

How Does Product Trust Affect Consumers' Purchase Intention for Low-GI Breakfast?——The Mediating Roles of Purchase Attitude and Digital Marketing Information Acceptance

Zian Jiang*

School of Economics, Jiangxi University of Finance and Economics, Jiangxi Nanchang, 330000, China

**Corresponding author: Zian Jiang.*

Abstract

From the perspective of consumer psychological cognition, this study explores the impact of product trust on consumers' purchase intention toward low-GI breakfast products and further analyzes its underlying mechanisms. Based on survey data from low-GI breakfast consumers, this study employs a multiple regression model to examine the effect of product trust on consumers' purchase intention toward low-GI breakfast products. Furthermore, robustness tests are conducted by replacing the dependent variable and substituting the core explanatory variable, while an instrumental variable approach is adopted to address potential endogeneity issues. A mediation effect model is further applied to investigate the mechanisms of purchase attitude and digital marketing information acceptance. The results show that product trust significantly enhances consumers' purchase intention toward low-GI breakfast products. Purchase attitude and digital marketing information acceptance play important mediating roles in the process through which product trust affects purchase intention. Meanwhile, consumers with stronger health management needs are more likely to be influenced by product trust. Therefore, enhancing trust in low-GI products, optimizing information communication mechanisms, and implementing differentiated marketing strategies for consumers with different health needs are important pathways for promoting the development of the low-GI breakfast market.

Keywords

low-GI breakfast, product trust, purchase intention, digital marketing information acceptance, purchase attitude

1. Introduction

The global burden of chronic non-communicable diseases continues to increase, and unhealthy dietary patterns have been recognized as one of the major behavioral risk factors. According to the World Health Organization, approximately 11 million deaths annually are attributable to unhealthy diets, among which metabolic disorders caused by high-glycemic-index (GI) diets constitute an important contributing factor. Against this background, promoting the development and application of low-glycemic-index foods has become

an issue with clear policy implications and practical urgency. The Healthy China Action (2019–2030) identifies “reasonable dietary action” as a major initiative and explicitly encourages the production and sale of low-glycemic-index (GI) foods, while advocating improvements in dietary structures and reductions in high-GI food consumption. This demonstrates the strategic importance attached by the government to using dietary interventions for chronic disease prevention. In recent years, several provinces, cities, and industry organizations have gradually initiated the development of low-GI food certification standards and market promotion programs, aiming to regulate market practices and enhance consumer confidence. These efforts indicate that China’s nutrition and health intervention strategies based on low-GI foods are transitioning from scientific consensus toward systematic policy implementation and industrial practice.

With continuous changes in dietary structures among Chinese residents, the proportion of refined carbohydrate intake has increased substantially. Accompanying this trend has been a persistent rise in the prevalence of metabolic diseases such as diabetes and obesity. The Report on Cardiovascular Health and Diseases in China 2025 indicates that the crude incidence rate of cardiovascular diseases among Chinese residents aged 18 and above reached 639.46 per 100,000 in 2024. Meanwhile, the Regional Diabetes Report 2000–2050 shows that the number of Chinese adults with diabetes (aged 20–79) reached 148 million in 2024. As a technical indicator measuring postprandial blood glucose responses to foods, the glycemic index has gradually moved from academic research into public health practices and food industry applications. The development, labeling, and standardized management of low-GI foods have therefore become an interdisciplinary issue involving both chronic disease prevention and consumption upgrading.

Research on low-GI health foods has mainly developed along three pathways. First, food science studies have focused on GI measurement, product formulation optimization, and postprandial blood glucose responses, emphasizing the physical and chemical characteristics and standardized certification of low-GI foods. Second, consumer behavior studies have used frameworks such as perceived value theory, the Health Belief Model, and the Theory of Planned Behavior to explain the formation mechanisms of consumers’ purchase intentions toward health foods. Third, studies have identified heterogeneous consumer characteristics through demographic attributes, consumption behaviors, and preference-based segmentation. However, these research streams have largely progressed independently, and effective theoretical integration has not yet been established regarding the question of how product trust affects purchase intention for low-GI breakfast products in a digital marketing context.

This study constructs a theoretical framework of “product trust—purchase attitude—purchase intention” by incorporating the credibility of low-GI product labeling and certification transparency, information presentation methods in digital marketing environments, and consumer evaluation mechanisms into a unified analytical framework. Furthermore, consumer health awareness and product involvement are introduced as heterogeneous factors to investigate differences among consumer groups. This approach helps address the insufficient evidence regarding the combined effects of product trust construction, digital information environments, and consumer psychological mechanisms in everyday low-GI breakfast consumption scenarios.

