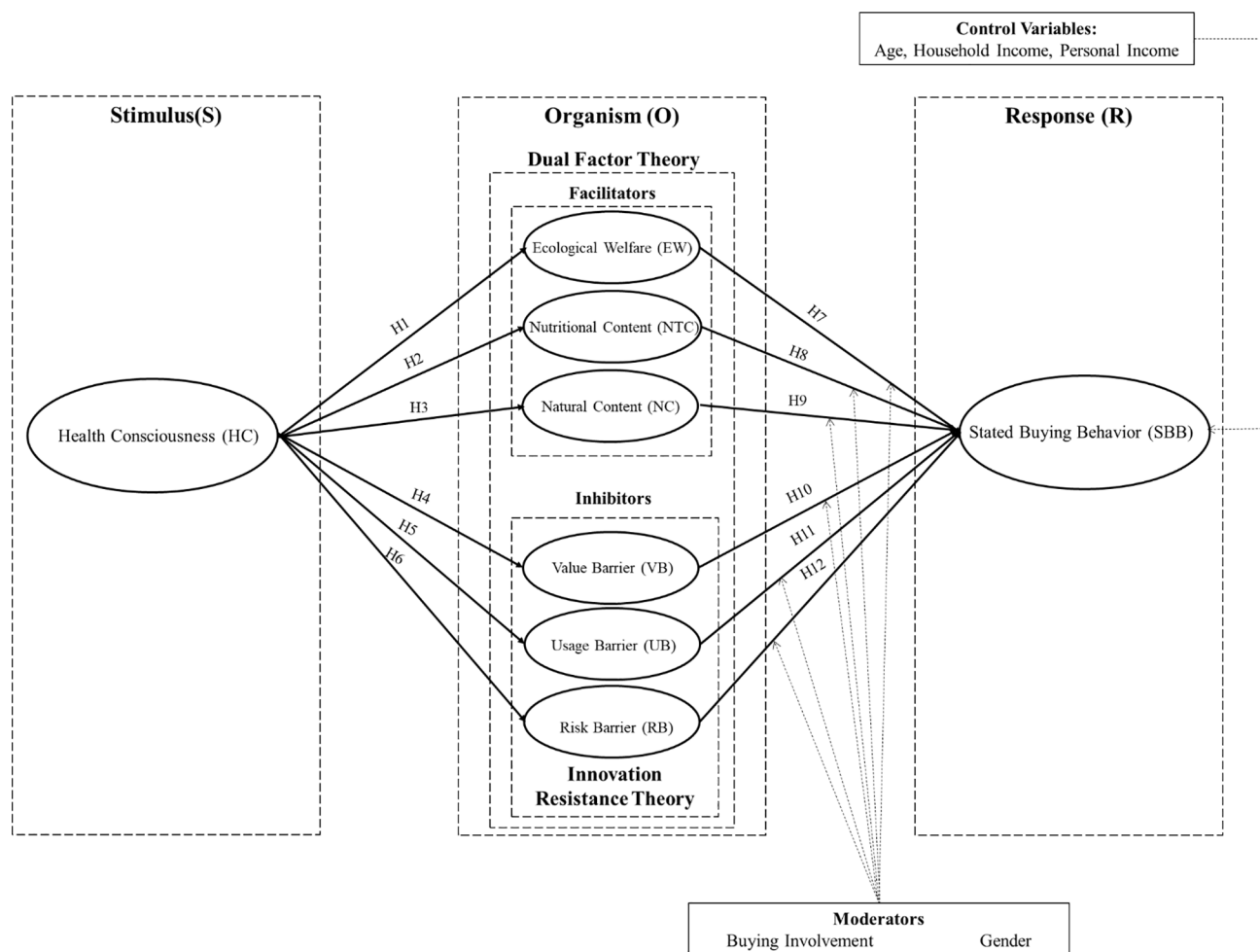


Fig. 1. Hypothesized model.

3.1. Health consciousness (HC) and facilitators (S-O)

Prior studies on organic food consumption have discussed the links between HC and factors such as EW, NTC, and NC. For instance, scholars have contended that consumers may be driven by concerns related to EW and the pro-environmental benefits to consuming organic food (Bryła, 2016; Schrank & Running, 2018). Similarly, some studies have claimed that health-conscious individuals are motivated to purchase organically cultivated food because it is produced using natural means,

without chemical, synthetic or genetic additions and manipulations (Hansen et al., 2018; Pham et al., 2019). This absence of artificial additives may cause consumers to discern these products as healthier options (Van Doorn & Verhoef, 2015) than conventionally-grown food. Pino et al. (2012) argued that consumer awareness of the production processes of organic food tends to create a perception of relative harmlessness of organic food since conventionally-grown food is estimated by consumers to cause higher exposure to agrochemical residues (Kareklas et al., 2014). Furthermore, Lee and Yun (2015) also suggested

that HC leads consumers to associate NTC and health-related benefits derived from organic food's NC, with its consumption, thus stimulating the acquisition of these products. Based on the preceding discussion, we also anticipate HC to stimulate factors that facilitate positive consumer disposition toward organic food. Thus, we propose the following hypotheses:

- H1. HC is positively associated with the EW aspect of organic food.
- H2. HC is positively associated with the NTC of organic food.
- H3. HC is positively associated with the NC of organic food

3.2. HC and inhibitors (S-O)

Previous studies have argued that consumers may be significantly affected by barriers, such as availability (Wojciechowska-Solis & Soroka, 2017), prices (Nguyen et al., 2019), and trust in available products (Nuttavuthisit & Thøgersen, 2017), in terms of their choice behavior toward organic food. Furthermore, Konuk (2018) found that individuals who were especially conscious of health-related issues, such as pregnant women, may undertake a significant evaluation of factors associated with organic food consumption before paying premium prices. Though no previous data on the matter exists, we intuitively argue that HC may cause purchasers to question the legitimacy of available products and might even induce doubt about pricing and labeling information. Consequently, we claim that HC may increase the effect of perceived value barrier (VB), usage barrier (UB), and risk barrier (RB). In the proposed framework, these barriers represent the internal state of consumer, i.e. the organism (O). Hence, we posit the following hypotheses:

- H4. HC is positively associated with the VB in relation to organic food.
- H5. HC is positively associated with the UB in relation to organic food
- H6. HC is positively associated with the RB in relation to organic food

3.3. Facilitators and stated buying behavior (O-R)

The protection of bio-diverse ecological systems and the concern for EW are some of the primary reasons for consuming organic food (Hansen et al., 2018; Kushwah, Dhir, & Sagar, 2019a). In fact, according to Teng and Lu (2016), ethical concerns, such as animal and environmental well-being, are among the key considerations for the use of organic food. In certain instances, EW may even precede personal benefits for consuming organically produced food (Monier-Dilhan & Bergès, 2016). Scholars have previously studied and acknowledged this dimension as a significant influence on organic food purchase intentions (Basha & Lal, 2019; Prakash et al., 2018) and increased buying (Birch et al., 2018). Given that EW is among the sustainability attributes that organic food claims to possess (Azzurra et al., 2019), its production preserves the integrity of the environmental ecosystem (Assocham & EY, 2018) in terms of both flora and fauna. Therefore, we anticipate that the concern for EW will cause consumers to buy organic food, and we hypothesize the following association:

- H7. EW is positively associated with SBB for organic food.

