Research Article
Factors Affecting the Consumer Willingness to Buy Based on the Quality of the Signal

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Abstract: This study from the perspective of the quality of the signal by 191 consumers in Nanjing questionnaire using SPSS statistical software factors to consider when consumers choose yogurt were analyzed, analysis safety certification, durability, price, brand awareness and whether the quality of the signal in the supermarket to buy consumer willingness to buy influence in varying degrees and finally put forward specific recommendations based on the analysis results.

Keywords: Food quality, influencing factors, multiple linear regression model, quality of the signal, yogurt

INTRODUCTION

In recent years, domestic food safety accidents and has intensified the trend. Not only are many popular, low-end products have occupied (such as early Fuyang "Big Head" milk, the recent "Sanlu", "poisonous cowpea," etc.) and many targeted at higher-end consumer products also often been exposed its possible quality defects (such as early KFC "Sudan", the recent "Deluxe" Milk, Dumex milk powder, "Wuchang rice", Jin Hao tea seed oil). These events increased consumer concerns about food safety, resulting in the food industry is facing a serious crisis of confidence. For this situation, public opinion called for "enhanced external supervision," "reshape consumer confidence" and academia on food safety issues have been widely discussed. The underlying causes of food safety incidents that production operators and consumers serious asymmetry in product quality information.

In this current environment, the quality of food being passed out a signal of consumer choice has become a key factor in the commodity. Know what the quality of the signal of a greater willingness of consumers to buy influence, to grasp the characteristics of consumer buying behavior, to meet consumer preferences and promote their brands to the consumer-oriented long-term development, has important practical significance.

From the perspective of food quality signals to study the factors affecting consumers to buy, the food quality signal into the brand, price, durability, safety certification and whether to buy these five factors in supermarkets, which use multiple regression analysis more influence signal quality consumer willingness to buy, explore the food quality and safety from the side.

LITERATURE REVIEW

Akerlof (1970) first analyzed the impact on the quality of the signal information asymmetry between sellers and buyers and the resulting market failures that cannot be good if the quality of signal transmission, quality is not higher prices, market it can only provide low-quality products. Grossman (1981) also on the quality of the signal issues related to research, that the quality of the signal if the full, effective, reliable, low cost, consumers do not need to pay too much cost can confirm the quality of products, the market will be able to operate effectively. Michael (1974) signal transmission model indicates that the party has a message send unsolicited information, separated from the same, so it profitable. Kim (2007) by the Japanese consumer prices and comparative study of some internal and external display information risks associated with food preferences, pointed affect consumer perception of quality is the most important factor in the origin and quality and safety assurance system.

After McCluskey and Loureiro (2003) in the study of consumers' eco-labeling genetically modified food labeling, origin, identity protection, BSE logo, logo and other fair trade preferences and willingness to pay, emphasizing the consumer to identify the differences in the quality of the different perception and origin or the impact of culture on the quality perception. Liang (2006) under asymmetric information market conditions, the brand for consumers is an effective way to communicate product information, is an important symbol of recognition of product quality to meet consumers seeking high-quality, high-quality Special preference items. Price is an important product attributes, with a strong signal effect, Wu (2005), believes commodity prices is not only monetary value,

but also the cultural psychology and cultural preferences of consumers in shopping behavior reflected. Fangen and Zhang (2005) in the study of agricultural certification system pointed out that agricultural product quality certification system as an institution arrangement to reduce transaction costs, both the quality of information transfer aids, is also an effective screening mechanism. Wang and Sun (2002) find themselves with both products, experience and trust products and other product characteristics according to the food quality, From the information asymmetry and market failure analyzes the quality of the signal problem of food markets and on the basis of return The propriety of the trading session in the product effectively promote food quality signal transfer approach.

Zhong and Ding (2004) Nanjing consumer survey research on genetically modified food consumption Cognition, found on whether genetically modified foods should be labeled the problem, the consumer the same stance, 94.58% People think it should be labeled. Consumer confidence has an impact on its acceptance and use of signal quality. Zhang and Han (2009) in Shanghai, fresh food for the subject studied cognitive factors affecting consumer food safety have sex, marital status, income, family size, focus and willingness to buy safe food for food safety, but age and level of education had no significant effect.