The practical value of this study is reflected in its potential contribution to low-GI food market governance and consumer education. From the perspective of regulatory authorities, the findings provide empirical support for improving digital marketing regulations, label authenticity management, and consumer warning mechanisms for low-GI foods. From the perspective of consumer education, clarifying the formation process and heterogeneous effects of product trust in digital marketing contexts can enhance consumers’ ability to identify low-GI food information and improve rational decision-making. Ultimately, this study contributes to the development of a healthy breakfast consumption culture based on scientific understanding.

2. Literature Review

2.1 The Impact of Product Trust on Low-GI Breakfast Purchase Intention

Existing studies have mainly focused on the concept, formation mechanisms, and behavioral consequences of product trust, particularly examining the roles of food quality and safety, information reliability, and perceived functional value in consumer decision-making processes. Product trust refers to consumers’ positive judgments formed based on product quality, functional performance, and the reliability of related information.

It serves as an important psychological factor influencing purchasing decisions under conditions of incomplete information and perceived consumption risks.

Research on food consumption indicates that consumer trust involves comprehensive evaluations of food quality, safety, and information authenticity, and is closely associated with purchasing behavior. In the consumption of functional foods, consumers often cannot directly verify health benefits before purchase. Therefore, they must rely on product information and trust-based judgments to determine whether products can satisfy their expected needs.

Low-GI foods represent a category of functional health foods, and existing studies have mainly focused on their development, application, and health benefits. Since the core value of low-GI foods lies primarily in functional characteristics that are difficult to directly perceive, such as postprandial blood glucose responses, consumers usually cannot determine whether products truly possess low-GI attributes through appearance or taste. Instead, they need to rely on product labels, testing information, and corporate communication to make judgments.

Therefore, in the consumption process of low-GI breakfast products, consumers' trust in product information authenticity and functional effectiveness may become an important factor affecting purchase decisions. Previous food consumption studies have shown that information transparency and source credibility influence consumers' evaluations of food quality and safety, thereby affecting purchase intention. Research on certified agricultural products has found that consumer trust is significantly associated with purchase intention, and trust in product quality and certification information can enhance consumers' willingness to purchase.

Similarly, studies on functional foods have demonstrated that consumer trust significantly influences purchase intention, indicating the importance of trust in consumption contexts where health functions are difficult to verify directly. For low-GI breakfast products, consumers not only consider whether the product possesses low-GI attributes but also evaluate whether corporate claims, nutritional information, and health functions are reliable. When consumers believe that products can fulfill their health-related promises, uncertainty during the purchasing process decreases, making them more likely to develop positive purchase intentions.

Existing studies have mainly examined green foods, organic foods, certified agricultural products, and functional foods, while limited research has investigated the role and mechanism of product trust in influencing purchase intention within the specific context of low-GI breakfast products. Therefore, this study proposes the following hypothesis:

Hypothesis 1: Product trust has a significant positive impact on consumers' purchase intention toward low-GI breakfast products.

2.2 The Mediating Role of Digital Marketing Information Acceptance

With the development of digital technologies and internet platforms, consumers increasingly obtain food-related information through digital channels such as social media, e-commerce platforms, and online reviews. Existing studies indicate that digital marketing can influence consumers' perceptions of product value through information dissemination, consumer interaction, and platform-based evaluations, thereby affecting purchasing decisions.

However, digital marketing information does not necessarily lead directly to consumer purchasing behavior. Its effectiveness depends on whether consumers are willing to accept and adopt such information. Research on information adoption suggests that consumers' acceptance of external information is influenced by factors such as information quality, credibility, and perceived usefulness. The process of information acceptance and adoption further affects purchase intention.

Studies on online word-of-mouth (eWOM) have found that consumers' adoption of electronic word-of-mouth information plays an important mediating role between information factors and purchase intention. External information can only influence consumer decisions after consumers recognize its value. Therefore, digital marketing information needs to undergo a process of consumer acceptance before it can be transformed into purchase intention.

Product trust may influence consumers' acceptance of digital marketing information. Studies related to e-commerce have shown that consumer trust affects their acceptance of online transaction environments and related information, thereby influencing behavioral intentions. Research on social commerce has also found that consumer trust affects evaluations of platform information environments and is associated with purchase intention.

In the context of functional food consumption, because product functions often involve professional knowledge, consumers' trust in information sources and content affects their understanding and acceptance of product information. For low-GI breakfast products, consumers need to obtain information about GI characteristics and health benefits through digital channels, including product descriptions, nutritional information, online reviews, and educational content.

When consumers have already developed a high level of product trust, they are more likely to perceive information provided by companies or platforms as reliable, thereby increasing their acceptance of digital marketing information. Improved information acceptance further enhances consumers' understanding of product value and promotes the formation of purchase intention.