Emphasizing its nutritional aspects, Popa et al. (2019) suggested that organic food may be considered healthier due to the lower levels of insecticides and the greater levels of macronutrients as well as micronutrients. According to Ditlevsen, Sandøe, and Lassen (2019), individuals can potentially correlate their comprehension of the NTC and healthiness of organic food with the absence of toxins or residual particulates of drugs and other chemicals. Some studies have suggested that the NTC of the food grown using natural or organic means is among the primary factors driving organic food buying (Schrank & Running, 2018).

In line with prior research, we also expect the perceived NTC of organic food to stimulate health-conscious consumers to buy it:

- H8. NTC is positively associated with SBB for organic food.

The perceived degree of freshness, purity, and naturalness of organic food and its ingredients is affected by consumers' health as well as social consciousness due to its benefits for familial and communal health (Molinillo et al., 2020). This perception of naturalness arises from consumers' belief in the natural production of organic products without utilization of artificial means (Wojciechowska-Solis & Soroka, 2017). It forms part of the health and/or safety attributes of organic food (Lee & Yun, 2015) and is considered to be a reflection of product quality (Bryła, 2016).

Prior research has found that consumer perception of an organic food product's NC or naturalness significantly predicts its buying consideration (Bryła, 2016; D'Amico et al., 2016). De-Magistris and Gracia (2016) and Kareklas et al. (2014) found a significant influence of NC on consumers' intention to buy and even their willingness to pay premium prices for organically produced food. We also believe that the perceived NC of organic food will attract health-conscious consumers, motivating them to buy organic food items. Hence, we propose the following hypothesis:

- H9. NC is positively associated with SBB for organic food.

3.4. Inhibitors and stated buying behavior (O-R)

Perceived value, which consumers derive from their assessment of the price and quality associated with a product, such as organic food, determines consumers' purchases (Lee & Hwang, 2016). Organic food products are generally presumed to be of good quality (Bryła, 2016), positively affecting consumer attitude (Fleseriu et al., 2020). However, consumers' purchases may be frequently inhibited because of the premium prices associated with organic food (Basha & Lal, 2019). Studies conducted by Yadav and Pathak (2016) and Basha and Lal (2019) found that prices acted as barriers to consumers' decision to buy organic food. Furthermore, consumers' perception of price as a VB depends on other related factors, such as price elasticity, consumers' knowledge of organic food product categories, and the reasons for their premium pricing (Aschemann-Witzel & Zielke, 2017). In agreement with existing literature, we also expect that VB, measured in pricing, likely has an adverse effect on consumers' buying behavior. Hence, we propose the following hypothesis:

- H10. The VB is negatively associated with SBB for organic food.

Scholars argue that consumers often face challenges in purchasing organically produced food, such as gathering information, locating its availability, or due to low visibility in stores (Kushwah, Dhir, Sagar, et al., 2019). Multiple studies have indicated that the lower accessibility, lack of information, or low in-store visibility of organic food may also act as a barrier, or inhibitor, for its purchase (Bryła, 2016). Extant findings have also confirmed that limited access to and availability of organically produced food items may act as a key inhibitor of consumers' intentions toward its purchase (Bryła, 2016; Pham et al., 2019). We concur with Kushwah et al. (2019) that the lower accessibility, availability, and visibility of organic food act as a UB that impedes its purchase. Hence, we hypothesize the following association:

- H11. The UB is negatively associated with SBB for organic food.

Consumers' skepticism regarding the authenticity and certification process for organic food labels can influence their perceived risk of consuming such products (Torres-Ruiz, Vega-Zamora, & Parras-Rosa, 2018) and create a perceived RB. Multiple studies claim that

insufficient information related to organic food and its labeling acts as a barrier that negatively affects its purchase (Basha & Lal, 2019; Kushwah et al., 2019). For instance, Anisimova et al. (2019) suggested that consumers' confusion regarding the eco-label certification of organic foods may arise due to a lack of clarity regarding the certification process and the number of different eco-labels present in the market. Similarly, Nuttavuthisit and Thøgersen (2017) suggested that consumers' mistrust about the certification system and the genuineness of organic content of available products can affect their buying behavior. In light of the preceding discussion, we maintain that consumers' mistrust of organic food certification and/or cultivation may influence their perception of the RB associated with consumption of organic food items and thus impede consumers' buying decisions. Hence, we posit the following hypothesis:

H12. The RB is negatively associated with SBB for organic food.

3.5. Moderating influence of buying involvement and gender

Scholars have emphasized that significant differences exist in consumers' exhibited buying behavior for organic food items. These differences depend on the degree of BI—that is, whether the individuals engage in the heavy or regular frequency of purchase (high involvement) versus rare or light frequency of purchase (low involvement; Kushwah, Dhir, & Sagar, 2019a; Lee & Hwang, 2016). While BI has received limited attention in previous studies, Teng and Lu (2016) suggested that individuals with higher involvement in organic food may exhibit a more positive attitude and greater purchase intention. Similarly, studies have found that BI significantly moderates the association between purchase intention and HC (Kim, 2019) as well as functional values (Kushwah, Dhir, & Sagar, 2019a). We anticipate that BI (i.e., consumers' frequency of purchase) will significantly moderate the association between the facilitators and inhibitors in relation to SBB. Hence, we propose the following hypotheses:

H13a. BI positively moderates the association of SBB with EW, NTC, and NC, respectively, such that the association is stronger in the case of high BI compared to low BI.

H13b. BI negatively moderates the association of SBB with VB, UB, and RB, respectively, such that the association is weaker in the case of high BI compared to low BI.

Prior studies have suggested that significant gender differences exist in consumers' purchase of organic food (Eisinger-Watzl et al., 2015). For example, Shin and Mattila (2019) found gender to influence organic food choices depending on the level of individuals' HC. Rödiger and Hamm (2015) suggested that women showcase greater inclination to pay for organic food than their male contemporaries. However, Singh and Verma (2017) found no significant gender difference in organic food buying behavior. This indicates the need for a more focused analysis in order to account for such gender differences in organic food consumption and buying behavior. We believe that gender is likely to influence the strength of the associations. Hence, we propose the following associations

H14a. Gender moderates the association of SBB with EW, NTC, and NC, respectively, such that the strength of the relationship is different for males and females.

