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# AN EMPIRICAL ANALYSIS OF CONSUMER SATISFACTION IN FRESH PRODUCE CROSS-BORDER E-COMMERCE UNDER THE BACKGROUND OF DIGITAL ECONOMY

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#### Abstract

The purpose of this study is to explore the relationship between the digitalization level of foreign trade of cross-border fresh e-commerce, cross-border logistics quality, international competition, foreign trade environment and consumer satisfaction. It aims to improve the consumer satisfaction of cross-border fresh e-commerce. This paper combines the theory of consumer behavior with cross-border e-commerce to build the consumer satisfaction model of cross-border fresh e-commerce, and analyzes the relationship between various variables. The relationship between the digitalization level of foreign trade of cross-border fresh e-commerce, cross-border logistics quality, international competition, foreign trade environment and consumer satisfaction is specifically discussed.

This paper uses quantitative analysis methods to design theoretical models and questionnaires, including the measurement of variables: foreign trade digitization level, cross-border logistics quality, international competition, foreign trade environment, and consumer satisfaction. 514 questionnaires were distributed to consumers with cross-border fresh e-commerce shopping experience, and 504 valid questionnaires were collected and analyzed.

The results show that the digitization level of foreign trade of cross-border fresh e-commerce, cross-border logistics quality, international competition, foreign trade environment are positively correlated with consumer satisfaction. For this end, reference suggestions are put forward according to the study results.

Key words: Digital economy, Cross-border fresh e-commerce, Consumer satisfaction, Empirical analysis

Introduction

Research Background

Cross-border e-commerce is a new form of foreign trade. It is a digital economy with traditional foreign trade networking and electronization. Taking business as the core, it uses electronic technology and logistics means to transfer traditional sales and shopping to online platforms, eliminating tangible and intangible barriers between countries and regions, and shortening the interconnection time. It has reduced the cost of foreign trade and realized the transformation of traditional distribution and procurement channels to the Internet. Cross-border e-commerce usually includes services such as online trading sites, payment platforms, international logistics and customs clearance. Cross-border fresh e-commerce takes vegetables, fruits, meat, poultry and eggs and other fresh produce as core commodities, and uses the Internet to deliver fresh produce to consumers through e-commerce warehouses and other modes. In 2023, China's cross-border e-commerce imports and exports reached 2.38 trillion yuan, up by 15.6%, of which exports reached 1.83 trillion yuan, up by 19.6% (Wen Rui, 2024).

Transaction scale of China fresh ecommerce.

"2022-2027 China's Fresh E-commerce Industry Demand Forecast and Development Trend Outlook Report" shows that in 2023, China's fresh commerce transaction scale reached about 642.76 billion yuan, a year-on-year growth of 14.74%. It is expected that the transaction scale of fresh e-commerce in China will reach 736.79 billion yuan in 2024 (Askci Research Institute, 2024a).

China's cold chain logistics market scale.

Cold chain logistics uses temperature control, preservation and other technologies, facilities and equipment to ensure the quality of food in the transportation and distribution of fresh products, reduce losses. Fresh e-commerce maintains vitality, rapid layout and development. According to the "2024-2029 China Cold Chain Logistics Industry Research and Development Prospects Analysis Report", the market size of China's cold chain logistics industry reached 491.6 billion yuan in 2022, with a compound annual growth rate of 14.24% in the past five years. It is predicted that the market size of China's cold chain logistics will reach 641.6 billion yuan in 2024 (Askei Research Institute, 2024b).

## Research Objectives

This paper takes improving consumer satisfaction of cross-border fresh e-commerce as its goal, and conducts questionnaire analysis on the variable relationship between the digitization level of foreign trade of cross-border fresh e-commerce, cross-border logistics quality, international competition, foreign trade environment and consumer satisfaction, so as to promote the development of cross-border fresh e-commerce.

#### Research Questions

The main research questions of this paper are as follows.

- 1. How does the digitization level of foreign trade of cross-border fresh e-commerce affect consumer satisfaction?
- 2. How does the cross-border logistics quality of cross-border fresh e-commerce affect consumer satisfaction?

- 3. How does the international competition of cross-border fresh e-commerce affect consumer satisfaction?
- 4. How does the foreign trade environment of cross-border fresh e-commerce affect consumer satisfaction?

