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Exploring the role of cultural values on consumers' organic food consumption: Does blockchain-enabled traceability matter?

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Abstract

Research background: There is limited knowledge about how cultural values influence organic food consumption, as well as how blockchain-enabled traceability facilitates this behavior. Given the increasing need for transparency in food supply chains and increasing interest in sustainable consumption, understanding the role of culture and technological innovations like blockchain is crucial.
Purpose of the article: This research applies Hofstede's cultural dimensions and the Theory of Planned Behavior to investigate the effects of cultural values on organic food consumption, and the moderating role of blockchain-enabled traceability. Therefore, the study aims to contribute to the state of the art by integrating cultural perspectives with technological advancements, offering actionable insights for consumer research and sustainable supply chain management.

Methods: Using a purposive sample of 5,326 consumers in Vietnam, the study employs hierarchical multiple regression to test the conceptual model and hypotheses.
Findings & value added: The findings reveal that uncertainty avoidance, collectivism, and long-term orientation positively influence attitude toward purchasing organic foods, which in turn enhances purchase intentions and behaviors. Conversely, masculinity negatively impacts these attitudes. However, power distance and individualism do not significantly affect attitudes or purchase behaviors. Furthermore, blockchain-enabled traceability significantly moderates the effects of perceived behavioral control on both organic food purchase intentions and behaviors. By bridging the research gap on consumer perspectives on blockchain adoption and cultural impacts on sustainable consumption, the study advances the existing literature and provides a comprehensive framework to understand and facilitate organic food consumption. These contributions have long-term implications for integrating cultural and technological dimensions into consumer behavior research and practical food supply chain management decision-making.

Introduction

Organic food is rapidly becoming one of the most swiftly expanding sectors in the global food industry (Mosadegh Sedghy *et al*., 2024; Ume, 2023). Currently valued at $250 billion, the global market for organic foods, with an annual growth rate exceeding 14.1%, is projected to surge past $850 billion by the year 2028 (Daraboina *et al*., 2024). This growth reflects consumers' increasing awareness of health and sustainability, particularly in the wake of the COVID-19 pandemic, which significantly heightened the demand for organic foods (Parashar *et al*., 2023). Consumers now have greater confidence in their health benefits, perceiving them as bolstering immune function and providing protection against a range of chronic illnesses (Ho *et al*., 2024). Investigating the determinants that drive organic food purchase intentions (IOF) and organic food purchase behaviors (BOF) is, therefore, essential (Winterstein *et al*., 2024). Such insights empower marketers and researchers to more adeptly cater to consumer demands and foster pro-environmental consumption practices in the future (Daraboina *et al*., 2024).

Scholars endeavored to explore the various antecedents of IOF and/or behaviors, such as health consciousness and environmental awareness (Parashar *et al*., 2023), social-focused values (Winterstein *et al*., 2024), and food safety (Guidani *et al*., 2024). Regrettably, almost all studies neglected the crucial importance of cultural values in shaping consumers' favorable attitudes, intentions and behaviors toward purchasing organic foods, while cultural values, encompassing dimensions like power distance (PD), uncertainty avoidance (UAI), collectivism (CLT), individualism (IDN), long-term orientation (LTO), and masculinity (MAS), significantly shape consumer perceptions and behaviors regarding the benefits and importance of organic foods (Larrea-Killinger *et al*., 2024). Moreover, the extant pro-environmental consumption literature suggests the facilitating role of cultural values on consumers' sustainable consumption (Duong *et al*., 2023). However, the research in general pro-environmental (green) consumption also only focuses on three dimensions of Hofstede (1991)'s cultures, including CLT, MAS, and LTO (Duong *et al*., 2023). Consequently, the role of Hofstede (1991)' five dimensions of culture on consumers' perceptions and behaviors are not adequately examined in the existing studies.

The organic food market suffers from the 'lemon effect', which erodes consumer trust in organic products and significantly impedes sustainable development (Ho *et al*., 2024; Laos-Espinoza *et al*., 2024). The primary feature of the "lemon effect" is information disproportionateness, which often results in fraudulent activities in the organic food supply chain (Boller *et al*., 2024). Given that contemporary organic food supply chains demand close collaboration among governments, manufacturers, farmers, and consumers, providing precise and prompt information is essential for alleviating food safety concerns and maintaining the long-standing functioning of these supply chains (Ho *et al*., 2024). Concurrently, the evolution of digital technology has facilitated the implementation of blockchain traceability systems, which ensure product information transparency (Contini *et al*., 2023). These systems provide detailed data from farm to table, enabling consumers to trace the origins and transportation of products (Boller *et al*., 2024). Consequently, they not only address the issue of information asymmetry and reduce health risks but also enhance the efficiency of fraud prevention across the organic food supply chain (Tao & Chao, 2024)

Today, consumers have heightened expectations for retailers to deliver comprehensive transparency regarding organic food-related information and to ensure superior safety standards across the entire organic food supply chain (Contini *et al*., 2023). In this scenario, blockchain technology's benefits of transparency and traceability are highly advantageous (Boller *et al*., 2024). Blockchain traceability systems can effectively make the environmental details of organic food products fully transparent, addressing consumer demands for more detailed and trustworthy information (Li *et al*., 2023; Treiblmaier & Garaus, 2023). While academic interest in blockchain technology's potential to enhance traceability in the food supply chains has grown (Ho *et al*., 2024; Zarbà *et al*., 2024), most studies have predominantly concentrated on the perspectives of organizations (Wan *et al*., 2022) or blockchain solution developers (Pakseresht *et al*., 2023), often neglecting consumers' viewpoints. Moreover, how blockchain-enabled traceability interacts with psychological constructs, such as perceived behavioral control (PBC), to drive organic food purchase decisions remains underexplored. This gap limits the ability to leverage blockchain technology effectively to rebuild consumer trust and promote sustainable consumption practices.

To address the abovementioned research gaps, our study extends the Theory of Planned Behavior (TPB), developed by Ajzen (1991), to explore how Hofstede (1991)'s cultural values inspire consumers' favorable attitude toward purchasing organic foods (ATF), which in turn, trigger their IOF and actual behaviors as well as explain how blockchain-enabled traceability (BET) facilitates the impacts of PBC on IOF and BOF. By integrating cultural values and blockchain technology into the

TPB framework, this study offers a novel approach to understanding how cultural, psychological, and technological factors interact to shape organic food consumption. Specifically, several following research questions (RQs) are addressed in our study:

RQ1. *How effectively does the TPB framework capture the effects of Hofstede's cultural dimensions on organic food consumption, and how does blockchain-enabled traceability moderate these effects?*

RQ2. *In what ways do Hofstede (1991)'s cultural dimensions shape consumers' attitudes toward purchasing organic foods, and how do these attitudes influence their purchase intentions and behaviors?*

RQ3. *How does blockchain-enabled traceability strengthen the impact of perceived behavioral control on organic food purchase intentions and behaviors?*

Answering these questions contributes to the state of the art in several ways. First, it extends the TPB framework by integrating Hofstede's cultural dimensions, providing a comprehensive understanding of how culture influences sustainable consumption behaviors. Second, it positions blockchain-enabled traceability as a critical moderating factor that bridges information asymmetry and enhances consumer trust, offering a new perspective on the role of technological innovations in consumer behavior. Third, the study establishes a unified framework linking cultural, psychological, and technological factors, advancing interdisciplinary research in consumer behavior, cultural studies, and supply chain transparency. Over the long term, these insights support the development of actionable strategies for policymakers and marketers to promote sustainable consumption globally, instilling hope for a more sustainable future.

This paper is structured to provide a thorough exploration of the conceptual framework and address the research queries in detail. The following section reviews the theoretical background and develops the hypotheses underpinning the study. The third section outlines the methodology, including details on data collection, measurement scales, and analytical techniques. The fourth section presents the results, focusing on the reliability, validity, and hypothesis testing. The fifth section provides a comprehensive discussion of the findings, followed by the final section, which concludes the paper with a summary of key theoretical and practical contributions, limitations, and future research directions.

Theoretical background and hypotheses

Theory of planned behavior

A variety of theories have been put forward to explain individual behavior (Polisetty *et al.*, 2024). One such theory is the Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975), which asserts that behavior results from an individual's attitudes toward a certain behavior (ATB) and the subjective norms (SN) they perceive, with these factors influencing behavior through the mediation of behavioral intentions. In order to increase this model's predictive capability in predicting behavior, Ajzen (1991) expanded the TRA by incorporating an additional construct, known as PBC. This modification led to the development of the TPB (Ajzen, 1991). Nevertheless, research has shown that the widely recognized high intention to purchase organic food among consumers does not consistently translate into actual purchasing behavior (Duong, 2023), which is commonly referred to as the intention-behavior gap (Chi *et al.*, 2022; Tawde *et al.*, 2023).

A meta-analysis examining the validity of the TPB determined that this framework can elucidate 39% and 27% of the variance in behavioral intentions and actual behaviors, respectively (Huang, 2025). While the attitude-behavior gap is widely documented in contemporary studies of TPB and TRA, there is a notable scarcity of evidence addressing the intention-behavior gap and the perceived behavioral control-actual behavior gap (Xu *et al.*, 2024). Additionally, research on effective strategies to bridge these gaps and improve behavioral outcomes is still limited. Indeed, while many empirical studies have examined the antecedents of attitudes, intentions, and even behaviors (Laos-Espinoza *et al.*, 2024), there is a notable lack of research focused on reducing or explaining intention-behavior gaps.

Moreover, the existing literature does not adequately address how to bridge the gap in the perceived behavioral control — actual behavior relationship within the TPB (Civelek *et al.*, 2024). PBC refers to an individual's perception of how easy or difficult it is to exercise personal control over resources and opportunities and their desires and motivations to achieve an expected outcome (Ajzen, 1991). Although organic foods are considered healthier and pro-environmental, various obstacles can impact and hinder purchase behaviors (Azlie *et al.*, 2023; Cao *et al.*, 2023). While many consumers understand the general concept of 'organic', they often cannot accurately describe organic practices, resulting from a lack of information about organic food production and distribution processes (Zarbà *et al.*, 2024).

PBC significantly influences BOF because when consumers feel confident in their ability to purchase organic foods, they are more likely to follow through with these purchases gap (Xu *et al.*, 2024). Higher PBC suggests that consumers perceive fewer barriers to accessing, affording, and choosing organic products, positively impacting their purchasing behavior (Polisetty *et al.*, 2024). Empirical studies have consistently shown a strong correlation between PBC and behavior (Leong *et al.*, 2023), indicating that consumers with greater control perceptions are more inclined to engage in desired behaviors, such as buying organic foods. Additionally, IOF strongly predicts actual buying behavior, as posited by the TPB. Empirical evidence supports the robust positive relationship between behavioral intention and actual behavior (Boubker, 2024; Maleki *et al*., 2025), with consumers who express a firm intention to buy organic products being more likely to convert these intentions into purchases. Moreover, many prior studies that applied the TPB revealed that IOF is shaped by ATF, subject norms, and PBC (Cao *et al*., 2023; Khan *et al*., 2022). The following hypotheses are formulated.

