

# Analysis on the consumers' behaviors and willingness of online shopping for fresh livestock products

Wang Mei Tu<sup>1,2</sup>

<sup>1</sup>College of Economics and Management, Shanxi Agricultural University, Taigu, Shanxi, 030801, China

<sup>2</sup>College of Economics and Management, Beijing Forestry University, Beijing, 100083, China

E-mail: wmt0707@163.com

---

In order to discover the factors influencing consumers behaviour and their willingness to shop online for fresh livestock products, this paper conducts relevant surveys by questionnaires distributed online and analyzes them in different ways. We use general statistical analysis methods, binomial logistic regression models and ordinal logistic regression models. The main conclusions of the paper are as follows: 1) consumers' age, education level and family monthly income significantly affect their buying behavior and willingness to shop online for fresh livestock products; 2) consumer' attention to the price significantly affects the consumers willingness to shop online for fresh livestock products; 3) the characteristics of fresh livestock products affect consumers' online shopping behavior and their willingness; 4) the characteristics of online sales, in a certain extent, attract consumers to purchase fresh livestock products through the internet. And on this basis, some suggestions were put forward.

Keywords: Online shopping; Fresh livestock products; Behaviors; Willingness; Influencing factors

---

The internet and information technology together provided the foundation for rapid development of e-commerce. As a result, online shopping has become a daily consumption pattern of consumers. The "Fortieth China Internet Development Statistics Report" published by CNNIC[1] shows that as of June 2017, the number of Chinese netizens reached 751 million, the number of mobile phone users reached 724 million, and the number of online shopping users reached 514 million, of which the mobile Internet shopping users included 480 million. At the same time, under the guidance and support of the central rural policy, rural electricity providers are also rising rapidly. Since 2014, rural e-commerce has been written into the No. 1 document of the Central Committee for four consecutive years, and many kinds of enterprises have accelerated their entry into the field of rural e-commerce[2].

Fresh agricultural product e-commerce is developing rapidly, and fresh livestock product e-commerce is also emerging. It is very meaningful to study the network sales of fresh livestock products under the current environment. The purpose of this paper is to study the factors affecting the behaviour and willingness of consumers to buy fresh livestock products online. However, there are few studies on the online shopping for fresh animal products. Most studies are for the study of buying fresh agricultural products for online shopping. The main methods used in our study are factor analysis[3], principal component analysis[4], regression models[5-7], analytic hierarchy process[8] and the structural equation model[9-11].The research finds that there are many factors that affect the consumer's willingness to buy fresh agricultural products. Some of these factors include price[3,12], quality [3-

4,8], service [3,7-8] of online shopping platform, weather and season[3], consumer personal and family characteristics[4-5], online shopping experience and habits[4], consumer cognition[7,10], payment willingness[7], information quality[7], product safety[8], freshness[8], network store popularity and trade security and trust[6], product attributes[12], distribution efficiency[7,12], and brand[12]. The other types of factors are classified, such as perceived value[10], perceived risk[9-10], perceived usefulness[9], perceived ease of use[9], emotional value[11], functional value[11], perception cost[11] and so on. In addition, from the perspective of interpretation level theory, this paper studies the influence of social distance, perceived risk, psychological distance and information interpretation level on purchase intention[13]. Under the rapid development of rural electricity providers, can the rural animal husbandry industry make good use of e-commerce? With reference to the existing research on fresh agricultural products of online shopping, this paper analyzes the online purchase of fresh livestock products and the factors affecting the willingness of online shopping, and then provides a reference for the network sales of fresh livestock products, and the production of fresh livestock products under the line and the related breeding industry.

## 1. DATA AND METHODS

### 1.1 Data

This article obtains the data through the network questionnaire survey, mainly involving the individual characteristics of the respondents, family population and income, the experience of online shopping, experience of the fresh livestock products purchased online. In addition to this the types, the frequency, the cost, and the experience of the online shopping of fresh livestock products relative to the real market, the willingness to buy fresh livestock products on the internet, and the importance of the related factors. Among them, the willingness to purchase fresh animal products online and the cognition of the importance of relevant factors which were in the form of a 5-level scale, while the others were in the form of single-choice, multiple-choice and blank-filling. The questionnaire was distributed randomly, and all the respondents were netizens. A total of 574 questionnaires were collected and all of them were deemed valid. From the results of recovery, the questionnaires were mainly from Shanxi, Beijing, Zhejiang, Guangdong, Shaanxi, Hebei, Liaoning and other places. 63.2% of the answers were answered by WeChat, and 97.6% of the questionnaires were answered by mobile phones.

