# The Influence of Agricultural Service Guarantee on Consumers' Willingness to Pay Premium Prices: The Mediating Effect of Brand Trust

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**Abstract:** There are differences in consumers' continuous trust in and the repurchase of a product after they've trusted, purchased and used. Enterprises can carry out market segmentation of consumers and product brands based on the brands of agricultural products and consumers' willingness to purchase, thus designing different guarantee accordingly. This paper gives a study on the influence of agricultural service guarantee on consumers' willingness to pay premium prices. Furthermore, proceeding from the mediating mechanism of consumers' willingness to buy, the mechanism of the influence of agricultural service guarantee on consumers' willingness to pay premium prices is also studied. The result shows that brand reliability and brand intention play a mediating role in the influence of service guarantee on consumers' willingness to pay premium prices.

**Keywords:** brand trust; willingness to pay premium prices; service guarantee

## 1 INTRODUCTION

Today, low-price competition has become an enduring strategy and tactics at both online or offline market, especially during the annual "Double Eleven" and "Double Twelve" promotions which witnessed growth year by year and more participating sellers. Therefore, some people in the industry believe that "premium in E-commerce industry is generally disappearing, and the trend is irreversible." What's more, in the context of "7-day return without reasons" guarantee, consumers gradually dominate the market, with increasingly enhanced awareness of Internet-based brands. In the game of interest with consumers, how should enterprises to achieve the best matching of compensation amount and activation of procedures? How can enterprises' brands achieve a win-win result in the game of interest between consumers and enterprises? Taking the survey of branded eggs as an e xample, this paper gives a discussion on whether service guarantee of agricultural products will influence consumers' brand trust and affect their willingness to pay premium prices [1].

Brand trust of agricultural products is a kind of confidence and expectation placed by customers. Customers concern whether to trust a brand or not only when there are risks. Trust can not only make consumers maintain a good impression of the product, but more importantly, affect the premium which brings economic growth to sellers. For consumers who strongly relate prices to quality, their willingness to pay premium prices is dependent on brand

trust. As an external quality signal, service guarantee gives individuals different perception of quality. The higher the individuals' trust in a brand, the greater the brand assets [2]. When consumers believe that a brand is trustworthy and can meet expectations, they are willing to pay more for the brand [3]. To this end, the following hypotheses are made:

H1: Service guarantee can influence consumers' willingness to pay premium prices.

H2: Brand trust plays a mediating role between service assurance and consumers' willingness to pay premium prices.

## 2 RESEARCH DESIGN

### 2.1 Scale design and data selection

In this paper, branded eggs in the agricultural product industry are surveyed in the questionnaires. First, service guarantee is divided into four categories based on different extent of compensation and the activation procedures: "high compensation, easy to activate" service guarantee; "high compensation, hard to activate" service guarantee; "low compensation, easy to activate" service guarantee; and "low compensation, hard to activate" service guarantee. The standard of amount for judging high and low compensation is as follows: high compensation refers to the expression that "we promise a full refund in an of the following cases after your purchase of the branded eggs"; low compensation refers to the expression that "we promise a 50% refund in an of the following cases after your purchase of the branded eggs". The brand trust is measured using a scale [4] which consists of eleven items and is divided into the two dimensions of brand reliability and brand intention. In the scale, each item is measured with 7-point Likert scale. The three measurement items of willingness to pay premium prices are designed by refer to some studies [5], and measured with 7-point Likert scale. A total of 480 questionnaires were distributed and 462 questionnaires were recovered, with a recovery rate of 96.25%.

### 2.2 Model design

In order to verify the mediating role of brand reliability and brand intention in the influence of service guarantee on consumers' willingness to pay premium prices, the design of corresponding variables is shown in Figure 1.
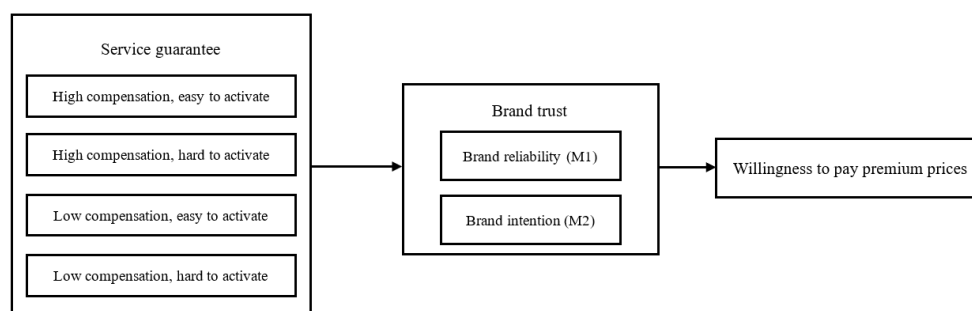