H1. *BOF is positively affected by (a) PBC and (b) IOF.*

H2. *IOF is positively affected by (a) ATF, (b) SN, and (c) PBC.*

Blockchain-enabled traceability as a moderator

Blockchain technology is highly regarded for its potential to mitigate information asymmetry and prevent tampering in food traceability systems (Treiblmaier & Garaus, 2023; Zarbà *et al*., 2024). This technology offers substantial benefits through its decentralized nature, which facilitates collaborative efforts across various stakeholders without a single point of failure (Cozzio *et al*., 2023). Its inherent transparency ensures that all transactions and data entries are visible and verifiable by all parties involved, fostering trust and accountability (Boller *et al*., 2024). The openness of blockchain also allows unrestricted access to information, while its anonymity feature protects participants' identities, enhancing security and privacy (Tao & Chao, 2024). These characteristics make blockchain an invaluable tool for improving the accuracy and trustworthiness of information in food supply chains (Ho *et al*., 2024). BET can act as a positive moderator in the relation between PBC and both IOF and behavior by enhancing perceived control, building trust, reducing information asymmetry, and improving the overall consumer experience.

First, blockchain technology enhances transparency and provides verifiable data regarding the origin, production processes, and distribution channels of organic food products. This level of traceability significantly reduces uncertainties and fosters greater consumer trust in the authenticity and quality of such products (Ho *et al*., 2024; Tao & Chao, 2024). This transparency allows consumers to feel more in control of their purchasing decisions, strengthening their intention to buy organic foods (Treiblmaier & Garaus, 2023). Additionally, the ability to trace the entire journey of organic food products from farm to table significantly builds consumer trust (Ho *et al*., 2024), amplifying the effect of PBC on purchase intentions. When consumers trust the information provided about organic foods, their perceived control increases, leading to stronger purchase intentions.

Furthermore, blockchain technology provides a secure and immutable record of product information, which reassures consumers about the integrity and safety of organic foods (Contini *et al*., 2023). This security aspect reduces concerns over fraud and contamination, lowering the psychological and perceived risks of purchasing organic products (Ho *et al*., 2024). The comprehensive and easily accessible information offered by blockchain systems can streamline the decision-making process (Vinayavekhin *et al*., 2024), making it more straightforward for consumers to follow through on their purchase intentions. When consumers feel assured that they are making informed choices backed by transparent data, their likelihood of purchasing increases. Also, BET fosters a sense of accountability and responsibility among producers and retailers (Ho *et al*., 2024), which can lead to improved product quality and consistency, further encouraging consumers to act on their actual purchase.

H3. *BET positively moderates the impacts of PBC on (a) IOF and (b) BOF.*

Cultural values and organic food consumption

According to Hofstede (2010), culture is described as s the shared mental framework that differentiates the members of one group or category of people from others. Culture is a vital factor in understanding consumer behavior and has been employed in numerous studies to analyze the purchasing patterns for pro-environmental products (Duong *et al*., 2023). Moreover, culture is a fundamental factor in influencing ethical decision-making, with consumer ethics varying widely between different cultural backgrounds (El Husseiny *et al*., 2024). In this study, we utilize the cultural dimensions introduced by Hofstede (2010), which are among the most widely applied frameworks for cultural analysis (Duong *et al*., 2023). These dimensions will be used to examine whether cultural values influence consumers' ATF, which in turn increases their IOF and behaviors.

In the prior studies, the IDN–CLT elements are often conceivably one of the most significant cultural values (Irawan *et al*., 2022), which influence pro-environmental consumption (Duong *et al*., 2023). In our study, it is essential to treat IDN and CLT as distinct constructs because both exist concurrently within a country, yet they influence consumer behavior in different ways. IDN emphasizes personal goals, autonomy, and self-reliance (Saracevic *et al*., 2022), leading consumers to prioritize personal health benefits and individual preferences when purchasing organic foods. In contrast, CLT focuses on group goals, community well-being, and interdependence, encouraging consumers to consider the broader impact of their choices on community health and environmental sustainability (Ma *et al*., 2024). By examining these constructs separately, we can better understand how each dimension uniquely shapes attitudes toward purchasing organic foods, subsequently affecting purchase intentions and behaviors.

Power distance

Power distance measures the extent to which less powerful members of a society accept and expect that power is distributed unequally (Hofstede, 2010). In high PD cultures, individuals often rely on authority figures, established institutions, or formal hierarchies for guidance and decision-making (Khan *et al*., 2024). This deference to authority means that recommendations or endorsements from influential figures, such as government officials, celebrities, or institutional leaders, carry substantial weight in shaping consumer attitudes and behaviors. When these authoritative figures advocate for organic food consumption, highlighting its health and environmental benefits, individuals in high PD societies are more likely to develop favorable attitudes toward organic foods (Cao *et al*., 2023). For instance, in many high PD societies in Southeast Asia, government-endorsed organic food campaigns have successfully influenced consumer behaviors by linking organic foods with broader social benefits, such as community health and environmental sustainability (Duong *et al*., 2023).

Additionally, high PD societies are characterized by hierarchical social structures, where individuals look to those in higher social strata for behavioral cues (Gohary *et al*., 2024). Organic food consumption may be perceived as a status symbol or an indicator of a healthy and environmentally conscious lifestyle, especially if it is associated with wealthier or more influential groups. This "trickle-down" effect has been observed in high PD contexts, where individuals emulate the consumption patterns of elites to align with societal norms or aspirational goals (Khan *et al*., 2024). For example, the increasing adoption of organic foods by middle- and upper-income households in high PD cultures reinforces their positive associations with quality and sophistication, further encouraging favorable attitudes across society (Duong *et al*., 2023). PD is thus hypothesized to positively affect attitudes toward purchasing organic foods.

H4. *PD positively affects ATF.*

Uncertainty avoidance

Uncertainty avoidance reflects the extent to which members of a society feel uncomfortable with uncertainty and ambiguity (Hofstede, 2010). In high UAI cultures, individuals seek stability, predictability, and safety in their choices to mitigate potential risks and uncertainties (Gong *et al*., 2024). Organic foods, often marketed as safer and healthier options due to their natural and environmentally friendly production methods, align well with the desires of individuals in these cultures to avoid uncertainty regarding food safety and health (Laos-Espinoza *et al*., 2024). Studies have shown that organic certification labels, stringent production standards, and transparent supply chain practices directly address these concerns, fostering consumer trust and positive attitudes toward organic foods in high UAI cultures (Khan *et al*., 2024).

Research also suggests that individuals in high UAI societies prefer detailed, reliable information to make informed decisions. The availability of transparent labeling and certification schemes such as USDA Organic or EU Organic significantly enhances trust in organic food products, making them more appealing in these cultures (Anisimova & Weiss, 2023; Cao *et al*., 2023; Duong *et al*., 2024). By addressing the desire for predictability and safety, organic foods align with the values of high UAI cultures, fostering positive attitudes toward their purchase. For example, organic food markets in countries like South Korea and Greece, both characterized by high uncertainty avoidance, have seen significant growth due to consumer preferences for safe and traceable food options (Lee *et al*., 2024). It is thus hypothesized that there is a strong and positive link between UAI and ATF.

H5. *UAI positively affects ATF.*

Collectivism

Collectivism emphasizes the importance of group goals, community well-being, and interdependence (Hofstede, 2010). In collectivist cultures, individuals are more likely to prioritize actions that benefit the larger community and contribute to the common good (Guo, 2024; Ma *et al*., 2024). Organic foods, often associated with environmental sustainability, reduced chemical use, and improved public health, strongly align with the values promoted by collectivist societies (Khan *et al*., 2024). For example, in India and Vietnam, collectivist values have been shown to drive consumer preferences for organic products, as they are perceived as socially responsible choices that benefit the entire community (Duong *et al*., 2024).

Moreover, collectivist societies place significant emphasis on group norms and peer influence. When members of a collectivist community adopt organic food consumption, it creates a reinforcing cycle where individuals perceive it as a desirable and socially acceptable behavior (Kim, 2024). Research shows that social recommendations and word-of-mouth play a important role in developing consumers' attitudes in such societies, as individuals are more likely to follow behaviors endorsed by their peers or social groups (Ma *et al*., 2024). Additionally, the long-term focus on community well-being in collectivist cultures aligns with the sustainability benefits of organic food, further strengthening positive attitudes. Based on these observations, it is hypothesized that CLT positively influences attitudes toward purchasing organic foods.

H6. *CLT positively affects ATF*.

Individualism

Individualism prioritizes personal goals, autonomy, and self-reliance over group goals and community well-being (Hofstede, 2010). In individualistic cultures, consumer choices are often driven by personal preferences, immediate gratification, and individual benefits rather than collective outcomes and long-term benefits for the community (Saracevic *et al*., 2022). Organic foods, typically perceived as more expensive and requiring a commitment to environmental and health-conscious values (Cao *et al*., 2023), may not align with the individualistic emphasis on cost-effectiveness and personal convenience. For instance, studies in the United States and Australia, both highly individualistic cultures, show that consumers are less likely to adopt organic foods due to their higher costs and the perceived inconvenience of sourcing them (Dorneich *et al*., 2024)

Furthermore, individualistic cultures emphasize tangible, short-term benefits over less direct, long-term rewards. This focus on immediate personal gain can lead to unfavorable attitudes toward organic foods, which are often associated with collective benefits such as environmental preservation or community health (Laos-Espinoza *et al*., 2024). Additionally, individualistic consumers may perceive organic foods as luxury items that offer limited personal utility compared to conventional alternatives (Kim, 2024; Ma *et al*., 2024). These dynamics suggest that IDN negatively affects attitudes toward purchasing organic foods.

H7. *IDN negatively affects ATF.*

Long-term orientation

Long-term orientation, which emphasizes persistence, future rewards, and sustained efforts (Hofstede, 2010), positively influences attitudes toward purchasing organic foods due to its focus on enduring benefits and careful resource management. In cultures with a strong LTO, individuals prioritize actions that ensure long-term health and environmental sustainability (Chen *et al*., 2024). Organic foods, known for their environmentally friendly production methods and long-term health benefits, strongly resonate with these cultural values (Duong *et al*., 2024; Phung & Tran, 2024). For instance, studies in Japan and South Korea show that consumers in long-term oriented societies are willing to pay a premium for organic products due to their alignment with future-focused goals (Han & Lee, 2022).

