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Understanding women's green food consumption in Beijing: Integrating knowledge–attitude–behavior and health belief models

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*Qinglu Qiu, Jirawan Deeprasert and Songyu Jiang**

Rattanakosin International College of Creative Entrepreneurship, Rajamangala University of Technology Rattanakosin, Nakhon Pathom 73170, Thailand

*For Correspondence: Email: jiang.song@rmutr.ac.th; jirawan.dee@rmutr.ac.th

Abstract

Promoting women's green food consumption contributes to SDGs 3, 5, 12, and 13. This study investigates how women in Beijing translate knowledge into certified green food consumption via health belief pathways. We surveyed 676 female consumers (aged 20-60) using purposive and quota sampling across various retail venues. Structural equation modeling (SEM) tested the proposed model. Results indicate that both subjective and objective knowledge significantly increase perceived benefits, susceptibility, and severity, while reducing perceived barriers. However, neither knowledge form directly affects consumption behavior. Instead, behavior is driven by health belief constructs, with cues to action also being a significant predictor. Furthermore, income and education level positively influence green food consumption. These findings theoretically enrich the discussion by integrating the Knowledge Attitude Behavior model with the Health Belief Model and distinguishing knowledge types. We also offer practical guidance for policymakers, certification bodies, retailers, and health educators aiming to promote safer, more sustainable food consumption. (*Afr J Reprod Health 2025; 29 [12s]: 65-85*).

Keywords: Green food consumption; subjective knowledge; objective knowledge; Health Belief Model; Chinese women consumers

Résumé

La promotion de la consommation alimentaire verte des femmes contribue aux ODD 3, 5, 12 et 13. Cette étude examine comment les femmes à Pékin traduisent leurs connaissances en consommation certifiée d'aliments verts via les voies des croyances en matière de santé. Nous avons interrogé 676 consommatrices (âgées de 20 à 60 ans) en utilisant un échantillonnage raisonné et par quota dans divers points de vente. La modélisation par équations structurelles (SEM) a testé le modèle proposé. Les résultats indiquent que les connaissances subjectives et objectives augmentent significativement les avantages perçus, la susceptibilité perçue et la sévérité perçue, tout en réduisant les barrières perçues. Cependant, aucune forme de connaissance n'affecte directement le comportement de consommation. Ce dernier est plutôt motivé par les constructions des croyances en matière de santé, les incitations à l'action étant également un prédicteur significatif. De plus, le revenu et le niveau d'éducation influencent positivement la consommation d'aliments verts. Ces résultats enrichissent théoriquement la discussion en intégrant le modèle Connaissance-Attitude-Comportement au Modèle des Croyances en matière de Santé et en distinguant les types de connaissances. Nous proposons également des conseils pratiques aux décideurs politiques, aux organismes de certification, aux détaillants et aux éducateurs en santé qui visent à promouvoir une consommation alimentaire plus sûre et plus durable. (*Afr J Reprod Health 2025; 29 [12s]: 65-85*).

Mots-clés: Consommation d'aliments verts, connaissances subjectives, connaissances objectives, Modèle des Croyances en matière de Santé, consommatrices chinoises

Introduction

Global food systems are under increasing pressure to deliver diets that are at once safe, healthy, and environmentally sustainable. Traditional high-input agricultural models have significantly expanded food supply, but they also have intensified problems such as resource overuse, environmental

degradation, and food safety risks¹. In response, the international community has promoted the notion of sustainable food, which emphasizes environmental protection, economic viability, and social equity across the entire chain from production to consumption². Within this broader agenda, green and organic food have emerged as tangible pathways to operationalize sustainable

consumption. China has become an important arena for the development of sustainable food systems. Since the early 1990s, the country has established a multi-level certification framework that distinguishes among green food, organic food, and other quality labels, and has integrated these schemes into national strategies for food safety and ecological agriculture³. Green food, as officially defined in China, refers to agricultural and processed products produced under restricted use of synthetic pesticides and fertilizers, with regular quality inspection and environmental protection requirements, and it can be identified through the official green food certification logo on the package⁴. According to recent statistics from the China Green Food Development Center (CGFDC), Chinese domestic sales of green food reached 585.657 billion RMB in 2023, more than five times the sales of organic food in the same period, indicating that green food has moved beyond a niche market and is increasingly embraced by mainstream consumers⁵.

However, rapid market expansion does not imply that consumers' purchasing behavior is stable or sufficient to support a long-term transformation of food systems. Existing research consistently shows that green and sustainable food markets are constrained by multiple factors, including higher prices, information asymmetry, and limited trust in certification standards⁶. In the specific case of China, the certification system is complex and multi-tiered, with AA-grade and A-grade green food coexisting alongside organic labels and loosely regulated claims such as "ecological" or "natural" food⁷. Many consumers struggle to distinguish among these categories, and official certification marks compete with commercial labels on supermarket shelves and digital platforms. This situation creates confusion, reinforces perceived risk, and contributes to a persistent "attitude-behavior gap," where positive attitudes toward green food do not consistently translate into actual purchasing behavior⁸.

Chinese women are at the center of these dynamics. In most urban households, women remain the primary decision-makers for food purchasing and meal preparation, and thus directly shape family dietary patterns⁹. At the same time, they often carry a culturally rooted responsibility

for safeguarding the health of children, partners, and elderly relatives, which heightens their sensitivity to food safety issues¹⁰.

From the perspective of the Health Belief Model (HBM), their decisions about whether to purchase green food are influenced by perceived susceptibility to foodborne risks, perceived severity of potential health consequences, perceived benefits of choosing certified products, and perceived barriers related to cost, availability, or social norms¹¹. In a context where foodborne diseases still pose important public health challenges and where pesticide residues, chemical additives, and pathogenic contamination remain salient concerns, these health beliefs exert substantial influence on women's food choices¹².

Yet, even among health-conscious, better-educated female consumers in urban China, green food consumption is marked by inconsistency. Many women report strong support for "healthy" or "safe" eating and express a desire to protect their families through better food choices, but their actual purchasing of certified green products is often sporadic¹³. One key reason lies in the structure of consumer knowledge. Recent research distinguishes between subjective knowledge, meaning self-perceived familiarity and confidence, and objective knowledge, meaning accurate, verifiable understanding based on expert-defined standards^{14, 15}. In China's green food market, a frequent pattern is high subjective but low objective knowledge: consumers believe they know what "green food" is, yet they confuse general "green" marketing terms with officially certified green food, mistake "ecological farm" branding for formal certification by the China Green Food Development Center, or trust unverified "green" products promoted on social media and short-video platforms¹⁶. Under these conditions, strong health beliefs may fail to translate into stable, certification-consistent purchasing behavior because the cognitive foundations of decision-making are flawed.

These practical challenges are mirrored by several theoretical limitations in the existing literature. First, most studies of green or organic food consumption adopt a single theoretical lens, typically either the Knowledge-Attitude-Behavior (KAB) model or the Health Belief Model. KAB

emphasizes a linear cognitive sequence from knowledge to attitude to behavior, and has been widely applied in food and nutrition education research^{17,18}. HBM, by contrast, highlights health-related motivations such as perceived susceptibility, perceived severity, perceived benefits, and perceived barriers, and has been used to explain preventive behaviors like vaccination uptake or healthy eating¹⁹. Only a few studies have attempted to integrate these perspectives, even though real-world food choices often involve both rational information processing and emotionally charged health concerns^{20,21}.

