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The role of marketing stimuli and attitude in determining post-COVID buying decisions toward organic food products: evidence from retail consumers in Beijing, China

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Customers are diverse, and their preferences have changed tremendously, especially post-pandemic, as many business organizations are facing major challenges in meeting those needs. Therefore, an in-depth understanding of consumer buying decisions plays a vital role to develop effective strategies. The aim of this study is to determine whether the marketing mix (4Ps) elements and their attitude have a significant effect on organic food product buying decisions among retail consumers in Beijing, China. A quantitative method was used in this study, whereby 334 questionnaires were physically collected randomly from walk-in customers at Walmart, Darunfa, and Yonghui supermarkets in Beijing, China. Based on the results of the hypothesis test using PLS-SEM, it was confirmed that product, place and promotional strategies had a significant positive relationship with attitude and consumer buying decisions. Interestingly, price had no effect and income was not a moderator. The results of this study provided relevant suggestions to marketing practitioners, especially organic food producers and retail stores on developing and implementing marketing strategies effectively to address changing consumer preferences.

KEYWORDS

organic food, retail sector, post-pandemic, sustainable buying behavior, marketing stimuli

1. Introduction

Due to the various food scandal incidents in the past decade, consumers have continuously become more concerned about the safety of the food consumed. For example, the tainted milk powder scare and the contaminated vegetables that were found in China markets have sparked a lot of attention and awareness, especially among consumers toward the importance of food safety (Liu and Ma, 2016). Besides, numerous reports have been highlighted by various media channels on the excessive usage of pesticides in vegetables and fruits that led to food poisoning, resulting in a rising level of concern among consumers (Liu et al., 2021). Agricultural issues such

as the conversion of commercial land, soil quality issues, and water pollution were claimed to have caused pressure on food supply. Rising food safety issues including adding illegal additives or chemicals and contamination of food supply were alleged to be due to a lack of a food production monitoring system (Lam et al., 2013).

Organic food is also commonly known as ecological or environmental-friendly natural food (Kushwah et al., 2019). The produce comes from organic farming systems and has to meet specific requirements (Eyinade et al., 2021). As it is considered to be pollution-free, many developing countries such as Europe, The United States, and Japan have long embraced organic food and the recent pandemic situation has also heightened the interest of consumers in China toward organic food (McCarthy et al., 2016; Murdoch et al., 2020).

Moreover, the pandemic has triggered consumers to focus more on their eating habits and improve how well they eat in order to maintain health standards. Based on McKinsey's China Consumer Research Report (2021), buying behavior and consumption post-pandemic are evolving. With the improvements in living standards and education levels, consumers themselves have also become increasingly aware of the importance of eating good food to stay healthy (Shahabi and Gorton, 2021). As of 2019, China's market size in the organic food sector has soared to 67.8 billion yuan (USD 9.8 billion), indicating a growth of approximately 15.9% annually. Moreover, this trend is expected to continue steadily as a result of favorable governmental policies, e-commerce penetration, and consumers' increasing demand for safer foods (Qianzhan Research Report, 2021). In terms of the organic food domestic sales value in China, an increasing trend is also observed. The sales of organic food in China increased from 465.66 billion yuan (USD 67.7 billion) in 2019 to approximately 521.86 billion yuan (USD 75.8 billion) in 2020 (Statista, 2023a,b,c). China is expected to become the fourth-largest consumer of organic foods and the fastest-growing organic food market in the world (Research and Markets, 2021).

No doubt, this is a huge opportunity for organic food producers and suppliers in China, yet the proportion of consumption by Chinese consumers still remains relatively low (Liu et al., 2023). Due to the premium pricing of organic food products and weak marketing efforts in China, the sales of organic food products are merely just 0.02% of the total food sales despite the strong market growth (Yen, 2018). Noteworthily, organic agriculture farming and supply in China is expanding but at a slow rate caused by the country's large geographical span which causes difficulties for producers to develop a large-scale organic food industry chain. This causes organic food products to be more expensive than conventional food products. Moreover, the organic food market faced other challenges including slow new product development, unclear positioning strategy, and lack of leadership skills (Yu et al., 2021). Despite having a huge market potential due to the large consumer group in China, organic food retailers face numerous challenges. Some consumers may be hesitant to buy organic food products if they are unsure about their safety and quality. In 2017, it was reported that some Chinese companies were selling counterfeit organic certificates, which allowed them to market their products as organic even if they were not. In reality, consumers may lack the knowledge or have a high suspicion of the credibility of organic food certification. As a result, many consumers are now more cautious about the food they buy and consume and are increasingly looking for products that have genuine certifications (CNN Business, 2019).

Generally, it is believed that consumers' income and level of education through cognition and knowledge significantly affect their choice of purchasing organic food (Akbar et al., 2019; Ali et al., 2021). Besides economic and cultural factors, there is a lack of understanding of Chinese consumers' attitudes toward organic food products which may influence their willingness to buy (Asdi and Putra, 2020). Global research on organic food is plenty, yet there are few studies conducted on the factors influencing consumer purchasing decisions toward organic foods, specifically in Beijing, China (Bai et al., 2019). Different countries, regions, and ethnicities in market segments display diverse buying choices in terms of clothing, food, housing, and transportation (Soundararajan, 2020). Being the capital city of China, Beijing consumers are reported to have higher levels of disposable income (Zhou, 2022). Possibly due to this, Beijing citizens tend to have higher acceptance and recognition of alternative food sources, and their consumption of organic food currently ranks first within China with a market size of 8.25 billion yuan (USD1.2 billion) in 2021 (Qianzhan Research Report, 2021). Besides, Beijing is located nearby to Shandong, which is the largest provider and supplier of organic food in China. Nonetheless, with the change in times, particularly post-pandemic, existing marketing strategies such as product, price, place, and promotion may not be effective and, thus, these factors, alongside the internal attitude affecting Beijing consumers' decisions require a closer investigation (Legeza et al., 2019). Thus, the main aim of this research is to determine whether the marketing mix (4Ps) strategies have any impact on consumers' post-pandemic attitudes and buying decisions toward organic food products in Beijing (Figure 1).