Additionally, individuals in high LTO societies are more likely to view organic food consumption as a worthwhile investment in their future well-being and the environment. This perspective is reinforced by the association of organic foods with sustainability and health outcomes, which align closely with the priorities of long-term oriented cultures (Cao *et al*., 2023; Duong *et al*., 2024). The cultural emphasis on preparing for future challenges and rewards further strengthens positive attitudes toward organic food consumption. Based on these arguments, it is hypothesized that LTO positively influences attitudes toward purchasing organic foods.

H8. *LTO positively affects ATF.*

Masculinity

Masculinity, is a cultural dimension that values competitiveness, achievement, and material success (Hofstede, 2010), can negatively affect attitudes toward purchasing organic foods. In highly masculine cultures, individuals often prioritize personal success, power, and status (Camilleri *et al*., 2023). This cultural orientation tends to favor behaviors and products associated with efficiency, convenience, and cost-effectiveness, which may conflict with the perceived characteristics of organic foods. Organic products, often marketed as premium goods requiring higher financial investment and a commitment to health-conscious and environmentally sustainable practices, may not align with the masculine focus on immediate outcomes and measurable achievements (Cao *et al*., 2023; Laos-Espinoza *et al*., 2024). For example, masculine consumers may view organic food as less practical due to its higher cost and less apparent short-term rewards, compared to conventional food options emphasizing affordability and availability. In such cultures, the emphasis on status and tangible results may further detract from the perceived value of organic foods, as they are often associated with community-oriented goals and less materialistic benefits (Khan *et al*., 2024).

Moreover, the traits associated with masculinity, such as a focus on economic efficiency and productivity, often overshadow the less immediate advantages of organic foods, such as long-term health improvements and environmental sustainability (Kreicbergs *et al*., 2024). In highly masculine societies, the preference for products that symbolize individual achievement and economic competitiveness may render organic foods' holistic and sustainability-focused benefits less appealing. This cultural emphasis on material success and competitive gains limits the appreciation of values like sustainability and well-being, which are central to organic food promotion. Additionally, the perception that organic food consumption requires significant effort, such as seeking certifications or making lifestyle changes, may further deter individuals in masculine cultures, who prioritize convenience and efficiency (Camilleri *et al*., 2023). These cultural dynamics suggest that in highly masculine societies, the alignment between personal goals and the ethos of organic food consumption is weak, leading to less favorable attitudes toward purchasing organic foods.

H9. *MAS negatively affects ATF.*

Consequently, despite significant advancements in the study of organic food consumption, several gaps persist in the existing literature. One major limitation is the insufficient attention given to the role of cultural values in shaping consumer attitudes and behaviors toward organic foods, particularly in emerging economies. While Hofstede's cultural dimensions have been widely applied in general consumer behavior research, their application to pro-environmental or organic food consumption remains limited, with most studies focusing on developed markets. This oversight neglects the complex relationship between cultural factors, such as collectivism, uncertainty avoidance, or long-term orientation, and the growing demand for sustainable consumption in emerging economies like Vietnam. Moreover, while transparency and traceability are recognized as critical factors for building consumer trust in the organic food supply chain, the role of blockchain technology as a tool to enhance these attributes has received limited empirical attention. Most existing studies have primarily examined organizational or operational perspectives of blockchain, leaving consumer-centric evaluations largely unexplored. These gaps highlight the need for research that integrates cultural values with technological enablers to understand better consumer behavior in diverse and rapidly evolving market contexts. The conceptual framework is summarized in Figure 1.

In light of the theoretical framework and hypotheses developed in this study, a robust methodological approach is crucial to address these identified gaps and ensure reliable and generalizable findings. This research adopts a rigorous and systematic approach to data collection, scale development, and statistical analysis to test the proposed conceptual model. We aim to investigate the direct and moderating effects of cultural dimensions and blockchain-enabled traceability on consumer attitudes, intentions, and behaviors by employing hierarchical multiple regression analysis and validated measurement scales from prior studies. The study draws on a sizeable purposive sample of Vietnamese consumers who have actively used blockchain-enabled QR codes to trace organic food origins, ensuring the relevance and applicability of the findings. This methodological rigor enables the study to contribute meaningful insights into the intersections of cultural values, technology, and sustainable consumption, advancing the state of the art in the field of organic food research.

Methods

Scales and questionnaire survey

This study employed a survey-based approach in Vietnam to investigate the key variables and evaluate the proposed hypotheses. Data collection was conducted through an online questionnaire, following a cross-sectional research design that relied on self-reported responses. The questionnaire was meticulously developed by integrating validated measurement scales from existing literature, ensuring a reliable and well-structured data collection process. Participants' responses were captured using a seven-point Likert scale, where the value of one indicated "strongly disagree" and the value of seven signified "strongly agree". To measure for Hofstede (1991)'s cultural dimensions, such as PD (4 items), UAI (4 items), CLT (8 items), IDN (7 items), LTO (6 items), and MAS (6 items), the scales from the studies of Yoon (2009), Mai *et al*. (2003), Sreen *et al*. (2018), and Yoo *et al*. (2011) were adopted. Moreover, the three variables in the TPB, including ATF (4 items), SN (4 items), and PBC (7 items), were adopted from the studies of Yadav and Pathak (2016), Yazdanpanah and Forouzani (2015), and Sultan *et al*. (2020), respectively. To measure BET, a scale was derived from the studies of Choe *et al*. (2008) and Chen and Huang (2013). Lastly, the scales from the research of Ladwein and Sánchez Romero (2021) and Le-Anh and Nguyen-To (2020) were adopted to measure IOF and behavior. A reverse-coded question (IOF4) was also incorporated to control for and mitigate bias and abnormal responses.

Sampling

A targeted sampling strategy was implemented to identify individuals who had a verifiable history of purchasing organic food products. To ensure accuracy in participant selection, blockchain-based QR codes were utilized to validate the origin and authenticity of these organic products within the past six months. Before accessing the online survey, potential respondents were presented with a screening question: "In the last six months, have you used QR codes to confirm the origin of organic food items you purchased?" Participants who responded with "No" or "Not yet" were politely excluded from the study, and their interest in participating was acknowledged with gratitude. Only those who answered "Yes" to the screening question were granted access to continue with the survey, ensuring that the sample included individuals with direct, recent experience relevant to the research objectives.

To ensure the reliability of the data collection process and minimize automated or inauthentic responses, participants were required to provide either an email address or a phone number to receive additional research-related products or results. This step ensured that responses were linked to genuine individuals. Furthermore, random validation questions were included in the survey to confirm participants' attention and engagement, such as describing their most recent experience with using QR codes to verify organic food origins. A thorough review of responses was also conducted to identify and exclude inconsistent or nonsensical answers, safeguarding the integrity of the dataset.

Participants who met the eligibility criteria and voluntarily chose to join the study were first introduced to the core concepts relevant to the research. Before starting the questionnaire, they were provided with an overview detailing the study's objectives and its intended outcomes. Upon completing the survey, participants received an acknowledgment expressing gratitude for their contributions. The survey, which was conducted online via the Google Forms platform, remained accessible between March 15 and June 5, 2024. To reach a diverse audience of individuals aged 18 years and above, the survey was widely disseminated through various social media channels, including platforms like Zalo, Facebook, Viber, Instagram, and Messenger. This approach ensured broad participation across different digital spaces. The dataset includes information on respondents' gender, age, educational levels, and monthly income, which is summarized in Table 1 to reflect socioeconomic diversity. However, geographic location (e.g., place of permanent residence) was not directly collected. To enhance representativeness, we ensured the distribution of the questionnaire across the three main regions of Vietnam: Northern, Central, and Southern regions. This approach also might increase regional coverage.

The choice of Vietnam as the research context is informed by its rapidly developing organic food market and the growing adoption of blockchain-enabled traceability technologies. Over recent years, Vietnam has experienced significant shifts in consumer behavior driven by heightened concerns over food safety and an increasing demand for transparency in food supply chains (Phung & Tran, 2024). High-profile incidents involving food contamination have raised public awareness about the need for verifiable product origins, making Vietnam a critical market for examining these issues (Ho *et al.*, 2024). The organic food sector in Vietnam has seen steady growth, supported by increasing consumer interest in health and sustainability and bolstered by governmental efforts to promote organic farming and environmentally friendly practices. Additionally, Vietnam's integration of blockchain technology within its food supply chains represents an emerging trend to address consumer concerns about product authenticity and traceability (Duong *et al.*, 2024). The country's diverse cultural landscape, spanning the Northern, Central, and Southern regions, further enhances its relevance as a research setting, providing an opportunity to explore how regional variations in cultural values influence attitudes and behaviors toward organic food consumption. Moreover, Vietnam's position as an emerging economy presents a unique context for understanding the relationships between cultural norms and modern technological innovations (Huy Tuu & Huu Khoi, 2024). The simultaneous influence of traditional cultural values and the adoption of advanced technologies such as blockchain offers insights into consumer behavior that are particularly relevant for other developing economies undergoing similar transitions. Therefore, Vietnam provides a valuable case for investigating the interaction between cultural values and blockchain-enabled traceability in shaping consumer attitudes and behaviors towards organic foods, with implications for broader applications in other emerging markets.

Data analysis approach

This study employed a systematic approach to data analysis to ensure validity and reliability while addressing the research hypotheses. First, Cronbach's α testing and confirmatory factor analysis (CFA) were conducted using SPSS 28.0 and AMOS 25.0 to assess the internal consistency and validate the measurement model. These methods ensured that the scales demonstrated reliability and convergent and discriminant validity. Harman's single-factor test was applied to address potential common method variance (CMV). Finally, hierarchical multiple regression was utilized to test the research hypotheses, particularly for examining moderating effects. This method was selected due to its ability to evaluate interaction effects and incremental contributions of predictor variables at different stages of the regression model. Hierarchical multiple regression allows researchers to systematically include variables in a stepwise manner, making it possible to examine the unique and combined effects of independent variables and moderators on the dependent variable (Ho *et al*., 2024). This approach was particularly suitable for testing the moderating effect of blockchain-enabled traceability on the relationships between perceived behavioral control, purchase intentions, and behaviors. Consequently, these methods provide a rigorous and comprehensive approach to analyzing the data, ensuring the validity and robustness of the findings.

Scale validation and common method bias

Once the data was considered appropriate, the researchers performed α testing and CFA on the complete set of constructs. Initially, the results showed that the α if the item deleted for IOF4 (reverse item) was 0.846, which is higher than the α_{IOF} of 0.765. Consequently, IOF4 was excluded from the original construct of IOF (Leontitsis & Pagge, 2007). After removing the unsatisfactory item IOF4, the measurement model exhibits excellent fitness indexes: χ^2 = 17060.767, df = 1482, χ^2/df = 11.512, GFI = 0.894, AGFI = 0.877, CFI = 0.934, TLI = 0.927, NFI = 0.928, and RMSEA = 0.044 (Xia & Yang, 2019).