Second, within the KAB framework, “attitude” is frequently treated as a broad evaluative disposition, which provides limited insight into why and how individuals are motivated to act. The multidimensional nature of health-related attitudes, especially in relation to perceived risks and perceived barriers, is often overlooked. Recent works suggest that the constructs of the HBM can be used to unpack and operationalize this attitude component, but empirical applications in the context of green food remain scarce²¹. Third, although the distinction between subjective and objective knowledge is gaining attention in consumer research, many studies still treat knowledge as a single-dimensional construct, thereby obscuring how confidence and factual accuracy may exert different, and sometimes opposing, effects on sustainable food choices^{14,15}.

In order to address these gaps, the present study focuses on Chinese women as key household food decision-makers in Beijing and investigates how their subjective and objective knowledge of green food influence health beliefs and consumption behavior. Specifically, this study pursues four objectives.

- 1) To investigate the impact of subjective knowledge and objective knowledge on Chinese women's green food consumption behavior.
- 2) To analyze the influence pathways of subjective knowledge and objective knowledge on health beliefs (perceived benefits, perceived barriers, perceived susceptibility, perceived severity).
- 3) To evaluate the effects of health beliefs (perceived benefits, perceived barriers, perceived susceptibility, perceived severity) on Chinese women's attitudes toward green food consumption.

- 4) To examine how demographic factors (marital status, education level, and household income, age) shape Chinese women's green food consumption behavior.

Literature review

Theoretical framework

This study adopts an integrated framework combining the Knowledge–Attitude–Behavior (KAB) model and the Health Belief Model (HBM). KAB suggests that knowledge shapes evaluative tendencies and ultimately behavior, and it has been widely applied in food choice, nutrition education, and sustainable consumption research¹⁷. Yet, treating knowledge as a single-dimensional construct and attitude as a generic evaluation is often insufficient in credibility-sensitive contexts such as food safety and certification, where consumers face complex signals and heterogeneous labelling practices. In green food markets, it is therefore necessary to distinguish objective knowledge (accurate, fact-based understanding) from subjective knowledge (self-perceived familiarity and confidence)^{14,15}. Integrating KAB with HBM reframes the classic knowledge→attitude→behavior chain into a more diagnostic pathway: knowledge→health beliefs→behavior—capturing the psychological mechanisms that underpin risk-averse, protective food choices.

Hypothesis development

Objective knowledge reflects verifiable understanding of product attributes, production processes, and certification standards; it improves consumers' ability to interpret certification cues, discriminate credible claims from vague slogans, and reduce ambiguity in decision-making¹⁴. Empirical work shows that factual knowledge increases recognition of certified labels and preference for verified products²², strengthens confidence in sustainability-related decisions²³, supports more stable pro-health/pro-environment purchasing patterns²⁴, increases attention to certification symbols in real purchase contexts²⁵, and promotes healthier choices under uncertainty²⁶.

H1: Consumers with higher levels of objective knowledge about green food are more likely to engage in green food consumption behavior.

Subjective knowledge captures perceived familiarity and self-assessed expertise, which may motivate protective consumption even when factual accuracy varies²⁷. Perceived familiarity with sustainability attributes increases preferences for eco-labelled foods²⁸; subjective knowledge reinforces expected nutritional benefits and protective eating choices²⁹, reduces uncertainty and increases willingness to pay for certified products³⁰, and supports precautionary behavior when market information is complex³¹. It is also especially influential among primary household food purchasers who rely on perceived expertise to manage safety risks and interpret quality/certification signals^{32, 33}.

H2: Consumers with higher levels of subjective knowledge regarding green food are more inclined to perform green food consumption behavior.

Beyond direct effects, both knowledge types are expected to shape HBM beliefs. When consumers feel knowledgeable, they tend to value the health/safety/quality advantages of certified foods more strongly^{14,32}, while experiencing fewer obstacles because confidence reduces confusion, strengthens trust, and enhances control in complex food environments^{34,35}. Perceived expertise can also heighten vulnerability and seriousness appraisals by making risks and long-term harm more salient³⁶.

H3a: Subjective knowledge positively influences perceived benefits of green food.

H3b: Subjective knowledge negatively influences perceived barriers to green food consumption.

H3c: Subjective knowledge positively influences perceived susceptibility to risks associated with non-green food.

H3d: Subjective knowledge positively influences perceived severity of the consequences of unhealthy food consumption.

Similarly, objective knowledge in credibility-sensitive settings can strengthen benefit beliefs by

clarifying concrete advantages³⁷, reduce barriers by improving label interpretation and authenticity assessment³⁸, heighten susceptibility through better understanding of contamination pathways and exposure³³, and increase severity appraisals by enhancing comprehension of chronic impacts and regulatory gaps³⁹.

H4a: Objective knowledge positively influences perceived benefits of green food.

H4b: Objective knowledge negatively influences perceived barriers to green food consumption.

H4c: Objective knowledge positively influences perceived susceptibility to risks linked to unhealthy food consumption.

H4d: Objective knowledge positively influences perceived severity of the consequences of unhealthy food consumption.

HBM constructs function as proximal determinants of preventive consumption⁴⁰. Stronger perceived benefits motivate adoption of safer and health-enhancing options, whereas perceived barriers (e.g., price concerns, authenticity doubts, inconvenience) inhibit protective behavior⁴¹. Higher susceptibility increases readiness to shift toward certified alternatives under perceived food safety threats^{42,43}, and greater severity strengthens motivation to avoid serious or long-lasting consequences⁴⁴.

H5a: Perceived benefits positively influence green food consumption behavior.

H5b: Perceived barriers negatively influence green food consumption behavior.

H5c: Perceived susceptibility positively influences green food consumption behavior.

H5d: Perceived severity positively influences green food consumption behavior.

Consistent with HBM, the effects of knowledge on behavior are expected to operate largely through beliefs. Clear benefit beliefs are a central motivational route: objective knowledge strengthens evidence-based expectations of nutritional value and reduced chemical exposure^{45,46}, and subjective knowledge similarly amplifies perceived outcome superiority and wellbeing expectations⁴⁷.

H6a: Perceived benefits mediate the relationship between objective knowledge and green food consumption behavior.

H6b: Perceived benefits mediate the relationship between subjective knowledge and green food consumption behavior.

Barriers provide another key pathway. Factual literacy helps consumers understand labelling systems and certification procedures, reducing uncertainty, confusion, and perceived effort/cost^{16,14,19}; perceived expertise likewise reduces anxiety and strengthens confidence in one's own judgments when navigating ambiguous claims¹⁵. Hence, we propose:

H7a: Perceived barriers mediate the relationship between objective knowledge and green food consumption behavior.

H7b: Perceived barriers mediate the relationship between subjective knowledge and green food consumption behavior.

Knowledge also influences behavior via perceived vulnerability. Objective knowledge about residues, contamination routes, and regulatory processes supports more accurate exposure assessment^{48, 49}

and makes risks more concrete, which can raise perceived susceptibility, particularly in uncertified contexts³³. Subjective knowledge can similarly intensify personalization of food risks and strengthen vulnerability perception as a cognitive channel to action^{50,51}. therefore, we posit:

H8a: Perceived susceptibility mediates the relationship between objective knowledge and green food consumption behavior.

