



The Impact of Agricultural Product Traceability Information on Consumer Online Purchasing Behavior —Mediating Effects of Perceived Environmental Information Transparency

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Abstract. The purpose of this study is to investigate the quick trust generated by traceability information of agricultural products in consumer purchasing behavior and its impact on purchasing behavior. The results show that traceability information promotes consumers' perception of environmental information transparency, builds quick trust, and promotes purchasing behavior.

Keywords: agricultural product traceability information; perceived environmental information transparency; quick trust; signal theory; trust transfer theory

1 Introduction

With economic development, consumers' awareness of food safety is increasing¹, but the current agricultural market suffers from the "lemon effect" and information asymmetry². Therefore, traceability information is needed to reduce information asymmetry, enhance trust, and promote purchasing behavior. In the online shopping context, merchants need to build fast trust to attract consumers, and fast trust refers to the trust formed within a short period of time after browsing products⁴. Currently, there are already platforms in China that try to promote purchasing behavior by acquiring quick trust⁵. Trust and perceived risk are two important influences on consumer buying behavior in online shopping situations⁶. Studies have shown that trust inhibits perceived risk, promotes purchasing attitude and indirectly influences purchasing behavior⁷. In this paper, we will rely on signaling theory and trust transfer theory to construct a theoretical model and conduct empirical analysis through questionnaire survey method.

2 Research hypotheses

2.1 agricultural product traceability information and perceived environmental information transparency;

For agricultural products, the increase of traceability information can effectively reduce information inequality in the market ². Among them, the use of blockchain technology can effectively increase information transparency ³, and enhance consumers' perception of environmental information transparency. Therefore, the following hypotheses are proposed in this paper: H1a. Agricultural product traceability information is positively associated with consumer perceptions of environmental information transparency

2.2 agricultural product traceability information and quick trust

In order for consumers to quickly build trust, merchants include icons or links on their websites that come from other trusted sources, a process known as trust transfer ⁸. In addition, trust was found to have a significant inhibitory effect on perceived risk, a significant positive effect on purchase attitudes, and an indirect effect on consumer purchase behavior ⁷. Therefore, the following hypotheses are proposed in this paper: H1b. Agricultural product traceability information is positively associated with quick trust

2.3 perceived environmental information transparency and quick trust

Transparency refers to how easy it is for both parties to a transaction to access information ⁹. Previous studies have shown that the more transparent the traceability information, the more trust the product will gain from consumers ¹⁰. According to signaling theory, environmental information transparency as a signal reduces information asymmetry and perceived risk, thus promoting rapid trust. Therefore, the following hypotheses are proposed in this paper: H2. Perceived environmental transparency is positively associated with quick trust

2.4 Quick trust and buying behavior

Trust and perceived risk are two important factors influencing purchasing behavior ⁶. Research has shown that trust has an inhibitory effect on perceived risk and a facilitating effect on purchasing behavior ⁷. Therefore, the following hypotheses are proposed in this paper: H3. Quick trust is positively correlated with buying behavior

3 Research content

3.1 Data collection

This study contains four key variables: information on produce traceability, perceived environmental information transparency, quick trust, and purchasing behavior.

Data collection for this study will be conducted using a questionnaire. The questionnaire consists of two main parts, the first part is the measurement of the variables related to this study, which will be measured mainly on a 7-point Likert scale (1-7 indicating from "strongly disagree" to "strongly agree"), and the second part is a demographic survey, in which the basic characteristics of the respondents will be investigated. The second part was a demographic survey, which investigated the basic characteristics of the respondents, including age, gender, education level, occupation, etc.

A total of 203 questionnaires were returned, of which 191 were valid.

3.2 data analysis

3.2.1 Reliability analysis.

Reliability analysis was conducted on the collected data, and the analysis results were shown in Table 1 and Table 2. The reliability and validity analyses showed that the Cronbach's α values for each variable are greater than 0.80, the CR values are greater than 0.90, and the AVE values are greater than 0.70, thus the scale has high reliability and convergent validity. In addition, the square root of the AVE value for each variable was greater than the correlation coefficient between that variable and the other variables, indicating better discriminant validity.

Table 1. Conceptual reliability and validity analysis

Variable	Cronbach's α	CR	AVE
Agricultural product traceability information	0.936	0.952	0.798
Quick trust	0.922	0.941	0.763
Perceived environmental information transparency	0.935	0.952	0.800
Purchasing behavior	0.970	0.978	0.918

Table 2. Distinguishing validity analysis

	Agricultural product traceability information	Quick trust	Perceived environmental information transparency	Purchasing behavior
Agricultural product traceability information	0.894			
Quick trust	0.865	0.874		
Perceived environmental information transparency	0.833	0.871	0.894	

ronmental in- formation transparency Purchasing behavior	0.852	0.821	0.842	0.958
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3.2.2 Structural Modeling Path Analysis.