Additionally, Table 2 indicates that the values for α, CR (composite reliability), and AVE (average variance extracted) all exceed their respective cut-off values of 0.63, 0.7, and 0.7 (Hu & Bentler, 1999). The SRAVEs (the square root of AVE), displayed in italics in Table 2, exceed the correlations between constructs, while the factor loadings for all items are greater than 0.5 (Hair *et al*., 2020) (see Table 3). Finally, we conducted Harman's single-factor test to examine CMV. The analysis revealed that a single factor accounted for only 32.821% of the total variance, which is well below the commonly accepted threshold of 50% (Harman, 1976). This indicates that CMV is not a significant issue in this study. Therefore, the scales are deemed reliable and appropriate for hierarchical multiple regression analysis.

Results

Adjusted R^2 for the three models indicates that the explanatory power ranges from 54.8% in Model 1, 66.6% in Model 2, and 67.7% in Model 3. These results demonstrate that the variables included in the models explain 54.8% of the variance in attitudes toward purchasing organic foods, 66.6% in organic food purchase intentions, and 67.7% in organic food purchase behaviors. While the adjusted R^2 values reflect moderate to substantial explanatory power, it is essential to acknowledge that consumer behavior is inherently influenced by a wide range of external, personal, and situational factors that extend beyond the constructs examined in this study. The focus on cultural dimensions, blockchain-enabled traceability, and psychological constructs from the TPB provided a targeted approach, but necessarily excluded other potential influences, such as economic conditions or marketing communications, which may contribute to additional variance. Nonetheless, the adjusted R^2 values reported here are consistent with those observed in prior research on consumer behavior and organic food consumption (Liang *et al*., 2024; Nascimento & Maria Correia Loureiro, 2024) , where models typically explain a similar proportion of variance due to the complexity of behavioral outcomes. These results demonstrate the utility of the proposed model in providing meaningful insights while highlighting opportunities for future research to incorporate additional variables to enhance the explanatory power further.

Hierarchical multiple regression is used to test formulated hypotheses. Control variables such as gender, age, education, and income were included in the models to ensure the reliability of the statistical analyses. The results in Table 4 reveal that BOF is positively affected by both PBC ($\beta = 0.096$, $p < 0.001$) and IOF ($\beta = 0.496$, $p < 0.001$). H1a and H1b are thus supported. Moreover, IOF was also significantly and positively influenced by attitude toward purchasing organic food ($\beta = 0.459$, $p < 0.001$), SN ($\beta = 0.026$, $p < 0.001$), and PBC ($\beta = 0.253$, $p < 0.001$). H2a, H2b, and H2c are therefore supported. Interestingly, BET was found to positively moderate the impacts of PBC on IOF ($\beta = 0.020$, $p < 0.001$) and BOF ($\beta = 0.036$, $p < 0.001$). H3a and H3b are thus supported. Figures 2 and 3 demonstrate the interaction plots.

The attitude towards purchasing organic foods is positively influenced by UAI ($\beta = 0.120$, $p < 0.001$), CLT ($\beta = 0.050$, $p < 0.001$), LTO ($\beta = 0.692$, $p < 0.001$), and negatively impacted by MAS ($\beta = -0.052$, $p < 0.001$), but not affected by PD and IDN ($p > 0.05$). H5, H6, H8, and H9 are thus supported while H4 and H7 are not supported. Remarkably, mediation analyses through PROCESS macro method (Hayes, 2022) in Table 5 reveal that four cultural values (UAI, CLT, LTO, and MAS) indirectly affect IOF through ATF ($\beta = 0.264$, 95% CI [0.242, 0.286; $\beta = 0.202$, 95% CI [0.174, 0.229]; $\beta = 0.478$, 95% CI [0.450, 0.505];]; $\beta = 0.196$, 95% CI [0.171, 0.221], respectively) and also pose serial indirect impacts on BOF via ATF-IOF path ($\beta = 0.146$, 95% CI [0.130, 0.161]; $\beta = 0.112$, 95% CI [0.095, 0.128]; $\beta = 0.256$, 95% CI [0.233, 0.278]; $\beta = 0.107$, 95% CI [0.092, 0.123], respectively). PD and IDN do not have these indirect effects since interval confidences contain zero.

Discussions

The findings show that BOF is positively influenced by both PBC and purchase intention, which aligns well with the TPB. According to TPB, an individual's intention to perform a behavior is the primary determinant of whether they will actually do so (Ajzen, 1991), which is evident in the strong relationship between purchase intention and actual purchasing behavior in this study. These findings also suggest that consumers strongly intending to buy organic foods are highly likely to follow through (Duong, 2023; Sultan *et al*., 2020). Moreover, the significant impact of PBC indicates that consumers' belief in their ability to purchase organic foods plays a crucial role in their actual behavior. TPB asserts that when individuals feel confident in their capacity to carry out a behavior influenced by factors such as access, affordability, and knowledge, they are more likely to engage in that behavior (Leong *et al*., 2023; Sultan *et al*., 2020). Thus, these findings support TPB by highlighting the importance of both intention and perceived control in understanding and predicting BOF.

The findings indicate that attitudes toward purchasing organic food, SN, and PBC significantly influence IOF. These positive relationships suggest that consumers who view organic foods favorably feel social pressure to purchase them and believe they have control over purchasing decisions are more likely to intend to buy organic foods. These results are consistent with prior studies, such as those by Dong and Gao (2024), who found that a positive attitude toward organic food significantly enhances purchase intentions. Similarly, the influence of SN aligns with research by Kamboj *et al*. (2023), which highlighted the role of social influence in shaping IOF. Furthermore, the significant impact of PBC on purchase intention supports findings by Yadav and Pathak (2016), demonstrating that consumers who feel capable of buying organic foods are more likely to intend to do so. Thus, our study corroborates and extends the existing literature by reaffirming that these three factors — attitudes, SN, and PBC — are crucial in forming intentions to purchase organic foods.

Our study also demonstrates that BET acts as the significant moderator of the impact of PBC on both IOF and behavior. This finding indicates that when consumers are equipped with transparent and verifiable information about the origins and quality of organic foods through blockchain technology, their confidence in their ability to purchase these products is significantly enhanced. This increased confidence boosts their intention to buy organic foods and directly influences their actual purchasing behavior. These findings support existing literature, such as Li *et al*. (2023), which highlight how transparency and traceability can enhance consumer trust and perceived control, encouraging pro-environmental purchasing behaviors. This study advances our understanding by illustrating blockchain technology's significant role in empowering consumers through perceived control, thereby fostering both the intention and actual behavior of purchasing organic foods.

The findings indicate that attitudes toward purchasing organic foods are positively influenced by UAI, CLT, and LTO while being negatively impacted by MAS. Specifically, consumers in cultures with high UAI tend to favor organic foods due to the perceived safety and reliability of these products, aligning with previous research highlighting the importance of risk reduction in consumer choices (Khan *et* *al*., 2024). Collectivist cultures, which prioritize group well-being and social harmony, are also more likely to have positive attitudes towards organic foods, supporting the notion that social and environmental benefits drive purchasing behavior in these societies (Duong *et al*., 2023). LTO emerges as a strong positive influence, suggesting that individuals who value future rewards and sustainability are more inclined to purchase organic foods, which is consistent with studies emphasizing the role of future-oriented thinking in sustainable consumption (Sreen *et al*., 2018). Conversely, the negative impact of MAS suggests that in cultures where competitiveness and material success are emphasized (Kreicbergs *et al*., 2024), there is less appreciation for the values associated with organic food consumption, such as environmental sustainability and health consciousness. Interestingly, the study finds that PD and IDN do not significantly affect attitudes toward purchasing organic foods, indicating that hierarchical structures and self-reliance may not substantially shape consumer attitudes in this context. These insights contribute to a broader understanding of how Hofstede (2010)'s cultural dimensions influence consumer attitudes toward organic foods, highlighting the importance of addressing cultural factors in promoting organic food consumption.

Conclusions

This study comprehensively explores the relationship between cultural values and blockchain-enabled traceability in shaping consumer attitudes, intentions, and behaviors toward organic food consumption. By integrating Hofstede's cultural dimensions into the TPB, the research offers a nuanced understanding of how cultural factors such as uncertainty avoidance, collectivism, long-term orientation, and masculinity influence consumer attitudes toward purchasing organic foods. Moreover, the moderating role of blockchain-enabled traceability is examined, highlighting its potential to enhance perceived behavioral control and bridge intention-behavior gaps in sustainable consumption. Using robust statistical methods and a large-scale survey of Vietnamese consumers, the findings contribute to the literature on sustainable consumption by demonstrating the critical roles of culture and technology in fostering organic food adoption. These insights pave the way for targeted strategies that address cultural and technological dynamics, benefiting policymakers, marketers, and supply chain managers in promoting sustainability across diverse consumer markets.

Theoretical contributions

This research provides notable theoretical insights into the study of consumer behavior, especially within the domain of organic food consumption. By integrating Hofstede (2010)'s cultural dimensions with the TPB, this research offers a nuanced perspective on how cultural values influence IOF and behaviors. Specifically, the study highlights the importance of UAI, CLT, LTO, and MAS in shaping consumer attitudes towards organic foods, which in turn affect purchase intentions and behaviors. This integration enriches TPB by demonstrating that cultural factors are critical in consumer decision-making processes, thus extending the applicability of TPB across different cultural contexts.

Additionally, the study contributes to the literature on blockchain technology in supply chain management by illustrating its moderating role in enhancing PBC. The findings reveal that BET strengthens the relationship between PBC and both purchase intentions and behaviors. This finding shows blockchain technology's potential to reduce information asymmetry and build consumer trust, providing new insights into how technological innovations can facilitate sustainable consumer practices.

Furthermore, this research addresses both the intention-behavior gap and the perceived behavioral control-behavior gap in organic food consumption by examining the indirect effects of cultural values on purchase behavior through attitudes and intentions. Identifying specific cultural dimensions that significantly influence these gaps provides a deeper understanding of the factors driving sustainable consumption behaviors. This contribution is particularly valuable for developing targeted interventions and policies aimed at promoting organic food consumption in diverse cultural settings.

Practical implementation

The findings of this study offer valuable insights for practitioners, including policymakers, marketers, and supply chain managers, aiming to enhance organic food consumption through targeted strategies.