#### Literature Review

Analysis of Variable Relationship

Relationship between foreign trade digitization level and consumer satisfaction.

Customer satisfaction, also known as customer satisfaction index. is a relative concept, which is short for systematic survey of customer satisfaction in the service industry, and is the matching degree of customer expectation and customer experience, that is, the index obtained when the customer's perceived effect of a product is compared with the expected value. Customer satisfaction is a measure of the degree of customer satisfaction. Usually, samples are obtained through random surveys, and the corresponding results are obtained using the weighted average method, based on customer specific satisfaction rating data (Lu Xiongwen, 2013).

In the process of cross-border fresh e-commerce trade, the application of digital technology has played a crucial role. On the one hand, digital technology can make cross-border trade more convenient and efficient. Using digital technology, enterprises can more accurately locate the target market, develop new customers, improve customer satisfaction and sales; On the other hand, digital technology strongly supports foreign trade logis-

tics and supply chain management. With the refined marketing of data analysis, enterprises can reduce costs, optimize and upgrade logistics efficiency and accuracy, and improve customer satisfaction and competitiveness.

However, the development of new business forms of cross-border fresh e-commerce of "online digital + offline entity" also faces some challenges and problems. For example, how to protect the rights and security of consumers, how to deal with complex financial issues such as cross-border payments, and how to deal with regulatory policies in different countries. To this end, the following hypotheses are made.

H1: The level of foreign trade digitization has a positive impact on consumer satisfaction.

Relationship between cross-border logistics quality and consumer satisfaction.

Logistics refers to the highquality transportation and warehousing activities. In the supply chain, logistics types can be mainly divided into five categories: first-party logistics, Second party logistics, third party logistics, fourth party logistics and fifth party logistics.

According to the logistics model proposed by Ballow (1998), an American logistician, the importance of logistics to the success of enterprises and the ability of enterprises to manage logistics are the main factors for enterprises to decide whether to self-operate or outsource logistics services. If the ability of enterprises to manage logistics is low, and logistics is more important to customer satisfaction, third-

party logistics is adopted. If the ability of enterprises to manage logistics is very high, and logistics is very important to customer satisfaction, self operated logistics is adopted. If the ability of enterprises to manage logistics is weak, and logistics is not important to customer satisfaction, outsourcing logistics services is adopted. To this end, the following hypotheses are made.

H2: Cross-border logistics quality has a positive impact on consumer satisfaction.

The Relationship Between International Competitiveness and Consumer Satisfaction.

In this paper, the international competitiveness referred to is the ability of a country to sell products in the international market (Orlowski, 1982), i.e. the ability to maintain a trade surplus or balance of trade. In the global international market, there is not only international competition in crossborder fresh e-commerce, but also competition in the efficiency and level of all links of logistics services. The higher the quality of the products sold by cross-border fresh e-commerce, the higher the consumer satisfaction, and the international competitiveness will also be enhanced accordingly. In a specific market, when there is information asymmetry between consumers and enterprises regarding product quality, the competition for enterprises to gain consumer trust and maintain reputation is actually very important, thereby indirectly increasing enterprise profits (Du Chuang, 2020). Therefore, the following assumption is made.

H3: International competition has a positive impact on consumer satisfaction.

The Relationship between Foreign Trade Environment and Consumer Satisfaction.

Foreign trade environment refers to other relevant factors in the target market aside from product sales, usually referring to the overall political, economic and social conditions. It mainly comprises: humanistic conditions, geographical conditions, industrial and commercial conditions, economic conditions and trade policy conditions, as well as relevant legal conditions, etc.

H4: Foreign trade environment has a positive impact on consumer satisfaction.

#### Variable Model Construction

The consumer satisfaction model of cross-border fresh e-commerce mainly includes five related variables: the digitalization level of foreign trade, the quality of cross-border logistics, international competition, foreign trade environment and consumer satisfaction.

According to the concept of "Cross-border e-commerce platforms are the most advanced practice and application of the traditional marketing and industrial supply chain innovation theory" in the theory of cross-border ecommerce (Liao Jiacheng, 2023), this paper proposes a total of four hypotheses to study the impact of the independent variables, namely the digitalization level of cross-border fresh ecommerce foreign trade, the quality of cross-border logistics, international competition, and the foreign trade environment, on the dependent variable, consumer satisfaction. A total of 15

items in 5 facets were formulated in this paper.