Although previous studies have examined the relationships among consumer trust, information adoption, and purchase intention separately, limited research has explored the mechanism of "product trust—digital marketing information acceptance—purchase intention" in the context of low-GI breakfast consumption. Therefore, this study proposes the following hypothesis:

Hypothesis 2: Digital marketing information acceptance plays a positive mediating role between product trust and purchase intention toward low-GI breakfast products.

2.3 The Mediating Role of Purchase Attitude

Purchase attitude refers to consumers' overall evaluative tendency toward a product after receiving information and conducting value judgments. It represents an important psychological variable connecting consumer cognition and behavioral intention. According to the Theory of Planned Behavior, attitude reflects consumers' positive or negative evaluations of a specific behavior and further influences behavioral intention.

Food consumption studies have also shown that positive attitudes toward food products can enhance consumers' purchase intention. In the context of health food consumption, consumer attitudes are influenced by product attributes, health values, and individual cognition, and play an important role in consumption decisions.

Research on organic foods has found that consumers' positive evaluations of product value and health attributes can further strengthen purchase intention. Related review studies have also demonstrated that consumer value perception and product evaluation are important factors driving health food consumption.

Product trust may influence purchase intention by affecting consumers' evaluations of products. Studies on functional foods have found that consumer trust not only directly affects purchase intention but also indirectly influences purchase intention through purchase attitude. This indicates that consumers first develop positive evaluations based on trust and subsequently increase their willingness to purchase.

For low-GI breakfast products, because health functions cannot be directly verified before purchase, consumers need to rely on product information, corporate reputation, and relevant health evidence to evaluate product value. When consumers believe that low-GI breakfast products can meet their health needs and that product information is reliable, they are more likely to form positive product evaluations and purchase attitudes, ultimately increasing purchase intention.

Although previous studies have examined the relationships among trust, purchase attitude, and purchase intention in functional foods, organic foods, and green foods, systematic research on how product trust affects purchase intention through purchase attitude in the emerging category of low-GI breakfast products remains limited. Therefore, this study proposes the following hypothesis:

Hypothesis 3: Purchase attitude plays a positive mediating role between product trust and purchase intention toward low-GI breakfast products.

3. Questionnaire Design and Data Collection

3.1 Data Source and SAMPLE Description

This study uses survey data from consumers of low-GI breakfast products to examine the impact of product trust on purchase intention. A total of 1,258 questionnaires were collected. After removing responses with missing values and those that did not select the third option in Question 19, the final regression sample contains 1,182 valid observations, which is sufficient to support the ordered choice model.

The questionnaire consists of several sections, including trust in low-GI breakfast products, purchase intention, demographic characteristics, health needs, health priority, food label attention, and GI knowledge level.

For the reverse-coded item Q20(3), “Although some foods are labeled as low-GI products, other nutritional components (such as fat and additives) may not be healthy,” reverse scoring was conducted by subtracting the original score from the sum of the maximum and minimum values of the same scale.

3.2 Variable Definition

3.2.1 Dependent Variable: Purchase Intention

The dependent variable in this study is whether consumers have a relatively high purchase intention toward low-GI breakfast products. Purchase intention is measured using four five-point Likert-scale items, which respectively reflect consumers’ willingness to try the product in the future, priority preference under similar conditions, continuous purchase intention after satisfaction, and purchase probability when product availability in stores increases.

First, the individual mean value of the four purchase intention items is calculated. When the mean value is lower than 1.5, purchase is assigned a value of 1, indicating that respondents generally “strongly disagree” with purchasing low-GI breakfast products. When the mean value is greater than or equal to 1.5 and lower than 2.5, purchase is assigned a value of 2, indicating that respondents generally “disagree” with purchasing low-GI breakfast products. When the mean value is greater than or equal to 2.5 and lower than 3.5, purchase is assigned a value of 3, indicating a “neutral” purchase intention level. When the mean value is greater than or equal to 3.5 and lower than 4.5, purchase is assigned a value of 4, indicating that respondents generally “agree” with purchasing low-GI breakfast products. When the mean value is greater than or equal to 4.5, purchase is assigned a value of 5, indicating that respondents “strongly agree” with purchasing low-GI breakfast products.

$$y_i^* = \frac{(will1_i + will2_i + will3_i + will4_i)}{4} \quad (1)$$

$$purchase_i = \begin{cases} 1 & y_i^* < 1.5 \\ 2 & 1.5 \leq y_i^* < 2.5 \\ 3 & 2.5 \leq y_i^* < 3.5 \\ 4 & 3.5 \leq y_i^* < 4.5 \\ 5 & y_i^* \geq 4.5 \end{cases} \quad (2)$$

Where $purchase_i$ indicates whether respondent i has a certain level of purchase intention; $will1_i - will4_i$ represents the score of the four purchase intention items; and y_i^* represents the arithmetic mean of the four purchase intention item scores for respondent i .