First, understanding the significant influence of cultural values such as UAI, CLT, LTO, and MAS on BOF can help marketers tailor their campaigns to resonate with these cultural dimensions. For instance, in cultures with high UAI, marketers should emphasize organic foods' safety, reliability, and health benefits. Campaigns highlighting the community and environmental benefits of organic food consumption in collectivist societies may be more effective. For long-term-oriented cultures, messaging focusing on the future health benefits and sustainability of organic foods will resonate more. In contrast, strategies in masculine cultures may need to address competitive pricing and the quality superiority of organic products.

Second, the study underscores the importance of PBC in driving IOF and behaviors. Enhancing PBC among consumers can be achieved through improving the accessibility and affordability of organic foods. Retailers can focus on ensuring that organic products are readily available and competitively priced while also providing clear and transparent information about their benefits and origins. Educational initiatives that increase consumer knowledge about organic foods and their benefits can further enhance PBC.

The research also highlights the role of BET in building consumer trust and confidence. Supply chain managers and retailers should consider implementing blockchain technology to provide transparent and verifiable information about the journey of organic products from farm to table. This transparency can significantly reduce information asymmetry, alleviate consumer concerns about product authenticity, and drive purchase behavior. Leveraging blockchain technology can also serve as a differentiator in the market, appealing to consumers who prioritize transparency and trust in their purchasing decisions.

Moreover, addressing the intention-behavior and PBC-behavior gaps requires a multifaceted approach. Marketers should design interventions that not only foster positive attitudes and intentions toward organic foods but also make it easier for consumers to act on these intentions. This strategy could include loyalty programs, discounts, and promotions that incentivize organic food purchases. Additionally, creating a supportive environment through partnerships with local communities and influencers can reinforce social norms and encourage organic food consumption.

Shortcomings of the research and avenues for further studies

While this study provides meaningful insights, it is essential to acknowledge several limitations and outline future research directions to address these gaps and advance the field. Firstly, the use of a cross-sectional research design imposes constraints on establishing causal relationships among the variables. Although significant associations were found between cultural values, PBC, attitudes, intentions, and behaviors are significant, they do not necessarily imply causation. Future studies could adopt longitudinal designs to establish causal relationships better and observe how attitudes, intentions, and behaviors toward organic food consumption evolve. For instance, tracking participants across different stages of organic food adoption would enable researchers to capture the dynamics of behavioral change as individuals respond to new influences such as marketing campaigns, policy shifts, or advancements in blockchain-enabled traceability. Furthermore, longitudinal studies could explore how consumer responses to cultural dimensions, such as uncertainty avoidance or collectivism, might shift as societies experience economic or technological transformations. These approaches would provide a more comprehensive understanding of the temporal and contextual factors driving organic food consumption.

Secondly, the dependence on self-reported dataset can result in the possibility of social desirability bias, where participants may overreport positive attitudes or intentions toward organic food consumption to appear more favorable. This bias can lead to inaccuracies in the portrayal of actual consumer behavior. To mitigate this issue, future research should incorporate objective behavioral data, such as analyzing transaction records, point-of-sale data, or purchase receipts, to validate self-reported measures. Additionally, advanced methods, such as implicit association tests or experimental approaches, can be used to uncover unconscious attitudes and genuine behavioral tendencies. Combining objective and implicit measures with self-reported data could yield a more nuanced and accurate picture of consumer behavior. Future studies might also explore innovative technologies, such as eye-tracking tools or mobile app tracking, to investigate real-time consumer interactions with organic products and blockchain systems.

Thirdly, the study was conducted exclusively within the Vietnamese cultural context, which may limit the applicability and generalizability of the findings to other regions or cultural settings. Cultural values and consumer behaviors often vary significantly across countries and regions. While this research provides valuable insights into the Vietnamese market, it may not fully capture the nuances of consumer behavior in other parts of the world. Future research should replicate this study in diverse cultural and economic environments to examine whether the relationships identified in this study are held across different populations. Comparative studies across countries with varying levels of organic market maturity, cultural dimensions, or blockchain adoption could provide richer insights into how local contexts shape consumer behavior. For instance, exploring these dynamics in both collectivist societies, like India, and individualistic markets, like the United States, would enhance the robustness and generalizability of the findings. Such cross-cultural comparisons could also open new avenues for identifying universal strategies to promote organic food consumption and localized approaches tailored to specific market needs.

Finally, future studies could expand the scope of this research by exploring additional factors that influence organic food consumption and incorporating emerging technologies. For example, investigating how evolving digital innovations like artificial intelligence (AI) or Internet of Things (IoT) systems interact with blockchain-enabled traceability could shed light on new drivers of consumer trust and purchasing behavior. Additionally, further research could examine the role of other psychological and sociocultural variables — such as environmental knowledge, moral norms, or generational differences — that may interact with cultural values to shape attitudes and behaviors. These extensions would broaden the theoretical landscape and equip practitioners with more targeted insights to design effective interventions and strategies.

References

Ajzen, I. (1991). The theory of planned behavior. *Journal of Behavior and Human Decision Process*, *50*, 197–211. https://doi.org/10.1016/0749-5978(91)90020-T.

Anisimova, T., & Weiss, J. (2023). Toward a better understanding of the attitude–behavior gap in organic food conative loyalty: A moderation and moderated mediation analysis. *Asia Pacific Journal of Marketing and Logistics*, *35*(6), 1474–1493. https://doi.org/10.1108/APJML-06-2021-0420.

Azlie, W. E., Zahari, M. S. M., Majid, H. N. A., & Hanafiah, M. H. (2023). To what extent does consumers' perceived health consciousness regarding organic food influence their dining choices at organic restaurants? An empirical investigation. *International Journal of Gastronomy and Food Science*, *34*, 100843. https://doi.org/10.1016/j.ijgfs.2023.100843.

Boller, M. L., Zurwehme, A., & Krupitzer, C. (2024). Qualitative assessment on the chances and limitations of food fraud prevention through distributed ledger technologies in the organic food supply chain. *Food Control*, *158*, 110247. https://doi.org/10.1016/j.foodcont.2023.110247.

Boubker, O. (2024). Does religion raise entrepreneurial intention and behavior of Muslim university students? An extension of Ajzen's theory of planned behavior (TPB). *International Journal of Management Education*, *22*(3), 101030. https://doi.org/10.1016/j.ijme.2024.101030.

Camilleri, L., Richard Gill, P., Scarfo, J., & Jago, A. (2023). Resolving the masculinity dilemma: Identifying subtypes of male meat consumers with latent profile analysis. *Food Quality and Preference*, *108*, 104890. https://doi.org/10.1016/j.foodqual.2023.104890.

Cao, D., Zheng, Y., & Li, G. (2023). Understanding food pleasure in organic consumption: The moderating effects of trust within the theory of planned behavior. *British Food Journal*, *126*(2), 898–919. https://doi.org/10.1108/bfj-02-2023-0162.

Chen, L., Shen, Q., Yu, X., & Chen, X. (2024). Knowledge spillovers along the sustainable supply chain of China's listed companies: The role of long-term orientation. *Journal of Innovation & Knowledge*, *9*(2), 100478. https://doi.org/10.1016/j.jik.2024.100478.

Chen, M.-F., & Huang, C.-H. (2013). The impacts of the food traceability system and consumer involvement on consumers' purchase intentions toward fast foods. *Food Control*, *33*(2), 313–319. https://doi.org/10.1016/j.foodcont.2013.03.022.

Chi, C. G., Chi, O. H., Xu, X., & Kennedy, I. (2022). Narrowing the intention-behavior gap: The impact of hotel green certification. *International Journal of Hospitality Management*, *107*, 103305. https://doi.org/10.1016/j.ijhm.2022.103305.

Choe, Y. C., Park, J., Chung, M., & Moon, J. (2008). Effect of the food traceability system for building trust: Price premium and buying behavior. *Information Systems Frontiers*, *11*(2), 167–179. https://doi.org/10.1007/s10796-008-9134-z.

Civelek, M., Ključnikova, J., Kloudová, J., Veselá, Z., & Ključnikov, A. (2024). From intention to action: Understanding bank credit access through the lens of the theory of planned behavior. *Oeconomia Copernicana*, *15*(2), 683–715. https://doi.org/10.24136/oc.3082.

Contini, C., Boncinelli, F., Piracci, G., Scozzafava, G., & Casini, L. (2023). Can blockchain technology strengthen consumer preferences for credence attributes? *Agricultural and Food Economics*, *11*(1), 27. https://doi.org/10.1186/s40100-023-00270-x.

Cozzio, C., Viglia, G., Lemarie, L., & Cerutti, S. (2023). Toward an integration of blockchain technology in the food supply chain. *Journal of Business Research*, *162*, 113909. https://doi.org/10.1016/j.jbusres.2023.113909.

Daraboina, R., Cooper, O., & Amini, M. (2024). Segmentation of organic food consumers: A revelation of purchase factors in organic food markets. *Journal of Retailing and Consumer Services*, *78*, 103710. https://doi.org/10.1016/j.jretconser.2024.103710.

Dong, Y., & Gao, L. (2024). Consumer attitude and behavioural intention towards organic wine: The roles of consumer values and involvement. *British Food Journal*, *126*(4), 1743–1764. https://doi.org/10.1108/BFJ-02-2023-0085.

Dorneich, M. C., Krejci, C. C., Schwab, N., Stone, T. F., Huckins, E., Thompson, J. R., & Passe, U. (2024). Producer and consumer perspectives on supporting and diversifying local food systems in central Iowa. *Agriculture and Human Values*, *41*(2), 661–681. https://doi.org/10.1007/s10460-023-10504-9.

Duong, C. D. (2023). Environmental corporate social responsibility initiatives and the attitude-intention-behavior gap in green consumption. *Social Responsibility Journal*, *20*(2), 305–325. https://doi.org/10.1108/srj-11-2022-0487.

Duong, C. D., Le, T. L., Lee, E.-M., & Gadomska-Lila, K. (2023). How cultural values integrate with each other to trigger sustainable consumption: A cross-culture study. *Asia Pacific Journal of Marketing and Logistics, 36*(4), 814–836. https://doi.org/10.1108/apjml-05-2023-0484.

Duong, C. D., Vu, T. N., Ngo, T. V. N., Chu, T. V., & Pham, L. H. T. (2024). Who can you trust? The curvilinear effects of producer-retailer trust (im)balance in organic food consumption – The moderation role of trust in blockchain technology. *Journal of Retailing and Consumer Services*, *81*, 104039. https://doi.org/10.1016/j.jretconser.2024.104039.

El Husseiny, I. A., Al Samman, A., Mansour, S., & Ibrahim, F. (2024). How do cultural values affect economic growth? An empirical evidence from world values survey (1994–2021). *Review of Economics and Political Science.* https://doi.org/10.1108/reps-02-2023-0012.

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.