METHODOLOGY

In this study, the yogurt market in Nanjing for the survey, the main selection Hohai University Jiangning Campus, Su fruit supermarket, XinJieKou three fieldwork sites and web-based survey methods, these three regions gathered a large group of students and office workers groups and shopping groups, in line with the requirements of the investigation. CPC study 200 questionnaires, 150 of which direct payment, online survey 40. 146 direct payment recovery, the recovery of 45 online surveys. Which excluded some invalid questionnaires invalid questionnaire kicked criteria are:

- No Completed
- Likert scale has appeared in only a sample of the same options data

Which the survey was 10 parts invalid questionnaires, 181 valid questionnaires, the questionnaire was 90.5% efficiency. The questionnaire scores using Likert 5-point scale way, a representative of "very important", 2 for "unimportant", 3 for "neutral", 4 represents "important" and 5 "very important."

The statistical characteristics of the sample: The survey, men have 87 people, 94 women, accounting for 48.1 and 51.9% of samples, respectively, in line with consumer psychology of women prefer shopping; on the age distribution, mainly middle-aged, the proportion of the elderly low; by education, the number of samples of college students in the largest, accounting for 50.3% of the total sample; the largest proportion of monthly income below the 28.7% of the total sample, the main reason for the selected area universities more, most students do not stable income. Questionnaires were specific socio-economic characteristics are shown in Table 1:

The regression model: This study selects the safety certification (RZ), shelf life (Date), Price (P), brand awareness a (Brand) and whether to buy in the Supermarket (CS) The quality of the signal as a test of consumer willingness to purchase factors, per person per week bottles (limited number of individuals drinking bottles, bottled and packaged yogurt because of the price difference is relatively large, the paper take vials bottled yogurt for the survey. to avoid buying a few too scattered, buy 10 bottles or more are counted as

Table 1: Statistics socio-economic characteristics of individual consumers

Variable names	Explanation and value	Frequency	Proportion (%)
Sex	Male = 0	87	48.1
	Female = 1	94	51.9
Age	Under 20 years old = 0	40	22.1
	20-30 = 1	70	38.7
	30-40 = 2	40	22.1
	40-60 = 3	20	11.0
	Over 60 years old = 4	11	6.1
Educational background	A high school education or less = 0	19	10.5
	University degree = 1	91	50.3
	Master's degree and above = 2	71	39.2
Monthly income	Under 2500 = 0	52	28.7
	2500-5000 = 1	47	26.0
	5000-7500 = 2	41	22.7
	7500-10000 = 3	27	14.9
	Over 10000 = 4	14	7.7

Table 2: Model summary

Model	R	R^2	Adjusted R^2	Standardized error of estimate	Change statistics				
					R^2 change	F change	df1	df2	Sig. F change
1	0.916[a]	0.839	0.835	0.651	0.839	182.647	5	175	0.000

[a]: Predictors: (constant), security authentication, whether in the supermarket to buy, brand, price and shelf life; R^2.: R square

Table 3: ANOVA table

Model	S.S.	df	M.S.	F	Sig.
Regression	387.038	5	77.408	182.647	0.00
Residuals	74.167	175	0.424		
	461.204	180			

Dependent variable: the number of bottles of yogurt per person per week to buy; Predictors: (constant), security authentication, whether in the supermarket to buy, brand, price and shelf life; S.S.: Sum of square; M.S.: Mean square

buying yogurt 10 bottles) as an alternative to buying intention variables, multiple regression model:

$$U_{ij} = \beta_0 + \beta_1 RZ_{ij} + \beta_2 Brand_{ij} + \beta_3 P_{ij} + \beta_4 Date_{ij} + \beta_5 CS_{ij}$$

The sample goodness of fit test and analysis of variance: Table 2 shows the statistics of the regression equation to measure the pros and cons. R is the multiple correlation coefficient, which indicates the closeness of the relationship between the size of the linear regression of all the independent variables and the dependent variables in the model. Its value is between 0 and 1; R greater the closer the linear regression relationship. Adjusted R^2 statistic we want to focus on; the greater its value, the better the effect of model fitting; Table 2, adjusted R^2 of 0.835. Table 3 shows the test results of the regression model analysis of variance. You can see the results of the analysis of variance F statistic is equal to 182.647, the probability p value was significantly less than the significance level of 0.05, so the model is statistically significant, (Table 4).

Empirical research:
Regression analysis: Regression analysis is shown in Table 4.