3.2.2 Core Explanatory Variable: Low-GI Product Trust

The core explanatory variable of this study is consumers’ trust in the reliability of low-GI products (trust_score). The core explanatory variable is measured using three five-point Likert-scale items.

These items reflect respondents’ evaluations of: (1) whether public GI testing institutions and their testing results enhance consumer trust; (2) whether reliable brands would intentionally exaggerate the health benefits of low-GI products; and (3) whether some foods labeled as low-GI products may still contain unhealthy nutritional components.

The baseline regression uses the factor score generated through principal component analysis (trust_pca) as the measurement of product trust. A higher value of this indicator represents a more positive overall perception and attitude toward low-GI breakfast products.

3.2.3 Control Variables

Following existing research on consumer choices and purchase intentions regarding healthy foods, this study gradually controls for age, gender, income level, duration of residence in Shanghai, health needs, health priority, and breakfast consumption frequency. Age, gender, income, and duration of residence in Shanghai are included to control for demographic differences and the degree of urban integration. Health needs reflect consumers' objective motivation for health management. The preference for health attributes over taste reflects consumers' subjective health attitudes. Food label attention is included as a fixed effect to control for systematic differences in consumers' attention to food-related information.

The questionnaire measures age groups, income groups, and Shanghai residence duration using categorical intervals, and these variables enter the model as categorical dummy variables.

Specifically, respondents with an original Shanghai residence duration value of ≥ 4 are classified into the long-term residence group. Respondents with an original age group value of ≥ 35 are classified as older consumers. Respondents with income levels $\geq 8,001$ yuan are classified as high-income consumers. Those who do not meet these conditions are used as the reference groups.

Breakfast consumption frequency is included to control for differences in consumers' daily dietary behaviors, reflecting their breakfast consumption habits and basic breakfast demand.

Since principal component analysis (PCA) extracts components based on the standardized correlation matrix, the mean value of the product trust variable is zero. Because respondents under 18 years old were excluded from the survey, the minimum value of age in the regression sample is 2; therefore, age group 2 is set as the reference group. In addition, since some consumers have never lived in Shanghai, the minimum value of Shanghai residence duration is 0.

Table 1: Descriptive Statistics

Variable Type	Variable Name	Definition	Observations	Mean	Standard Deviation	Minimum	Maximum
Dependent variable	Purchase intention	The degree of consumers' purchase intention	1,182	3.766	1.092	1.000	5.000
Core explanatory variable	Product trust	Principal component score of three cognition and attitude-related items	1,182	0.000	1.510	-3.680	1.845
Control variables	Demographic variables	Age	Age group	1,182	4.145	1.540	2.000
		Gender	Gender dummy variable; male = 1, female = 2	1,182	1.518	0.500	1.000
		Income	Income group	1,182	3.467	1.747	1.000
		Duration of residence in Shanghai	Length of residence in Shanghai	1,182	3.418	1.724	0.000
	Health motivation	Health needs	Degree of health needs	1,182	0.477	0.500	0.000
		Health priority	Ranking priority between taste and health attributes of food products	1,182	2.382	0.994	1.000
	Consumption frequency	Breakfast consumption frequency	Breakfast consumption frequency group	1,182	3.727	1.231	1.000

Variable Type	Variable Name	Definition	Observations	Mean	Standard Deviation	Minimum	Maximum
Fixed effects	Information attention	Food label attention	Degree of attention to food labels	1,182	2.376	1.252	1.000
Control variable	Cognitive level	GI knowledge	Level of understanding of GI concepts and information recognition	1,182	2.000	0.994	1.000

3.3 Model Specification

To examine the impact of product trust on consumers' purchase intention toward low-GI breakfast products, this study constructs an ordered choice model based on the ordered characteristics of the dependent variable. The basic regression model is specified as follows:

$$\ln[P(i \leq j) / (1 - P(i \leq j))] = \theta_j - (\alpha + \beta \text{TrustPCA}_i + \gamma' \text{Controls}_i) \quad (3)$$

Where $P(i \leq j)$ represents the cumulative probability that the purchase intention level of respondent i is less than or equal to a specific level j ; θ_j represents the specific constant term corresponding to the cutoff point of the j -th category, which indicates the baseline level of the cumulative Logit when the independent variables take the value of zero, and must satisfy the monotonic increasing constraint of $\theta_1 < \theta_2 < \theta_3 < \theta_4$; TrustPCA_i represents the principal component score of low-GI product trust; Controls_i represents the set of control variables; α represents the constant term; β represents the key coefficient of interest in this study; γ represents the coefficient vector of the control variables. When β is significantly greater than zero, it indicates that more positive low-GI product trust is significantly associated with a higher probability of purchase intention.