Concept of Related Variables.

# (1) Digitalization Level of Foreign Trade.

The digitalization level of cross-border fresh e-commerce foreign trade can improve the management mechanism and facilitate a more precise and objective understanding of its role, avoiding the impact on consumer satisfaction due to the low digitalization level.

(2) Quality of Cross-border Logistics. Since the quality of cross-border logistics has a positive effect on consumer satisfaction, cross-border fresh ecommerce enterprises should comprehensively strengthen the connotation construction of cross-border logistics quality and enhance consumer satisfaction. Due to different concepts of quality, the interpretation of "quality of cross-border logistics" varies. Therefore, cross-border fresh e-commerce enterprises should start from the concept, organize and strengthen the training of logistics quality awareness in a targeted manner, and implement relevant measures of digital full-track monitoring of cross-border logistics quality in a planned manner.

(3) International Competition. With the rise of cross-border enterprises such as AliExpress, cross-border fresh e-commerce has ushered in a new era of comprehensive transformation. Platforms, brands, and sellers will face competition in terms of professionalism, product power, brand power, and innovation power, including legal lawsuits and market competition risks.

Adapting to market trends and enhancing comprehensive capabilities will become the driving force for the stable development of enterprises. Establishing differentiated competitive advantages, adapting to local needs, strengthening intellectual property protection, standardizing compliance operations, and optimizing logistics and distribution have become crucial tasks. Enterprises need to maintain innovation vitality, seize new market opportunities, and continuously enhance comprehensive competitiveness.

## (4) Foreign Trade Environment.

Cross-border fresh e-commerce is not only a business model but also a bond connecting the global market. Cross-border fresh e-commerce enterprises showcase their respective characteristics and advantages on a global scale through platform models and layouts. They continuously expand the market and optimize the foreign trade environment by employing means such as brand building, local operations, delivery experience, brand acquisition, and global cooperation. Foreign trade environment is an important influencing factor that cannot be ignored by cross-border fresh ecommerce, and it must be closely

#### (5) Consumer Satisfaction.

Put consumers at the forefront during the service process, and ensure that each link benefits and facilitates consumers. Consumer Satisfaction is the degree to which consumers are satisfied with the service measures in different stages of the product, including pre-sale, during-sale, after-sale, and throughout the product life cycle. The higher the consumer satisfaction, the more it can stimulate consumers' shop-

monitored and responded to correctly.

ping tendencies and ultimately induce consumption behavior (Yin Xiajun and Xie Ting, 2021).

Research Model Framework

Based on the literature research, this paper constructs a theoretical "model" and formulates a formal "questionnaire". The designed theoretical model framework is as follows (see Figure 1).

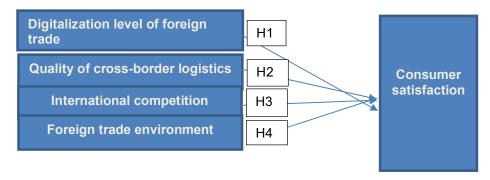


Figure 1: The relationship between the digital level of foreign trade, cross-border logistics quality, international competition, foreign trade environment, and consumer satisfaction

Source: Compiled from the study

#### Research Methods

This paper mainly uses the methods of literature review, questionnaire survey and empirical research, based on the theory of consumer behavior and the reality of cross-border fresh ecommerce, to design the research framework, propose research hypotheses, identify the definition of variables and conduct measurements of variables.

### Questionnaire Design

By referring to the design ideas of mature questionnaires in the past, the research framework is modified, sorted out and designed on the basis of questionnaires adopted by previous scholars.

Questionnaires were issued to "adult consumers with cross-border

fresh e-commerce shopping experience". Collect and analyze their gender, age, education level, occupation, monthly income, cross-border fresh e-commerce shopping time, monthly average expenditure and so on. The analyses of the questionnaire reliability and validity, descriptive statistics, and correlation were further completed.

#### Research Results

#### Data Analysis Results

From June to August 2023, formal questionnaires were randomly sampled to Chinese mainland adult consumers with cross-border fresh ecommerce shopping experience through the Internet for large-scale surveys. A total of 514 formal questionnaires were issued, including 504 valid ones. The valid questionnaire rate was 98.05%.

Demographic Analysis.