H14b. Gender moderates the association of SBB with VB, UB, and RB, respectively, such that the strength of the relationship is different for males and females.

3.6. Socio-demographic factors as control variables

Feil et al. (2020) suggested that there exists a lack of global consensus among scholars on the socio-demographic profiles of organic food consumers. Yet, existing literature suggests a prominent role of

socio-demographic factors, such as age and income, in determining consumers' buying behavior for organically produced food (Feil et al., 2020). For example, studies suggested that higher disposable incomes for households (Larson, 2018) as well as individual consumers (Hwang, 2016) significantly affect purchase intentions. In terms of age, different motivations may drive organic food purchases among younger and older consumers. For instance, Bryla (2016) reported that younger consumers prefer organic food due to its environmental friendliness, whereas older consumers may consider taste to be a significant reason. Similarly, Hwang (2016) found that different antecedents influence purchase frequency for younger and older consumers. Therefore, our study includes age and income (both personal and household) as control variables.

4. Methodology

4.1. Questionnaire and study measures

To measure the eight constructs, we used a questionnaire that we developed by adopting items from pre-validated scales that were tested for validity and reliability for the current context (see Table 2). HC was measured using a three-item scale from Gould (1988), which prior studies found to be reliable (Michaelidou & Hassan, 2010). We used four-item scales to measure EW (Lindeman & Väänänen, 2000) and NTC

Table 2
Factor loadings for the measurement and structural model.

Study Measures	Measurement items	CFA	SEM
Health Consciousness (HC) (Gould, 1988)	HC1: I reflect a lot about my health	0.84	0.84
	HC2: I'm very self-conscious about my health	0.89	0.89
	HC3: I'm alert to changes in my health	0.80	0.80
Ecological Welfare (EW) (Teng & Lu, 2016)	EW1: Organic food is produced in a way that does not affect the balance of nature	0.74	0.74
	EW2: Organic food is packaged in an environmentally friendly manner	0.77	0.78
	EW3: Organic food is produced without causing pain to animals	0.83	0.83
	EW4: Organic food is produced while respecting animal rights	0.82	0.82
Nutritional Content (NTC) (Escobar-López et al., 2017)	NTC1: Organic food contains a lot of vitamins and minerals	0.81	0.81
	NTC2: Organic food keeps me healthy	0.80	0.81
	NTC3: Organic food is nutritious	0.89	0.89
Natural Content (NC) (Kareklas et al. (2014)	NTC4: Organic food is high in protein	0.81	0.81
	NC1: Organic food contains no additives	0.82	0.83
Value Barrier (VB) (Laukkanen, 2016)	NC2: Organic food contains natural ingredients	0.84	0.83
	VB1: I find that organic food is expensive	0.90	0.87
Usage Barrier (UB) (Laukkanen, 2016)	VB2: I find that the price of organic food is high	0.88	0.91
	UB1: In my opinion, it is not easy to find information on organic food products	0.76	0.83
Risk Barrier (RB) (Laukkanen, 2016)	UB2: In my opinion, it is not easy to find outlets selling organic food products	0.92	0.85
	RB1: I fear that organic food available in the market is not actually organic	0.89	0.83
Stated Buying Behavior (SBB) (Singh and Verma, 2017)	RB2: I fear that organic food labeling is not authentic	0.79	0.85
	SBB1: I have been a regular buyer of organic foods	0.75	0.76
	SBB2: I buy organic food even though conventional alternatives are available	0.89	0.89
	SBB3: I don't mind paying a premium price for organic goods	0.84	0.85

(Step toe et al., 1995). In contrast, NC was measured using a two-item scale, which was adopted from Step toe et al. (1995). The scales we used for NTC, EW, and NC have also been used by prior studies, which indicated that the reliability of these items was appropriate (e.g., Lee & Yun, 2015).

For barriers, we adopted two-item measures for UB, VB, and RB from Laukkanen (2016). Kushwah, Dhir, and Sagar (2019a) previously also used these items and found them to be reliable. We measured SBB by using a three-item scale adapted from Singh and Verma (2017), who referred to these items as a measure of actual buying behavior.

Three experts from academia, who are professors in related fields of marketing and food marketing, were invited to assess the questionnaire and suggest corrections. We used their feedback to make minor modifications to the questionnaire to improve clarity. Then, the questionnaire was piloted with Japanese respondents who represented the socio-economic profiles of targeted organic food consumers. We conducted semi-structured interviews by using the developed questionnaire as a template to obtain feedback on its clarity, with theoretical saturation gained at 14 respondents. Interestingly, one of the items (i.e., NTC4) adopted for NTC indicated that organic food was high in protein, and we expected to obtain negative responses to this statement. However, the respondents indicated acquiescence to this statement, which indicated that it might be a prevalent misconception that organic food has high protein content. Further, the items for the VB consisted of two statements that were used to assess consumers' perception of (a) the quality of organic food in relation to its premium pricing (organic food is expensive) and (b) high prices as a barrier (price is high). During the qualitative round, we discussed these statements with the respondents to ensure that this differentiation was clear.

4.2. Data collection

We collected primary data through a survey administered in Japan through the automated system of a leading Japanese market-research firm, Macromill Inc. (Nagata, 2017). We used open Internet research services of Macromill Inc. to gain access to research panels, which were recruited from various web-based media sources without the use of advertisements to prevent respondent bias (Macromill Inc., n.d.). The target age group was permanent residents of Japan aged 30–65 years. The data was collected in one wave from individuals who were enrolled with Macromill Inc. and located in multiple cities across Japan using random sampling.

The survey was designed to collect responses from buyers who have different levels of buying involvement. Example, heavy buyers were engaged in heavy purchases (3–10 times per month) while light buyers are engaged in light or rare purchases (1–2 times per month) of organic food items. We used the following screening question, “Do you know about the existence of organic food?”, which was accompanied by a description of organic food. Next, respondents were asked to indicate their frequency of organic food purchase on a numeric scale ranging from 1 to 10. We collected 522 responses (56.3%) from individuals who reported their purchase frequency to be between 1 and 2 times per month and 406 responses (43.7%) from those who indicated their response as 3 or more. The data collection process lasted one week. A total of 928 respondents participated in the study. We analyzed the data by using structural equation modeling (SEM) in AMOS.

4.3. Sample characteristics

The mean age of the respondents was 47.20 (SD = 9.65) years and 50% of the respondents were females. 50% of the respondents were buyers of organic food.