2. Literature review

2.1. Consumer buying decision

The concept of purchase decision can be described as the choices that are made by consumers prior to a purchase that forms one of the stages in the process of consumers' buying behavior, which is undertaken to fulfill a need (Kotler and Armstrong, 2010). The consumer buying process commonly features five stages starting from identifying needs, to obtaining information from various communication channels, and is followed by evaluating the alternatives to making the purchase decision. The last stage is the post-purchase consumption behavior (Chukwu et al., 2019; Alsoud et al., 2021). At the center of a consumer's purchase behavior process is their purchase decision (Palalic et al., 2020). Consumer buying behavior

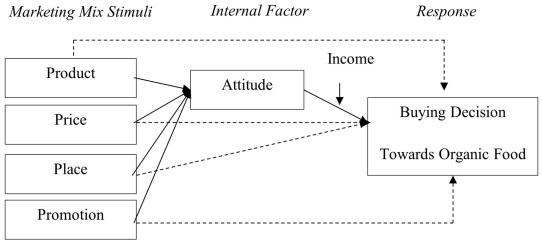

FIGURE 1
Conceptual framework.

entails the buying stages in which a consumer would seek, choose, acquire, consume, and discard products and services to fulfill their desires (Ali, 2020). The consumer buying decision is related to any consumption-related personal behavior of consumers including their psychological activities, physiological activities, and other substantial activities that would motivate them to take action (Chowdhury, 2019). During the purchase decision stage, consumers ultimately express intent toward buying a particular product or service (Ahmed et al., 2017).

Some scholars have revealed some common patterns in describing consumer purchase decision behaviors (Reddipalli, 2020; Sivakumar, 2021; Srivastava et al., 2021). The two commonly applied models to explain consumer buying behavior are the Engel-Kollat-Blackwell (EKB) and Howard-Sheth (HS) models. The EKB model focuses on delineating the stages that a buyer goes through to make a buying decision (Gupta et al., 2020). Based on this model, consumers would be exposed to external stimuli such as marketing communication strategies by organizations (Chukwu et al., 2019). The consumers then process this information and form internal perspectives of the product, brand, or services, which include attitude, experience, and personality that eventually lead them to take action (Rahman et al., 2018). Similarly, in the HS model, consumer decision-making is influenced by external stimuli (Legeza et al., 2019). The external stimulus is commonly generated by the language, text, and pictures disseminated in advertising media channels, and it is said that consumers selectively accept and respond to these stimulus factors (Chowdhury, 2019). Chukwu et al. (2019) found that most Chinese people preferred to buy luxury brands based on the external implications.

The buyer's buying decision can also be viewed as an exchange process. During the transaction process, both the buyer and the seller evaluate the relative trade-offs they must make in order to satisfy their respective needs and wants. The stimulus–response or "black box" model assumes that consumers are logical problem solvers who respond to a range of external and internal factors when deciding whether or not to buy a product or service. This model identifies that consumers tend to respond to external stimuli including the marketing mix or 4Ps. These marketing mix strategies represent a set of stimuli that are planned, created, and executed by the company to stimulate consumers' internal thoughts and perceptions. These include consumers' beliefs and attitudes that translate to consumers' responses on whether to purchase or not to purchase. According to the black box model, it is challenging to fully understand what drives consumers' choices, and the exchange process can be unpredictable and difficult for marketers to understand.

The values of Chinese traditional culture are based on group orientation, which is deeply rooted in the buying behavior of Chinese consumers (Soundararajan, 2020). The buying decision may involve the individual consumer or even any family members or important persons (Gupta et al., 2020). For instance, Tandon et al. (2021) found that the main buyers of organic food were families and those with children were more inclined to buy organic food. There have been varied results found on whether family or economic situation is more important in determining organic food buying decisions in China. While price and economic factors do play a role in organic food buying behaviors in China, the influence of the family and group is generally considered to be more important, as indicated in some past studies. For instance, in China, it was found that large families and families with children or elders staying in one household tend to be more inclined toward buying organic food products (Xie et al., 2015). That being said, economic status can still influence organic food buying behaviors in China, particularly among lower-income consumers, university students, or even consumers who have a lower perceived value of the product (Ali et al., 2021).

There are numerous other factors affecting buying decisions such as the number of consumers, demand, purchasing power, storage location, and shelf life of goods (Qazzafi, 2019). Many consumers are inclined to be emotionally affected when buying and hence, easily influenced by advertising, product packaging, store decoration, and other promotional methods, resulting in impulse purchases (Palalic et al., 2020). Interestingly, Legeza et al. (2019) stated that the majority of consumers lack corresponding knowledge to make buying decisions, especially on price and technical terms when choosing goods with complex ingredients or confusing product specifications. Joshi et al. (2018) stated that China's population structure is also relatively complex, and the characteristics of buying behaviors differ across different cities and regions. With the rapid growth of China's economy and the improving pandemic situation, the level of consumer consumption has significantly improved, yet there is still a large gap in the knowledge of the existing buying decision-making process (Pandey and Parmar, 2019).

2.2. Attitudes toward organic food products

Central to human behavior are the psychological factors that influence consumers' purchase decisions including attitudes, motivations, feelings, and learnings (Chen and Lin, 2018). Attitude is often defined as an individual's evaluation of behavior (Luria, 2020). The rational behavior theory plays an important role in explaining individual attitudes and their influencing factors (Shi et al., 2021). Past studies have found that attitudes are the most significant motivators of purchase intention for organic cotton clothing (Hasan et al., 2022), upcycled fashion products (Yoo et al., 2021), green hotels (Wang, 2022), and green foods (Rustagi and Prakash, 2022).