### 1.2 Methods

This article adopts the general statistical method to analyze the basic situation of the respondents and the situation of fresh livestock products purchased online. In this paper, two logistic models were used to analyze the factors affecting the behavior of fresh livestock products by online shopping, and the factors affecting the willingness of fresh livestock products were analyzed by a order logistic model.

#### 1.2.1 Variables Selection

We now examine dependent variables. Two variables were selected to measure the choice and willingness of consumers to buy fresh livestock products online. These variables included the consumers' behavior to purchase fresh livestock products through online shopping and the willingness of consumers to buy fresh livestock products online. Consumer online shopping behavior to purchase fresh livestock products was a two-valued variable: 1. Yes; 2. No. Consumers' willingness to buy fresh livestock products online was very reluctant to 5 categorical variables. Two variables reflected the willingness of consumers to buy fresh livestock products online from different perspectives. One reflected the current state and the other reflected the possible future state.

We now examine the independent variables. It mainly involved quality, type, price, freshness, safety, convenience, business reputation, service quality, buyer evaluation, distribution efficiency, and 11 other features. It was assumed that consumers' perception of their importance would affect their behavior and willingness to buy fresh livestock animal products online.

We now examine control variables. Family characteristics included family numbers and family monthly income. If consumers had high monthly household incomes, their willingness to buy fresh animal products online would be greater. The number of households would also have a certain impact on the willingness to buy fresh livestock products online. Respondents' individual variables included gender, age, education level and residence. It was assumed that women were more likely to buy fresh animal products online. If they were too old or too young this would reduce their willingness to buy fresh livestock products online. The higher the education level of consumers, the stronger their willingness to buy fresh livestock products online; the place where the city was more likely to buy fresh livestock products in the city than in the countryside. The statistical results of the sample description are shown in Table 1.

#### 1.2.2 Model Setting

In this paper, two logistic regression models and sequential Logistic regression models were adopted. The dependent variables of the two logistic regression models were two valued categorical variables, usually referred to as "1 yes" and "0 no". The ordinal logistic regression model was mainly applied to multiple classification dependent variables. That is, the number of dependent variables was greater than or equal to 3. When there was a certain order relation between categories of dependent variables, the order Logistic regression model was usually adopted.

The dependent variables of this study included two valued variables and variables with a certain order. The variables in a certain order include: "1 very reluctant" "2 not willing" "3 neutrality", "4 willing", "5 very willing", and therefore selecting two regression models for estimation. The two models were set the same, and the model was set as follows:

$$Y = a + b(E) + c(F) + d(I) + e$$

In the formula:  $Y$  represents the behavior and willingness

**Table 1** Correlation index description statistical results.

Variable	Variable properties	Average value	Standard deviation	Variable assignment
<b>Dependent variable</b>				
Behaviors of online purchase of fresh livestock products	Two values	0.29	0.45	1 Yes;0 No
The willingness to buy fresh livestock products online	Classification	2.94	1.13	“1 very reluctant” “2 not willing” “3 neutrality”, “4 willing”, “5 very willing”
<b>Independent variable</b>				
Quality	Classification	3.40	1.19	1 is very unimportant; 2 is not important; 3 is neutral; 4 is important; 5 is very important.
Type	Classification	2.86	1.22	1 is very unimportant; 2 is not important; 3 is neutral; 4 is important; 5 is very important.
Price	Classification	2.93	1.17	1 is very unimportant; 2 is not important; 3 is neutral; 4 is important; 5 is very important.
Freshness	Classification	3.41	1.20	1 is very unimportant; 2 is not important; 3 is neutral; 4 is important; 5 is very important.
Safety	Classification	3.42	1.19	1 is very unimportant; 2 is not important; 3 is neutral; 4 is important; 5 is very important.
Convenience	Classification	3.15	1.22	1 is very unimportant; 2 is not important; 3 is neutral; 4 is important; 5 is very important.
Business reputation	Classification	3.30	1.21	1 is very unimportant; 2 is not important; 3 is neutral; 4 is important; 5 is very important.
Service quality	Classification	3.25	1.23	1 is very unimportant; 2 is not important; 3 is neutral; 4 is important; 5 is very important.
Buyer evaluation	Classification	3.05	1.21	1 is very unimportant; 2 is not important; 3 is neutral; 4 is important; 5 is very important.
Distribution efficiency	Classification	3.28	1.19	1 is very unimportant; 2 is not important; 3 is neutral; 4 is important; 5 is very important.
Characteristic	Classification	2.84	1.24	1 is very unimportant; 2 is not important; 3 is neutral; 4 is important; 5 is very important.
<b>Family characteristics of control variables</b>				
Family monthly income	Classification	3.90	1.86	1 is less than 2000 yuan; 2 is 2001 yuan to 4000 yuan; 3 is 4001 to 6000 yuan; 4 is 6001 yuan to 8000 yuan; 5 is 8001 to 10000 yuan; 6 is 10001 yuan to 20000 yuan; 7 is 20001 yuan to 40000 yuan; 8 is more than 40000 yuan.
Number of family population	Continuity	3.51	1.23	
<b>Personal characteristics of control variables</b>				
Age	Classification	2.73	0.83	1 is below 20 years old; 2 is 20 (containing 20) to 29 years old; 3 is 30 39 years old; 4 is 40 49 years old; 5 is 50 59 years old; 6 is over the 60 years old.
Gender	Two values	0.40	0.49	1 male;0 female
Educational level	Classification	4.06	0.89	1 is junior high school and below; 2 is high school / technical secondary school / technical school; 3 is junior college; 4 is university undergraduate college; 5 is Master degree or above.
Place of residence	Classification	2.48	0.70	1 is village; 2 is county; 3 is municipal city

of consumers to buy fresh livestock products online;  $a$  is a constant;  $b(E)$  is a cognitive variable function for the importance of influencing the factors of fresh animal products online shop-

ping;  $c(F)$  is a family characteristic variable function;  $d(I)$  is the characteristic variable function of the interviewee.

The basic assumption of the sequential logistic model was

that there was an unobserved continuous dependent variable  $Y^*$ , which was a linear function of a set of independent variables (the formula is abbreviated). The actual observed variable  $Y$  was a set of ordered categories, assuming that  $w_1, w_2, w_3, w_4$  etc. represented the demarcation point of the value that the willingness of the wetland conservation projects had not been observed, then  $Y$  and  $Y^*$  had the following relation: if  $Y^* < w_1, Y = 1$ ; if  $w_1 \leq Y^* < w_2, Y = 2$ ; if  $w_2 \leq Y^* < w_3, Y = 3$ ; if  $w_3 \leq Y^* < w_4, Y = 4$ ;  $Y^* \geq w_4, Y = 5$ .

## 2. RESULTS AND ANALYSIS

### 2.1 The Individual Characteristics of Respondents and the Situation of Fresh Livestock Products Purchased Online

The result of the survey data analysis showed that 231 men were interviewees and 27.71% had the experience of online purchasing of fresh livestock products; 343 were female respondents and 29.15% had the experience of online purchase of fresh livestock products. It can be seen that there was no significant difference in the consumer gender for the online purchase of fresh livestock products.

The age of the interviewees was mainly concentrated in the age of 20 to 49. The proportion of fresh livestock products purchased online from 30 to 39 is the highest, reaching 41.88%. The rate of age between 40 and 49 years is 25.71%. Respondents aged 20 to 29 had the largest number of respondents, but their net purchase of fresh livestock products was only 15.97%. It can be seen that the consumer groups of fresh livestock products are mainly concentrated in the age of 30 to 49. The group can operate both a mobile phone and computer, and these are part of the daily life of the family. It can be seen that the consumer groups of fresh livestock products are mainly concentrated in the age group from 30 to 49. The group can operate both the mobile phone and the computer, and these are part of the daily life of the family.

From the level of education, the ratio of raw and fresh livestock products for masters and above was 46.24%, 21.11% for undergraduate, 14.55% for college and 22.22% in high school.

From the perspective of occupational types, the ratio of fresh livestock products for three categories of civil servants and professionals (including lawyers, teachers, doctors, etc.) and enterprise management staff was 70.37%, 59.42% and 55.26%, and was three of the highest rate of raw and fresh livestock products purchased for the occupational type.