Since the main factors of demographic variables exert an influence on the consumer satisfaction of cross-border fresh e-commerce consumers, in order to verify the model more accurately, "formal questionnaires" will conduct investigations and measurements of these factors, including gender, age, education level, occupation, as well as monthly income, cross-border fresh e-commerce shopping time, and monthly average expenditure, etc. The basic statistical characteristics of the "model" research samples are as follows.

As can be seen from the frequency analysis results of the basic information, in this survey sample, males accounted for 52.47% and females accounted for 47.53%. The sample aged 26-30 accounted for the

largest proportion of 25.84%, followed by those aged 21-25, accounting for 22.68%. In terms of education level, the proportion of college and undergraduate students both exceeds 30%... In terms of occupation, state-owned enterprise employees account for the largest proportion, at 26.04%. Monthly income ranging from 7,001 to 9,000 yuan accounted for the largest proportion, at 34.71%, followed by 5,001 to 7,000 yuan, accounting for 22.29%. The longest time of using cross-border fresh e-commerce shopping services was 5-6 years, accounting for 46.94%. The proportion of cross-border fresh ecommerce online shopping with an average monthly expenditure of less than 1000 yuan is the highest, accounting for 39.25%.

Descriptive Analysis.

Table 1. Descriptive Statistical Analysis

Variable	Digit	Min (M)	Maxi- mum (X)	Mean (E)	standard deviation
Quality of cross-border logistics	504	1	7	4.1752	1.57386
Foreign trade environment	504	1	7	4.2431	1.55862
Digitalization level of for- eign trade	504	1	7	4.3189	1.56975
International competition	504	1	7	4.4203	1.69018
Consumer satisfaction Effective N (Column)	504 504	1	7	4.1748	1.56249

Source: Compiled from the study

Table 1 shows a descriptive analysis of each dimension. As can be seen from the table, the average scores of the five dimensions in this survey are all greater than 4, among which the dimension with the highest average value is international competition, with a score of 4.4203; the dimension with

the lowest average value is consumer satisfaction, with a score of 4.1748. This shows the correlation between different variables.

Reliability Analysis.

Reliability refers to the consistency of measurement, which can be

divided into intrinsic reliability and extrinsic reliability. Intrinsic reliability refers to whether a set of questions can measure the same concept, that is, how the intrinsic consistency of these questions is, and whether this concept can be stably measured. The most commonly used method is the Cronbach's alpha coefficient; Extrinsic reliability refers to whether the results obtained by the same tester at different times are consistent, and repeated measurement reliability is a commonly used test method for extrinsic reliability. The

intrinsic reliability of the questionnaire was measured using the Cronbach's alpha coefficient.

The Cronbach's alpha coefficient is between 0-1. If  $\alpha \ge 0.9$ , the intrinsic reliability of the scale is high; If  $0.8 < \alpha < 0.9$ , the intrinsic reliability is acceptable; If  $0.7 \le \alpha \le 0.8$ , although the designed scale has problems, it still has reference value; If  $\alpha < 0.7$ , there is a problem with the scale design and the questionnaire should be redesigned (see Table 2).

Table 2. Results of the Reliability Analysis

Variable	Cronbach's alpha	Variable questions
Quality of cross-border	0.847	3
logistics		
Foreign trade environ-	0.862	3
ment		
Digitalization level of	0.869	3
foreign trade		
International competition	0.854	3
Consumer satisfaction	0.869	3

Source: Compiled from the study

As can be seen from Table 2: the Cronbach alpha coefficient for cross-border logistics quality is 0.847, the Cronbach alpha coefficient for foreign trade environment is 0.862, the Cronbach alpha coefficient for digitalization level of foreign trade is 0.869 the Cronbach alpha coefficient for international competition is 0.854, and the Cronbach alpha coefficient for consumer satisfaction is 0.869 All of them are greater than 0.8, indicating the good reliability of this survey.

Validity Analysis.

The structural validity of a questionnaire refers to the degree of correspondence between the questionnaire structure and the measured values re-

flected in the measurement results. The method used for structural validity analysis is factor analysis.