In this study, the relationship between traceability information, quick trust, perceived environmental information transparency and purchasing behavior of agricultural products was investigated and the above research hypotheses were tested. The results of the path analysis are shown in Figure 1, and all hypotheses are supported.

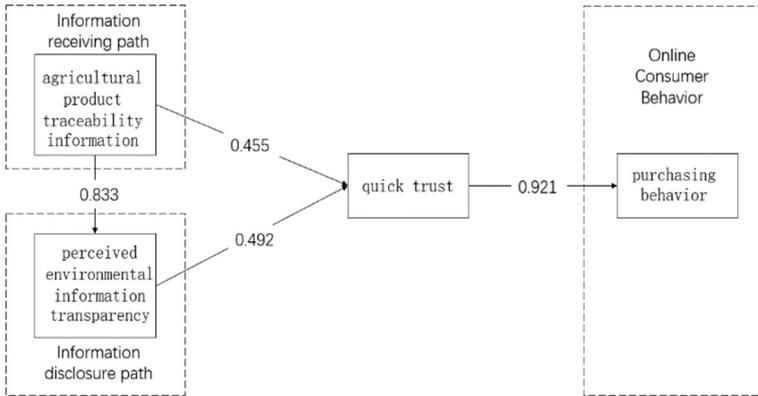


Fig. 1. Structural model analysis

3.2.3 Tests for mediating effects

The mediation effect was tested on the collected data, and the results are shown in Table 3. A mediation effects test was conducted and found that quick trust partially mediates the effect of agricultural product origin information on purchasing behavior, and perceived environmental information transparency partially mediates the effect of agricultural product origin information on quick trust.

Table 3. Mediating effects test

Latent variable 1	Intermediary variable	Latent variable 2	T-statistic	P-value
Agricultural product traceability information	Perceived environmental information transparency	Quick trust	5.270	0.000
Agricultural product traceability information	Quick trust	Purchasing behavior	5.551	0.000

mation				
Perceived environmental information transparency	Quick trust	Purchasing behavior	5.628	0.000

4 Conclusions

4.1 Discussion of results

The results of the empirical study show that the effect of information on the origin of agricultural products on the perception of environmental information transparency is positive. Agricultural product origin information is related to environmental information transparency perception and quick trust. Among them, there is a significant positive correlation between perceived environmental information transparency and quick trust. Hypotheses H1a, H1b and H2 are supported. Empirical findings suggest that origin information carried on agricultural products expands consumers' perceptions of environmental information transparency and thus gains consumer trust.

The results of the empirical study show that the effect of quick trust on buying behavior is positive. Quick trust and buying behavior are related and quick trust has a significant positive effect on buying behavior. Hypothesis H3 is supported.

The results of the empirical study indicate that perceived environmental information transparency mediates the relationship between information about the origin of agricultural products and quick trust, through the disclosure of the information on the origin of agricultural products, is that consumers obtain a certain degree of understanding, and can develop quick consumer trust. At the same time, quick trust mediates between information about the origin of agricultural products and purchasing behavior, i.e., consumers in the generation of the quick trust will point to a certain purchasing behavior.

Based on the results of data analysis, the following conclusions were drawn from this study:

First, the study reveals that both the path of information reception and the path of information disclosure play an important role in quick consumer trust;

Second, the perceived transparency of environmental information mediates the role of information on the origin of agricultural products in influencing consumers' quick trust;

Thirdly, quick consumer trust affects consumer buying attitude, which uniquely determines buying intention, so quick consumer trust plays an important role in consumer buying behavior.

4.2 Theoretical implications

The theoretical implications of this study are as follows:

First, this study is based on the market for green agricultural products and expands related literature research by focusing on the impact of information on the origin of agricultural products on consumer purchasing behavior. The study of environmental information transparency based on the characteristics of agricultural products further enriches the research on product information transparency;

Second, this study applies signaling theory and extends related research on signaling theory by examining how perceptions of transparency of origin and environmental information affect consumers' quick trust.

4.3 Relevance

The relevance of this study is as follows:

First, the study shows that the disclosure of origin information of agricultural products helps or consumer trust and promotes purchasing behavior, and related enterprises and marketers can increase sales by displaying origin information to gain consumer trust;

Secondly, this study also provides theoretical guidance for the governmental organization of agricultural products management, provides strong theoretical basis and guidance for the government to manage the agricultural products market more efficiently and control the agricultural products market, and puts forward constructive suggestions in a targeted manner.

4.4 Limitations and future prospects

There are also some limitations in this study, which is based on the trust transfer theory, which examines the rapid trust generated by consumers on the disclosure of traceability information of agricultural products, which in turn will be transferred to the corresponding products, but in the actual purchasing behavior, there are also the influence of other factors, such as price, quality, and so on. Future research can add variables such as perceived value to make the study more comprehensive.

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