4.4. Data analysis

The current study has utilized the entire data-set of 928 to carry the

confirmatory factor analysis (CFA) (i.e., examining measurement model) and testing the structural model. Kline (2015) suggests that most cross-sectional studies are single-shot studies, and they are limited to a single model and data-set. However, Kline (2015) argues that scholars should use independent data-sets to cross-validate the findings, but still, most cross-sectional studies are limited to single model testing. The current research has only utilized a single data-set because the current study design is cross-sectional, due to which, it does not offer the cross-validation of the study findings.

5. Results

5.1. Common method bias

Harman's single-factor test was conducted to examine the common method bias, in line with prior studies (e.g., Talwar et al., 2020c). The test reported that a single factor explained 31.38% of the total variance. This shows that the dataset had no common bias issues because the variance is less than the recommended threshold of 50%.

5.2. Validity and reliability analyses

The validity and reliability analyses were conducted using CFA. The CFA model resulted in good model fit: $\chi^2/df = 3.74$, CFI = 0.96, TLI = 0.95, RMSEA = 0.05 (Tabachnick & Fidell, 2007). The factor loadings for the study items were greater than 0.70 (see Table 2). The composite reliability (CR) values of the study measures were greater than 0.70. This proves internal reliability and convergent validity (Fornell & Larcker, 1981). Additionally, convergent validity was established as values of average variance explained (AVE) for the study measures were greater than 0.50 and less than their corresponding CR values (see Table 3). The inter-correlations among the study constructs were smaller than the square root of the AVE values for the constructs. This proves the presence of discriminant validity.

5.3. Hypothesis testing

Analysis returned satisfactory model fit ($\chi^2/df = 4.45$, CFI = 0.93, TLI = 0.91, RMSEA = 0.06). The results confirmed that hypotheses 1 through 6 were supported. This implies that HC was found to be positively correlated with all facilitators—EW ($\beta = 0.28$; $p < .001$), NTC ($\beta = 0.34$; $p < .001$), and NC ($\beta = 0.27$; $p < .001$). Similarly, HC was found to be positively associated with all inhibitors—VB ($\beta = 0.16$; $p < .001$), UB ($\beta = 0.16$; $p < .001$), and RB ($\beta = 0.14$; $p < .001$). Furthermore, only two facilitators, EW ($\beta = 0.44$; $p < .001$) and NTC ($\beta = 0.34$; $p < .001$), were found to be positively correlated with SBB as hypothesized. Thus, H7 and H8 were supported. In comparison, NC ($\beta = -0.24$; $p < .001$) was found to have a negative association with SBB. Thus, H9 was not supported. Similarly, among inhibitors, only VB ($\beta = -0.29$; $p < .001$) had a negative association with SBB as hypothesized, revealing support for H10. UB ($\beta = -0.03$; $p > .05$) was found to have no association, and RB ($\beta = 0.13$; $p < .001$) was found to have a positive association with SBB. Thus, H11 and H12 were not supported (see Fig. 2 and Table 4). The model explained the variance among the different dependent variables as follows: 7.6% for EW, 12.3% for NTC, 8.1% for NC, 4.8% for VB, 3.1% for UB, 2.4% for RB, and 40% for SBB.

5.4. Moderation analysis

We examined the moderating roles of BI and gender for associations of inhibitors and facilitators with SBB by using process macro. The findings confirmed BI to positively moderate the association of NTC and RB with SBB only (see Table 5 and Figs. 3a and 3b). By comparison, gender moderated the association of all three facilitators (EW, NTC, and NC; Figs. 3c–e) with SBB, with the relationship being stronger for males as compared to females. In the case of inhibitors, gender moderated the

Table 3
Convergent and discriminant validity.

	CR	AVE	MSV	ASV	SBB	HC	EW	NTC	NC	VB	UB	RB
SBB	0.87	0.68	0.21	0.07	0.83							
HC	0.88	0.72	0.09	0.05	0.28	0.85						
EW	0.87	0.62	0.52	0.20	0.45	0.25	0.79					
NTC	0.90	0.69	0.62	0.21	0.37	0.31	0.71	0.83				
NC	0.82	0.69	0.62	0.21	0.23	0.26	0.72	0.78	0.83			
VB	0.89	0.79	0.15	0.07	-0.21	0.13	0.16	0.28	0.39	0.89		
UB	0.83	0.71	0.12	0.05	-0.01	0.13	0.19	0.23	0.23	0.35	0.84	
RB	0.83	0.71	0.08	0.02	0.01	0.13	-0.13	-0.12	-0.10	0.13	0.27	0.84