**Figure 1.** Scale design

The basic theoretical mathematical model [6] for verification of the mediating effect is as follows:
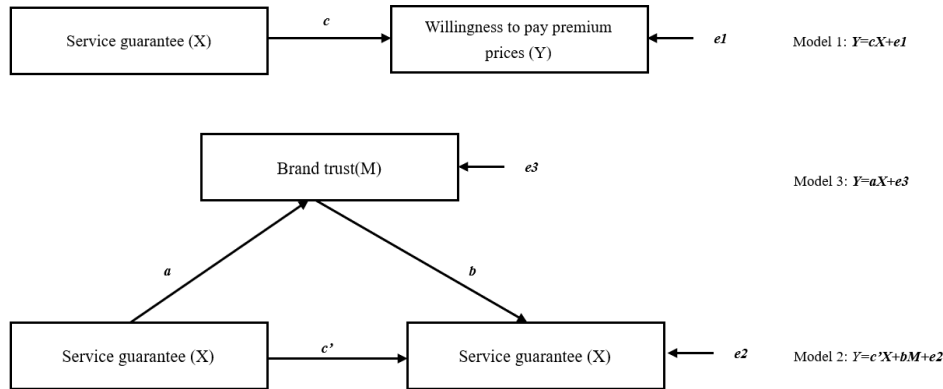


**Figure 2.** Verification model of the mediating effect

There are three models of the mediation effect. As to Figure 2, the description is as follows:

Model 1: According to the regression analysis of independent variable X and dependent variable Y, there is a significant relationship between X and Y; the purpose is to obtain the total effect c;

Model 2: According to the regression analysis of independent variable X, intermediate variable M and dependent variable Y, there is a significant influence relationship between X and M; the purpose is to obtain the direct effect c', and the process value b of intermediate effect;

Model 3: According to the regression analysis of the independent variable X and the mediating variable M, the regression coefficients of both X and M are significant, indicating that there is a partial mediating effect; the purpose is to obtain the process value a of intermediate effect.

## 3 RESULTS

### 3.1 Credibility and validity verification and analysis of variance

#### 3.1.1 Credibility and validity verification

In order to ensure the credibility of the sample data, the credibility verification was performed for the scale. Cronbach's alpha coefficient is usually used for verification. The verification showed that the Cronbach's alpha coefficient of the whole questionnaire was 0.793, suggesting satisfactory reliability and stability of the whole questionnaire. The Cronbach's alpha coefficient of brand reliability was 0.779; the Cronbach's alpha coefficient of brand intention was 0.801; the composite credibility of brand reliability was 0.814; and the composite credibility of brand intention was 0.831. They were all higher than 0.70, indicating that the designed scale was reliable. Factor analysis showed that the factor loading of each item was

between 0.60 and 0.77, which were all greater than 0.5. Furthermore, according to the fit index of the measurement model, $\chi2=94.11$，df=43，$\chi2/df=2.19$ (smaller than 3 and close to 2),CFI=0.96,GFI=0.93, NNFI=0.95, NFI=0.93, IFI=0.96, RMSEA=0.072 (smaller than 0.08), indicating high convergent validity. There was satisfactory fitting between the data and the confirmatory factor analysis model.

### 3.1.2Variance analysis

In order to examine the moderating effect of service assurance on brand reliability, multi-factor variance analysis model was used for verification. According to the data analysis in Table 1, the main effect of service guarantee on brand reliability was significant (F=7.419, p=0.000<0.001).