Consequently, it was discovered that consumers with favorable and robust attitudes and values toward ecology reported high intention to buy eco-friendly products (Barber et al., 2012). Exhibited pro-environmental attitudes have been found to lead to pro-environmental behaviors, whereby consumers are more driven to consume items that are helpful not just for the environment but also for their own health (Sharpe et al., 2021). Consumers' attitudes are often shaped selectively to compromise their needs and may be altered by external influences such as new knowledge from media communication and green marketing strategies (Dewi, 2021). Organic food products that are promoted as free from harmful ingredients are more favored by consumers that are more concerned about their health, especially post-pandemic. This is especially significant for women who are playing the role of mother and caretaker of the family and want to provide the safest and serve the best food for their family (Nevedida et al., 2022).

Based on a survey that was conducted among organic yogurt buyers in Croatia, the respondents had positive attitudes toward the product and, in return, it motivated them to purchase organic yogurt from supermarkets and specialty stores (Tomić Maksan et al., 2022).

In some of the top-tiered cities of China, the enhancement of consumers' attitudes toward organic foods promotes their organic purchases and significantly mediates the effects of their environmental protection consciousness (Liu et al., 2021). Moreover, consumers' attitudes have been found to mediate the relationship between the marketing mix strategy and purchase decision of green and organic products among consumers in Sri Lanka (Karunarathna et al., 2020), Pakistan (Hussain and Aslam, 2022), Vietnam (Nguyen and Dang, 2022), and Thailand (Cavite et al., 2022). This supports the notion that Asian people's dietary intake and preferences are often varied when compared with Western culture. For instance, it was found that among Indian consumers, their purchasing intentions showed convergence with their attitude when it comes to their perception of a balanced diet (Kolte et al., 2022). From the perspectives of developing countries, consumers' attitudes toward the perceived affordability of organic foods are often affected by their standard of living and economic situation (Mostenska et al., 2022).

2.3. The role and relevance of marketing mix stimuli

The concept of the marketing mix was historically defined by Kotler and Armstrong (2010) as a set of strategic marketing tools that can be applied and implemented by a company in order to create desired responses among their target markets. In other words, the marketing mix comprises the 4Ps strategies of product, price, place, and promotion that a marketer can use to increase the reaction toward their product from a specific group of audience.

Among the marketing mix tools, the product marketing strategy refers to the offerings by business organizations that can be provided to meet the requirements of consumers (Soltani-Fesaghandis and Pooya, 2018). The key to the success of business organizations lies in the degree to which they are able to manufacture and introduce products that meet the needs of their target consumers, thus creating value for their firm (Cho and Tsang, 2020). By paying attention to the unique selling points, product quality, and functional appeal, companies are able to increase purchase motivation (Sumardi and Fernandes, 2020). At the most basic level of a product is the core attribute which is defined as its utility, quality, and typical function that drives consumers' interest (Skard et al., 2021). Consumers do not buy a product to own the entity of the product but rather to obtain the benefits that can meet their needs (Cho and Tsang, 2020).

Noteworthily, tangible elements of the products including trademark, brand, packaging, and labeling are all relevant product strategies, particularly for organically claimed products (Simões and Sebastiani, 2017). Research has also discovered that consumers with a heightened awareness of health risks after consuming a product are more motivated to opt for organic alternatives (Ditlevsen et al., 2019). Food safety confidence plays a very important role in developing positive attitudes in consumers toward organic foods and their importance (Wong and Tzeng, 2021). Thus, packaging-related eco-labels of organic food products have relative importance as extrinsic cues are able to affect consumers' perceptions of food quality and safety (Donato and D'Aniello, 2022).

Price strategy is key in attracting customers by estimating customer demand and performing cost analysis (Chetthamrongchai et al., 2019). Price strategies, including setting the price level, price discounts, and payment methods have an impact on consumers' buying behavior (Stavins, 2018). The choice of pricing strategy will also directly affect other marketing decisions such as product and promotional strategies (Schnyder and Sallai, 2020). According to Mostenska et al. (2022), dietary intakes and food preferences among rich and poor customers varied. In particular, food prices are more sensitive for vulnerable groups of customers who may make their buying decision based on price solely. For instance, in Ukrainian households, the consumption of basic food types depends on the prices of those products (Mostenska et al., 2022). Thus, baking companies and bakeries would reduce prices in order to stimulate demand.

Nonetheless, the calculation of the optimum price is a complex process due to various internal and external influences. Cost and price are important topics when discussing the development of the organic food industry (Wang, 2022). For instance, the cost of logistics is relatively complicated as it may include transportation, packaging, storage, and other aspects (Sampaio et al., 2021). In China, the price of organic vegetables is usually three to six times that of ordinary vegetables, and these organic vegetables have become "luxury goods" (Zhu, 2018). Organic food items are priced higher and are more expensive than their conventional alternatives, and the higher prices actually lead to a decline in the attitude toward organic foods among customers (Łuczka, 2019). Moreover, such a price barrier can, consequently, not only cause a decline in attitudes but also diminish the consumption of organic foods altogether (Yamoah and Acquaye, 2019). There is no doubt that the price level is very important in the influence of purchase behavior, but the influence of price on purchase behavior is gradually decreasing especially in more developed countries (Workie et al., 2020). Among the identified factors, price is arguably the most influential with respect to consumers' organic food preferences (Cucchiara et al., 2015). Among consumers in China, it was revealed that they were more willing to pay a premium price in order to ensure that they were getting safer food products (Feng et al., 2012). Moreover, consumers with positive attitudes toward organic foods were more self-driven to purchase green products at premium prices (Liu et al., 2017).

Place strategy is an important part of the whole marketing mix that influences the firm's cost and competitiveness (Kosaki et al., 2018). The continuous innovation of Internet technology facilitates the omni-channel marketing of online and offline retail firms, improving the distribution methods and further influencing consumers' buying decisions (Chan et al., 2021). Place strategy is defined as the various activities by firms that enable target markets to access and buy their products (Kosaki et al., 2018). It is proposed that the availability and variety of intermediaries, middlemen, and marketing service facilities must be used effectively in order to supply these products and services to the target market more effectively and sustainably (Cole and Aitken, 2020). Products that are made available in the right place and time for the convenience of customers will motivate them to buy (Pride and Perrellm, 2010). Place strategy regardless of whether online or offline tends to influence the customers' mental image of the firm and ultimately their purchase decision (Al-Zyoud, 2019). The emergence of the Covid pandemic which caused a lockdown in most cities in China has caused a shift in firms' production and distribution of products especially food-related

items (Ding et al., 2021). During the pandemic, consumers showed higher preference and support for local products that are more readily available. Consumers tend to perceive that a good distribution of organic products means that there are plenty of choices available and it is not difficult for them to buy (Handriana et al., 2022).