4. Empirical Results

4.1 Descriptive Statistics

Table 2 presents the descriptive statistics of the main variables. The mean value of consumers' purchase intention toward low-GI breakfast products is 3.52, indicating that respondents generally demonstrate a relatively positive purchase tendency. However, the standard deviation of 0.95 suggests considerable differences among consumers in terms of purchase intention.

The mean value of the product trust index is approximately zero because the variable is generated through principal component analysis after standardization. The distribution of product trust among respondents shows substantial variation, indicating differences in consumers' perceptions of low-GI product reliability and information credibility.

Regarding demographic characteristics, the sample contains respondents with different age groups, genders, income levels, and residence durations in Shanghai, providing sufficient variation for regression analysis. In terms of health-related variables, respondents show differences in health management needs and preference priorities between health attributes and taste. These differences provide a foundation for further examining heterogeneous effects.

Table 2: Baseline Regression Results

Variable	(1)	(2)	(3)
Low-GI product trust (trust_pca)	0.4611*** (0.0436)	0.4209*** (0.0448)	0.4075*** (0.0446)
Age	0.4837*** (0.1337)	0.4748*** (0.1345)	0.3809*** (0.1388)
Gender	0.6383*** (0.1186)	0.5952***	0.5679*** (0.1201)

Variable	(1)	(2)	(3)
		(0.1194)	
Income	0.1363 (0.1263)	0.0778 (0.1288)	0.0677 (0.1291)
Duration of residence in Shanghai	0.5118*** (0.1444)	0.4638*** (0.1447)	0.3943*** (0.1482)
Health needs	—	-0.3000** (0.1461)	-0.3078* (0.1476)
Health priority	—	0.2100*** (0.05167)	0.2036*** (0.0518)
Breakfast consumption frequency	—	—	0.1419*** (0.0527)
Food label attention	Controlled	Controlled	Controlled
Demographic controls	Yes	Yes	Yes
Health demand controls	No	Yes	Yes
Consumption frequency controls	No	No	Yes
Observations N	1,182	1,182	1,182
Wald χ^2	387.82	418.56	427.31
Pseudo R ²	0.1320	0.1384	0.1407

Note: Standard maximum likelihood standard errors are reported in parentheses. For final submission, robust or clustered robust standard errors are recommended. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

4.2 Baseline Regression Results

Since empirical results may be affected by variable definitions, construction methods of core variables, and extreme observations, relying solely on a single model specification may not be sufficient to verify the impact of low-GI product trust on consumers' purchase intention. Therefore, this study conducts robustness tests by replacing the measurement method of the dependent variable, substituting alternative measures of the core explanatory variable, and winsorizing continuous variables to examine whether the main conclusions remain stable under different model specifications.

4.2.1 Replacing the Dependent Variable

To further verify that consumers with stronger trust in low-GI products are more likely to develop higher purchase intention, this study adjusts the classification criteria of the dependent variable. Specifically, purchase intention is redefined using the thresholds of purchase ≥ 3 and purchase ≥ 4 , with the value assigned as 1 when the criterion is satisfied and 0 otherwise. In other words, respondents whose average scores are no lower than the midpoint of the scale (3 or 4 points) are classified as having high purchase intention.

A binary Logit stepwise regression model is then re-estimated. As shown in Table 3, consumers' positive trust toward low-GI products has a significant positive effect on purchase intention.

$$purchase_i = 1[(will_1 + will_2 + will_3 + will_4) / 4 \geq n] \quad (4)$$

Where $purchase_i$ represents whether respondent i has a high purchase intention; $will_1 - will_4$ represent the scores of the four purchase intention items, respectively; n takes the value of 3 or 4 according to the adjusted criterion; $1[\]$ is an indicator function, which takes the value of 1 when the condition in brackets is satisfied and 0 otherwise.

Table 3: Robustness Test: Replacing the Dependent Variable

Variable	purchase ≥ 3	purchase ≥ 4
Low-GI product trust (trust_pca)	0.4801*** (0.0583)	0.3939*** (0.0541)
Food label attention	Controlled	Controlled
Demographic controls	Yes	Yes
Health demand controls	Yes	Yes
Consumption frequency controls	Yes	Yes
Observations N	1,182	1,182
Wald χ^2	251.77	260.12
Pseudo R ²	0.2533	0.2044

Note: Standard maximum likelihood standard errors are reported in parentheses. For final submission, robust or clustered robust standard errors are recommended. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

4.2.2 Replacing the Core Explanatory Variable

To ensure that the baseline regression results are not dependent on a single measurement method of the core explanatory variable, this study applies two alternative approaches, namely exploratory factor analysis (EFA) and the entropy weighting method (Entropy), to construct composite scores for product trust.