**Table 1.** Verification of effect among objects

| Source | Type-III sum of squares | df | Mean square | F | Sig. |
|---|---|---|---|---|---|
| Calibration model | 12.116 | 14 | 1.731 | 4.376 | .00 |
| Intercept | 3783.511 | 2 | 3783.511 | 9565.844 | .00 |
| Serviceguarantee | 8.803 | 6 | 2.934 | 7.419 | .00 |
| Temporaldistance | .182 | 2 | .182 | .459 | .499 |
| Serviceguarantee temporaldistance | 3.150 | 6 | 1.050 | 2.654 | .049 |
| Error | 88.202 | 446 | .396 | | |
| Total | 3891.320 | 262 | | | |
| Total calibration | 100.317 | 460 | | | |

Note: $R^2=0.121$ (adjust $R^2=0.093$).

In order to examine the moderating effect of service assurance on brand intention, multi-factor variance analysis model was used for verification. According to the data analysis in Table 2, the main effect of service guarantee on brand intention was significant (F=13.268 , p=0.000<0.001).

**Table 2.** Verification of effect among objects

| Source | Type-III sum of squares | df | Mean square | F | Sig. |
|---|---|---|---|---|---|
| Mean square | 16.810 | 14 | 2.401 | 6.934 | .00 |
| Intercept | 4514.985 | 2 | 4514.985 | 13037.365 | .00 |
| Serviceguarantee | 13.784 | 6 | 4.595 | 13.268 | .00 |
| Temporaldistance | .027 | 2 | .027 | .077 | .781 |
| Serviceguarantee temporaldistance | 2.950 | 6 | 0.983 | 2.839 | .039 |
| Error | 77.227 | 446 | .346 | | |
| Total | 4614.139 | 262 | | | |
| Total calibration | 94.038 | 460 | | | |

Note: $R^2=0.179$ (adjust $R^2=0.153$).

## 3.2 Verification results

In order to verify the mediating effect of self-owned agricultural brand trust on consumers' willingness to pay premium prices, the above hypotheses were verified using spss hierarchical regression. It can be learned from Table 3 that the regression analysis was carried out with X1 as the independent variable, M1 as the intermediary variable, and Y as the dependent variable. In the first step, "high compensation, easy to activate" has a significant positive influence on the willingness to pay premium prices. In the second step, "high compensation, easy to activate" has a significant positive influence on brand reliability. In the third step, when brand reliability is added, "high compensation, easy to activate" has a significant positive influence on the willingness to pay premium prices, but the regression coefficient is lower than that in the first step and brand reliability still has a significant influence on the willingness to pay premium prices. Therefore, it is believed that as to the influence of "high compensation, easy to activate" on the willingness to pay premium prices, brand reliability plays partial mediating role. It can be learned from Table 4 that the regression analysis was carried out with X2 as the independent variable, M1 as the intermediary variable, and Y as the dependent variable. In the first step, "high compensation, hard to activate" has a significant positive influence on the willingness to pay premium prices. In the second step, "high compensation, hard to activate" has a significant positive influence on brand reliability. In the third step, when brand reliability is added, "high compensation, hard to activate" has a significant positive influence on the willingness to pay premium prices, but the regression coefficient is lower than that in the first step and brand reliability still has a significant influence on the willingness to pay premium prices. Therefore, it is believed that as to the influence of "high compensation, hard to activate" on the willingness to pay premium prices, brand reliability plays partial mediating role.

It can be learned from Table 5 that the regression analysis was carried out with X3 as the independent variable, M1 as the intermediary variable, and Y as the dependent variable. In the first step, "low compensation, easy to activate" has a significant positive influence on the willingness to pay premium prices. In the second step, "low compensation, easy to activate" has a significant positive influence on brand reliability. In the third step, when brand reliability is added, "low compensation, easy to activate" has a significant positive influence on the willingness to pay premium prices, but the regression coefficient is lower than that in the first step and brand reliability still has a significant influence on the willingness to pay premium prices. Therefore, it is believed that as to the influence of "low compensation, easy to activate" on the willingness to pay premium prices, brand reliability plays partial mediating role. It can be learned from Table 6 that the regression analysis was carried out with X4 as the independent variable, M1 as the intermediary variable, and Y as the dependent variable. In the first step, "low compensation, hard to activate" has a significant positive influence on the willingness to pay premium prices. In the second step, "low compensation, hard to activate" has a significant positive influence on brand reliability. In the third step, when brand reliability is added, "low compensation, easy to activate" has a significant positive influence on the willingness to pay premium prices, but the regression coefficient is lower than that in the first step and brand reliability still has a significant influence on the willingness to pay premium prices. Therefore, it is believed that as to the influence of "low compensation, hard to activate" on the willingness to pay premium prices, brand reliability plays partial mediating role.