During the pandemic, many companies turned to e-commerce to grow their business. Based on a study published by World Internet Statistics (2021), 66 percent of the world's Internet users have bought products online using their mobile application while a staggering 74 percent did online shopping almost every week. In the same report, it was revealed that the majority of people spent the most on buying food products for fear of future disruptions in the food supply chain that was affected by the pandemic. Organic food producers often rely on a few large distributors or retailers to reach their customers, which can limit their reach and ability to expand their market share. However, the growing trend of online sales platforms for organic foods has helped to expand the reach of organic food producers and increase consumer awareness of organic foods. Another important role that distribution channels play in the organic food industry is ensuring the authenticity and traceability of organic food products. In China, there have been concerns over the authenticity of organic food products due to the lack of a reliable certification system which may have a negative impact on consumers' attitudes and buying behavior toward choosing organic food over conventional food products (Chai et al., 2022). Similar to a study that was conducted on consumers from Bangladesh, many of the more traditional-minded shoppers have reservations about the authenticity of organic foods because they are not aware of the organic farming process and distribution (Akter et al., 2023). Thus, by working with trustworthy distributors and retailers, organic food producers can ensure that their products are properly labeled and certified, which helps to build consumer trust and increase sales.

Promotion is a series of marketing activities including advertising, public relations, sales promotion, personal selling, and direct marketing (Kotler and Armstrong, 2010). Promotion strategy is the technique used by firms to promote the sale of goods and communicate their firm's offerings and brand identity to the customers (Roggeveen et al., 2021). Consumer demand is multifaceted and promotional activities need to meet customers' psychological needs (Kumar and Rajan, 2012). Promotion management is also similar to general management, which requires clear purpose, planning, process management, implementation, and measurement of results (Yoon and Chung, 2018). Promotion can assist business firms to establish favorable brand positioning, improve customer loyalty, stimulate consumers' purchasing desire, change consumers' buying habits, and induce consumers' impulsive buying behavior (Khan et al., 2019). These days, consumers acquire information and knowledge on products and promotional campaigns *via* a variety of media channels including television, magazines, social media, and mobile applications (Chu, 2018). The exposure and increase in consumers' knowledge regarding the benefits of organic foods improve their attitude and buying choice toward organic food products (Pearson et al., 2013). Moreover, efforts in designing attractive promotional campaigns with explicit messages for a cause-related marketing strategy tend to stimulate the consumers' demand for organic foods (Van Huy et al., 2019).

> Hypothesis 1: Product strategy has a significant positive relationship toward attitude.

> Hypothesis 2: Price strategy has a significant positive relationship toward attitude.

> Hypothesis 3: Place strategy has a significant positive relationship toward attitude.

> Hypothesis 4: Promotion strategy has a significant positive relationship toward attitude.

> Hypothesis 5: Attitude has a significant positive relationship toward buying decision.

> Hypothesis 6: Attitude mediates the relationship between product and buying decision.

> Hypothesis 7: Attitude mediates the relationship between price and buying decision.

> Hypothesis 8: Attitude mediates the relationship between place and buying decision.

> Hypothesis 9: Attitude mediates the relationship between promotion and buying decision.

> Hypothesis 10: Income moderates the relationship between attitude and buying decision.

3. Methodology

To fulfill the stated objectives and confirm the hypothesis posited, a quantitative research methodology was applied. A simple random sampling approach was adopted whereby every 5th customer that walked into the supermarket was approached to fill in the survey. Estimating the appropriate sample size calculation using power analysis is a common practice in social science and business research (Faul et al., 2007). Hence, G*Power is recommended for sample size calculations as it applies various statistical methods (Kang, 2021). For the ANOVA test, Cohen suggested the effect sizes of "small," "medium," and "large" as 0.02, 0.15, and 0.35; thus, in this study, the sample size is calculated by applying a medium effect size. The resulting estimated minimum sample size required for this study is 150 ($\alpha = 0.05$, $1-\beta = 0.95$). The total population of Beijing is 25 million, accounting for 1.78% of China's total population (National Bureau of Statistics China, 2021a). Therefore, this paper estimates that the number of consumers who have bought organic food in Beijing is about 3.24 million. For this study, 400 questionnaires were distributed to supermarket customers in Beijing to ensure that the minimum sample size is met.

The questionnaires are designed to ensure effective data collection and are not too lengthy for respondents to complete. Firstly, Section A contains the demographic profile of the respondents including gender, monthly income, age, and education level. Whereas Section B includes independent variable statements measuring price, product, place, and promotion, and Section C contains the mediator questions for attitude and dependent variable for consumer buying decisions toward organic food products. Statements under Sections B and C are measured using a five-point Likert scale that ranges from one as "Strongly Disagree" to five as "Strongly Agree." The three "Product" statements and five statements related to "Price" and "Place" dimensions were all adapted from Chen et al. (2014), and the "Promotion" variable also with five statements was adapted from Maulana and Najib (2021). "Attitude" was measured with two statements and "consumers' buying decisions" had five statements that were adapted from Teng and Wang (2015) and Canova et al. (2020), respectively.

The offline field survey was conducted in Beijing during the month of July, 2022. In order to ensure the feasibility of the questionnaire statements, a pre-test on the Chinese language translated version of the questionnaire was filled in by five customers randomly at Beijing Walmart supermarket before the formal data collection was conducted. All the statements were clear, and we then proceeded with a pilot data collection. For the pilot study, a total of 50 hardcopy survey questionnaires were administered following the recommendation of Morris and Rosenbloom (2017).