### 2.2 The Family Characteristics of Respondents and the Situation of Fresh Livestock Products Purchased Online

The proportion of respondents living in the countryside buying fresh livestock products online was 7.46%, 29.88% living in the country. and 32.07% in the city. According to table 2, with the increase of household monthly income, the ratio of fresh animal products purchased online has increased. The number of respondents' family population is mainly concentrated in 2-

5 people, which is not significantly related to online shopping fresh livestock products. See Table 2 in detail.

### 2.3 Online Purchase of Fresh Livestock Products Types, Quality, Price, Etc.

Among the respondents, 164 people bought fresh livestock products online, accounting for 28.6%, while 410 did not buy it online, accounting for 71.4%. The main buying platforms were Jingdong, Tmall, WeChat and Taobao. The frequency of purchase was 1-96 times a year, of which 12 times are the largest, having 54 people a year. The cost varied from 100-10000. The frequency and cost of purchase showed a regular change with family monthly income.

From Table 3, it can be seen that the type and quantity of fresh livestock products purchased online by respondents are from high to low in order of fresh milk(146), fresh beef(122), fresh eggs(85), fresh pork(79), fresh mutton(75), and fresh poultry(71). Fresh beef and fresh milk are more imported. From this we can see the difference between consumer demand and physical market and the structure of animal husbandry. Table 4 shows that the purchased fresh livestock products are generally better than the physical stores, and the prices are relatively cheap. As shown in Table 5, the main reason for the selection of fresh livestock products online is convenient and time saving, and the second is that people can buy the products they want, without the need to find them in a physical marketplace. The main reason for not buying fresh livestock products online is the fear of freshness and food safety and the need to wait.

### 2.4 Regression Analysis

Due to the need for regression, this article selected the reference group for the different independent variables. The education level took the undergraduate college as the reference group, the age virtual variable 2 (40 years and above =1), the residential place virtual variable (city =1), the family monthly income from 6001 to 10000 yuan was taken as the reference group, and the online shopping tools used the mobile phone as the reference group. The stepwise regression method was used to set a significant standard of 10%. A regression analysis was made on the consumers' behavior of buying fresh livestock products online and their willingness to buy fresh livestock products online. The results are shown in Table 6 and 7. Many non-significant variables were removed, and the quasi  $R^2$  of the binomial logistic model was 0.12, and the corresponding P value was 0.000, indicating that the joint significance of all coefficients (except the constant term) of the whole model was very high. The ordinal logistic model also fitted well.

The first was the influence of Education. In the existing online purchase of fresh livestock products, education degree showed a significant impact. The probability that graduate students and above chose to buy fresh livestock products online was 115.67% higher than the undergraduates, however, the probability that junior college students and below chose to buy fresh livestock products online was 44.65% lower than the undergraduates. In terms of the willingness to buy fresh livestock products online, the willingness to buy fresh livestock

**Table 2** The household income and population distribution of respondents and the proportion of buying fresh livestock products online.

Income	Count	Proportion%	Proportion of online shopping%	Number of family population	Count	Proportion%	Proportion of % online shopping%
2000 yuan and below	51	8.90	15.69	1 person	26	4.50	26.92
2001~4000 yuan	110	19.20	15.45	2 people	59	10.30	32.20
4001~6000 yuan	98	17.10	21.43	3 people	238	41.50	32.35
6001~8000 yuan	105	18.30	30.48	4 people	148	25.80	19.59
8001~10000 yuan	73	12.70	39.73	5 people	70	12.20	31.43
10001~20000 yuan	93	16.20	35.48	6 people	19	3.30	36.84
20001~40000 yuan	24	4.20	50.00	7 people	10	1.70	20.00
More than 40000 yuan	20	3.50	60.00	8 people and above 4	0.70	25.00	

**Table 3** The types of fresh livestock products purchased by consumers online(people).

Types	Made in China	Imported	Made in China and importation	Not to buy
Fresh pork	56	4	19	90
fresh mutton	51	3	21	93
Fresh beef	62	21	39	51
Fresh poultry	48	2	21	96
Fresh eggs	62	5	18	84
Fresh milk	73	29	44	38

**Table 4** The quality and price of fresh livestock products purchased online by consumers.

Items	Quality		Items	Price	
	Count	Proportion%		Count	Proportion%
Very good	44	26.8	Much higher	44	26.8
good	75	45.7	A little higher	75	45.7
general	42	25.6	Same	42	25.6
bad	2	1.2	A little cheaper	2	1.2
Very bad	1	0.6	Much cheaper	1	0.6