H8b: Perceived susceptibility mediates the relationship between subjective knowledge and green food consumption behavior.

Severity appraisal is expected to operate as an additional mechanism. Understanding exposure routes and long-term health effects can heighten seriousness evaluations and motivate safer alternatives⁵², while perceived familiarity increases the accessibility and salience of negative consequences⁵³. Evidence further suggests that once severity is modeled, direct knowledge effects may weaken while indirect effects via severity remain meaningful⁵⁴. therefore, we posit:

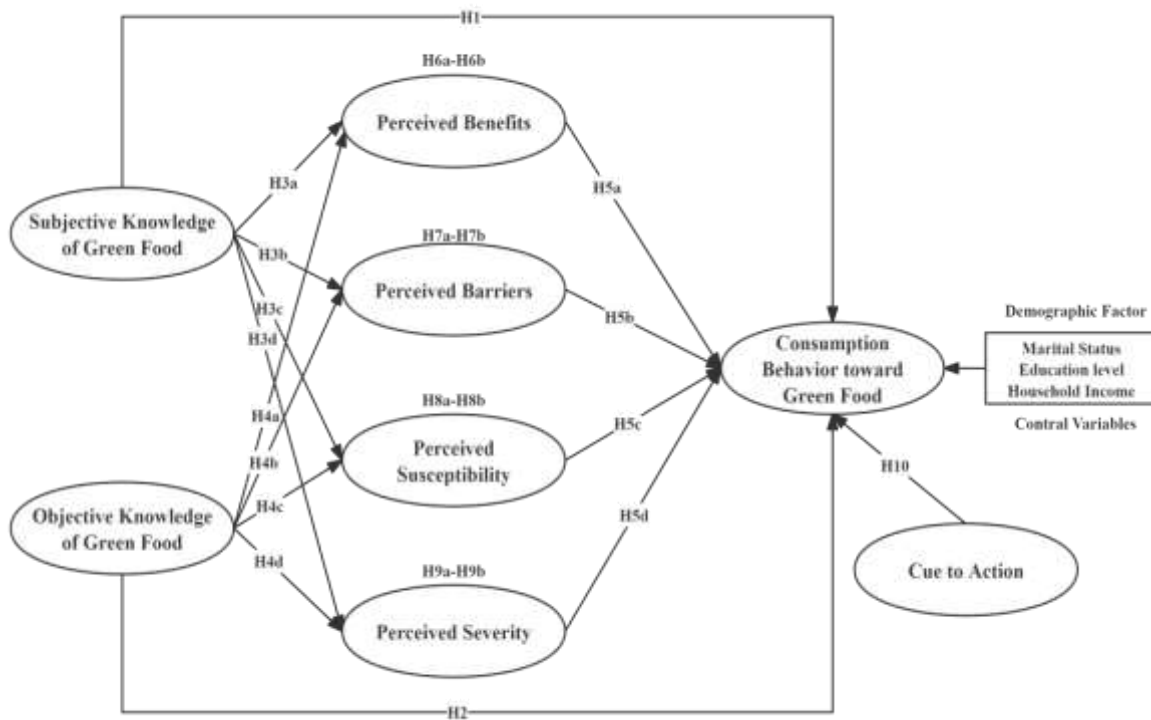


Figure 1: The research model of consumption behavior toward green food

H9a: Perceived severity mediates the relationship between objective knowledge and green food consumption behavior.

H9b: Perceived severity mediates the relationship between subjective knowledge and green food consumption behavior.

Finally, cues to action activate knowledge and beliefs at the decision point and facilitate belief-to-behavior translation⁵⁵. External signals such as government alerts, incident-related news, and campaigns heighten risk salience and encourage certified choices⁴², while social media exposure and online health messages operate as powerful prompts for sustainable/health-oriented purchasing⁵⁶. Interpersonal recommendations from family, peers, and health professionals further strengthen intention–behavior consistency⁵⁷.

H10: Cues to action positively influence green food consumption behavior.

In sum, the proposed model links objective and subjective knowledge to HBM beliefs and then to green food consumption behavior, with cues to action and demographics as contextual influences (Figure 1).

Methods

Data collection

This study surveyed 676 Chinese female consumers aged 20 to 60 years who lived in Beijing city, China and had previous experience purchasing certified green food. Data were collected using a multi stage sampling strategy that combined quota sampling with purposive sampling. Age based quotas were first set according to the age distribution of women aged 20 to 60 so that the sample structure broadly reflected the population. Within each age quota, trained investigators used screening questions to recruit eligible respondents at large chain supermarkets, community fresh markets, organic food specialty stores and shopping malls where green food is sold. Fieldwork was conducted between September and October 2025. After obtaining informed consent, respondents completed an electronic questionnaire on the Wenjuanxing

platform on their own mobile phones or on tablets provided by the research team.

Instrument

The questionnaire consisted of four sections. The first section provided an introduction outlining the study purpose, data confidentiality, and voluntary participation. The second section collected demographic information such as age, education level, marital status, household income, and parenting status. The third section assessed respondents' purchasing behavior and familiarity with green food. The fourth and most substantial section contained measurement scales for seven latent variables.

Each construct was measured using scales adapted from validated instruments published in peer-reviewed journals. Subjective knowledge of green food was assessed with three items adapted from Fatha and Ayoubi¹⁵ to capture consumers' perceived familiarity with green food. Objective knowledge was measured with five factual statements adapted from the same authors, covering production methods, environmental impact, certification, and product attributes. Cues to action were captured with three items adapted from Glick, Winham⁴⁰, reflecting the influence of expert recommendations, family and friends, and social media exposure. Perceived benefits and perceived barriers were measured with six and five items, respectively, adapted from Martey^{19,58} to assess beliefs about the health advantages of green food and the psychological, accessibility, and cost-related obstacles to its consumption. Perceived susceptibility was measured with three items adapted from Wang, Guo⁵⁹, and perceived severity with four items adapted from Wang, Huang¹¹, both capturing consumers' perceived vulnerability to and seriousness of foodborne health risks. Green food consumption behavior was assessed using four items adapted from Zhu, Li⁶⁰, which evaluate the frequency of purchasing, attention to green labels, willingness to pay a premium, and recommendation behaviors. Except for the objective knowledge scale, which used dichotomous scoring (0 for incorrect or "not sure" and 1 for correct responses), all items were rated on a seven-point Likert scale ranging from "strongly disagree" (1) to "strongly agree" (7).

Data analysis

Data analysis followed several stages. First, completed questionnaires were screened for completeness, logical consistency, and response quality. Cleaned data were coded and entered into SPSS for descriptive statistics, reliability checks, and preliminary validity assessments. Structural equation modeling (SEM) was subsequently conducted using SmartPLS to examine both direct and indirect effects among variables, allowing simultaneous evaluation of the measurement and structural models.

Before the main survey, a pilot study was conducted with 35 respondents who met the study criteria to assess the reliability and validity of the questionnaire. Cronbach's alpha values for all constructs ranged from 0.780 to 0.927, exceeding the recommended threshold of 0.70, indicating strong internal consistency. Kaiser–Meyer–Olkin (KMO) values for all variables were above 0.70, confirming adequate sampling adequacy for factor analysis. These results demonstrate that the measurement scales possessed satisfactory reliability and validity and were suitable for full-scale data collection.