First, exploratory factor analysis (EFA) is conducted on the product trust-related items to extract an alternative trust index, which replaces the principal component score used in the baseline model.

Second, the entropy weighting method is applied to assign objective weights to the trust-related items and construct a new composite indicator. The model is then re-estimated.

After controlling for the same covariates and using robust standard errors, the estimated coefficients of product trust based on EFA and Entropy methods are 0.6044 and 0.6154, respectively. Both coefficients remain statistically significant at the 1% level, indicating that the positive effect of low-GI product trust on consumers' purchase intention does not depend on a specific indicator construction method.

Table 4: Comparison of Full Models Using Different Measurements of the Core Variable

Variable	Entropy	EFA
Low-GI product trust (trust_entropy)	0.6044*** (0.0862)	0.6154*** (0.0674)
Food label attention	Controlled	Controlled
Demographic controls	Yes	Yes
Health demand controls	Yes	Yes
Consumption frequency controls	Yes	Yes
Wald χ^2	388.76	427.31
Pseudo R ²	0.1304	0.1407

*Note: Standard maximum likelihood standard errors are reported in parentheses. For final submission, robust or clustered robust standard errors are recommended. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.*

4.3 Additional Robustness Tests

To avoid the potential influence of extreme observations on the regression results, this study applies two-sided winsorization at the 1%, 5%, and 10% levels to the main continuous variables, including the principal component score of low-GI product trust, health priority, and breakfast consumption frequency. As shown in Table 5 (Winsorization Treatment), after winsorization at the 1%, 5%, and 10% levels, the coefficients of the core explanatory variable are 0.4062, 0.4258, and 0.4471, respectively. The estimated coefficients show no substantial differences, indicating that the baseline regression results are not significantly affected by extreme observations. Therefore, the model estimation results demonstrate good stability and reliability.

Table 5: Winsorization Treatment

Variable	Winsorization 1%	Winsorization 5%	Winsorization 10%
Low-GI product trust (trust_pca)	0.4062*** (0.0447)	0.4258*** (0.0471)	0.4471*** (0.0494)
Food label attention	Controlled	Controlled	Controlled
Demographic controls	Yes	Yes	Yes
Health demand controls	Yes	Yes	Yes
Consumption frequency controls	Yes	Yes	Yes
Observations N	1,182	1,182	1,182
Wald χ^2	425.87	425.10	425.44
Pseudo R ²	0.1408	0.1410	0.1412

*Note: Standard maximum likelihood standard errors are reported in parentheses. For final submission, robust or clustered robust standard errors are recommended. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.*

4.4 Instrumental Variable Approach

This study uses consumers' knowledge of the GI concept as an instrumental variable for product trust. Regarding the relevance condition, consumers' knowledge of GI concepts may influence their understanding and evaluation of low-GI food information. A higher level of GI knowledge enables consumers to better identify the health value of products, understand testing information, reduce information asymmetry, and

consequently enhance their trust in products. Therefore, GI knowledge is positively associated with product trust.

Regarding the exclusion restriction condition, GI knowledge mainly affects consumers' information cognition and risk evaluation processes and does not directly determine purchase intention. Consumers' decisions to purchase low-GI breakfast products are still influenced by multiple factors, including product value, price, and individual needs. Therefore, GI knowledge primarily affects purchase intention through improving product trust, satisfying the validity requirements of the instrumental variable.

Table 6: First-Stage Regression Results of 2SLS

Variable	First Stage
GI knowledge (GI_knowledge)	0.2265*** (0.0299)
Food label attention	Controlled
Demographic controls	Yes
Health demand controls	Yes
Consumption frequency controls	Yes
Observations N	1,182
F-statistic	55.40
Wald χ^2	—
Pseudo R ²	0.3340

Table 7: Second-Stage Regression Results of 2SLS

Variable	Second Stage
GI knowledge (GI_knowledge)	—
Low-GI product trust (trust_pca)	1.538*** (0.2150)
Food label attention	Controlled
Demographic controls	Yes
Health demand controls	Yes
Consumption frequency controls	Yes
Observations N	1,182
Wald χ^2	331.63
Pseudo R ²	0.1250

*Note: Standard maximum likelihood standard errors are reported in parentheses. For final submission, robust or clustered robust standard errors are recommended. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.*

4.5 Heterogeneity Analysis

To examine whether the impact of product trust on consumers' purchase intention toward low-GI breakfast products varies across different consumer groups, this study conducts subgroup analyses based on age, health management needs, and previous low-GI food purchase experience.

