A STUDY OF INFLUENCING FACTORS OF CONSUMERS' WILLINGNESS TO BUY FRESH FRUITS AND VEGETABLES ONLINE IN UNDERDEVELOPED AREAS BASED ON CONSUMER SURVEY IN TONGREN CITY, GUIZHOU PROVINCE[*]

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Abstract

Consumers in underdeveloped areas in China have a huge market demand for fresh fruit and vegetable products; however, there are problems such as late popularity of online shopping, relatively low acceptance of online shopping by consumers, and unique factors affecting purchase intention. The consumers in the underdeveloped areas of China, including Guizhou province, were used as investigation objects, and the empirical research was mainly based on the five dimensions of demographic variables, the product features of preference, the acceptance of the logistics service quality, shopping platforms, degree of consumers on the influence of consumers' willingness to buy fresh fruits and vegetables online in underdeveloped areas. The empirical results showed that demographic variables had an impact on consumers' purchasing intention. Preference of product characteristics, quality of logistics service, acceptance of shopping platforms, and the degree of consumers themselves positively affected consumers' willingness to buy fresh fruits and vegetables online in underdeveloped areas. The degrees of influence from high to low included preference of product features, quality of logistics service, acceptance of shopping platform, degree of consumers. This result enables the fresh fruits and vegetables e-commerce platforms to increase the understanding of consumers' online shopping intentions in underdeveloped areas, and to fill the gaps of relevant research on consumers' online shopping intentions of fresh fruits and vegetables in underdeveloped areas.

Introduction

By March 2020, the number of Chinese Internet users had exceeded 900 million, of which online shopping consumers was 710 million. Compared with the traditional offline purchase, the information asymmetry between buyers and sellers in the online shopping environment is divided in time and space. The research on the traditional consumers' offline purchase willingness should turn to the research of the online shopping willingness of modern consumers with the rapid development of the Internet. At the same time, consumers in the underdeveloped areas of China have a huge market demand for fresh fruit and vegetable products, but there are problems such as the late popularization of online shopping, the relatively low acceptance of online shopping, and the influence factors of purchasing willingness are unique.

This article, represented by consumers in Tongren, Guizhou Province, China, collects data through questionnaire survey, analyzes the empirical results of fresh fruit and vegetable

electricity business platform and merchants, and strives to help fresh fruit and vegetable online shopping platform and merchants to improve the purchase willingness of consumers in underdeveloped areas, and thus improve the sales of fresh fruits and vegetables.

Objective

This paper focuses on three problems: 1.What factors are mainly affecting the willingness of consumers to buy fresh fruits and vegetables products online? 2.What is the impact of the factors? 3.How can enable the merchants of e-commerce platforms to make reasonable improvements on the existing basis according to the characteristics of consumers' purchase willingness in specific regions?

Material and Method

1. Literature review of Literature review

At present, there are few research literature on the influencing factors of online shopping willingness, and few literature on the influencing the willingness of consumers of specific groups and specific products. Due to the particularity of online shopping, there is space between consumers and needed goods, can only psychologically determine what kind of goods, then log on shopping web page or APP to collect information, evaluation after purchase, and after the waiting time caused by logistics transportation, so consumers buy goods online, the factors needed to consider are more than the traditional offline purchase channels. Geng likai (2016) for quantitative research on network consumer behavior, pointed out that compared with offline consumers personalized, process, purpose and other new characteristics, at the same time summarizes the logistics, network evaluation, business leading factors, shopping platform, online shopping experience, and explore five influence factors to purchase willingness three stages, the influence of each factor on each stage, summarizes the concern of consumers in each stage. In this document, the steps on purchase intention are divided into three steps. The impact of post-purchase behavior on secondary purchase is not deeply explored, which is not comprehensive in analysis, but the comprehensive summary of influence factors is relatively comprehensive, which has certain reference significance for the relevant research of online consumers.

Logistics service quality factors: Xiao Zhiping (2010) is a detailed analysis of the current online shopping methods and customer satisfaction factors, pointing out that logistics and product quality are the influencing factors.