**Table 3.** Mediating effect verification 1

| Models | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| | Y | M1 | Y |
| X1 | 0.438** | 0.29** | 0.307** |
| M1 | | | 0.367** |
| F | 59.450 | 46.321 | 55.921 |
| $R^2$ | 0.192 | 0.161 | 0.310 |

**Table 4.** Mediating effect verification 2

| Models | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| | Y | M1 | Y |
| X2 | -0.414** | -0.285** | -0.301** |
| M1 | | | 0.202** |
| F | 51.593 | 46.011 | 54.490 |
| $R^2$ | 0.171 | 0.160 | 0.323 |

**Table 5**. Mediating effect verification 3

| Models | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| | Y | M1 | Y |
| X3 | 0.402** | 0.291** | 0.263** |
| M1 | | | 0.382** |
| F | 51.593 | 46.518 | 50.204 |
| $R^2$ | 0.161 | 0.163 | 0.287 |

**Table 6.** Mediating effect verification 4

| Models | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| | Y | M1 | Y |
| X4 | -0.381** | -0.280** | -0.282** |
| M1 | | | 0.408** |
| F | 42.546 | 45.255 | 53.979 |
| $R^2$ | 0.145 | 0.156 | 0.302 |

**Table 7.** Mediating effect verification 5

| Models | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| | Y | M2 | Y |
| X1 | 0.438** | 0.265** | 0.317** |

| | | | 0.357** |
|---|---|---|---|
| M2 | | | 0.357** |
| F | 59.450 | 42.321 | 54.921 |
| $R^2$ | 0.192 | 0.141 | 0.300 |

**Table 8.** Mediating effect verification 6

| Models | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| | Y | M2 | Y |
| X2 | -0.414** | -0.280** | -0.312** |
| M2 | | | 0.222** |
| F | 51.593 | 45.125 | 52.560 |
| $R^2$ | 0.171 | 0.158 | 0.358 |

**Table 9.** Mediating effect verification 7

| Models | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| | Y | M2 | Y |
| X3 | 0.402** | 0.321** | 0.262** |
| M2 | | | 0.381** |
| F | 48.131 | 48.637 | 48.355 |
| $R^2$ | 0.161 | 0.188 | 0.260 |

**Table 10**. Mediating effect verification 8

| Models | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| | Y | M2 | Y |
| X4 | -0.381** | -0.301** | -0.279** |
| M2 | | | 0.388** |
| F | 42.546 | 46.189 | 51.343 |
| $R^2$ | 0.145 | 0.163 | 0.298 |

It can be learned from Table 7 that the regression analysis was carried out with X1 as the independent variable, M2 as the intermediary variable, and Y as the dependent variable. In the first step, "high compensation, easy to activate" has a significant positive influence on the willingness to pay premium prices. In the second step, "high compensation, easy to activate" has a significant positive influence on brand intention. In the third step, when brand intention is added, "high compensation, easy to activate" has a significant positive influence on the willingness to pay premium prices, but the regression coefficient is lower than that in the first step and brand intention still has a significant influence on the willingness to pay premium prices. Therefore, it is believed that as to the influence of "high compensation, easy to activate" on the willingness to pay premium prices, brand intention plays partial mediating