Ethical considerations

This study involved an anonymous questionnaire survey administered to adult participants (aged 18 years or above). Participation was entirely voluntary. Prior to the survey, participants were provided with an information sheet describing the study purpose, procedures, expected time commitment, and data use, and they indicated informed consent before proceeding. No personally identifiable information was collected, and responses were analyzed and reported only in aggregate form to protect privacy and confidentiality. Participants could skip any question and withdraw at any time before submitting the survey without penalty. In accordance with the authors' institutional guidance and relevant local regulations for minimal-risk, anonymous survey research with competent adults, the study was determined to be exempt from formal ethical review; therefore, no ethics committee approval number is available. Nevertheless, the study was conducted in line with established ethical principles

for human-subject research, including respect for persons, beneficence, and confidentiality.

Results

Table 1 shows that all 676 respondents had at least heard of green food, with most reporting that they knew it fairly well or very well, which indicates adequate familiarity for examining knowledge related mechanisms. The age structure is relatively even, with the largest share in the 40–49 group and comparable proportions in the 20–29 and 30–39 groups, while respondents aged 50–60 account for a smaller share. Average monthly income is concentrated between RMB 8,001 and 20,000, with fewer respondents at very low or very high income levels, suggesting a predominance of middle income households. In terms of education, over half hold a bachelor degree, about one fifth have a master or doctoral degree, and around one quarter are in the bachelor and below category, showing that the sample is generally well educated rather than dominated by low education groups. For marital status, single and married respondents together account for most of the sample, whereas divorced and widowed women represent only a small minority.

Figure 2 presents a descriptive overview of Chinese female consumers' green food practices across four dimensions: information acquisition, purchase purpose, household sharing, and decision criteria. The upper left panel shows that short video platforms are the most frequently used channel for accessing green food information, followed by social media, search engines, WeChat official accounts and other digital sources, while supermarkets, community spaces and interpersonal recommendations play a supporting but less prominent role. The upper right panel indicates that most respondents buy green food primarily for daily consumption, with smaller groups purchasing mainly as gifts or for both everyday use and gifting. The lower left panel reveals that green food is usually shared within the household rather than consumed by a single person, with mixed family consumption occupying the largest share. The lower right panel shows that health benefits are the dominant consideration when purchasing green food, with taste and nutritional value also highly

Table 1: Sample information

Information and Options		Frequency	Percent (%)
Have you heard of green food before	Yes, but I don't understand it at all	101	14.9
	Yes, and I know a little about it	176	26
	Yes, and I know it fairly well	187	27.7
	Yes, and I understand it very well	212	31.4
Age	20–29	183	27.1
	30–39	187	27.7
	40–49	212	31.4
	50–60	94	13.9
	Above 60	31	4.6
Average Monthly Income (RMB)	2,001–4,000	13	1.9
	4,001–6,000	82	12.1
	6,001–8,000	52	7.7
	8,001–10,000	164	24.3
	10,001–15,000	126	18.6
	15,001–20,000	122	18
	20,001–30,000	74	10.9
Education Level	Above 30,000	43	6.4
	Bachelor's degree and below	176	26
	Bachelor	360	53.3
	Master	120	17.8
	Doctor	20	3
Marital Status	Single	310	45.9
	Married	331	49
	Divorced	25	3.7
	Widowed	10	1.5

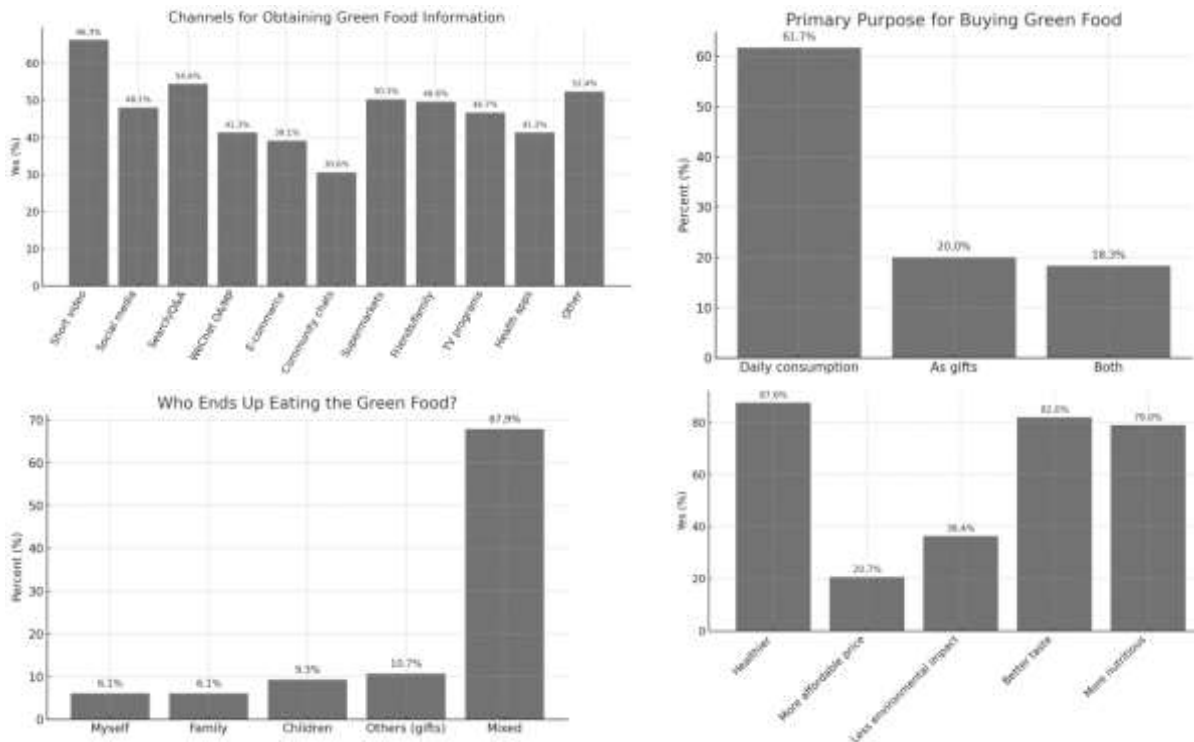


Figure 2: Information channels, household use and decision making in green food consumption