Starting from the product's own feature preferences, Jiuan Tan(2003) proves that consumers generally prefer to buy more famous brands online than buying unknown brands, and also illustrates the importance of the brand of the product to consumer willingness. In addition to the product brand, the quality of the product, directly determines the consumer repeat purchase intention, whether the traditional offline stores to buy goods channels, or online purchase channels, the product quality is the core of the product force, excellent product quality is the best marketing means to motivate consumers, produce repeated purchase motivation, positive affect consumers' willingness to buy.

In terms of demographic variables, gender caused by willingness differences exist, according to Ye Wen (2001) online shopping research shows that boys in shopping relative girls choose goods after thoughtful more rational and willingness is not easy to change, used to search commodity quality, performance information, and girls in the process of online shopping more used to put the favorite goods into the shopping cart, the choice of goods is

easy to be evaluated by others and change intention. Age is also an influencing factor that cannot be ignored. Young people generally have a maverick style and like to highlight personality, ideological impulse to actively pursue popular elements. In terms of purchase, it is the main force of personalized purchase and fashion purchase. At the same time about the education and economic income, because the higher the network consumer education level, the more familiar with network knowledge and information search means, prompting such customers can well accept and use online shopping this purchase way, also because the education is usually positively related to income, and higher income level, produce higher purchasing power, higher purchasing power also creates a high frequency of online shopping behavior. On the contrary, under the low degree of education, not familiar with the use of online shopping and lagging consumption concept, which will negatively affect the purchase willingness of online shopping.

Shopping platform acceptance, Ye Naifold, guo-hua zhou (2002) noticed item search convenience, and online store design influence consumers, and said to make consumers in psychological and physical on the virtual world online purchase channels, as well as the real world traditional offline purchase channel free conversion, experience easy and free shopping experience.

2. The study assumes that the Research hypothesis

(1) Demographic variables (gender, age, education, monthly income, marital status, occupation, etc.). Since this article is studied in underdeveloped areas, in this description (Liu Yong, 2005) pointed out that the residents in underdeveloped areas have backward and relatively low education, the demographic variables of consumers have to be valued. On this basis, a hypothetical one is proposed.

H1: The demographic variables will have an impact on consumers deciding to buy fresh fruits and vegetables online.

(2) Logistics service quality (logistics speed, price, service quality), logistics is an important process of online shopping, Xiao Zhiping (2010) pointed out that logistics distribution directly affects consumer satisfaction, the better logistics, the higher customer satisfaction, the improvement of customer satisfaction will also promote consumers' willingness to repeat purchase. At the same time, because of the short shelf life of fresh fruits and vegetables and product quality and time, so the speed of logistics is the key factor, and logistics service quality is one of the variables used by most scholars to study logistics factors, and the author also includes one of the variables in this paper.In conclusion, hypothesis II.

H2:The quality of logistics service will have a positive impact on consumers' willingness to buy fresh fruits and vegetables online

(3) Preferences for product characteristics (product price, origin, quality include: freshness, taste, etc.), No matter what product you buy or what kind of group, the most concerned problem is the product itself. Take the article product fresh fruits and vegetables as an example, Such as Wang Zhigang, Yu Bincopper (2019) pointed out in the article. Due to the influence of geographical weather factors, the taste of agricultural products is slightly different, and the different taste preferences also cause customers to choose the products from a specific place of origin. In conclusion, hypothesis three.

H3:The preference for product characteristics will have a positive impact on consumers' willingness to buy fresh fruits and vegetables online

(4) Acceptance of the shopping platform (interface design, operation difficulty, customer service quality, search convenience, online comments, etc.), Shopping platforms are like traditional offline stores to consumers, Leaves leaves folded, Zhou Guohua (2002) pointed out that the advantages of the platform's interface design will affect the time consumers stay on the page, The second good platform is open to all kinds of groups, Both the elderly and children should be easy to grasp and purchase operations, At the same time, because of the spatial distance between merchants and consumers, Consumers want to communicate with the merchants if they want to fully understand the commodity information, So online customer service answering questions are crucial. At the same time, online comments are like the traditional offline reputation, and consumers can learn more of the product characteristics according to the description of the people who have purchased. To sum up, the author put forward the hypothesis four.

H4:The acceptance of the shopping platform will have a positive impact on consumers' willingness to buy fresh fruits and vegetables online

(5) consumers themselves degree (online shopping acceptance, shopping experience, fresh fruit and vegetables choice knowledge), Geng Lijia (2016) pointed out that online shopping experience also affects consumers, and rich online experience or not is an important investigation factor starting from consumers themselves. Based on this, the author put forward the hypothesis of five.