**Table 5** The reason why consumers choose and do not choose to buy fresh livestock products online.

The reason for choosing to buy fresh livestock products online			The reason for not choosing to buy fresh livestock products online		
Items	Count	Proportion%	Items	Count	Proportion%
Convenient and time saving	132	80.5	Food safety is difficult to guarantee	244	59.5
Having characteristics	31	18.9	Freshness is hard to maintain	299	72.9
Good quality	56	34.2	Poor quality of service	21	5.1
Many kinds	59	36	Need to wait	110	26.8
Food Safety	23	14	High price	34	8.3
Can buy the product you want	78	47.6	Cannot operate	21	5.1
Others_____	6	3.7	Others_____	69	16.8

Note: The filling amount of the fresh livestock products purchased online is 164, and the filling amount of the fresh livestock products which are not purchased online is 410.

**Table 6** The regression results of the binary logistic model of whether consumers have bought fresh livestock products online.

Independent variable	Dependent variable	
	Online purchase of fresh livestock products	
	Coefficient	odds ratio
Educational virtual variable 2(Master degree or above=1) <sup>1</sup>	0.7686 (0.2199)***	2.1567
Age virtual variable 1( $\leq 29=1$ ) <sup>2</sup>	-1.0697 (0.2248)***	0.3431
Family monthly income virtual variable 1( $\leq 6000=1$ ) <sup>3</sup>	-0.6566 (0.2141)***	0.5186
Educational virtual variable 1(below junior college=1)1	-0.5914 (0.3187)*	0.5535
Intercept item	-0.4531(0.1908)**	
Likelihood ratio chi-square value	80.92***	
Log likelihood function value	-302.9448	
Quasi R <sup>2</sup>	0.1178	

Note: The numbers in the brackets corresponding to the coefficients are standard errors. \*\*\* represents a significant level of 1%; \*\*represents a significant level of 5%; \*represents a significant level of 10%. <sup>1</sup>represents that the control group is undergraduates in educational virtual variables. <sup>2</sup>represents that the control group is the interviewees from 30 to 39 years old in age virtual variables. <sup>3</sup>represents that the control group is the interviewees whose income is between 6001 and 10000 yuan in family monthly income virtual variables.

**Table 7** The ordinal Logistic model regression results of consumers' willingness to purchase fresh livestock products online.

independent variables	Dependent variables	
	Willingness to buy fresh livestock products online	
	Coefficient	odd ratio
Price	0.2976 (0.0679) ***	1.3467
Family monthly income virtual variable 1( $\leq 6000=1$ ) <sup>1</sup>	-0.3990 (0.1599)**	0.6710
Age virtual variable 1( $\leq 29=1$ ) <sup>2</sup>	-0.3341 (0.1615)**	0.7159
Educational virtual variable 2(Master and above=1) <sup>3</sup>	0.3298(0.1693)*	1.3907
Cut-off point	-1.4512(0.2506)	
Cut-off point	-0.1895(0.2384)	
Cut-off point	1.7519(0.2503)	
Cut-off point	2.7818(0.2684)	
Likelihood ratio chi-square value	41.79***	
Log likelihood function value	-817.9336	

Note: The numbers in the brackets corresponding to the coefficients are standard errors. \*\*\* represents a significant level of 1%; \*\*represents a significant level of 5%; \*represents a significant level of 10%. <sup>1</sup>represents that the control group is the interviewees whose income is between 6001 and 10000 yuan in family monthly income virtual variables. <sup>2</sup>represents that the control group are the interviewees from 30 to 39 years old in age virtual variables. <sup>3</sup>represents that the control group are undergraduates in educational virtual variables.

products online of graduate students and above was one grade higher than undergraduates, and the probability was 39.07% higher. The junior college and below did not significantly affect the willingness.

The second was the influence of age. In the two regression results, the age virtual variable 1( $\leq 29=1$ ) always showed significant influence. Its probability of buying fresh livestock products online was 65.69% lower than that of the reference group of 30–39 years old. The probability of raising one grade of the willingness to buy fresh livestock products online was 28.41% lower. Consistent with the analysis in 2.1, consumers aged 29 and younger have a relatively low probability of buying fresh livestock products online, although they have a strong online shopping ability.