Correlation analysis: To get brand recognition, whether at the supermarket to buy, whether shelf life, price, quality and safety certification of these five signals of individual preference relations and socio-economic characteristics of consumers, make the following two assumptions:

H1: The higher the degree, the more security-conscious one authentication factor
H2: Female consumers will pay more attention to brand awareness

Proposed a hypothesis based mainly on account of higher education may have a higher food safety requirements, from theoretical perspective may pay more attention to the quality of the signal back to the safety of certification; hypothesize two main consideration to female consumers shopping psychology and the pursuit of similar psychological designer, female consumers may prefer this brand quality signal. SPSS software applications of these two sets of variables correlation analysis were done, respectively in Table 5 and 6 two correlation analysis chart. By analyzing Table 5, it can be seen that the quality of education and safety certification level signal at 0.01 low positive correlation, meaning that the higher educated people more likely to consider the safety certification of this quality when buying yogurt signal. The hypothesis of this study is different, gender and

Table 4: Regression analysis table

Model	Coefficient				
	Un-standardized coefficients		Standardized coefficients		
	B	S.E.	β	t	Sig.
(Constant)	-1.136	0.221		-5.141	0.000
Brand awareness	0.287	0.073	0.167	3.934	0.000
Whether to buy in the supermarket	0.177	0.053	0.127	3.365	0.001
Shelf life	0.427	0.080	0.291	5.348	0.000
Price	0.248	0.075	0.148	3.290	0.001
Safety certification	0.603	0.087	0.349	6.955	0.000

Table 5: Degree correlation analysis and safety certification

		Educational background	Safety certification
Educational background	Pearson correlation	1	0.301**
	Significant (bilateral)		0.000
	N	181	181
Safety certification	Pearson correlation	0.301**	1
	Significant (bilateral)	0.000	
	N	181	181

Table 6: Gender and brand awareness correlation analysis correlation

		Sex	Brand awareness
Sex	Pearson correlation	1	0.068
	Significant (bilateral)		0.366
	N	181	181
Brand awareness	Pearson correlation	0.068	1
	Significant (bilateral)	0.366	
	N	181	181

brand awareness of the quality of the signal does not produce relevant.

Using SPSS software to analyze survey data obtained, we can see that brand awareness, whether to buy in the supermarket, shelf life, price, quality and safety certification of these five signals on consumer willingness to buy produce positive effects and brand awareness, whether in supermarket to buy, durability, price, safety certification of the five factors that p-values were less than significant level. This study described the five selected quality signal and consumer wishes to purchase a linear relationship between the significant Where the probability p-value of the constant is less than the significance level, indicating that the model for the general multiple linear regression model. By non-standardized coefficients can be seen in the purchase of yogurt safety certification and shelf life of two main consumers consider quality of the signal, followed by brand recognition and price and whether to buy this quality factor for consumers to buy in the supermarket willingness of small shocks. The linear regression equation as:

$$Uij = -1.136 + 0.603RZij + 0.287Brandij$$
$$+0.248Pij + 0.427Dateij + 0.177CSij$$

CONCLUSION AND RECOMMENDATIONS

This study made a multiple regression using SPSS analysis and correlation analysis, we can see in this study selected brand awareness, whether to buy in the supermarket, shelf life, price, quality and safety certification of these five signals on consumer purchase intention impact. In view of this result, the following reasonable suggestions. It is worth noting that the factors which affect the quality certification for consumers to buy the most, followed by the shelf life and brand, whether to buy less willingness to buy a significant impact on consumers in the supermarket. Understand the role of the consumer buying factors for understanding consumer psychology is very important. It also forces us to enlightenment should pay more attention to quality certification and brand quality signal.

The proposal for the enterprise:

- Through product quality certification signal to eliminate information asymmetry and increase Consumer confidence. First, companies should raise awareness of certified management, focus on improving the quality of their products and technology, in strict accordance with the quality certification requirements to produce products and achieved accreditation of certification bodies; Second, companies should intensify innovation, the introduction of advanced technology, hire professional and technical personnel, increase research and high-end products with concurrency, in accordance with the certification requirements for the production of quality products.

- To take certain public relations means to establish a good reputation for products, enhance their visibility. Well-known brand for consumer purchase decisions have a significant impact, will increase consumer willingness to buy, as opposed to "unknown brand", consumers prefer to buy well-known brands. And fees are usually more willing to buy brand buy habit, indicating that consumers have higher brand loyalty.

The government's proposal: In addition to regular government safety regulatory measures, but also to regulate the product brand, price, green certification and other property information. Strengthen consumer education, increasing consumer awareness on food certification and trust. Improve the certification standards of organic food, green food, HACCP, pollution-free food, IS09001, etc., standardize certification of processes. For brand-name products, careful use exemption system to ensure quality brand-name products meet safety standards. Low brand awareness for the product may be appropriate to relax the regulation in order to reduce regulatory costs to improve the legal system, so that the food market more legalization. Establish a good quality signal transfer mechanism helps Experience good product characteristics and trust into a search product features, thereby promoting Into the quality of information between buyer and seller, in two-way communication between producers and consumers and ultimately food commodities on the market Continuously improve the quality, consumers can safely eat safe, healthy food.

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