For the pilot data, Cronbach's α coefficient can be used as a standard to measure reliability, and a large coefficient means high reliability (Heale and Twycross, 2015). In general, if the coefficient is greater than 0.8, it indicates that the questionnaire has high reliability. If the coefficient is between 0.7 and 0.8, it indicates that the reliability of the scale is within an acceptable range (Anderson et al., 2019). If the coefficient is less than 0.6, the questionnaire should be adjusted (Li and Xue, 2021). As shown in Table 1, Cronbach's α coefficients of customers' buying decisions, attitude, and 4P scales ranged between 0.898 and 0.613, which are all higher than the threshold of 0.6, indicating that the scales had passed the reliability test.

4. Findings and discussion

Out of the total 400 questionnaires that were distributed at three main retail stores in Beijing, namely, Walmart, Darunfa, and Yonghui supermarket, a total of 334 valid questionnaires were returned, giving a response rate of 83.5%. The data was entered into SPSS for descriptive analysis. Further inferential analyses were conducted using the partial least squared-structural equation modeling (PLS-SEM) method in the SmartPLS Ver 3 software. The following sections discuss the results of these analyses.

4.1. Demographic characteristics

As shown in Table 2, the demographic information of the respondents such as age group, gender group, and monthly income are summarized. In the data collected from the respondents, there are a total of 86 (25.7%) male respondents and 248 (74.3%) female respondents. In comparison, Beijing is a metropolitan city that has over 21 million residents and a total of 51.14% are men and the remaining are women (National Bureau of Statistics China, 2021b). The data drawn from this study shows a higher ratio of female respondents compared to the population census as it was collected at supermarkets which were generally more frequented by female shoppers.

The majority age ranges from the total of 334 respondents were 96 (28.8%) for the age group of "31–40 years old," 74 (22.2%) for "41–50 years old," 57 (17.1%) for "51–60 years old," and 48 (14.4%) for "21–30 years old." There were 44 respondents (13.2%) "above 60 years

TABLE 1 Reliability results of pilot data (n=50).

Variables	Number of items	Cronbach's α
Consumer buying decision	5	0.868
Attitude	2	0.754
Product	3	0.893
Price	5	0.898
Place	3	0.613
Promotion	5	0.732

TABLE 2 Demographic characteristics of respondents (N=334).

Profile		Frequency	Percent (%)
Age group	Below 20 years old	15	4.5
	21–30 years old	48	14.4
	31–40 years old	96	28.8
	41–50 years old	74	22.2
	51–60 years old	57	17.1
	Above 60 years old	44	13.2
Gender	Male	86	25.7
	Female	248	74.3
Income	Below 1,000 yuan (USD145)	31	9.3
	1,000–3,000 yuan (USD145-USD435)	54	16.2
	3,000–5,000 yuan (USD436- USD 725)	83	24.9
	5,000–10,000 yuan (USD726-USD1451)	59	17.7
	10,000–20,000 yuan (USD1452-USD2903)	96	28.7
	More than 20,000 yuan (More than USD2903)	11	3.3
Education level	Primary school	29	8.7
	High school	34	10.2
	Diploma	47	14.1
	Undergraduate Degree	160	47.9
	Master	57	17.1
	Doctorate	7	2.1

old" and the minority age group "below 20 years old" was 15 (4.5%). As for the age demographics representation, this is aligned with the general population in Beijing where in 2021, the majority was between 30 and 40 years of age (Statista, 2023a,b,c).

For the monthly income of the 334 respondents, the majority of 96 (28.7%) earned 10,000 to 20,000 yuan (USD1452-USD2903), 83 (24.9%) earned between 3,000 and 5,000 yuan (USD436- USD 725), 54 (16.2%) earned 1,000 to 3,000 yuan (USD145-USD435), 31 (9.3%) earned less than 1,000 yuan (USD145), and 11 (3.3%) earned more than 20,000 yuan (USD2903) per month. It is quite comparable between the respondents' income levels with the overall population as it is reported that in 2022, the monthly average wages of the Beijing population are USD 1,220 or 8,409 yuan (Bdeex, 2022). However, Beijing is one of the four major first-tier cities in China and the salary ranges may differ drastically depending on the occupation, industry, and years of experience (Salary Explorer, 2023).

In terms of the educational background among the 334 respondents, the majority of 160 (47.9%) were undergraduates, 57 (17.1%) were masters students, 47 (14.1%) were diploma students, 34 (10.2%) were in high school, 29 (8.7%) were in primary school, and 7 (2.1%) were at postgraduate level. For comparison purposes, it is reported that in Beijing, as of 2020, 9.1 million people had college-level or higher qualifications, 2.3 million had attended primary school, and 8.5 million were in high school (CEIC, 2021).

4.2. Measurement modeling result

The partial least squares structural equation modeling undergoes two stages – measurement modeling and structural modeling. At the measurement modeling stage, the convergent validity and discriminate validity were assessed (Henseler et al., 2015). The results of the convergent validity are presented in Table 3 below.The composite reliability (CR), average variance extracted (AVE), and Cronbach's Alpha (CA) values were examined. The convergent validity is assumed to be satisfactory if the outer loading values are above 0.7 (Hair et al., 2019). Based on the data in Table 3, the outer loadings were all above 0.7 and ranged between 0.761 and 0.917 and the corresponding AVE values were also all above 0.5, which indicates that all the items can sufficiently be explained by least 50% for each respective construct (Sarstedt et al., 2019). Additionally, all the CR and CA values were above the suggested minimum thresholds of 0.70, which indicates that these constructs met internal consistencies (Hair et al., 2019).

To assess the discriminant validity, the result of the heterotrait-monotrait (HTMT) ratio of correlations is presented in Table 4. As observed, all the HTMT values were less than the value of 0.90 (Hair et al., 2019), thus confirming the discriminant validity of the constructs.

4.3. Structural modeling result

To test the hypothesized relationships, structural modeling is performed using the bootstrapping procedure as suggested by Hair et al. (2019). In structural equation modeling, bootstrapping is a non-parametric resampling procedure that creates subsamples (in this study, 5,000 subsamples were used) with random permutations. The purpose of conducting bootstrapping is to examine the variability of data and to avoid the pitfalls of any errors in data distribution assumptions (Hair et al., 2021). The results of the path coefficients are presented in Table 5 below.