Table 2: Descriptive statistics results

Study variables	Items	Mean	S.D.	Skewness Value	S.E.	Kurtosis Value	S.E.
Subjective Knowledge	SK1	4.560	1.454	-0.918	0.126	-0.013	0.251
	SK2	4.530	1.420	-0.844	0.126	-0.251	0.251
	SK3	4.570	1.358	-0.896	0.126	-0.065	0.251
Objective Knowledge	OK1	4.540	1.434	-0.879	0.126	-0.363	0.251
	OK2	4.470	1.447	-0.822	0.126	-0.263	0.251
	OK3	4.520	1.438	-0.835	0.126	-0.271	0.251
	OK4	4.490	1.427	-0.966	0.126	0.029	0.251
	OK5	4.530	1.406	-0.910	0.126	-0.102	0.251
Green Food Consumption Behavior	GCB1	4.460	1.494	-0.752	0.126	-0.464	0.251
	GCB2	4.570	1.382	-0.839	0.126	-0.089	0.251
	GCB3	4.530	1.418	-0.839	0.126	-0.218	0.251
	GCB4	4.540	1.395	-0.758	0.126	-0.491	0.251
Perceived Benefits	PB1	4.510	1.468	-0.700	0.126	-0.496	0.251
	PB2	4.580	1.436	-0.859	0.126	-0.108	0.251
	PB3	4.520	1.401	-0.843	0.126	-0.088	0.251
	PB4	4.540	1.438	-0.721	0.126	-0.493	0.251
	PB5	4.530	1.460	-0.711	0.126	-0.578	0.251
	PB6	4.500	1.444	-0.849	0.126	-0.197	0.251
Perceived Barriers	PBA1	3.490	1.414	0.738	0.126	-0.406	0.251
	PBA2	3.380	1.439	0.792	0.126	-0.298	0.251
	PBA3	3.500	1.380	0.717	0.126	-0.454	0.251
	PBA4	3.490	1.410	0.842	0.126	-0.302	0.251
	PBA5	3.430	1.403	0.868	0.126	-0.227	0.251
Perceived Susceptibility	PS1	4.530	1.525	-0.803	0.126	-0.274	0.251
	PS2	4.530	1.372	-0.847	0.126	-0.168	0.251
	PS3	4.540	1.414	-0.890	0.126	-0.154	0.251
Perceived Severity	PSV1	4.500	1.431	-0.831	0.126	-0.308	0.251
	PSV2	4.450	1.494	-0.761	0.126	-0.395	0.251
	PSV3	4.530	1.433	-0.809	0.126	-0.333	0.251
Cues to Action	CA1	4.540	1.373	-0.956	0.126	0.050	0.251
	CA2	4.620	1.398	-0.972	0.126	-0.012	0.251
	CA3	4.530	1.462	-0.856	0.126	-0.373	0.251

salient, whereas environmental impact and affordability are secondary but still relevant concerns. Together, these patterns depict a health oriented and family centred consumption profile embedded in a strongly digital information environment.

Table 2 reports the descriptive statistics for all measurement items used in this study, including mean values, standard deviations, skewness, and kurtosis. Overall, the results indicate that most constructs exhibit relatively high mean scores, generally above 4.4 for subjective knowledge, objective knowledge, perceived benefits, perceived susceptibility, perceived severity, and cues to action, suggesting that respondents tend to express strong

agreement or high levels of endorsement across these dimensions. In contrast, items measuring perceived barriers show noticeably lower mean values, clustered around 3.4 to 3.5, indicating that barriers are present but not strongly perceived among most respondents.

The skewness and kurtosis values across items fall within acceptable ranges for SEM-based analyses, with negative skewness for knowledge-related and belief-related constructs reflecting a distribution leaning toward higher scores, while perceived barriers demonstrate positive skewness, consistent with their lower mean levels. Kurtosis values remain close to zero across all items, suggesting relatively normal distributional

Table 3: Measure model fit metrics

Fit index	χ^2/df	RMSEA	GFI	AGFI	NFI	TLI	CFI
Reference standards	<3	<0.08	>0.9	>0.9	>0.9	>0.9	>0.9
Result	1.056	0.012	0.931	0.916	0.929	0.995	0.996

Table 4: Convergence validity

Latent variables	Observation indicators	Factor loading	CR	AVE
Subjective Knowledge	SK1	0.759	0.817	0.598
	SK2	0.809		
	SK3	0.751		
Objective Knowledge	OK1	0.813	0.895	0.631
	OK2	0.783		
	OK3	0.776		
	OK4	0.803		
	OK5	0.796		
Green Food Consumption Behavior	GCB1	0.786	0.844	0.576
	GCB2	0.742		
	GCB3	0.753		
	GCB4	0.753		
Perceived Benefits	PB1	0.762	0.897	0.593
	PB2	0.765		
	PB3	0.777		
	PB4	0.756		
	PB5	0.786		
	PB6	0.772		
Perceived Barriers	PBA1	0.789	0.880	0.594
	PBA2	0.741		
	PBA3	0.757		
	PBA4	0.780		
	PBA5	0.785		
Perceived Susceptibility	PS1	0.757	0.804	0.578
	PS2	0.744		
	PS3	0.780		
Perceived Severity	PSV1	0.713	0.787	0.552
	PSV2	0.781		
	PSV3	0.733		
Cues to Action	CA1	0.758	0.845	0.645
	CA2	0.866		
	CA3	0.781		

characteristics and supporting the suitability of the data for subsequent confirmatory factor analysis and structural equation modeling. Together, the descriptive results presented in Table 2 provide an initial overview of respondents' attitudinal patterns and confirm the adequacy of the dataset for further multivariate analysis.

Structural equation model

Confirmatory factor analysis

To evaluate the adequacy of the measurement model, a confirmatory factor analysis was

conducted and the resulting fit indices are presented in Table 3. The model demonstrates an excellent overall fit. The ratio of chi-square to degrees of freedom is 1.056, which is well below the commonly accepted upper limit of three, indicating that the model reproduces the observed covariance structure effectively. The RMSEA value of 0.012 is substantially lower than the recommended threshold of 0.08, suggesting a close model fit. In addition, the incremental and absolute fit indices show strong support for the measurement structure. The Goodness-of-Fit Index (GFI) and Adjusted Goodness-of-Fit Index (AGFI) values exceed 0.90,

Table 5: Discriminant validity test

Latent variables	SK	OK	GCB	PB	PBA	PS	PSV	CA
Subjective Knowledge	0.773 ***							
Objective Knowledge	0.426	0.794 ***						
Green Food Consumption Behavior	0.443	0.451	0.759 ***					
Perceived Benefits	0.362	0.422	0.488	0.770 ***				
Perceived Barriers	-0.473	-0.437	-0.474	-0.395	0.771 ***			
Perceived Susceptibility	0.390	0.435	0.543	0.479	-0.373	0.760 ***		
Perceived Severity	0.408	0.505	0.538	0.428	-0.461	0.408	0.743 ***	
Cues to Action	0.396	0.359	0.504	0.339	-0.315	0.441	0.444	0.803 ***

Note: The diagonal is the square root of the corresponding dimension AVE
 SK: Subjective Knowledge; OK: Objective Knowledge; GCB: Green Food Consumption Behavior; PB: Perceived Benefits; PBA: Perceived Barriers; PS: Perceived Susceptibility; PSV: Perceived Severity; CA: Cues to Action.
 ***: P<0.001.