H5:The degree of consumers themselves has a positive impact on consumers' willingness to buy fresh fruits and vegetables online.

The analysis of literature and the above influencing factors analyzed the theoretical framework of this paper:
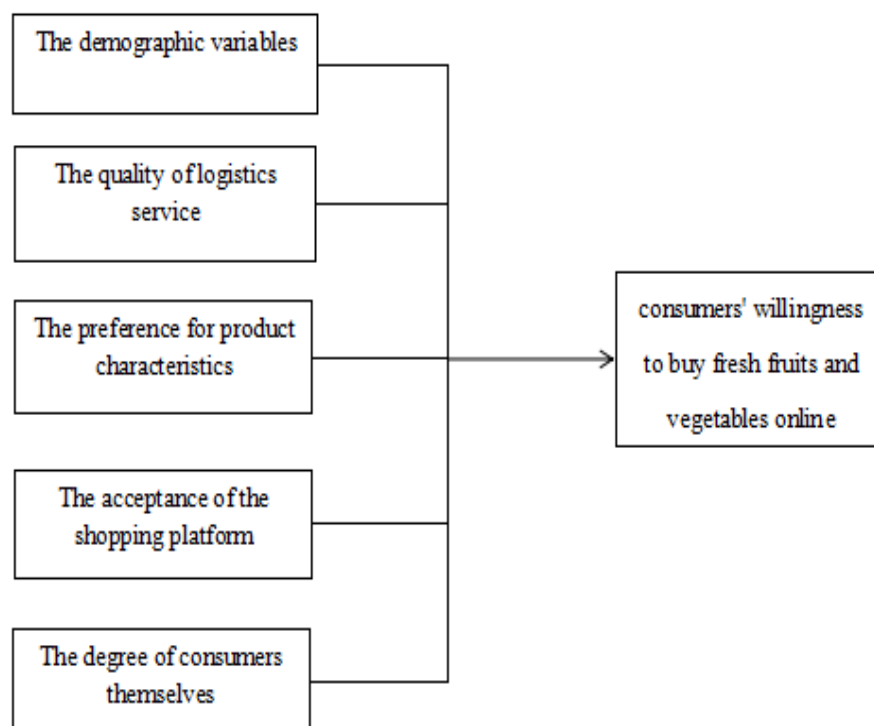
1. Descriptive statistics for Descriptive statistical results

Descriptive statistical analysis of this paper found that in the gender distribution of the sample, more men than women bought fresh fruits and vegetables, 205 men and 195 women, each accounting for 51.2% and 48.8%.Samples were more dispersed, mainly during 26 ~ aged 65 years. Sample degrees are mainly concentrated in junior college and undergraduate degree, accounting for 84.1% of the total. The sample monthly online shopping frequency was mainly concentrated in 3~4 times, accounting for 40.5% of the total. Details are shown in the table below.

Population frequency distribution				
Name of name	Options	Frequency	Percentage (%)	Cumulative percentage (%)
Gender	Female	195	48.8	48.8
	Male	205	51.2	100
Marriage situation	Married	322	80.5	80.5
	Unmarried	78	19.5	100
Age	Under the age of 18	40	10	10
	18 ~ was 25 years old	55	13.8	23.8
	26 ~ was 35 years old	112	28	51.8
	36 ~ is 50 years old	102	25.5	77.3
	51 ~ was 65 years old	79	19.8	97.1
	More than 66 years old	12	3	100
Academic degree	High school or below	27	6.8	6.8
	Junior college	161	40.3	47.1
	Undergraduate	175	43.8	90.9
	Masters students or above	37	9.3	100
Career	Students	78	19.5	19.5
	Civil servants or staff of state-owned enterprises or public institutions	88	22	41.5
	Private enterprise staff or others	234	58.5	100
Monthly income	Under RMB 1,000 yuan	40	10	10
	1000~2000	59	14.8	24.8
	2000~3000	91	22.8	47.6
	3000~4000	117	29.3	76.9
	Above 4,000 yuan	93	23.3	100
Monthly online shopping of fresh fruits and vegetables expenditure	Under 50 yuan	122	30.5	30.5
	50 ~ $200	170	42.5	73
	200~400	68	17	90
	More than 400 yuan	40	10	100