Based on the results presented, the hypothesis of product, place, and promotion toward attitude has been supported, whereas price did not have a significant effect on consumers' attitudes. Besides, attitude was a significant influencer on their buying decision toward organic food products. As for the mediating role of attitude, the result confirms that attitude did mediate the relationship between product, place, and promotion with buying decisions. However, this study failed to prove the mediating role of attitude in price and buying decisions.

The result of the overall coefficient of determination is demonstrated in Table 6 above. The R-square value of 0.543 shows that product, place, and promotion can explain 54.3% of the variance in attitude. According to Cohen (1988), the R-square value of 0.194 indicates moderate prediction accuracy and 0.543 indicates a substantial level of prediction accuracy. Further discussions and implications of the results are presented in the section below.

4.4. Moderation effect result (Hypothesis 10)

The data in Table 7 shows the influence of income on individual paths between attitude and buying decisions. The findings indicate that income does not moderate the relationship between attitude and consumer buying decisions. The first step shows that attitude explains 8.7% of the variance of consumer buying decisions, which is significant ($R^2 = 0.089$, $F\triangle = 32.59$, $p < 0.05$). In the second step, income contributes an additional 0.4% to explain consumer buying decisions ($R^2 = 0.093$, $R^2\triangle = 0.004$, $F\triangle = 1.337$, $p > 0.05$). In the third step, both attitude and income are considered, and the interaction variable (attitude x income) explains an additional 0.3% of the variance, which is significant ($R^2 = 0.096$, $R^2\triangle = 0.003$, $F\triangle = 0.957$, $p > 0.05$). However, all three effects are not statistically significant in step 3, and the partial correlation is small ($r = 0.051$). Therefore, the results suggest that income does not moderate the relationship between attitude and consumer buying decisions.

4.5. Discussion

Having an understanding of consumers' psychological reactions toward marketing strategies enables firms to achieve sustainable competitive advantage. Based on the above results, product strategy is the most influential factor in consumers' attitudes to organic food products. By buying organic foods, consumers expect them to be a healthier and safer option. Consumers who have a higher education level and disposable income or female consumers with children tend to choose organic food products for their families because of their health benefits. Hence, providing clear information about the unique characteristics and benefits of organic production methods is a promising strategy for the organic food market. According to another study conducted on consumers from Shantou, Shenzhen, and Guangzhou in China, organic labeling awareness and food safety attitudes directly influenced consumers' organic food buying decisions (Wong and Tzeng, 2021). Organic food producers should accurately develop effective market positioning, strengthen their

TABLE 3 Convergent validity.

Construct	Items	Outer loadings	Average variance extracted	Composite reliability	Cronbach's alpha
Attitude	ATT1—Organic foods are safer to consume compared to conventional foods.	0.917	0.836	0.911	0.804
	ATT2—Eating organic foods is healthier compared to conventional foods.	0.912			
Consumer Buying Decision	CBD1—I would buy organic food compared to conventional foods.	0.846	0.700	0.921	0.893
	CBD2—Buying organic foods is the usual routine for me.	0.831			
	CBD3—I prefer to buy organic foods whenever it is available.	0.839			
	CBD4—In the last month, I have bought organic foods.	0.843			
	CBD5—I buy organic foods at least once a week.	0.823			
Product	PROD1—Proper packaging of organic foods is important to me.	0.849	0.751	0.900	0.834
	PROD2—The brand name of organic food is important to me.	0.856			
	PROD3—Certification label relating to the quality of organic foods is important to me.	0.895			
Price	PRICE1—The value of organic foods matches their price.	0.813	0.642	0.900	0.862
	PRICE2—The price of organic foods is reasonable.	0.796			
	PRICE3—The price of organic foods is a reflection of its brand.	0.838			
	PRICE4—The price of organic foods is comparable to conventional foods.	0.763			
	PRICE5—The price of organic foods reflects their quality.	0.796			
Place	PLACE1—The availability of organic food delivery from online stores is important to me.	0.817	0.657	0.851	0.743
	PLACE2—The availability of organic food in convenience stores/ supermarkets is important to me	0.840			
	PLACE3—I can easily find organic food outlets nearby.	0.773			
Promotion	PROMO1—There is sufficient advertising exposure regarding organic food.	0.784	0.641	0.899	0.860
	PROMO2—Online promotion for organic food is very attractive.	0.816			
	PROMO3—The advertisement message used for organic food is very persuasive.	0.761			
	PROMO4—There is a variety of discounts given for organic foods.	0.827			
	PROMO5—There are sufficient social media promotions regarding organic foods.	0.815			

brand image, and strictly control product quality to improve brand credibility, trust, and reputation. Equally, the government can support this through stringent monitoring and standardizing organic food certification.

In this study, it was confirmed that price had no influence on consumers' attitudes toward organic food products. During the Covid-19 pandemic, the research on prices of organic food products was vague and inconclusive. Past research results indicate that consumers have heightened their willingness to pay for safer more wholesome food products (Yue et al., 2021). According to Xie et al. (2015), price rather than the quality of products significantly influenced consumers' purchase intentions. Price was found to be the most influential variable of the marketing mix that can be used by organic food firms to build customer relationships (Al-Zyoud, 2019). Also as stated earlier, higher prices of organic vegetables compared to conventional vegetables may have been one of the barriers to consumer purchase decisions (Łuczka, 2019). Also, income was found to have no moderating effect on their buying decision of organic foods. The past studies seem to contradict the results in this present study. In line with this, high-income respondents among the highly educated respondents consistently reported a higher willingness to pay for meat with certified labels (Wang et al., 2018). Noteworthily, in recent years, China's high-end consumption has increased (Legeza et al., 2019). This phenomenon was mainly caused by the increasing growth of the country's high and middle-class population which expressed a strong demand for high-quality and safer products

TABLE 4 Discriminant validity (HTMT ratio).