Table 6: Model fit metrics

Fit index	χ^2/df	RMSEA	GFI	AGFI	NFI	TLI	CFI
Reference standards	<3	<0.08	>0.9	>0.9	>0.9	>0.9	>0.9
Result	1.221	0.024	0.915	0.900	0.915	0.982	0.983

Table 7: Direct path effects

Hypothesis	Path	B	S.E.	C.R.	P	Results
H1	SK → GCB	0.048	0.081	0.615	0.539	Non-supported
H2	OK → GCB	0.020	0.072	0.272	0.786	Non-supported
H3a	SK → PB	0.273	0.064	4.301	***	Supported
H3b	SK → PBA	-0.380	0.065	-5.898	***	Supported
H3c	SK → PS	0.305	0.071	4.510	***	Supported
H3d	SK → PSV	0.291	0.062	4.364	***	Supported
H4a	OK → PB	0.331	0.059	5.385	***	Supported
H4b	OK → PBA	-0.293	0.057	-4.910	***	Supported
H4c	OK → PS	0.330	0.064	5.087	***	Supported
H4d	OK → PSV	0.403	0.058	6.083	***	Supported
H5a	PB → GCB	0.166	0.059	2.864	0.004	Supported
H5b	PBA → GCB	-0.156	0.063	-2.510	0.012	Supported
H5c	PS → GCB	0.231	0.064	3.585	***	Supported
H5d	PSV → GCB	0.206	0.077	2.995	0.003	Supported
H10	CA → GCB	0.215	0.065	3.620	***	Supported

Note: SK: Subjective Knowledge; OK: Objective Knowledge; GCB: Consumption Behavior toward Green Food; PB: Perceived Benefits; PBA: Perceived Barriers; PS: Perceived Susceptibility; PSV: Perceived Severity; CA: Cues to Action.
 ***: p<0.001.

and the Normed Fit Index (NFI), Tucker–Lewis Index (TLI), and Comparative Fit Index (CFI) values are all above 0.92, indicating an acceptable-to-excellent overall and incremental fit. Taken together, these results confirm that the measurement model has sound psychometric properties and is appropriate for subsequent structural analysis.

To further establish the quality of the measurement model, convergence validity was examined through standardized factor loadings, composite reliability, and average variance extracted. The results, presented in Table 4, show that all latent constructs exhibit satisfactory psychometric performance. Across the eight latent variables, the standardized factor loadings range from approximately 0.71 to 0.86, indicating that each indicator contributes meaningfully to its underlying construct. Composite reliability values exceed the recommended threshold of 0.70 for all constructs, with several surpassing 0.85, reflecting high internal consistency. The average variance extracted values are all above 0.55, demonstrating that each construct explains more than half of the variance in its observed indicators. These findings confirm that the latent variables demonstrate strong convergence validity and are suitable for subsequent structural modeling.

The discriminant validity of the measurement model was assessed using the Fornell–Larcker criterion, with the results presented in Table 5. For each construct, the square root of the average variance extracted appears on the diagonal and exceeds all corresponding inter-construct correlations in the same row and column. This pattern confirms that each latent variable shares greater variance with its own indicators than with any other construct in the model. The correlations among the factors remain within theoretically reasonable ranges, with positive associations observed among knowledge, perceived benefits, susceptibility, severity, and consumption behavior, while perceived barriers show expected negative correlations with most variables [61]. Furthermore, all correlations are statistically significant at the 0.001 level, reinforcing the robustness of the structural relationships. Taken together, these results indicate that the model achieves satisfactory discriminant validity and that

the latent constructs are empirically distinct, allowing for reliable testing of the hypothesized pathways in subsequent analyses.

Structural model path analysis

The overall structural model demonstrates an excellent level of fit, as summarized in Table 6. All key indices meet or surpass commonly accepted methodological thresholds, indicating that the hypothesized model adequately reflects the covariance structure of the observed data. The chi-square divided by degrees of freedom is 1.221, well below the recommended upper limit of 3, suggesting minimal discrepancy between the model and the sample covariance matrix. The RMSEA value of 0.024 falls far beneath the 0.08 benchmark, further confirming a close model fit. Additionally, the incremental and absolute fit indices, including GFI (0.915), AGFI (0.900), NFI (0.915), TLI (0.982), and CFI (0.983), all exceed the conventional 0.90 criterion. Together, these results provide robust empirical support for the adequacy of the structural model and justify proceeding with the analysis of hypothesized relationships among the study variables.

Table 7 presents the direct path estimates of the structural model and shows a clear pattern in how the hypotheses are supported. Regarding H3a–H3d, subjective knowledge significantly predicts all four health belief components. Higher subjective knowledge increases perceived benefits, perceived susceptibility, and perceived severity, and reduces perceived barriers, which confirms that H3a, H3c, and H3d are supported while H3b is supported in the negative direction as expected. Similarly, H4a–H4d are all supported: objective knowledge has a positive effect on perceived benefits, perceived susceptibility, and perceived severity, and a negative effect on perceived barriers. These significant paths indicate that both subjective and objective knowledge shape consumers' cognitive evaluations of the advantages of green food, the likelihood of experiencing food related risks, and the seriousness of potential harm, while easing psychological and practical obstacles.

In contrast, H1 and H2 are not supported, because neither subjective knowledge nor objective knowledge has a significant direct effect on green

Table 8: Indirect effect bootstrap analysis

Hypothesis	Mediation path	Effect value	SE	Bias-Corrected 95%CI		Results
				Lower	Upper	
H6a	OK → PB → GCB	0.054	0.03	0.007	0.128	Supported
H7a	OK → PBA → GCB	0.045	0.029	0.001	0.125	Supported
H8a	OK → PS → GCB	0.074	0.036	0.015	0.153	Supported
H9a	OK → PSV → GCB	0.081	0.044	0.015	0.195	Supported
H6b	SK → PB → GCB	0.047	0.029	0.009	0.128	Supported
H7b	SK → PBA → GCB	0.061	0.041	-0.004	0.164	Non-supported
H8b	SK → PS → GCB	0.073	0.036	0.011	0.145	Supported
H9b	SK → PSV → GCB	0.062	0.036	0.010	0.179	Supported

Note: SK: Subjective Knowledge; OK: Objective Knowledge; GCB: Green Food Consumption Behavior; PB: Perceived Benefits; PBA: Perceived Barriers; PS: Perceived Susceptibility; PSV: Perceived Severity; CA: Cues to Action.

Table 9: Total effects

Effect path	Effect size	SE	Bias-Corrected 95%CI	
			Lower	Upper
CA→GCB	0.237	0.096	0.054	0.440
SK→GCB	0.293	0.100	0.116	0.520
OK→GCB	0.273	0.082	0.117	0.442

Note: SK: Subjective Knowledge; OK: Objective Knowledge; GCB: Green Food Consumption Behavior; PB: Perceived Benefits; PBA: Perceived Barriers; PS: Perceived Susceptibility; PSV: Perceived Severity; CA: Cues to Action.

Table 10: Direct path effects

Control variables	Dependent variable	β	S.E.	T	P	Results
Age	GCB	-0.111	0.069	-1.868	0.063	Non-supported
Average monthly income	GCB	0.11	0.046	2.391	0.003	Supported
Education level	GCB	0.17	0.077	2.208	0.001	Supported
Marital status	GCB	-0.022	0.079	-0.348	0.728	Non-supported

Note: GCB: Green Food Consumption Behavior.

food consumption behavior. The non significant coefficients suggest that knowledge alone does not automatically translate into action, and that its influence is channelled mainly through changes in health beliefs rather than through direct behavioral motivation. In line with H5a–H5d, all four health belief constructs show significant direct effects on consumption behavior. Perceived benefits, perceived susceptibility, and perceived severity each increase the likelihood of purchasing green food, whereas perceived barriers reduce it, confirming the deterrent role of financial, cognitive, and accessibility constraints. Finally, H10 is supported, as cues to action exert a significant positive effect on consumption behavior, highlighting the importance of external triggers

such as media information, professional advice, and interpersonal recommendations in activating protective food choices. Together, these results indicate that health belief variables provide the main explanatory pathway for the impact of both forms of knowledge, which helps explain why the direct knowledge to behavior hypotheses H1 and H2 are not empirically supported.