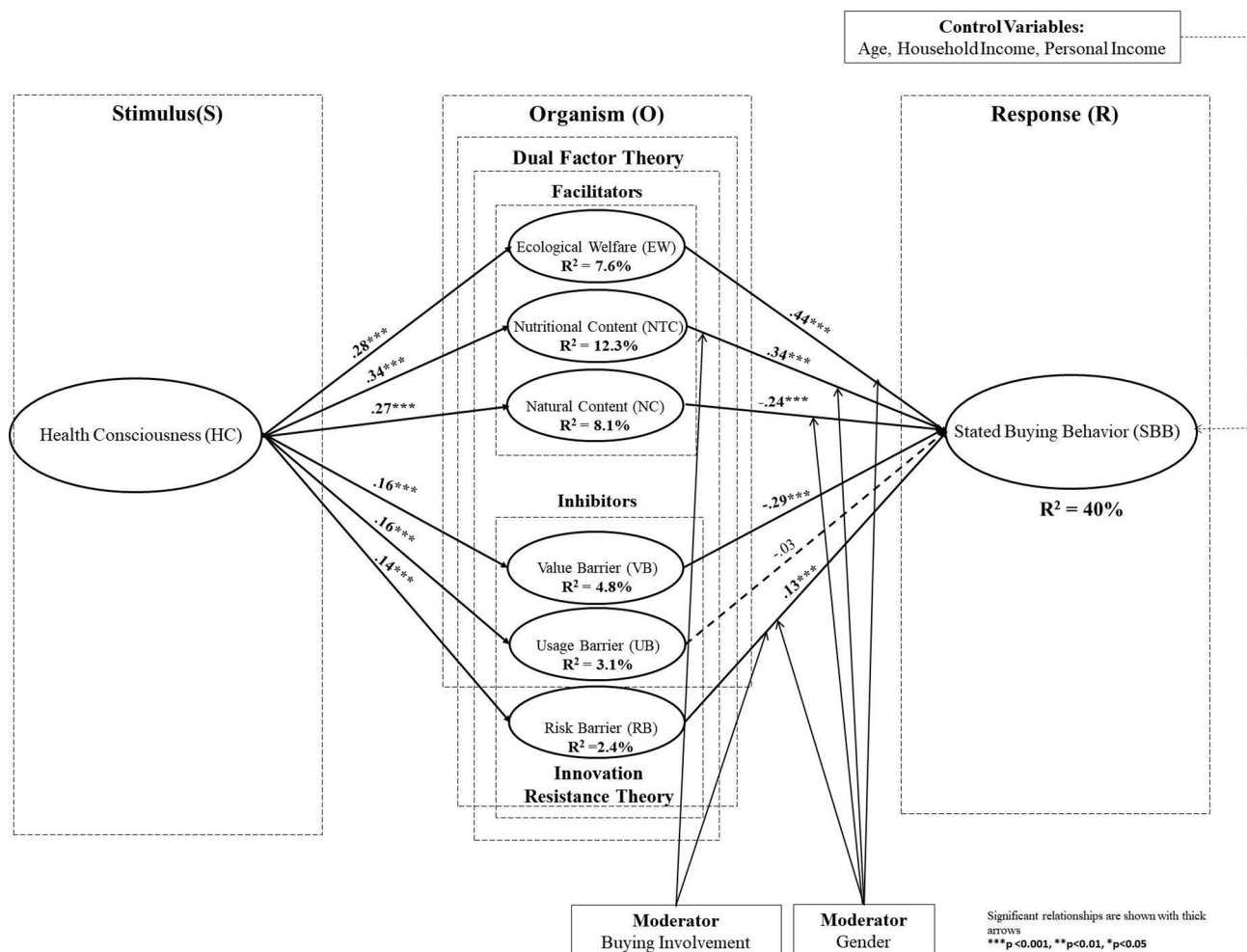


Fig. 2. Results of hypothesis testing.

association of only one inhibitor, RB, with SBB, with the relationship being weaker for males compared to females (Fig. 3f).

5.5. Findings

The results support H1–H8 and H10. Support for H1 to H3 implies that consumers who are conscious of health-related issues will be positively oriented toward organic food items. The actions of health-oriented consumers are reinforced because of their perception that such food is environment as well as animal friendly and delivers higher nutritional and natural content than food grown through conventional means. These positive aspects of organic food represent the internal state of consumers regarding the facilitators (EW, NTC, and NC). Our findings are in line with the existing literature on reasons for organic food consumption (e.g., Bryła, 2016; Lee & Yun, 2015). The support for these

hypotheses is rationally justified because HC is commonly related to both, what one consumes and the surrounding environment. However, this positive association of HC with EW, NTC, and NC translates into SBB only for the first two facilitators, implying support for H7 and H8. This means that, despite the prediction based on prior research (De-Magistris & Gracia, 2016), the perceived naturalness of organic food items, as hypothesized by H9, does not translate into their purchase. Such a result is not immediately clear, and repeated studies are required to confirm this inconsistency in Japanese consumers' behavior.

Regarding the inhibitors, H4–H6, the results support a positive influence of HC on the VB, UB, and RB. While there is no established explanation for such an association, the organic food literature has theorized barriers that may impede consumers' positive intention (e.g., Basha & Lal, 2019; Wojciechowska-Solis & Soroka, 2017). We feel that consumers who are self-conscious about their health and well-being

Table 4
Confirmation of the hypothesis.

Hypothesis	Path	N = 928	
		β	p
H1	HC → EW	0.28	<0.001
H2	HC → NTC	0.34	<0.001
H3	HC → NC	0.27	<0.001
H4	HC → VB	0.16	<0.001
H5	HC → UB	0.16	<0.001
H6	HC → RB	0.14	<0.001
H7	EW → SBB	0.44	<0.001
H8	NTC → SBB	0.34	<0.001
H9	NC → SBB	-0.24	<0.001
H10	VB → SBB	-0.29	<0.001
H11	UB → SBB	-0.03	>0.05
H12	RB → SBB	0.13	<0.001

Table 5
Results of moderation analysis.

Buying Involvement (BI)						
	β	t	p	LLCI	ULCI	Moderation?
EW → SBB	0.01	1.48	0.14	-0.0039	0.0277	No
NTC → SBB	0.02	2.52	0.01	0.0046	0.0375	Yes
NC → SBB	0.01	1.12	0.26	-0.0068	0.0249	No
VB → SBB	0.01	0.85	0.39	-0.0087	0.0222	No
UB → SBB	-0.00	-0.05	0.96	-0.0151	0.0144	No
RB → SBB	-0.02	-2.64	0.01	-0.0338	-0.0050	Yes
Gender						
	β	t	p	LLCI	ULCI	Moderation?
EW → SBB	-0.21	-2.95	0.00	-0.3491	-0.0701	Yes
NTC → SBB	-0.18	-2.40	0.02	-0.3194	-0.0323	Yes
NC → SBB	-0.21	-2.99	0.00	-0.3397	-0.0702	Yes
VB → SBB	-0.01	-0.11	0.91	-0.1530	0.1371	No
UB → SBB	0.01	0.06	0.95	-0.1474	0.1574	No
RB → SBB	0.23	3.21	0.00	0.0903	0.3747	Yes

would be more likely to be cognizant about the authenticity, potentially dubious labeling, and high pricing of available organic food products. Limited availability is expected to aggravate consumers' perceived barriers further, leading them to resist organic food due to concerns related to perceived premium pricing, limitations of in-store availability, and less informative product labeling. However, this positive association of HC with inhibitors is not matched by a negative influence on SBB. Only H10, which hypothesizes a negative association between the VB

and SBB, is supported, indicating that pricing is a major concern for Japanese shoppers which can dissuade them from buying organic food items. UB does not have a significant negative influence on SBB (H11), implying that access to information and the actual availability in stores do not concern Japanese consumers. This is valid, given the fact that a lot of pertinent information is available on the Internet. Furthermore, given the Japanese government's support for organic food, the availability of such food at the point of purchase is to be expected.

H12, hypothesizing the negative association of RB with SBB, is not supported. On the contrary, the results reveal an interesting and statistically significant positive association. Though this association needs to be confirmed by repeating the study with a larger sample, this finding is not entirely implausible. The IRT literature points to various instances of the RB having an unanticipated positive association with intentions. For instance, Taddicken (2014) confirmed the coexistence of privacy concerns (a part of the RB in information-systems literature) and usage intention. Taddicken (2014) referred to it as the "privacy paradox." Other studies related to IRT also argue that barriers could coexist with adoption (e.g., Laakkonen & Kiviniemi, 2010). Therefore, our findings that show the positive impact of RB on SBB are reliable, and we venture to coin the term "*authenticity paradox*" in the context of SBB for organic food. The term implies that health-conscious individuals may continue to have doubts about the authenticity of available organic food and yet show an inclination to buy it. We believe that such behavior is based on the fact that Japanese consumers might find the consumption of traditionally produced food to be riskier than consuming organic food, with the latter being considered less authentic than expected.