	Attitude	Buying decision	Place	Price	Product	Promotion
Attitude						
Buying decision	0.515					
Place	0.432	0.560				
Price	0.344	0.539	0.323			
Product	0.865	0.478	0.388	0.312		
Promotion	0.415	0.445	0.315	0.357	0.325	

(Qazzafi, 2019). Moreover, this study was conducted among the consumers in Beijing where their average income range was considered to be higher when compared to other smaller cities in China. According to the National Bureau of Statistics of China (2022), the average *per capita* income growth rate between 2020 and 2021 was 6.9 percent. In Beijing households specifically, the disposable income increased by 1.4 percent in, 2022 when compared to the previous year. The majority of past studies that supported the notion that income was a moderator of organic food buying behaviors were conducted pre-Covid (Yin et al., 2010; Akbar et al., 2019; Ali et al., 2021). As established in this study, the post-pandemic situation may have altered this either temporarily or permanently (Inoue and Todo, 2023). A recent study has also coined this as "revenge-buying behavior." For instance, a study conducted in Shanghai, China, found that after the pandemic lockdown, people were highly willing to buy their desired products regardless of the price (Liu et al., 2023). Hence, it can be concluded that both price and income are not a value visualization of the product decision itself especially when it comes to purchasing organic food products that are believed to be healthier and safer, especially post-pandemic. This could be resulting from consumers' fear of falling ill or avoiding health risks, hence, price and income were no longer a barrier for them. Moreover, organic food products have always carried a premium price due to their intricate process, making price an insignificant factor of consideration for consumers who favor organic products. This is also supported by Aschemann-Witzel and Zielke (2017) who found that the price sensitivity of organic consumers is relatively lower than those of occasional or non-organic consumers.

The result of this study also confirms that place or distribution strategy is key in encouraging the purchase of organic food products. Food traceability networks are an effective means of increasing transparency in food production and distribution by creating a continuous trusted flow of safe manufacturing processes (Accorsi et al., 2016). Recent trends in green marketing have also seen the growth in green place strategy which focuses on the development of production and distribution facilities that pays more attention to environmental sustainability (Sureeyatanapas et al., 2018). For instance, green place strategy not only supports the supply of fresh organic food products to the end-users but also encompasses all related supply chain systems including proper logistics and transportation methods that help to reduce air pollution and other forms of environmental damage. Improving the level of integration between various departments such as production, sales, quality control, and marketing will help to reduce the circulation process from the farm to the end-users, hence, reducing waste and time needed for the organic products to reach the retail stores. This will not only help to make the products conveniently available but will also reduce the market price of organic foods and promote consumer demand for organic foods.

Based on this study, the promotional strategy was found to have a significant impact on consumers' attitudes toward organic food, particularly through digital media platforms. According to the loading value for the measurement items, it was indicated that consumers were more inclined to online promotions, social media advertisements, and discounts. Advertising and sales promotion of eco-friendly products have undergone major transformations and it was deduced that consumers who have a positive attitude toward these advertisements have higher tendencies to buy the products (Testa et al., 2011). Currently, the promotion of organic food is little, and advertising seems insufficient to draw all levels of Chinese consumers. As such, organic food providers and retailers should leverage exposure by advertising and promoting their products through popular media channels such as instant messages, push notifications, and social media platforms. Organic food suppliers and distributors should increase advertising investment and carry out more publicity on websites, billboards, and public places such as train stations and bus stations. Additionally, online promotional activities such as rebates and mobile coupons can also be implemented as the current consumers prefer to buy products online, including food (Hooton and Tyler, 2019). Moreover, related government agencies can promote healthy consumption by developing public service announcement (PSA) videos or infographics that make it easier for consumers and non-organic consumers to improve their level of knowledge on organic food products.

The findings of the present study regarding the mediating effect of consumer attitude appear to be in contrast to those found in a recent study where attitude was a moderator between green marketing mix and green buying intention of millennials in India (Kaur et al., 2022). Based on this study, attitude has a positive significant impact on consumer purchase behaviors of organic foods, thus, this needs to be capitalized on for the masses through the development of effective green marketing mix strategies. Although the effect of attitude toward their buying decision is at a low to moderate level, the COVID-19 pandemic situation has opened a window of opportunity by altering Chinese consumers' behavior toward food purchasing and consumption, especially in selecting healthier options (Li et al., 2022). Perhaps, the concept of "organic" is still superficial to Chinese consumers as they may not have fully understood the entire organic food process. According to Xie et al. (2015), the main barriers to organic food sellers in Eastern China are the consumers' lack of knowledge. Based on a recent study by Handriana et al. (2022), consumer decisions in consuming environmentally friendly food

TABLE 5 Path coefficients.

Hypothesized relationships	Path coefficient	Standard Deviation	*t*-value	*p*-value	Result
Hypothesis 1: Product strategy has a significant positive relationship toward attitude	0.630	0.041	15.488	0.000	Supported
Hypothesis 2: Price strategy has a significant positive relationship toward attitude	0.055	0.043	1.298	0.097	*Rejected*
Hypothesis 3: Place strategy has a significant positive relationship toward attitude	0.098	0.041	2.391	0.008	Supported
Hypothesis 4: Promotion strategy has a significant positive relationship toward attitude	0.131	0.038	3.467	0.000	Supported
Hypothesis 5: Attitude has a significant positive relationship toward buying decision	0.440	0.044	9.919	0.000	Supported
Hypothesis 6: Attitude mediates the relationship between product and buying decision	0.277	0.033	8.446	0.000	Supported
Hypothesis 7: Attitude mediates the relationship between price and buying decision	0.024	0.020	1.235	0.108	*Rejected*
Hypothesis 8: Attitude mediates the relationship between place and buying decision	0.043	0.019	2.245	0.012	Supported
Hypothesis 9: Attitude mediates the relationship between promotion and buying decision	0.058	0.018	3.188	0.001	Supported

TABLE 6 Overall coefficient of the determination result.

Construct	R Square	Level of prediction accuracy
Attitude	0.543	Substantial
Buying decision	0.194	Moderate

products are highly influenced by green products, green places, and green promotions. Thus, it is important for consumers to improve their level of understanding of organic food and learn to identify the authenticity of organic food according to the brand, organic certification, and other information.