The third was the influence of family monthly income. According to the regression results of binomial logistic model and ordinal logistic model, the significant levels of monthly

household income were 1% and 5%, respectively. The probability of buying fresh livestock products online depending on the family monthly income virtual variable 1( $\leq 6000=1$ ) was 48.14% lower than the reference group whose income was between 6001 and 10000 yuan, and the probability of raising one grade of the willingness to buy fresh livestock products online was 38.30% lower. The family monthly income virtual variable 2 (10000 yuan and above=1) had no significant effect on the choice of online fresh livestock products and the willingness to purchase online fresh livestock products.

The fourth was the impact on price attention. Price is the core of the market economy, and price adjusts supply and market balance. The degree of attention to price will affect the supply of merchants and the demand of consumers. It can be seen from the regression results that the price has no significant influence on the existing online purchase of fresh animal products. It had a strong influence on the willingness to buy

fresh livestock products online, and significantly affected the willingness of consumers at the level of 1%. When a one grade higher of attention was paid to price, the probability of raising one grade of the willingness to buy fresh livestock products online was 34.67% higher.

### 3. DISCUSSIONS

#### 3.1 There is No Obvious Gender Difference in the Behavior and Willingness of Online Purchase of Fresh Livestock Products

The results of statistical analysis and regression analysis show that the gender has no significant effect on consumer behavior and willingness to purchase fresh animal products online. According to the "Research Report on China's Online Shopping Market in 2015", the amount of money spent on online shopping for men is 1.2 times that of women, indicating that more men are in the ranks of online shopping consumers. Men's participation is also reflected in the online purchase of fresh livestock products, and the proportion is not much different from that of women. Therefore, no gender virtual variables are found in the regression results.

#### 3.2 The Basic Characteristics of Individuals and Families are the Core Factors that Affect Consumers' Behavior and Willingness to Purchase Fresh Livestock Products Online

The results show that age, education level and monthly family income have a significant impact on consumer behavior and willingness to purchase fresh animal products online. These three basically reflect the condition of the consumer. Age reflects the current life stage of the consumer, and the degree of education reflects the level of consumer awareness, learning and technology, and the monthly income of the family reflects the economic basis of the consumer. Other factors will affect consumer behavior and willingness to some extent, but not significantly, indicating that the most important factor or the factor that has been imperceptibly influencing the decision-making of consumers is generally considered first.

#### 3.3 The Attention on Price Affects Consumer Expectations

For the existing consumer behavior, consumers may focus on the satisfaction brought by consumer products, rather than accounting for the price paid. For the consumer behavior that does not happen, consumers will consider a series of questions about products, the most important of which is the price. The current price level will affect consumers' next choice online. At the same time, it also shows that online shopping is different from the characteristics of the in-store shopping. Consumers can make a large number of comparisons on the Internet, choose a satisfactory product for their own price, or look for companies whose offers match their expectations for their favorite products (see Table 4). In a physical store, such

behavior consumes more energy.

#### 3.4 The characteristics of fresh livestock products and the characteristics of online sales affect consumers' behavior and willingness

It can be seen from Table 5 that the reasons why consumers do not choose to buy fresh livestock products online are mainly related to food safety and freshness, and they need to wait for a certain amount of logistic and distribution time. The main reason for the selection of fresh livestock products online is the convenience and time saving. There are many kinds of products of good quality, and consumers can buy the products they want. This embodies the characteristics of network sales. Therefore, the food safety and freshness and distribution efficiency are the problems that need to be improved in network sales. And the factors that consumers pay more attention too are not involved in this study, which need to be further detailed.

#### 3.5 The Online Purchase of Fresh Livestock Products is Mainly Made in China

The investigation and analysis show that the fresh livestock products bought by consumers online are mostly domestic, especially fresh pork, fresh mutton, fresh poultry and fresh eggs. Fresh beef and fresh milk are still the most domestic, but the import quantity is many times as much as the import of other fresh livestock products (see Table 3). Among them, there are consumers' inherent awareness and consumption awareness of imported beef and milk products, as well as domestic breeding structure and supply structure of fresh livestock products. How to further increase the online purchasing volume of domestic fresh livestock products, attract consumers' attention and how to further adjust the breeding structure still need further research.