Gohary, A., Madani, F., Lie, D. S., & Chan, E. Y. (2024). Does rejecting inequality enhance green consumption? The effect of power distance belief on organic food consumption. *Appetite*, *206*, 107764. https://doi.org/10.1016/j.appet.2024.107764.

Gong, Z., Gonçalves, M., Nanjappan, V., & Georgiev, G. V. (2024). Priming uncertainty avoidance values: Influence of virtual reality stimuli on design creativity in ideation. *Computers in Human Behavior*, *158*, 108257. https://doi.org/10.1016/j.chb.2024.108257.

Guidani, B., Ronzoni, M., & Accorsi, R. (2024). Virtual agri-food supply chains: A holistic digital twin for sustainable food ecosystem design, control and transparency. *Sustainable Production and Consumption*, *46*, 161–179. https://doi.org/10.1016/j.spc.2024.01.016.

Guo, Y. (2024). Investigating the impact of culture dimensions on Chinese citizens' continuous use of e-government websites: A cultural model-based study. *Acta Psychol (Amst)*, *244*, 104196. https://doi.org/10.1016/j.actpsy.2024.104196.

Hair, J. F., Howard, M. C., & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research*, *109*, 101–110. https://doi.org/10.1016/j.jbusres.2019.11.069.

Han, S., & Lee, Y. (2022). Analysis of the impacts of social class and lifestyle on consumption of organic foods in South Korea. *Heliyon*, *8*(10), e10998. https://doi.org/10.1016/j.heliyon.2022.e10998.

Harman, H. H. (1976). *Modern factor analysis*. Chicago: University of Chicago Press.

Hayes, A. F. (2022). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Publications.

Ho, B. D., Duong, D. C., Ngo, V. N. T., Nguyen, H. M., & Bui, V. T. (2024). How blockchain-enabled drivers stimulate consumers' organic food purchase intention: An integrated framework of information systems success model within stimulus-organism-response theory in the context of Vietnam. *International Journal of Human–Computer Interaction*. https://doi.org/10.1080/10447318.2024.2406961.

Hofstede, G. (1991). *Organizations and cultures: Software of the mind*. New York: McGraw-Hill.

Hofstede, G. (2010). *Culture and organizations: Software of the mind: Intercultural cooperation and its iImportance for survival*. New York. McGraw-Hill.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1–55. https://doi.org/10.1080/10705519909540118.

Huang, S. (2025). Reviving the entomophagy tradition among the younger generation: An application of the theory of planned behavior. *Food Quality and Preference*, *124*, 105356. https://doi.org/10.1016/j.foodqual.2024.105356.

Huy Tuu, H., & Huu Khoi, N. (2024). The role of food-related consideration of future consequences, health and environmental concerns in explaining sustainable food (fish) attitudes. *Journal of Economics and Development*, *26*(3), 253–271. https://doi.org/10.1108/jed-01-2024-0003.

Irawan, Elia, A., & Benius. (2022). Interactive effects of citizen trust and cultural values on pro-environmental behaviors: A time-lag study from Indonesia. *Heliyon*, *8*(3), e09139. https://doi.org/10.1016/j.heliyon.2022.e09139.

Kamboj, S., Matharu, M., & Gupta, M. (2023). Examining consumer purchase intention towards organic food: An empirical study. *Cleaner and Responsible Consumption*, *9*, 100121. https://doi.org/10.1016/j.clrc.2023.100121.

Khan, O., Varaksina, N., & Hinterhuber, A. (2024). The influence of cultural differences on consumers' willingness to pay more for sustainable fashion. *Journal of Cleaner Production*, *442*, 141024. https://doi.org/10.1016/j.jclepro.2024.141024.

Khan, Y., Hameed, I., & Akram, U. (2022). What drives attitude, purchase intention and consumer buying behavior toward organic food? A self-determination theory and theory of planned behavior perspective. *British Food Journal*, *125*(7), 2572–2587. https://doi.org/10.1108/bfj-07-2022-0564.

Kim, S.-Y. (2024). Examining 35 years of individualism-collectivism research in Asia: A meta-analysis. *International Journal of Intercultural Relations*, *100*, 101988. https://doi.org/10.1016/j.ijintrel.2024.101988.

Kreicbergs, T., Ščeulovs, D., & Bernovskis, A. (2024). Brand and masculinity archetypes as an innovative research approach for analyzing consumer preferences on masculinity in advertising. *Journal of Open Innovation: Technology, Market, and Complexity*, *10*(1), 100184. https://doi.org/10.1016/j.joitmc.2023.100184.

Ladwein, R., & Sánchez Romero, A. M. (2021). The role of trust in the relationship between consumers, producers and retailers of organic food: A sector-based approach. *Journal of Retailing and Consumer Services*, *60,* 102508. https://doi.org/10.1016/j.jretconser.2021.102508.

Laos-Espinoza, J., Juaneda-Ayensa, E., García-Milon, A., & Olarte-Pascual, C. (2024). Why do you want an organic coffee? Self-care vs. world-care: A new SOR model approach to explain organic product purchase intentions of Spanish consumers. *Food Quality and Preference*, *118*, 105203. https://doi.org/10.1016/j.foodqual.2024.105203.

Larrea-Killinger, C., Munoz, A., Echeverria, R., Larrea, O., & Gracia-Arnaiz, M. (2024). Trust and distrust in food among non-dependent elderly people in Spain. Study on socio-cultural representations through the analysis of cultural domains. *Appetite*, *197*, 107306. https://doi.org/10.1016/j.appet.2024.107306.

Le-Anh, T., & Nguyen-To, T. (2020). Consumer purchasing behaviour of organic food in an emerging market. *International Journal of Consumer Studies*, *44*(6), 563–573. https://doi.org/10.1111/ijcs.12588.

Lee, P.-E., Kwon, E.-H., Kim, S.-H., Kim, M.-S., Kang, J.-G., & Lee, D.-J. (2024). Establishment of an inspection standard for decomposition and methane production rates of organic waste co-digestion facilities in Korea. *Journal of Environmental Management*, *356*, 120578. https://doi.org/10.1016/j.jenvman.2024.120578.

Leong, L.-Y., Hew, T.-S., Ooi, K.-B., Metri, B., & Dwivedi, Y. K. (2023). Extending the Theory of planned behavior in the social commerce context: A meta-analytic SEM (MASEM) approach. *Information Systems Frontiers*, *25*(5), 1847–1879. https://doi.org/10.1007/s10796-022-10337-7.

Leontitsis, A., & Pagge, J. (2007). A simulation approach on Cronbach's alpha statistical significance. *Mathematics and Computers in Simulation*, *73*(5), 336–340. https://doi.org/10.1016/j.matcom.2006.08.001.

Li, Y., Liao, A., Li, L., Zhang, M., Zhao, X., & Ye, F. (2023). Reinforcing or weakening? The role of blockchain technology in the link between consumer trust and organic food adoption. *Journal of Business Research*, *164*, 113999. https://doi.org/10.1016/j.jbusres.2023.113999.

Liang, H., Wu, Z., & Du, S. (2024). Study on the impact of environmental awareness, health consciousness, and individual basic conditions on the consumption intention of green furniture. *Sustainable Futures*, *8*, 100245. https://doi.org/10.1016/j.sftr.2024.100245.

Ma, H., Velasco, F., Janakiraman, N., & Yang, Z. (2024). A meta-analytic investigation into the pay-it-forward phenomenon: The roles of individualism-collectivism and social distance. *Journal of Business Research*, *183*, 114822. https://doi.org/10.1016/j.jbusres.2024.114822.

Mai, N. T. T., Jung, K., Lantz, G., & Loeb, S. G. (2003). An exploratory investigation into impulse buying behavior in a transitional economy: A study of urban consumers in Vietnam. *Journal of International Marketing*, *11*(2), 13–35. https://doi.org/10.1509/jimk.11.2.13.20162.

Maleki, S., Naeimi, A., Bijani, M., & Salahi Moghadam, N. (2025). Comparing predictive power of planned behavior and social cognition theories on students' pro-environmental behaviors: The case of University of Zanjan, Iran. *Journal of Cleaner Production*, *486*, 144386. https://doi.org/10.1016/j.jclepro.2024.144386.

Mosadegh Sedghy, B., Nematollahi, M., & Tajbakhsh, A. (2024). Market dynamics between retail channels and short food supply chains: A case of organic fruits. *Journal of Retailing and Consumer Services*, *79*, 103775. https://doi.org/10.1016/j.jretconser.2024.103775.

Nascimento, J., & Maria Correia Loureiro, S. (2024). Understanding the desire for green consumption: Norms, emotions, and attitudes. *Journal of Business Research*, *178*, 114675. https://doi.org/10.1016/j.jbusres.2024.114675.

Pakseresht, A., Yavari, A., Kaliji, S. A., & Hakelius, K. (2023). The intersection of blockchain technology and circular economy in the agri-food sector. *Sustainable Production and Consumption*, *35*, 260–274. https://doi.org/10.1016/j.spc.2022.11.002.

Parashar, S., Singh, S., & Sood, G. (2023). Examining the role of health consciousness, environmental awareness and intention on purchase of organic food: A moderated model of attitude. *Journal of Cleaner Production*, *386*, 135553. https://doi.org/10.1016/j.jclepro.2022.135553.

Phung, T.-B., & Tran, C.-M. (2024). The study of consumers' post-purchasing behavioural intentions towards organic foods in an emerging economy: From the S-O-R model perspective. *International Journal of Services, Economics and Management*, *15*(1), 84–100. https://doi.org/10.1504/IJSEM.2024.136069.

Polisetty, A., Chakraborty, D., Singu, H. B., & Behl, A. (2024). Examining the relationship between pro-environmental consumption behaviour and hedonic and eudaimonic motivation. *Journal of Environmental Management*, *359*, 121095. https://doi.org/10.1016/j.jenvman.2024.121095.

Saracevic, S., Schlegelmilch, B. B., & Wu, T. (2022). How normative appeals influence pro-environmental behavior: The role of individualism and collectivism. *Journal of Cleaner Production*, *344*, 131086. https://doi.org/10.1016/j.jclepro.2022.131086.

Sreen, N., Purbey, S., & Sadarangani, P. (2018). Impact of culture, behavior and gender on green purchase intention. *Journal of Retailing and Consumer Services*, *41*, 177–189. https://doi.org/10.1016/j.jretconser.2017.12.002.

Sultan, P., Tarafder, T., Pearson, D., & Henryks, J. (2020). Intention-behaviour gap and perceived behavioural control-behaviour gap in theory of planned behaviour: Moderating roles of communication, satisfaction and trust in organic food consumption. *Food Quality and Preference*, *81*, 103838. https://doi.org/10.1016/j.foodqual.2019.103838.