Table 8 presents the bootstrap results for the indirect effects and provides clear evidence that most of the proposed mediation pathways are supported. For objective knowledge, all four mediation paths through perceived benefits, perceived barriers, perceived susceptibility, and perceived severity show significant indirect effects on green food consumption behavior. The

confidence intervals for these paths do not include zero, indicating reliable mediation⁶². These findings suggest that objective knowledge influences green food consumption primarily through its effects on health related beliefs, rather than exerting a direct influence on behavior.

Subjective knowledge also demonstrates significant indirect effects through three of the four health belief constructs. The mediation paths involving perceived benefits, perceived susceptibility, and perceived severity all show significant and positive indirect influences on consumption behavior. This pattern confirms that subjective understanding of green food contributes to behavioral engagement by shaping consumers' perceived advantages and health risk evaluations. Only the mediation path through perceived barriers is not supported, as the confidence interval includes zero. This indicates that the effect of subjective knowledge on perceived barriers is insufficient to generate a meaningful indirect influence on consumption behavior.

Table 9 summarizes the total effects of cues to action, subjective knowledge, and objective knowledge on green food consumption behavior. The results show that all three predictors exert significant overall influences when both direct and indirect paths are taken into account. Cues to action demonstrate a total effect size of 0.237, with a confidence interval that does not include zero. This finding confirms that external prompts, reminders, and informational signals play an important role in encouraging consumers to choose green food products.

Subjective knowledge shows a total effect of 0.293, and its confidence interval also excludes zero. This indicates that consumers' perceived familiarity and self assessed understanding of green food consistently contribute to behavioral engagement. Although the direct path of subjective knowledge to consumption behavior was not statistically significant in earlier analyses, the significant total effect reflects the importance of its indirect influence through health belief constructs. Objective knowledge likewise shows a significant total effect of 0.273. This suggests that factual understanding of green food certification, safety standards, and production processes ultimately promotes consumption behavior, even though the direct pathway was previously found to be non

significant. The significant total effect once again underscores the mediating role of perceived benefits, perceived barriers, perceived susceptibility, and perceived severity.

Taken together, the total effect results reveal that both forms of knowledge contribute meaningfully to green food consumption and that cues to action provide an additional source of behavioral motivation. These findings confirm the integrated nature of the model and highlight that indirect cognitive pathway serve as the primary mechanism linking knowledge to consumer behavior.

Table 10 presents the direct effects of the demographic control variables on green food consumption behavior. The results show that average monthly income and education level have significant positive impacts on GCB, whereas age and marital status remain statistically not significant. Higher income is associated with more frequent green food purchasing ($\beta = 0.11$, $p = 0.003$), which is consistent with the idea that consumers with greater economic resources are better able to afford price premiums and to prioritize health oriented products within their household budgets. Education level also exerts a positive and significant effect on GCB ($\beta = 0.17$, $p = 0.001$), suggesting that better educated consumers are more capable of understanding certification information, evaluating food safety risks, and translating health awareness into concrete purchasing decisions.

By contrast, age has a negative but statistically insignificant effect on GCB ($\beta = -0.111$, $p = 0.063$). This result suggests that within the group of Beijing women aged 20 to 60, generational differences in green food purchasing are weak once income, education, and health related beliefs are taken into account. In large Chinese cities such as Beijing, women across this age range share similar exposure to food safety incidents and health information and commonly take primary responsibility for household food purchases, so age per se does not create a clear divide in green food consumption. Marital status also shows no meaningful association with GCB ($\beta = -0.022$, $p = 0.728$). After controlling for household income, education, parenting status, and psychological variables, being single, married, divorced, or widowed does not substantially change the

likelihood of buying certified green food. This pattern reflects the growing economic independence of urban Chinese women and the fact that food related decisions are increasingly made by women regardless of their marital status, which reduces the explanatory power of marital status as a simple demographic marker in this context. Overall, the findings suggest that socioeconomic position, captured by income and education, still matters for green food consumption, while purely demographic markers such as age and marital status have limited explanatory power in this context.

Discussion

The study set out to understand the path of knowledge translating into certified green food consumption among Chinese women in Beijing. The findings show a consistent pattern: neither subjective knowledge nor objective knowledge has a significant direct effect on green food consumption behavior, but both types of knowledge strongly shape women's health beliefs, including perceived benefits, perceived barriers, perceived susceptibility and perceived severity. These health belief constructs, together with cues to action, emerge as the most proximal determinants of consumption behavior, and they mediate most of the relationships between knowledge and behavior. Besides, we also reveal that income and education level exert additional positive effects on green food consumption, whereas age and marital status do not show significant independent influences once knowledge and psychological variables are taken into account.

Earlier research on sustainable food often treated knowledge as a single undifferentiated construct and assumed that more knowledge would directly translate into greener purchasing decisions^{63,64}. By distinguishing subjective knowledge from objective knowledge and examining their joint position at the cognitive starting point of health beliefs and cues to action, the present study shows how knowledge is channelled into certified green food consumption among Chinese women in Beijing without exerting a direct behavioural effect. The findings also reposition the role of the HBM in food choice research. Prior applications in food

related settings mainly focused on risk perceptions and perceived benefits at the level of individual beliefs^{65,66}. Our results indicate that subjective and objective knowledge, together with income and education, shape these belief structures and cues to action, which then function as the most immediate antecedents of certified green food purchasing, while age and marital status lose their influence once psychological variables are considered. Taken together, these results shift the discussion from asking whether knowledge matters to explaining through which belief pathways knowledge and socioeconomic position are converted into concrete green food behaviours in the Chinese food safety context.

Theoretical implications

This study significantly expands the theoretical application of the Health Belief Model in the field of sustainable food consumption among Chinese women. In this way the model becomes a cognitive bridge that converts knowledge into protective food choices and its role in integrated frameworks combining knowledge and behavior is substantially extended.

On the other hand, this research contributes to the KAB by demonstrating that attitudes toward green food are not unidimensional but instead arise from a constellation of health-related beliefs. Traditional versions of the KAB model assume that knowledge generates a general evaluative attitude which then informs behavior⁶⁷. However, more contemporary work recognizes that attitudes related to sustainable food choices reflect multiple evaluative components linked to risk management, personal health considerations, environmental responsibility, and social norms^{68,69}. Health beliefs function as a set of interrelated attitudinal components, this study provides a multidimensional understanding of how attitudes develop in the context of green food consumption. This strengthens the theoretical explanatory power of the knowledge-attitude-behavior structure and supports a more complex conception of psychological evaluation processes in sustainability-oriented consumption.

Finally, the study enriches the gendered perspective within sustainable consumption theory by focusing specifically on Chinese women, who

often play central roles in household health management and food purchasing. Women exhibit stronger concerns about health and food safety and are more inclined to engage in protective food-related behaviors^{42,70}. This study shows that women's green food consumption is strongly shaped by perceptions of health risks and benefits, thereby providing empirical support for a health-oriented and risk-management perspective that complements existing environmental motivation theories.