The support for the positive moderating influence of BI on the association of NTC and RB with SBB indicates that existing buyers who perceive organic food to be a nutritionally better choice would have more positive buying behavior. We further claim that increased BI might affect consumers' perception of risk with the purchase of organic food items. However, the absence of a moderating effect of BI on other facilitators and inhibitors is perplexing and needs to be explored further. The confirmed moderating influence of gender on the association of all three facilitators with SBB reveals that males with stronger perceptions of the ecological, nutritional, and naturalness merits of organic food will exhibit a more positive organic food buying behavior. These findings contradict the majority of prior literature, indicating that females give more importance to such aspects of food as naturalness (Román et al., 2017). However, a recent study found that in the context of state-branded food products, males were more influenced by perceived behavioral control than females (Shin et al., 2020). Thus, we argue that this contradictory finding may be attributed to the context-specific

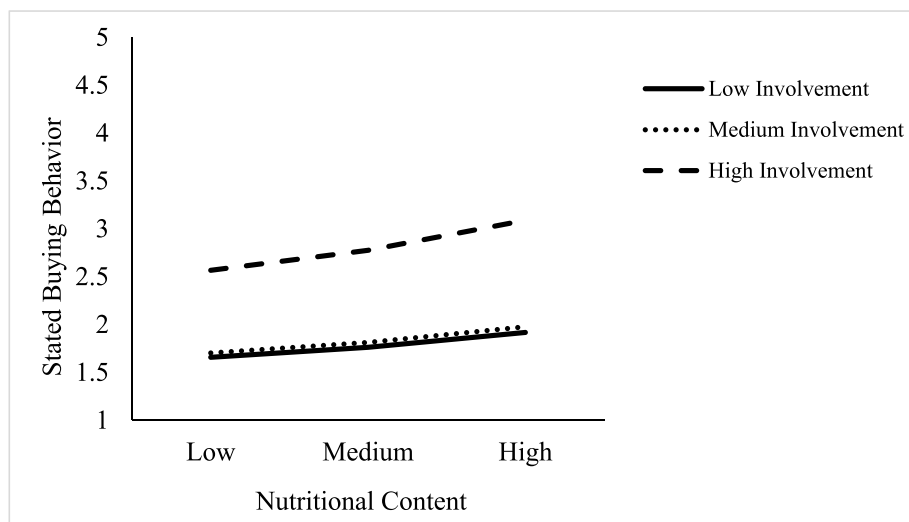


Fig. 3a. The moderating influence of BI on the association of NTC with SBB.

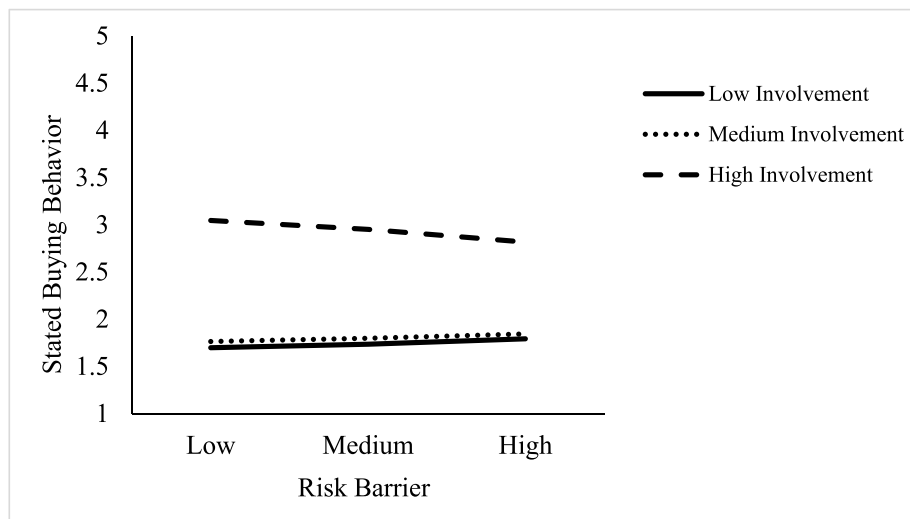


Fig. 3b. The moderating influence of BI on the association of RB with SBB.

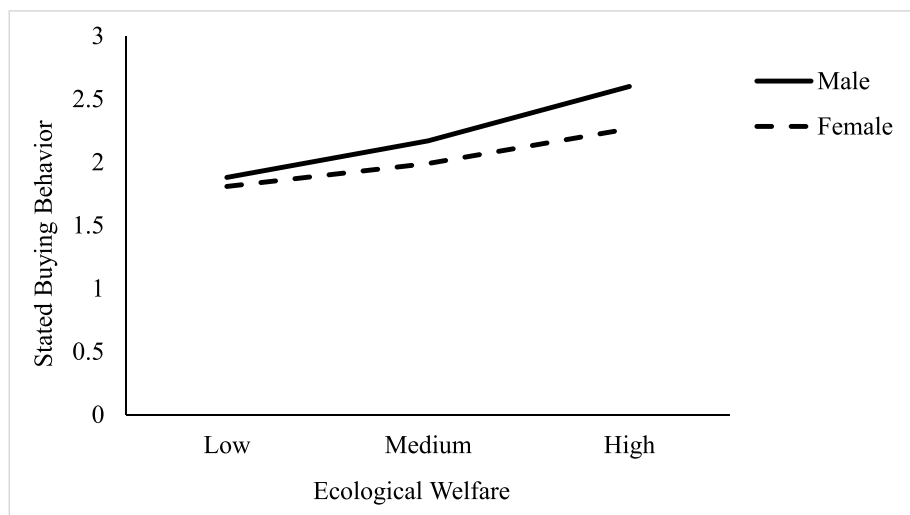


Fig. 3c. The moderating influence of gender on the association of EW with SBB.