5. Conclusion

Consequently, this research sets out to provide significant practical and theoretical contributions with regard to the empirical linkages between marketing mix elements, consumers' attitude, and their buying decision. The marketing mix as the external stimuli developed by companies was often postulated as having a direct response on consumers. This study tested the internalized role of attitude as a mediator. The results of this study found that for organic food, the marketing mix strategies of product, place, and promotion were crucial to influence Beijing consumers' attitudes. Interestingly, price was not an important factor that affects consumer purchasing decisions, particularly post-covid where consumers displayed much more concern for their health and food safety. Moreover, income was also found to have no moderating effect on attitude and buying decisions. It is often assumed that consumers would prefer cheaper prices but in terms of safer organic food products, this study proved otherwise. In this study, the major respondents were the more affluent female consumers who have a higher income range, thus the pricing strategies did not manage to capture this segment and income was not a consideration. Contrarily, product strategies were confirmed to be the most significant element for them. The consumers preferred organic food products that highlight their core benefits clearly on the packaging and labeling. Moreover, their perception of attractive and relevant promotional strategies also determines their attitude toward organic food products which in turn impacts their interest to buy these products.

5.1. Implications of study

From an academic perspective, the findings of this study have contributed to new marketing knowledge. Although the basic framework of marketing mix strategies which are commonly known as the 4Ps have been widely studied, many of the studies were from the pre-pandemic era. Moreover, past studies related to this rarely applied attitude as a mediator in buying behavior. Due to the changing behavior of consumers especially in developing countries that were affected by the pandemic, this study gave insights into these shifts especially when price and income were found to have no significant effect on consumer buying decisions of organic food products in particular. From the practitioners' perspective, this study has confirmed that customers respond positively to product strategies, place strategies, and promotional strategies, while implemented price strategies by organic food retailers did not have a significant impact on Beijing consumers' attitudes toward organic food products. Contradictory to past studies, income was also found to have no moderating effect on buying decisions. In

TABLE 7 Results of moderation effect.

Variables	R^2	Adjusted R^2	R2Δ	FΔ	SE B	Beta	Sig	Correlation (part)
Step 1								
Constant					0.118	1.587	0.000	
Attitude	0.089	0.087	0.099	32.59	0.049	0.280	0.000***	0.299
Step 2								
Constant					0.216	11.442	0.000	
Attitude					0.049	0.285	0.000***	0.303
Income	0.093	0.088	0.004	1.337	0.031	0.036	0.248	0.061
Step 3								
Constant					0.486	1.868	0.000	
Attitude					0.135	0.162	0.233	0.063
Income					0.127	−0.085	0.506	−0.035
Attitude* Income	0.096	0.087	0.003	0.957	0.036	0.035	0.329	0.051

particular, for product strategies, the respondents indicated the highest concern on the certification, and for place strategies, they place a higher preference for convenient location and availability of delivery services provided by online stores. In terms of promotional strategy, they seem to prefer discounts and other forms of promotion that are available through online channels. Essentially, the income of the consumers in Beijing did not determine their purchase decision in this study. This may imply that from a wider perspective that when the nation's economic situation and the population's *per capita* income improves, naturally, the spending power is higher. As such, the implication for marketers and organic food producers is the need to emphasize the quality and safety attributes in their marketing messages to appeal to health-conscious and environmentally-conscious consumers rather than solely on the price worthiness or value comparison. Appropriate online advertising and reasonable discount programs are conducive to attracting consumers' attention, developing favorable attitudes, and motivating them to buy more organic food products. Although this study showed that price was not a deciding factor for consumers, marketers of organic food products must still communicate the added value of their products to justify the higher prices. Moreover, marketers of organic food products must ensure that their products are easily accessible to consumers by choosing the right distribution channels. Modern-day retailers must enter the omni-place channel where they must continue to innovate their business model and optimize value creation and technological advancements in order to improve their distribution strategy. Companies can use a range of promotional strategies such as advertising, social media marketing, and influencer marketing to reach consumers and promote the benefits of organic food. Based on this study, attitude does impact consumers' consumption of eco-friendly products, thus shaping green marketing strategies. For marketers and retail stores, strengthening the product and promotional strategies to communicate and improve consumers' knowledge will develop a more favorable attitude among consumers toward organic food products. As policymakers in China work to promote the growth of the organic food industry, it is important for them to understand how marketing mix strategies, especially product quality/certification, effective promotional tactics, and improvements in distribution channels can help increase consumer demand for these products. For instance, the Certification and Accreditation Administration of China (CNCA), which is the agency in charge of organic food in China, can implement certain regulations related to organic food production, certification, and labeling to improve the attitude of locals toward the genuineness of organic products. In addition to the CNCA, the Ministry of Agriculture and Rural Affairs (MARA) and the State Administration for Market Regulation (SAMR) can collaborate with CNCA to work together to ensure that organic food products suppliers in China meet national standards and to promote the health benefits of organic food consumption through mass media channels.

5.2. Limitations and future research

As for the limitations, although some factors affecting consumers' buying decisions and attitudes toward organic food products were examined in this paper, other factors could have been overlooked and the sample size is limited to consumers in Beijing city only. Future research may consider other social influences and demographic characteristics as moderating variables to improve the model's explanatory power. Moreover, the data was collected through a physical survey at retail stores and supermarkets only. Perhaps this has limited the participation of consumers who may have purchased organic food products online or on store websites. It is suggested that further studies can consider respondents from both physical and online platforms for better inclusivity. A comparative analysis between these two groups of customers may contribute to a further understanding of their distinct buying behavioral patterns. Nonetheless, by studying consumers' attitudes and buying decisions toward organic food products, practitioners can more accurately grasp the future trend of this market and formulate more targeted and effective marketing strategies for organic agricultural products.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

YJ: conceptualization and research design. SINWA: administration and writing. RW: data analysis. KTP and BJHL: writing and editing. All authors contributed to the article and approved the submitted version.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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