Tao, Z., & Chao, J. (2024). The impact of a blockchain-based food traceability system on the online purchase intention of organic agricultural products. *Innovative Food Science & Emerging Technologies*, *92*, 103598. https://doi.org/10.1016/j.ifset.2024.103598.

Tawde, S., Kamath, R., & ShabbirHusain, R. V. (2023). 'Mind will not mind' – Decoding consumers' green intention-green purchase behavior gap via moderated mediation effects of implementation intentions and self-efficacy. *Journal of Cleaner Production*, *383*, 135506. https://doi.org/10.1016/j.jclepro.2022.135506.

Treiblmaier, H., & Garaus, M. (2023). Using blockchain to signal quality in the food supply chain: The impact on consumer purchase intentions and the moderating effect of brand familiarity. *International Journal of Information Management*, *68,* 102514. https://doi.org/10.1016/j.ijinfomgt.2022.102514.

Ume, C. (2023). The role of improved market access for small-scale organic farming transition: Implications for food security. *Journal of Cleaner Production*, *387*, 135889. https://doi.org/10.1016/j.jclepro.2023.135889.

Vinayavekhin, S., Banerjee, A., & Li, F. (2024). "Putting your money where your mouth is": An empirical study on buyers' preferences and willingness to pay for blockchain-enabled sustainable supply chain transparency. *Journal of Purchasing and Supply Management*, *30*(2), 100900. https://doi.org/10.1016/j.pursup.2024.100900.

Wan, Y., Gao, Y., & Hu, Y. (2022). Blockchain application and collaborative innovation in the manufacturing industry: Based on the perspective of social trust. *Technological Forecasting and Social Change*, *177*, 121540. https://doi.org/10.1016/j.techfore.2022.121540.

Winterstein, J., Zhu, B., & Habisch, A. (2024). How personal and social-focused values shape the purchase intention for organic food: Cross-country comparison between Thailand and Germany. *Journal of Cleaner Production*, *434*, 140313. https://doi.org/10.1016/j.jclepro.2023.140313.

Xia, Y., & Yang, Y. (2019). RMSEA, CFI, and TLI in structural equation modeling with ordered categorical data: The story they tell depends on the estimation methods. *Behav Res Methods*, *51*(1), 409–428. https://doi.org/10.3758/s13428-018-1055-2.

Xu, H., Xiao, M., & Zeng, J. (2024). How public opinion of food safety affects green food purchase intentions: The mediating role of insecurity and the moderating role of green label trust. *Cleaner and Responsible Consumption*, *14*, 100212. https://doi.org/10.1016/j.clrc.2024.100212.

Yadav, R., & Pathak, G. S. (2016). Intention to purchase organic food among young consumers: Evidences from a developing nation. *Appetite*, *96*, 122–128. https://doi.org/10.1016/j.appet.2015.09.017.

Yazdanpanah, M., & Forouzani, M. (2015). Application of the theory of planned behaviour to predict Iranian students' intention to purchase organic food. *Journal of Cleaner Production*, *107*, 342–352. https://doi.org/10.1016/j.jclepro.2015.02.071.

Yoo, B., Donthu, N., & Lenartowicz, T. (2011). Measuring Hofstede's five dimensions of cultural values at the individual level: Development and validation of CVSCALE. *Journal of International Consumer Marketing*, *23*(3-4), 193–210. https://doi.org/10.1080/08961530.2011.578059.

Yoon, C. (2009). The effects of national culture values on consumer acceptance of e-commerce: Online shoppers in China. *Information & Management*, *46*(5), 294–301. https://doi.org/10.1016/j.im.2009.06.001.

Zarbà, C., Chinnici, G., Matarazzo, A., Privitera, D., & Scuderi, A. (2024). The innovative role of blockchain in agri-food systems: A literature analysis. *Food Control*, *164*, 110603. https://doi.org/10.1016/j.foodcont.2024.110603.

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Data availability statement

All data generated or analyzed are included in the published article. The raw data supporting the conclusion of this article will be made available by the authors, without undue reservation. The raw anonymized data can be provided by emailing the primary author.

Author contributions

All listed authors have made a substantial, direct and intellectual contribution to the work, and approved it for publication. The authors take full responsibility for the accuracy and the integrity of the source analysis.

Conflict of interest statement

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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Annex

Table 1. Participants' information

Demographic variables		**Frequency**	**%**
Gender	Male	2813	52.8
	Female	2513	47.2
Age (years old)	< 20	785	14.7
	20-29	1909	35.8
	30-39	1308	24.6
	40-49	1138	21.4
	50-59	122	2.3
	> 60	64	1.2
Educational levels	High school	1331	25.0
	Bachelor	3576	67.1
	Master and above	419	7.9
Monthly income	< 20 million VND	1258	23.6
	20 – 30 million VND	1683	31.6
	30 – 40 million VND	1649	31
	40 – 50 million VND	458	8.6
	Over 50 million VND	278	5.2

Note: N= 5326. 1 USD = 25,405.00 VND (exchange rate on 12 December 2024).

Table 2. Correlation matrix, reliability and validity analyses

Constructs	Mean	S.D.	α	CR	AVE	1	2	3	4	5	6	7	8	9	10	11	12
1. CLT	4.533	1.349	0.928	0.928	0.617	***0.786***											
2. BOF	5.017	1.296	0.795	0.798	0.570	0.233**	***0.755***										
3. IOF	5.098	1.275	0.846	0.844	0.644	0.258**	0.784**	***0.803***									
4. ATF	5.290	1.268	0.890	0.898	0.687	0.278**	0.731**	0.780**	***0.829***								
5. SN	4.352	1.464	0.878	0.879	0.645	0.608**	0.235**	0.253**	0.244**	***0.803***							
6. BET	5.177	1.293	0.893	0.892	0.674	0.270**	0.697**	0.691**	0.770**	0.226**	***0.821***						
7. PBC	5.096	1.145	0.868	0.865	0.518	0.295**	0.729**	0.748**	0.773**	0.308**	0.740**	***0.720***					
8. PD	3.985	1.610	0.776	0.862	0.677	0.443**	0.210**	0.184**	0.148**	0.502**	0.169**	0.240**	***0.823***				
9. MAS	4.526	1.286	0.843	0.850	0.486	0.518**	0.265**	0.270**	0.260**	0.501**	0.236**	0.353**	0.603**	***0.697***			
10. IDV	4.335	1.436	0.930	0.926	0.643	0.369**	0.293**	0.296**	0.269**	0.329**	0.280**	0.380**	0.475**	0.553**	***0.802***		
11. LTO	5.372	1.225	0.928	0.930	0.688	0.289**	0.619**	0.663**	0.726**	0.261**	0.708**	0.736**	0.137**	0.320**	0.296**	***0.829***	
12. UAI	4.663	1.485	0.919	0.919	0.740	0.377**	0.346**	0.346**	0.402**	0.299**	0.412**	0.439**	0.348**	0.437**	0.550**	0.387**	***0.860***

Notes: N = 5326. *p < 0.05. **p < 0.01; α: Cronbach's α; The italic diagonal elements: SRAVEs.

Table 3. Research instruments and standardized regression weights

Constructs	Codes	Measures	Sources	Factor loading
Blockchain-enabled traceability	BET1	Blockchain-enabled organic food systems are traceable	Choe *et al*. (2008); Chen and Huang (2013)	0.811
	BET2	Blockchain-enabled organic food systems provide rich and detailed product information		0.815
	BET3	Blockchain-enabled organic food systems accurate and real-time information about the product		0.864
	BET4	Blockchain-enabled organic food systems provide complete information from producers (farmers) to end users		0.791
Organic food purchase intention	IOF1	I am willing to buy organic food in the future	Ladwein and Sánchez Romero (2021)	0.780
	IOF2	I plan to buy organic food		0.832
	IOF3	I will make an effort to buy organic food		0.795
	IOF4	I may not purchase organic foods in the future ®		-
Organic food purchase behavior	BOF1	I buy organic food on a regular basis	Le-Anh and Nguyen-To (2020)	0.821
	BOF2	I buy organic food for my daily needs' products		0.668
	BOF3	I have bought organic food over the past six months		0.821
Attitude toward purchasing organic foods	ATF1	Buying organic food is a good idea	Yadav and Pathak (2016)	0.814
	ATF2	Buying organic food is a wise choice		0.832
	ATF3	I like the idea of buying organic food		0.844
	ATF4	Buying organic food would be pleasant		0.798
Subjective norms	SN1	My family thinks that I should buy organic foods rather than non-organic foods	Yazdanpanah and Forouzani (2015)	0.701
	SN2	Most people I value would buy organic foods rather than non-organic foods		0.835
	SN3	People I value (such as my teacher) think you should buy organic foods		0.839
	SN4	My close friends, whose opinions regarding diet are important to me, think that I should buy organic foods		0.830
Perceived behavioral control	PBC1	Purchasing organic food makes me feel good	Sultan *et al*. (2020)	0.734
	PBC2	Spending money on organic food products is enjoyable		-
	PBC3	I have control over my desire to buy organic food		0.629
	PBC4	It is up to me to enjoy new experiences of trying organic food		0.727
	PBC5	It is up to me to treat myself by eating organic foods		0.781
	PBC6	Eating organic foods is a pleasure		0.704
	PBC7	For me, the best time to enjoy organic foods is during meals with family/friends		0.734

Table 3. Continued

Constructs	Codes	Measures	Sources	Factor loading
Power distance	PD1	Subordinates are afraid to express disagreement with their superiors	Yoon (2009)	-
	PD2	Subordinates should follow their superiors' decisions unconditionally.		0.854
	PD3	Managers should make most decisions by themselves		0.712
	PD4	Subordinates should not question their superiors' decision		0.892
Uncertain avoidance	UAI1	When starting a new job, I fear doing it	Yoon (2009)	0.839
	UAI2	I fear uncertainty about the future		0.866
	UAI3	I fear ambiguous situations and unfamiliar adventures		0.879
	UAI4	It is risky to do something that has never been done before		0.856
Collectivism	CLT1	I will stick with my family if they need me, even when I am not happy with them	Mai *et al*. (2003)	0.755
	CLT2	Members of a family should stick together, even when they are not happy with each other		0.779
	CLT3	I behave in a manner consistent with the way my family group expects me to, even though I may not personally agree with their expectations		0.805
	CLT4	Members of a family should behave in a manner consistent with the way others in the family expect them to, even though they may not personally agree		0.857
	CLT5	I strive to make an important contribution to my family		0.733
	CLT6	Members of a family should try to make an important contribution to the family		0.717
	CLT7	I pursue goals that are important to my family group, even though these goals may not be consistent with my own personal desire for achievement		0.819
	CLT8	Members of a family should pursue goals that are important to the whole family, even though these goals may not be consistent with their own personal desire for achievement		0.811
Individualism	IDV1	When am not happy with my family, I stay away from them	Mai *et al*. (2003)	0.751
	IDV2	When members of a family are not happy with one another, they should stay away from each other		0.792
	IDV3	I behave consistently with my own personal attitudes, even though my family group may not agree with me		0.834
	IDV4	Members of a family should behave in a manner consistent with their own personal attitudes, even though others in my family may not agree with them		0.838
	IDV5	Members of a family should not have to rely on others in the family		0.824