Consumers of different age groups may differ in their attention to health-related information, consumption decision-making patterns, and risk perceptions, which may lead to variations in the effect of product trust. Consumers with health management needs generally pay greater attention to blood glucose control, nutrition, and functional foods, making it more likely that product trust will be transformed into purchase intention. Consumers with previous low-GI food purchase experience have a more comprehensive understanding of product characteristics and value, and their trust formation mechanisms may differ from those of consumers without previous purchase experience.

Therefore, this study performs subgroup regressions based on purchase experience, age, and blood glucose management needs to further identify which consumer groups are more likely to be influenced by product trust. Consumers aged ≤ 30 years, consumers who have never purchased low-GI foods, and consumers without blood glucose or health management-related needs are classified into the first group, while the remaining consumers are classified into the second group.

As shown in Table 8 (Heterogeneity Analysis), in the age-based grouping, the coefficients of low-GI product trust on purchase intention are 0.4869 and 0.4020, respectively. In the purchase experience grouping,

the corresponding coefficients are 0.4527 and 0.3818, respectively. In the blood glucose management grouping, the coefficients are 0.5802 and 0.4274, respectively.

The results indicate that low-GI product trust significantly increases purchase intention across different consumer groups. However, the effect is stronger among consumers with blood glucose management needs, suggesting that health risk perception may strengthen consumers' reliance on low-GI product information and quality trust.

Table 8: Heterogeneity Analysis

Variable	Age >35	Age ≤35	Purchased before	Never purchased	Without blood glucose management needs	With blood glucose management needs
Low-GI product trust (trust_pca1)	0.4869*** (0.0663)	0.2520* (0.1480)	0.4527*** (0.0537)	0.1049 (0.0638)	0.5802*** (0.1236)	0.5729 (0.3483)
Fixed effects	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
Demographic controls	Yes	Yes	Yes	Yes	Yes	Yes
Health demand controls	Yes	Yes	Yes	Yes	Yes	Yes
Consumption frequency controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations N	457	725	732	450	430	752
LR χ^2	190.96	226.46	243.12	126.66	415.76	84.41
Pseudo R ²	0.0759	0.0614	0.0621	0.0566	0.0750	0.1127

*Note: Standard maximum likelihood standard errors are reported in parentheses. For final submission, robust or clustered robust standard errors are recommended. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.*

4.6 Mechanism Analysis

4.6.1 The Mediating Role of Purchase Attitude

To further explore the underlying mechanism through which low-GI product trust affects consumers' purchase intention, this study introduces purchase attitude as a mediating variable for examination.

Consumers' trust in low-GI breakfast products influences their evaluations of product value, functional benefits, and consumption risks, thereby shaping positive or negative purchase attitudes. When consumers perceive low-GI products as more credible, they are more likely to form favorable evaluations and further enhance their purchase intention. Therefore, purchase attitude may serve as an important psychological mechanism linking product trust and purchase intention.

The results show that low-GI product trust has a significant positive effect on purchase attitude at the 1% statistical level, indicating that consumers with higher trust in low-GI products are more likely to develop positive purchase attitudes. After incorporating purchase attitude into the model, purchase attitude continues to have a significant positive impact on purchase intention. Meanwhile, the effect of low-GI product trust on purchase intention remains statistically significant, although its coefficient decreases compared with the baseline model.

These results indicate that purchase attitude plays a partial mediating role between low-GI product trust and purchase intention. Specifically, consumers' trust in low-GI products not only directly increases purchase intention but also indirectly promotes purchasing decisions by fostering more positive purchase attitudes.

Table 9: the Mediating Role of Purchase Attitude

Variable	Purchase Intention	Purchase Attitude	Purchase Intention
Low-GI product trust (trust_pca1)	0.4075*** (0.0446)	0.1789*** (0.0203)	0.3747*** (0.0427)
Purchase attitude	—	—	0.3280*** (0.0593)
Food label attention	Controlled	Controlled	Controlled

Variable	Purchase Intention	Purchase Attitude	Purchase Intention
Demographic controls	Yes	Yes	Yes
Health demand controls	Yes	Yes	Yes
Consumption frequency controls	Yes	Yes	Yes
Observations N	1,182	1,182	1,182
LR χ^2	427.31	—	542.08
Pseudo R ²	0.1407	0.3140	0.0858

4.6.2 The Mediating Role of Digital Marketing

Digital marketing serves as an important psychological and information transmission mechanism connecting product trust and purchase intention, as it can strengthen consumers' perception of low-GI product value.