Online shopping experience	Under 2 years	123	30.8	30.8
	2 ~ for 4 years	141	35.3	66.1
	5 ~ for 7 years	81	20.3	86.3
	More than 8 years	55	13.8	100
The frequency of fresh fruits and vegetables purchased online shopping in November	Average of 0~2 times per month	120	30	30
	Average of 3~4 times per month	162	40.5	70.5
	On average, 5 ~ is 6 times per month	75	18.8	89.3
	Average of 7 times and more per month	43	10.8	100

2. Difference analysis

　　　　After the following table for the demographic variable difference analysis results, marriage status, age, education, monthly income, occupation type four factors, the factors have significant difference, namely marriage status, age, education, monthly income, occupation type has significant influence on consumer purchase decisions, so that demographic factors will influence consumers online fresh fruit and vegetable willingness.

　　　　Therefore, the hypothesis one in this paper is verified.

Differential analysis of each variable on each demographic variable

dimension	Quality of logistics services	Preferences for product characteristics	Shopping platform	Consumers themselves are level	Consumers want to buy it
Marriage status	T=0.53,p=0	T=0.35,p=0	T=0.62,p=0	T=0.79,p=0	T=0.62,p=0
Age	F=348.533,P<0.01	F=652.385,P<0.01	F=657.655,P<0.01	F=633.067,P<0.01	F=197.289,P<0.01
Academic degree	F=23.424,P<0.01	F=28.999,P<0.01	F=25.559,P<0.01	F=12.405,P<0.01	F=15.62,P<0.01
Monthly income	F=484.45,P<0.01	F=769.73,P<0.01	F=985.38,P<0.01	F=731.474,P<0.01	F=247.193,P<0.01
Type of occupation	F=1388.131,P<0.01	F=2639.593,P<0.01	F=3644.052,P<0.01	F=1536.622,P<0.01	F=1029.683,P<0.01

3. Correlation analysis of the Correlation analysis results

　　　　Correlation between willingness to purchase using Pearson correlation and logistics service quality, preference for product characteristics, acceptance of shopping platform, and sound degree of consumers themselves. The following table shows that the correlation between logistics service quality and the willingness of consumer network to purchase in less developed areas is 0.485.The correlation between product characteristics preference and willingness to purchase was 0.556.The correlation between the acceptance of shopping platforms and consumers' willingness to buy was 0.435.The correlation of consumers themselves to their willingness to buy is 0.402. In addition, the above four items are all significant at the level of 0.01. Therefore, it shows that the level of logistics service, the preference for product characteristics, the acceptance of shopping platform and the degree of

consumers themselves are all positively affecting the willingness of consumers to buy fresh fruits and vegetables online in underdeveloped areas.

Pearson related inspection

Pursuant to buy		
Logistics service quality	Correlation coefficient	0.485**
	p value	0.000
Preferences for product characteristics	Correlation coefficient	0.556**
	p value	0.000
Acceptability of shopping platforms	Correlation coefficient	0.435**
	p value	0.000
Consumers themselves are level	Correlation coefficient	0.402**
	p value	0.000

Regression analysis (Regression analysis)

With the dependence of the quality of logistics service, product characteristics, shopping platform acceptance and consumer degree as independent variables, the R^2 value of the dependent variable is 0.366 and the adjusted ΔR^2 value is 0.360, indicating that the model fit after adding demographic control variables and the interpretation rate of the model has increased by 36%; 36% of the change in purchase willingness can be explained by four independent variables. The data analyzed showed a F value of 56.996 and that the independent variable was significant at the level of 0.01, respectively, with the model collinearity statistic VIF all less than 10, that is, the model has no multiple collinearity. The model formula is:

Purchase Decision =1.005 + 0.213 * Logistics Service Quality + 0.235 * Product Features Preferences + 0.173 * Acceptability of Shopping Platform + 0.120 * Consumer themselves degree

Linear regression

Self-variable	Non-standardized coefficients		Standardization coefficients	t	Significance
	B	Standard error	Beta		
(constants)	1.005	0.197		5.102	00.00
Logistics service quality	0.213	0.050	0.214	4.251	.0000
Preferences for product characteristics	0.235	.0044	0.266	5.364	.0000
Acceptability of shopping platforms	0.173	.0049	0.168	3.524	.0000
Consumers themselves are level	0.120	0.041	0.136	2.914	04.00
Caactor variable: Consumer willingness to buy (YY)					
R^2 was 0.366 and an adjusted ΔR^2 of 0.360					
F= 56.996***					

Validation results

The results of regression analysis can be drawn:

The regression coefficient value of logistics service quality is 0.213 (t=4.251, p=000<0.05), that is, logistics service quality has significant positive effects on consumers' willingness to buy, verifying hypothesis II.