Table 3. Continued

Constructs	**Codes**	**Measures**	**Sources**	**Factor loading**
Individualism	IDV6	I pursue goals that are important to my own personal achievement, independent of the goals that my family may have		0.762
	IDV7	Members of a family should pursue goals that are important to their own personal achievement, regardless of family goals		0.807
Long-term orientation	LTO1	Careful management of money is important to me	Sreen *et al.* (2018)	0.819
	LTO2	I do not give up easily, even if I do not succeed in my first attempt		0.829
	LTO3	I believe in planning for the long-term		0.838
	LTO4	I value personal steadiness and stability		0.830
	LTO5	I work hard for success in the future		0.838
	LTO6	I do not mind giving up today's fun for success in the future		0.822
Masculinity	MAS1	The fulfillment of tasks is more important than caring for others	Yoon (2009); Yoo *et al.* (2011)	0.697
	MAS2	A job with high earnings is better than a job with quality of life		0.663
	MAS3	A man should be strong, and a woman should be tender		0.705
	MAS4	There are some jobs that a man can always do better than a woman		0.623
	MAS5	Men usually solve problems with logical analysis, women usually solve problems with intuition		0.740
	MAS6	It is more important for men to have a professional career than it is for women		0.747

Notes: N = 5326.

Table 4. Hierarchical multiple regression

Variables	Attitude towards purchasing organic foods (ATF)				Organic food purchase intention (IOF)				Organic food purchase behavior (BOF)			
	Model 1				Model 2				Model 3			
	β	SE	t	p-value	β	SE	t	p-value	β	SE	t	p-value
Constant	0.793***	0.082	9.647	<0.001	0.645***	0.082	7.913	<0.001	0.879***	0.078	11.200	<0.001
Age	0.038***	0.011	3.569	<0.001	0.016	0.009	1.771	0.077	0.029**	0.009	3.184	0.001
Gender	0.066**	0.023	2.826	0.005	-0.009	0.020	-0.434	0.664	0.021	0.020	1.029	0.304
Education	-0.005	0.022	-0.221	0.825	0.020	0.019	1.053	0.293	0.017	0.019	0.889	0.374
PD	0.016	0.010	1.710	0.087								
UAI	0.120***	0.010	11.949	<0.001								
CLT	0.050***	0.011	4.725	<0.001								
IDV	-0.006	0.011	-0.550	0.582								
LTO	0.692***	0.011	64.508	<0.001								
MAS	-0.052***	0.013	-3.949	<0.001								
ATF					0.459***	0.014	33.721	<0.001				
SN					0.026***	0.007	3.572	<0.001				
PBC					0.253***	0.022	11.657	<0.001	0.096***	0.021	4.450	<0.001
BET*PBC					0.020***	0.002	8.503	<0.001	0.036***	0.002	15.876	<0.001
IOF									0.495***	0.012	39.827	<0.001
R^2	0.549				0.666				0.677			
Adjusted R^2	0.548				0.666				0.677			
D-W statistic	1.746				1.783				1.849			
F Change	719.398***				1518.016***				1858.372***			

Notes: N = 5326. *p < 0.05, **p < 0.01, ***p < 0.001.

Table 5. Mediation analyses

Indirect paths									Effects	BootSE	Bootstrap 95% CIs	
											LCI	UCI
PD	→	ATF	→	IOF					0.090	0.009	-0.072	0.108
UAI	→	ATF	→	IOF					0.264	0.011	0.242	0.286
CLT	→	ATF	→	IOF					0.202	0.014	0.174	0.229
IDV	→	ATF	→	IOF					0.181	0.011	-0.159	0.202
LTO	→	ATF	→	IOF					0.478	0.014	0.450	0.505
MAS	→	ATF	→	IOF					0.196	0.013	0.171	0.221
PD	→	ATF	→	IOF	→	BOF			0.049	0.005	-0.039	0.059
UAI	→	ATF	→	IOF	→	BOF			0.146	0.008	0.130	0.161
CLT	→	ATF	→	IOF	→	BOF			0.112	0.009	0.095	0.128
IDV	→	ATF	→	IOF	→	BOF			0.098	0.007	-0.085	0.111
LTO	→	ATF	→	IOF	→	BOF			0.256	0.012	0.233	0.278
MAS	→	ATF	→	IOF	→	BOF			0.107	0.008	0.092	0.123
ATF	→	IOF	→	BOF					0.435	0.015	0.405	0.465
SN	→	IOF	→	BOF					0.173	0.013	0.149	0.198
PBC	→	IOF	→	BOF					0.459	0.016	0.428	0.488

Notes: N = 5326; LCI: Lower level of confidence interval; UCI: Upper level of confidence interval; SE: Standard errors.

Figure 1. Hypothesized model

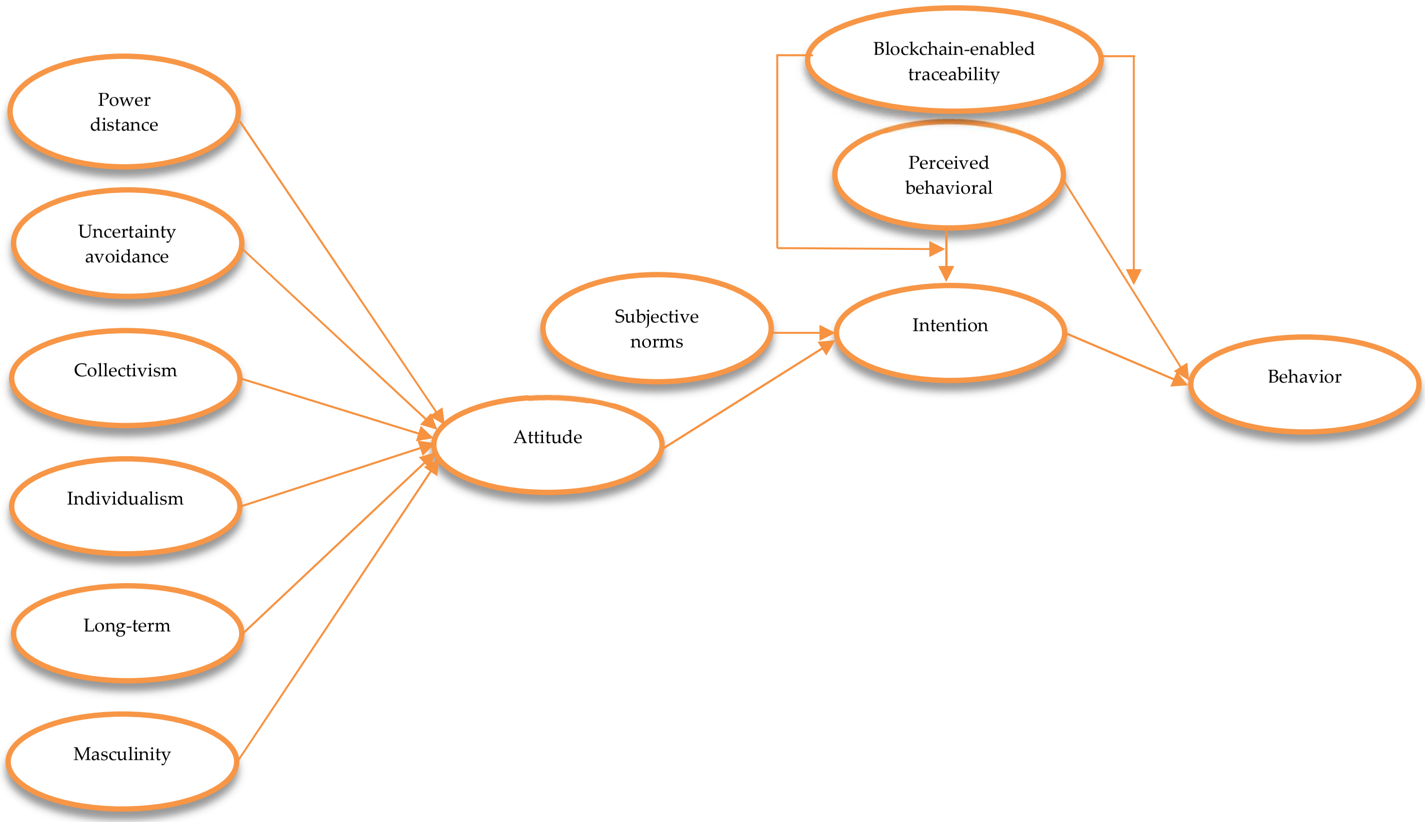

Figure 2. Interaction effect of blockchain-enabled traceability and perceived behavioral control on organic food purchase intention

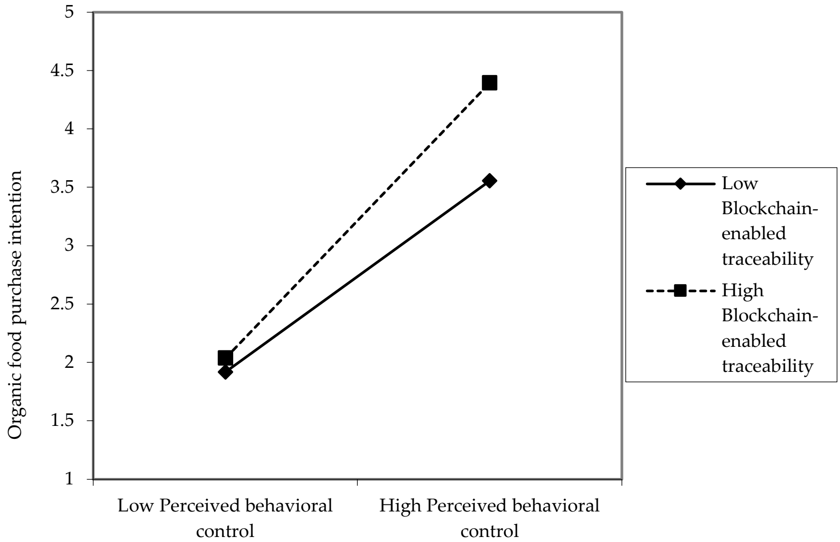

Figure 3. Interaction effect of blockchain-enabled traceability and perceived behavioral control on organic food purchase behavior