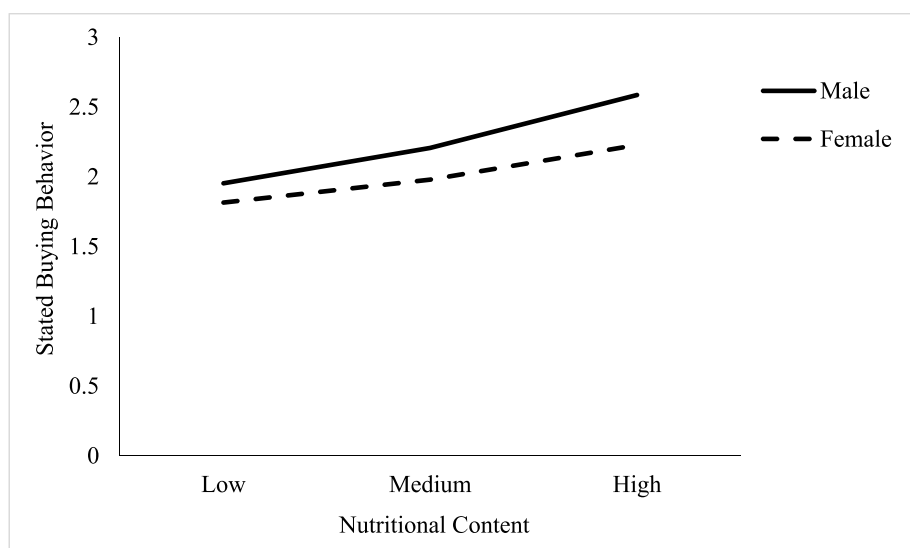


Fig. 3d. The moderating influence of gender on the association of NTC with SBB.

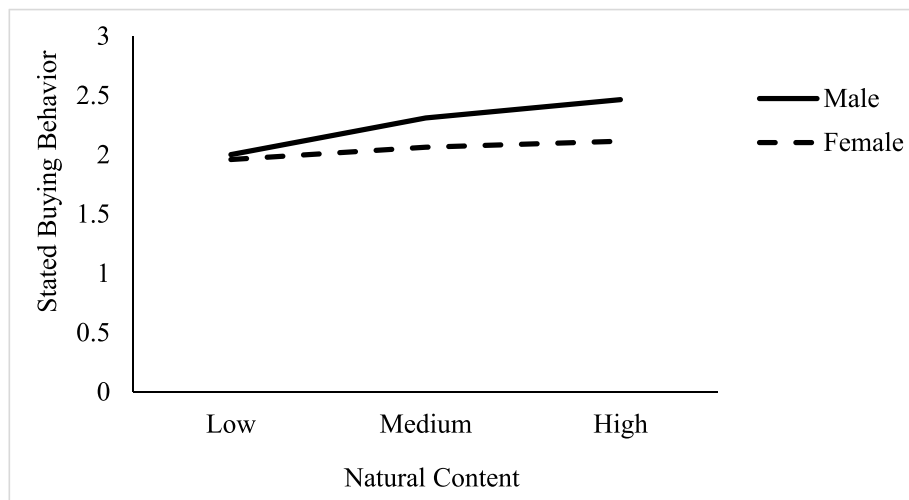


Fig. 3e. The moderating influence of gender on the association of NC with SBB.

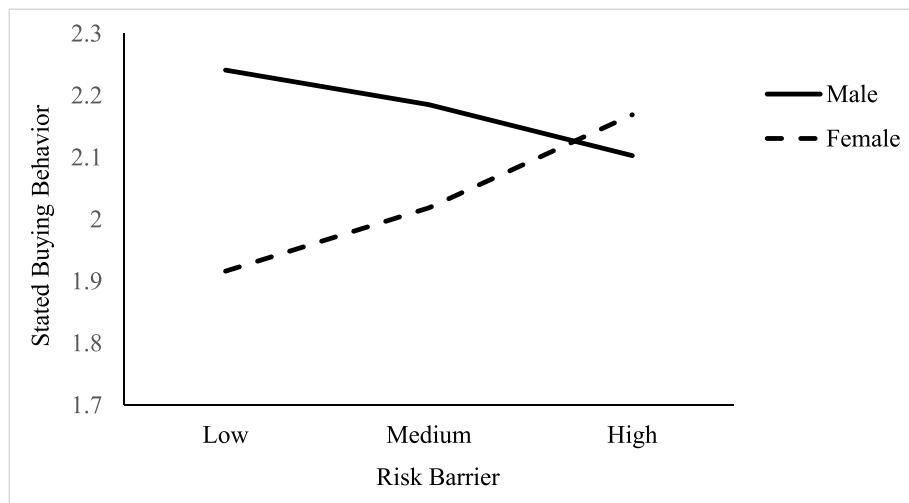


Fig. 3f. The moderating influence of gender on the association of RB with SBB.

nature of the sample and/ or the Japanese market. However, further research is required to validate this result. Furthermore, gender moderated the association of only one inhibitor, RB, with SBB. This finding is probably rooted in the contextual differences of the trust formation process in men compared to women. However, no conclusion can be drawn without investigating this outcome further.

6. Discussion and implications

The global consumption of organic food is intensifying, resulting in increased academic interest. However, an extensive review of the literature revealed many gaps in the extant knowledge, offering promising prospects for new research in this area. Of particular interest are extant deficiencies in understanding consumer behavior toward organic food. For instance, the debate around the discrepancy between consumers' willingness to buy organic food items and their actual buying behavior remains unresolved (Joshi & Rahman, 2015). Therefore, we attempted to provide a better understanding of the antecedents of SBB for organically produced food products by examining the influence of HC on facilitators and inhibitors of SBB.

The findings indicated that HC significantly positively stimulated the facilitators as well as the inhibitors. However, only two facilitators (EW and NTC) and one inhibitor (VB) were found to significantly affect SBB

as hypothesized. Additionally, BI positively moderated the association between EW and SBB. In comparison, gender moderated the association of all facilitators with SBB and RB with SBB. The study findings form the basis for several key implications for theory and practice, as we discuss below.

6.1. Theoretical implications

This study offers five implications. First, the three-step conceptual model contributes to theoretical advancement in modeling consumer behavior toward organic food in the following ways: (a) by using three popular theories (SOR, DFT, and IRT) to investigate the SBB of consumers toward organic food items, (b) by pioneering the idea of evaluating consumers' Janus-faced response to organic food, and including barriers that represent consumer resistance to organic food along with the facilitators that positively affect adoption.

Second, this study lends credence to the previous findings that identify HC as a key stimulant of the factors that promote consumers' positive attitude toward organic food. Interestingly, our findings indicate that HC also influences consumer resistance toward organic food measured through VB, UB, and RB. This new finding is a significant contribution to existing literature. We posit that this finding may arise due to an *authenticity paradox*, which refers to the situation whereby a

health-conscious consumer is motivated to consider the purchase of organic food while being simultaneously inhibited in executing the purchase due to individual reasons. Such reasons include the inability to perceive value for money, lack of trust in the authenticity of organic food items, or higher perceived risks associated with its purchase.