The regression coefficient value for the preference for the product characteristics was 0.235 (t=5.364, p=000<0.05), i. e., the preferred consumer purchase willingness of the product characteristics had a significant positive effect. Validation hypothesis 3.

The regression coefficient value of the shopping platform acceptance is 0.173 (t=3.524, p=000 <0.05), i. e., the acceptance of the sensory shopping platform has a significant positive impact on consumers' willingness to buy. Validation hypothesis 4.

The regression coefficient value for the degree of the consumer itself was 0.120 (t=2.914, p=04 <0.01), that is, the consumer own degree has a significant positive effect on the consumer's willingness to buy. Validation hypothesis 5.

To sum up, it can be learned that the four independent variables: logistics service quality, the preference for product characteristics, the acceptance of the shopping platform and the degree of consumers themselves, all have a significant positive impact on consumers'

willingness to buy. From high to low, they are the preference of product characteristics, logistics service quality, the acceptance of the shopping platform, and the degree of consumers themselves. Meanwhile, hypothesis one can be verified according to the results of the difference analysis above.

Conclusion Conclusion

This article makes the following suggestions on the influencing factors verified in this article:

1. Preference factor aspects of product characteristics. First, for the taste of consumers and the quality of the products concerned about the research, strictly screen the supply of fresh fruits and vegetables, put the fresh fruits and vegetables that meet the requirements of the majority of consumer product fruits and vegetables for sale.2. Strict quality control of the supply of goods, as well as the delivery of products, to ensure that the freshness, taste, quality and safety of fresh fruits and vegetables flowing into the market are guaranteed. Three, according to different kinds of fresh fruits and vegetables according to their product characteristics, such as sweetness, origin, nutrition and so on label classification processing, so that consumers can quickly choose according to their own needs to meet their fresh fruits and vegetables to meet their own preferences.

2. Quality of logistics services. The research results show that e-commerce platform and merchants can through rapid delivery, nearby delivery, with remote and underdeveloped local farmers cooperation, realize online payment transactions local distribution products, the fastest can buy today, the next day, greatly improve the time of consumers receive goods, pull into the gap with traditional purchase timeliness. It can better retain loyal consumers, and partly attract consumers who worry about the time limit of transporting goods to shop online.

3. Acceptance aspect of the shopping platform. According to the analysis results, the shopping platforms are also an important factor affecting consumers' willingness to buy, and different age groups are also affected by them. For shopping platforms, we can set up different operation interfaces and operation logic close to their users for teenagers, middle-aged and elderly habits. For example, on the same APP, you can choose a version that meets your age group with one button. The teen version can reduce some inappropriate advertising and product descriptions, while choosing the cool page background that teenagers prefer. Simple pages can be set up for middle-aged people to improve their shopping efficiency. For the elderly, you can enlarge the font to use a simple operation logic, simplify the purchase process while adding more prompt options, let the elderly group can also simply and easily carry out online shopping.

4. In terms of consumers' own degree,1. The platform can introduce relevant preferential activities. For example, after consumers buy on the platform, if they recommend the product to others, they can enjoy a certain discount, which will make the online shopping of fresh fruits and vegetables known to more people to know and accept.2. Put relevant operation videos in relevant APP s, so that people with less online shopping experience can quickly adapt to the platform and get a good online shopping experience.3. Cooperate with the web celebrity of TikTok and other platforms to popularize the purchase knowledge of fresh fruit and vegetables. At the same time, promote the platform to enhance its popularity, so that consumers are familiar with the knowledge of the purchase of fresh fruits and

vegetables while enhancing the sense of trust and purchase willingness of relevant shopping platforms.

Acknowledgements

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