The findings therefore extend existing gender-sensitive frameworks and highlight how socialized caregiving roles and health responsibilities shape sustainable consumption decisions among women. Beyond health beliefs, the results also reveal that education and income retain additional explanatory power for women's green food purchasing. Higher educational attainment appears to strengthen health literacy, label comprehension and risk evaluation skills, which makes it easier for women to translate abstract information about pesticide residues or certification standards into stable beliefs and protective food related behaviours⁷¹. In turn, higher household income relaxes budget constraints and allows women to act on these beliefs by paying price premiums for certified products and prioritising food safety within household expenditure, a pattern that echoes prior evidence that organic and green food markets are disproportionately sustained by better off consumers⁷².

Theoretically, these findings enrich the Health Belief Model by demonstrating that structural resources such as education and income shape not only background characteristics but also the very formation and enactment of health beliefs in the domain of food safety^{73,74}. Instead of treating socioeconomic status as a mere control factor, the model derived from this study locates it upstream of cognitive and motivational processes, showing how structural advantages increase the likelihood that perceived benefits, perceived severity and cues to action are converted into sustained green food purchasing. At the same time, the results extend the Knowledge–Attitude–Behaviour framework by revealing that knowledge does not operate in a social vacuum. The behavioural returns to both subjective and objective knowledge are larger

among highly educated and high income women, suggesting that KAB pathways are conditioned by unequal access to the financial and cognitive resources required to implement protective food choices. In this way, the study links gendered caregiving roles with socioeconomic position and offers a more structurally grounded account of women's protective food related behaviours in contemporary urban China.

Study strengths and limitations

First, this study advances theory by integrating the Knowledge–Attitude–Behavior (KAB) model with the Health Belief Model (HBM) and empirically demonstrating a “knowledge → health beliefs/cues → behavior” pathway in a certification- and risk-sensitive food context. Second, it refines the knowledge construct by separating objective knowledge from subjective knowledge, which improves conceptual clarity and avoids the common oversimplification that “more knowledge automatically produces greener behavior.” Third, the model explicitly tests multiple belief mechanisms (perceived benefits, barriers, susceptibility, and severity) together with cues to action, allowing a more complete explanation of how knowledge becomes actionable in certified green food purchasing. Finally, by incorporating socioeconomic variables alongside psychological mechanisms, the study provides a more realistic account of certified green food consumption that considers both cognitive processes and structural resources.

Several limitations should be acknowledged. First, the study relies on cross-sectional survey data, which restricts causal inference; the observed pathways are consistent with the proposed framework, but longitudinal or experimental designs are needed to confirm temporal ordering and causality. Second, key constructs are self-reported, which may introduce common method bias and social desirability effects, particularly for health- and sustainability-related behaviors; future studies could combine surveys with objective indicators (e.g., purchase records, receipt verification, or shopping tasks) to validate behavioral outcomes. Third, the sample focuses on Chinese women in Beijing, which strengthens

contextual relevance but limits generalizability to other regions, rural settings, or male consumers; replication across diverse Chinese cities and demographic groups would improve external validity and enable meaningful subgroup comparisons. Fourth, the operationalization of objective knowledge (typically based on limited factual items) may not fully capture the breadth of certification literacy and label comprehension in real markets; more comprehensive knowledge assessments and scenario-based tests could strengthen measurement precision. Finally, while the model highlights health beliefs and cues to action as proximal determinants, other influential factors in certified food choice—such as trust in certification bodies, perceived authenticity, availability constraints, and broader environmental or social-norm motivations—were not modeled and could be incorporated to further extend explanatory power.

Practical implications

For governmental departments, they should be responsible for food safety, health promotion, and sustainable consumption, furthermore, policy communication should emphasize the scientifically verified advantages of certified green food and clearly illustrate the potential health risks associated with uncertified products. Public authorities can therefore enhance practice by improving certification transparency, strengthening the visibility of official green food labels, and disseminating health risk information through government websites, community health programs, and widely used digital platforms. By doing so, they can reduce confusion about certification systems and assist consumers in forming accurate health-related evaluations.

For green food producers, retailers, and marketing practitioners, retailers may also strengthen point-of-purchase guidance through in-store educational materials, dedicated green food sections, and staff training programs that equip employees to respond to consumer questions about certification. Reducing perceived barriers is equally important. Businesses can achieve this by increasing the availability of certified products,

diversifying price ranges, improving packaging clarity, and offering promotions or sampling opportunities that lower the financial and psychological thresholds to trial consumption.

Health professionals, nutrition educators, and community-based organizations also have important roles. Physicians, nutritionists, and community health workers can therefore incorporate green food knowledge into routine health counseling, emphasizing its relevance for chronic disease prevention, child health, and family well-being. Community organizations may design educational workshops, household nutrition programs, and neighborhood information sessions that reinforce protective dietary practices and provide reliable interpretations of certification labels and food safety regulations.

Digital platforms and social media ecosystems represent another critical arena of practical influence. Since many consumers acquire green food information through short video platforms, social networks, and search engines, the integration of accurate and credible content into these digital environments can substantially shape subjective knowledge formation^{75,76}. Digital platforms can collaborate with authoritative science communicators and food safety experts to develop evidence-based content, including interactive micro-lessons, educational videos, and certification guides⁷⁷. Influencers who engage in lifestyle, parenting, or health content can further support informed consumption by presenting scientifically grounded explanations rather than promotional messages based solely on commercial interests.

For individual consumers and households, the findings highlight the value of developing health-protective food routines based on reliable information sources. Since knowledge influences behavior mainly through health beliefs, families may benefit from jointly learning to interpret certification labels, comparing product attributes across shopping environments, and adopting household norms that prioritize verified safety and nutritional value. Providing consumers with accessible tools, such as mobile applications or printed checklists that explain green food standards, can strengthen their capacity for informed decision-making.

Conclusion

This study investigated how subjective knowledge and objective knowledge jointly shape Chinese women's green food consumption behavior through multiple health belief pathways. The analysis demonstrated that neither subjective knowledge nor objective knowledge has a significant direct effect on certified green food purchasing. Instead, both forms of knowledge exert their influence mainly through health belief constructs. Higher levels of subjective knowledge and objective knowledge strengthen perceived benefits, perceived susceptibility and perceived severity, and reduce perceived barriers. Through these changes in health related beliefs, subjective knowledge and objective knowledge both promote green food consumption, with objective knowledge additionally exerting an indirect effect through lower perceived barriers. Cues to action all operate as significant facilitators of green food consumption, while perceived barriers hinder behavioral adoption. Demographic analysis further shows that average monthly income and education level have positive effects on green food consumption, whereas age and marital status do not display significant direct influences once knowledge and belief variables are taken into account. Taken together, the results portray a coherent empirical picture in which subjective knowledge, objective knowledge and health related beliefs jointly determine whether Chinese women translate their concerns about food safety and family health into stable certified green food purchasing.

Contributions

Q.Q--Writing, revision and data analysis; J.D--framework, project investigation and revision; S.J--Revision, data analysis and proofreading.

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