Consumers with higher levels of trust in products are more likely to accept information presentation, content communication, and interactive marketing approaches provided by digital platforms, thereby enhancing their purchase intention. Therefore, digital marketing plays a mediating role in the process through which product trust influences purchase intention.

As shown in Table 10 (The Mediating Role of Digital Marketing), product trust has a significant positive effect on digital marketing acceptance, and digital marketing acceptance also significantly promotes purchase intention. After including the digital marketing variable, the effect of product trust on purchase intention remains significant, indicating that digital marketing acceptance plays a partial mediating role between product trust and purchase intention.

Table 10: the Mediating Role of Digital Marketing

Variable	Purchase Intention	Digital Marketing Acceptance	Purchase Intention
Low-GI product trust (trust_pca1)	0.4075*** (0.0446)	0.1913*** (0.0197)	0.3607*** (0.0428)
Digital marketing acceptance	—	—	0.4004*** (0.0616)
Food label attention	Controlled	Controlled	Controlled
Demographic controls	Yes	Yes	Yes
Health demand controls	Yes	Yes	Yes
Consumption frequency controls	Yes	Yes	Yes
Observations N	1,182	1,182	1,182
LR χ^2	427.31	—	553.83
Pseudo R ²	0.1407	0.3591	0.0876

*Note: Standard maximum likelihood standard errors are reported in parentheses. For final submission, robust or clustered robust standard errors are recommended. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.*

5. Conclusion and Implications

Based on survey data from low-GI breakfast consumers, this study employs a multiple regression model to examine the impact of product trust on consumers' purchase intention, while gradually incorporating demographic characteristics, health needs, breakfast consumption frequency, and food label attention as control variables. The results show that trust in low-GI products has a significant positive effect on consumers' purchase intention. Specifically, the higher the degree to which consumers recognize the authenticity, functional effectiveness, and reliability of low-GI products, the stronger their purchase intention. After conducting robustness checks through replacing the dependent variable, changing the measurement method of the core explanatory variable, and applying winsorization procedures, the positive effect of product trust remains significant. Furthermore, after addressing potential endogeneity issues using an instrumental variable approach, the positive effect of product trust on purchase intention toward low-GI breakfast products remains valid, indicating that the research conclusions are robust. Meanwhile, heterogeneity analysis reveals that product trust promotes purchase intention among different consumer groups, but the magnitude of the effect varies across groups. Specifically, consumers with blood glucose management needs exhibit a higher degree of reliance on product trust, and the positive effect of product trust on their purchase intention is stronger, suggesting that consumers' health needs and risk perception levels influence the role of product trust.

Existing studies on low-GI and health foods have mainly examined consumer behavior from perspectives related to product development, food labeling, information disclosure, and marketing, while research focusing on the impact of product trust on low-GI food purchase intention from the perspective of consumer psychological cognition remains relatively limited. In particular, the health functions of low-GI breakfast products have certain implicit characteristics, making it difficult for consumers to directly judge their low-GI attributes and functional effectiveness before purchase. Therefore, analyzing consumer behavior solely from the perspectives of product attributes and information supply cannot fully explain the formation of purchase intention. This study introduces product trust into the analytical framework of low-GI breakfast purchase intention from the perspective of consumer product trust, thereby expanding the explanatory perspective of health food consumption research. The mediation effect analysis further shows that product trust not only directly enhances purchase intention but also indirectly affects purchase intention through purchase attitude and digital marketing information acceptance. Among these mechanisms, purchase attitude reflects the process through which consumers form positive product evaluations based on product trust and subsequently transform them into purchase intention; digital marketing information acceptance represents the process through which consumers' trust in products facilitates the acceptance of relevant information, which further influences purchase intention.

Based on the above findings, this study proposes the following recommendations. For consumers, more targeted low-GI food promotion and health service approaches can be explored for groups with different health needs, such as those requiring blood glucose management. Relevant product information should be provided according to consumer needs to help them fully understand the characteristics of low-GI foods. For enterprises and industry organizations, attention should be paid to consumers' acceptance process of product information in the digital marketing environment. By presenting clear and standardized content, enterprises can strengthen the communication of GI-related information, nutritional composition, and evidence supporting product functions. Meanwhile, consumer interaction and online reviews should be appropriately utilized to improve the comprehensibility and credibility of information. For governments and relevant regulatory authorities, the standards, certification systems, and information disclosure mechanisms for low-GI foods should be further improved. The standardization and transparency of GI testing information, product labeling, and health function descriptions should be enhanced, while supervision of promotional content and consumer education should be strengthened to provide a favorable market environment for consumers to make scientific and rational consumption decisions.

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Conflicts of Interest

The authors declare no conflict of interest.

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