role. It can be learned from Table 8 that the regression analysis was carried out with X2 as the independent variable, M2 as the intermediary variable, and Y as the dependent variable. In the first step, "high compensation, hard to activate" has a significant positive influence on the willingness to pay premium prices. In the second step, "high compensation, hard to activate" has a significant positive influence on brand intention. In the third step, when brand intention is added, "high compensation, hard to activate" has a significant positive influence on the willingness to pay premium prices, but the regression coefficient is lower than that in the first step and brand intention still has a significant influence on the willingness to pay premium prices. Therefore, it is believed that as to the influence of "high compensation, hard to activate" on the willingness to pay premium prices, brand intention plays partial mediating role. It can be learned from Table 9 that the regression analysis was carried out with X3 as the independent variable, M2 as the intermediary variable, and Y as the dependent variable. In the first step, "low compensation, easy to activate" has a significant positive influence on the willingness to pay premium prices. In the second step, "low compensation, easy to activate" has a significant positive influence on brand intention. In the third step, when brand intention is added, "low compensation, easy to activate" has a significant positive influence on the willingness to pay premium prices, but the regression coefficient is lower than that in the first step and brand intention still has a significant influence on the willingness to pay premium prices. Therefore, it is believed that as to the influence of "low compensation, easy to activate" on the willingness to pay premium prices, brand intention plays partial mediating role. It can be learned from Table 10 that the regression analysis was carried out with X4 as the independent variable, M2 as the intermediary variable, and Y as the dependent variable. In the first step, "low compensation, hard to activate" has a significant positive influence on the willingness to pay premium prices. In the second step, "low compensation, hard to activate" has a significant positive influence on brand intention. In the third step, when brand intention is added, "low compensation, hard to activate" has a significant positive influence on the willingness to pay premium prices, but the regression coefficient is lower than that in the first step and brand intention still has a significant influence on the willingness to pay premium prices. Therefore, it is believed that as to the influence of "low compensation, hard to activate" on the willingness to pay premium prices, brand intention plays partial mediating role.

## 4 CONCLUSION

This paper verifies that brand guarantee influences consumers' brand trust in products to a large extent, thus influencing consumers' willingness to pay a premium. Moreover, consumers are willing to trust or purchase branded products, and there is a difference in their trusting and repurchase after use of the brand. Enterprises should carry out market segmentation in terms of agricultural product brands and consumers' willingness, and provide different service guarantee for different market segments. This research can promote enterprises to improve service quality, establish a good image of enterprises, make consumers more trust the service guarantee of enterprises, and maximize the word-of-mouth effect.

According to the conclusion, from the perspective of credibility and validity verification, the credibility of the influence of service guarantee on brand trust is higher than that of the influence of agricultural product brand trust on consumers' willingness to pay premium prices. In the aspect of variance analysis, according to the F-distribution, the significance of brand

intention is greater than that of brand reliability. In the aspect of hypothesis verification, the brand reliability and brand intention are further verified through the models. The stepwise regression is adopted to verify the path relationship among service guarantee, brand reliability and the willingness to pay premium prices, and it is concluded that brand reliability has significant mediating effect. Similarly, the stepwise regression is used to analyze the path relationship among service guarantee, brand intention and the willingness to pay premium prices. The result shows that brand reliability and brand intention play a mediating role in the influence of service guarantee on consumers' willingness to pay premium prices. The service guarantee provided by sellers can trigger consumers' willingness to pay premium prices, and the influence is transmitted through brand trust. On the basis of the research content of this paper, the next step will be to further study how agricultural policies affect the role of agricultural product service guarantee on consumers' willingness to pay premium, so as to help the government better provide policies to support the agricultural product market.

# REFERENCES

[1] Zuo X. W., and Xu Z. J., "Service assurance, brand trust and consumers' willingness to pay premium: the moderating effect based on time distance," Business Economics Research, 11, 70-73 (2022).

[2] Bai S., Zheng J., and Wu R., "An Empirical Analysis of Cognition of Green Agricultural Product, Willingness to Pay Premium Prices and Purchase Behaviors," Journal of Commercial Economics, 6, 171-173 (2017).

[3] Zheng N., and Huang Z., "Research on the Influence of Consumer Experience on Brand Loyalty in Virtual Brand Community," Journal of Commercial Economics, 3, 76-78 (2018).

[4] Shi M., "Analysis of Social Network Characteristics of Virtual Brand Community based on Literature Research ," Journal of Commercial Economics, 20, 60-62 (2017).

[5] Dong Y., and Lu H., "Analysis of the Influence of Service Tangible Display on Brand Trust and Willingness to Pay Premium Prices," Commercial Times, 32, 63-65 (2014).

[6] Bennur S., and Jin B., "The mediating role of brand trust and affect in clothing brand loyalty formation: a cross-cultural examination of U.S. and India," The Journal of The Textile Institute, 108, 1-9 (2017).