### 4. CONCLUSIONS

In this study, the behavior and willingness of consumers to buy fresh livestock products online were analyzed by general statistics, binomial logistic regression models and ordinal logistic regression models. The main conclusions are as follows: 1) consumer age, education level and family monthly income significantly affect the behavior and willingness of online shopping for fresh livestock products; 2) the consumer's attention to the price significantly affects the consumers' willingness of online shopping for fresh livestock products; 3) the characteristics of fresh livestock products affect consumers' online shopping behavior and their willingness; 4) the characteristics of online sales, in a certain extent, attract consumers to purchase fresh livestock products through the internet.

In combination with the above conclusions, this study suggests that: 1) a targeted marketing strategy should be implemented to attract attention from different consumers, 2) more attractive prices relative to offline sales should be set, 3) online platforms introduce strict regulations for sellers of fresh livestock products and apply food safety traceability systems

to reduce and eliminate consumers' concerns about product quality, safety and freshness, 4) the types and characteristics of network fresh livestock products should be enriched further, 5) the efficiency of logistics and distribution should also be further improved.

## ACKNOWLEDGEMENT

Funding project: Shanxi soft science research project(2016041025-3)

## REFERENCES

1. China Internet Information Center: A Statistical Report on the Development of the Fortieth China Internet[R]. [http://www.cac.gov.cn/2017-08/04/c\\_1121427728.htm](http://www.cac.gov.cn/2017-08/04/c_1121427728.htm),2017,7
2. China E-Commerce Research Center: China's rural e-commerce development report(2016-2017)[R]. <http://www.100ec.cn/detail-6419058.html>,2017.10.13.
3. Yijian Xu: Study on Influencing Factors of Residents' Willingness to Purchase Fresh Agricultural Products Online[J], Science and Technology Information of Jiangsu, 2014,21(11), 97-98.
4. Jingjing Liu, Xiaorui Wang and Hang Yuan: Study on the Behavior of Consumers Online Shopping for Fresh Agricultural Products[J], Quality and Safety of Agro-products, 2016(5), 73-78.
5. Lin Li: Analysis of the Influencing Factors of Consumer Online Shopping Fresh Agricultural Products[J], Heilongjiang Agricultural Sciences, 2016(9), 120-123.
6. Huanan Liu and Shiju Zhu: Analysis of Consumers' Willingness to Purchase Fresh Vegetables Online and Its Influencing Factors – Based on the survey of consumers in Shanghai[J], Chinese Agricultural Science Bulletin, 2014,30(21), 289-293.
7. Ziqiang Wu: An Empirical Analysis of Factors Influencing Willingness to Purchase Fresh Agricultural Products Online[J], Statistics and Decision, 2015,44(20), 100-103.
8. Yanqiong Mao and Yufeng Xing: Analysis of Factors Affecting Online Shopping of Fresh Agricultural Products – Based on Analytic Hierarchy Process[J], Management Observer, 2015,31(11), 149-151.
9. Chunxia Wu: Consumers' Attitude and Willingness to Purchase Fresh Agricultural Products Online: An Empirical Study Based on Beijing City[J], Chinese Agricultural Science Bulletin, 2017,33(30), 158-164.
10. Xiaofei Zhao and Qiyuan Gao: Research on Influencing Factors and Mechanism of Online Purchase Intention of Agricultural Products – Based on the Perspective of Reference Effect[J], Journal of Beijing Technology and Business University(Social Sciences), 2016,31(3), 42-53.

11. Junhong Zhu, Liwei Zhu and Xinfei Huang: Research on Influencing Factors of Consumers' Willingness to Purchase Fresh Agricultural Products based on SEM[J], Journal of Shanghai Business School, 2017,18(3), 50-58.
12. Yaqin Zheng and Ying Yang: The Influencing Factors of the Selection of Fresh Agricultural Products Online Shopping[J], Journal of Zhengzhou Institute of Aeronautical Industry Management, 2014,32(5), 49-52.
13. Wene Qi and Chuan Lin: Analysis of Factors Influencing Consumers' Purchase Intention of Fresh Agricultural Products[J], Journal of South China Agricultural University:(Social Science Edition), 2018,17(1), 78-93.

## About the author

Wang Meitu, Female, born in 1980, Shanxi. She graduated from the School of Economics and Management of Beijing Forestry University in 2006 with a Master's degree in forestry economic management. She is currently a teacher at the School of Economics and Management of Shanxi Agricultural University and a doctoral student at the School of Economics and Management of Beijing Forestry University. Her research interests include agricultural and forestry economic management, resources and environmental economic. E-mail: wmt0707@163.com, Mobile Phone: 13403549552.