Third, the study addresses the inconsistencies and limitations in prior research by (a) examining the effect of NC on consumers' buying behavior, which has remained indeterminate in the past, with some studies supporting its significant influence (e.g., [De-Magistris & Gracia, 2016](#)) and others contradicting it (e.g., [Lee & Yun, 2015](#)); (b) examining EW, a dimension that is said to exert considerable influence on the intention to buy and the purchase of organic food items according to some studies (e.g., [Basha & Lal, 2019](#); [Birch et al., 2018](#)) while being considered as insignificant by others ([Pandey & Khare, 2015](#)); and (c) examining NTC as a facilitator to address the contradictory results regarding its influence on the buying of organic food by consumers (e.g., [Popa et al., 2019](#)). The findings indicate the positive influence of the facilitators on Japanese consumers, a conclusion also supported by previous research stating that Japanese consumers expect superior quality from consumer products and attempt to stay updated on product-specific features to evaluate the quality of different products available in the market ([Synodinos, 2001](#)). Furthermore, the findings add to the existing knowledge on gender-based differences in organic food buying behavior by showing that males are more influenced by the antecedents of SBB. While this finding needs to be validated by additional research, it is in line with prior inconsistencies found in relation to the insignificant ([Singh & Verma, 2017](#)), or the significant influence of gender in the context of consumers' demonstrated behavior toward organic food (e.g., [Eisinger-Watzl et al., 2015](#); [Rödiger & Hamm, 2015](#); [Shin & Mattila, 2019](#)).

Fourth, by proposing BI as a moderator that influences the association of facilitators and barriers with SBB, the current study underlines the fact that the behavior of existing buyers needs to be evaluated further as it might offer useful insights into how consumers with less buying involvement and low purchase frequency can be positively influenced.

Finally, the findings confirm Japanese consumers' paradoxical behavior by revealing a positive association of the RB with SBB. Our study has explained this paradoxical behavior for the first time from the perspective of organic food purchases. These findings reveal an exciting new area for research on consumer resistance to organic food.

6.2. Practical implications

The study offers four implications for practice. First, as our study revealed that HC increases the facilitators that ultimately drive SBB, we suggest that marketers should focus on convincing customers to consume organically-produced food items available in their countries by focusing on appropriate labeling and the provision of nutritional-content information on product packaging.

Second, as our study revealed gender-based differences in the association of facilitators (EW, NTC, and NC) with SBB, firms selling organic food should run promotional campaigns aimed at increasing the positive buying behavior of females, who were found to have a weaker association between facilitators and SBB. This is particularly important because, in households, females usually play a more active role in food purchase. We anticipate that the higher buy-in of female consumers would increase the sales of organic food.

Third, as our results revealed that despite the high-risk barrier, health-conscious Japanese consumers might tend to buy organic food, and firms can strengthen this buying behavior by addressing consumers' fear regarding the authenticity of organic food by introducing the following practices: (a) offering trial packs; (b) making products available in smaller packages so that consumers feel that even if the product does not provide many benefits, the waste is limited; and (c) promising complete refunds if products are found to be of dubious quality.

Finally, our study has revealed a negative effect of the pricing of organic food on SBB. Therefore, we recommend that organic food producers and sellers undertake a cost-benefit analysis to determine if prices could be reduced. That way, increased demand would protect their profits. Furthermore, increased effort should be expended on developing cost-effective ways of producing and selling organic food in order to reduce prices. One way to achieve this could be to sell organic food using online channels or to set up weekly farmers' markets in popular shopping districts, thereby targeting a larger base of consumers and potentially offsetting any increases in supply-chain-related costs.

6.3. Limitations and future scope

This study has certain limitations that can be addressed by future researchers. First, the study suffers from research-design issues that are related to the use of self-reported questionnaire, and the cross-sectional design of the study. Thus, further research is needed before generalizations from the findings of this study could be applied to Japanese consumers at large. However, the sufficiently large sample size and the adequate care taken to solicit unbiased responses alleviate concerns about the robustness of the findings. Second, despite including buyers as respondents, we did not measure the post-purchase satisfaction or dissatisfaction of existing organic food buyers. Third, we did not test the effects of interventions, such as testimonials of existing buyers and trial packs, on the SBB of Japanese consumers toward organic food. Fourth, future studies could revise the VB items to address cross-cultural differences in consumers' perceptions of value-for-money, quality, and price barriers.

We recommend that future researchers draw upon our study to advance the knowledge on consumer behavior toward organic food by (a) collecting independent data-sets to cross-validate the study findings as recommended by [Kline \(2015\)](#). (b) conducting replication studies using our model in different geographies and (c) measuring the post-purchase responses of existing Japanese organic food buyers to confirm their satisfaction or dissatisfaction with their choice. In fact, it would be interesting to see if the sources of dissatisfaction and satisfaction are different, as found by prior studies in information-systems research ([Talwar et al., 2020b](#)). Future researchers could also (d) conduct longitudinal studies measuring the association of facilitators and barriers with SBB pre and post-interventions to determine the temporality and causality of such associations; (e) measure the effect of culture (collectivist versus individualistic) on individuals' consumption of organic food items; (f) study the strength of association for HC, consumer attitude, intention, and other factors that may promote or inhibit consumption of organic food items; and (g) conduct gender-based studies to further explicate and/or validate the findings of this study and the degree of influence exerted by other antecedents of SBB on male versus female organic food buyers.

7. Conclusion

Despite encouraging organic food production, certain countries, such as Japan, continue to report low adoption rates, and research diagnosing the reasons for such behavior is limited. The present study has attempted to address these two eminent gaps in existing literature by examining the antecedents of SBB of Japanese consumers toward organic food items. Furthermore, to ensure that the revealed behaviors have sound theoretical grounding, we used well-recognized behavioral theories, namely the SOR framework, IRT, and DFT to identify the antecedents of SBB. These theories have enabled us to highlight the dichotomous influences on SBB, those of facilitators on the one hand, and of the inhibitors on the other hand. At the same time, these theories have enabled us to contemplate the stimulus that influences both the facilitators and the inhibitors. Accordingly, we identified HC as a stimulus for facilitators (EW, NTC, and NC) and inhibitors (VB, UB, and RB).

CRediT authorship contribution statement

Anushree Tandon: Conceptualization, Investigation, Data curation, Writing - original draft. **Fauzia Jabeen:** Conceptualization, Investigation, Data curation, Writing - original draft. **Shalini Talwar:** Conceptualization, Investigation, Methodology, Validation, Supervision, Project administration, Writing - review & editing. **Mototaka Sakashita:** Validation, Supervision, Project administration, Methodology, Writing - review & editing. **Amandeep Dhir:** Conceptualization, Investigation, Methodology, Validation, Supervision, Project administration, Writing - review & editing.

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