When factor analysis is used to test validity, the prerequisite for factor analysis must first be met, that is, there is a strong correlation between the items, which is reflected in two test indicators: 1. KMO value, and 2. Bartlett's test of sphericity value. Among them, KMO value is used to compare the simple correlation and partial correlation coefficients between items, with values ranging from 0 to 1. The criteria for conducting factor analysis are: greater than 0.9, very suitable; 0.7-0.9 is suitable; below 0.7, consider giving up. The Bartlett's test of sphericity

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Table 3. Results of Validity Analysis

Factor loading coefficient						Com
Item	factor1	factor2	factor3	factor4	Factor5	mon- ality (com mon factor vari- ance)
Characteristic root value (before rotation)□	4.326	1.872	1.673	1.921	1.654	-
Variance explanation rate % (before rotation)□	32.637%	14.369 %	13.293 %	12.185 %	11.852 %	-
Cumulative variance explanation rate % (before rotation)□	33.681%	42.538 %	53.841 %	67.432 %	79.854 %	-
Characteristic root value (after rotation)□	2.692	2.468	2.563	2.497	2.431	-
Variance explanation rate % (after rotation)□	15.749%	15.912 %	15.691 %	15.821 %	15.724 %	-
Cumulative variance explanation rate % (after rotation)□	15.765%	34.653 %	46.728 %	65.218 %	79.862 %	-
KMO value □	0.871					-
Bartlett's test of sphericity value □	3809.826					-
df □ p value □	103 0.000					- -

Source: Compiled from the study

value is used to test whether the correlation coefficient between items is significant. If it is significant (i.e. sig. <0.05), factor analysis is suitable.

According to the data in Table 3, the following analysis is conducted. The KMO and Bartlett's test of sphericity value, with KMO value of 0.871, which is greater than 0.7, and the significance of Bartlett's test of sphericity is 0.000, which is less than

0.05. This indicates that factor analysis is suitable. The structural validity of the questionnaire is good.

The 15 items in the scale are divided into 5 common factors. The variance contribution rate of the 5 common factors accounts for 79.862%, indicating that these 5 common factors can explain 79.862% of the original variables' information.

From the factor loading coefficient, it can be seen that the factor division with higher loading is consistent with the dimension division preset in the questionnaire.

Based on the above analysis, it can be concluded that the validity of the survey is good.

Confirmatory Factor Analysis.

Table 4. Results of model convergence validity AVE and CR indicators

Variable	Average Variances Extracted AVE values	Composite Reliability CR value
Quality of cross-border logistics	0.691	0.863
Foreign trade environ- ment	0.685	0.861
Digitalization level of foreign trade	0.672	0.864
International competition	0.694	0.865
Consumer satisfaction	0.639	0.862

Compiled from the study

Confirmatory factor analysis (CFA) was conducted for a total of 5 factors and 15 analysis items. As can be seen from Table 4, the AVE values corresponding to all 5 factors are

greater than 0.6, and the CR values are all above 0.8, which means that the analyzed data has good aggregation (convergence) validity.

Table 5 .Confirmatory factor analysis of discriminant validity: Pearson correlation with AVE square root values

Variable	Quality of cross-border logistics	Foreign trade envi- ronment	Digitalization level of for- eign trade	<sup>1</sup> International competition	Consumer satisfaction
Quality of cross- border logistics	0.793				
Foreign trade environment	0.352	0.819			
Digitalization level of foreign trade	0.243	0.241	0.814		
International competition	0.247	0.243	0.235	0.829	
Consumer satisfaction	0.201	0.217	0.253	0.257	0.831
Note: The diagonal number is the AVE square root value					

Compiled from the study

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Table 5 is an analysis of discriminant validity. The following results can be obtained from the data in the table. For cross-border logistics quality, its AVE square root value is 0.793, which is greater than 0.352, the maximum value of the absolute value of the correlation coefficient between factors, indicating that it has good discriminant validity. For the foreign trade environment, the AVE square root value is 0.819, which is greater than 0.352, the maximum value of the absolute value of the correlation coefficient between factors, indicating that it has good discriminant validity. For the digitalization level of foreign trade. the AVE square root value is 0.814, which is greater than 0.243, the maximum value of the absolute value of the correlation coefficient between factors, indicating that it has good discriminant validity. For international competition, the AVE square root value is 0.829, which is greater than 0.247, the maximum value of the absolute value of correlation coefficient between factors, indicating that it has good discriminant validity. For consumer satisfaction, the AVE square root value is 0.831, which is greater than 0.257, the maximum value of the absolute value of the correlation coefficient between factors. The above analysis means that the data has good discriminant validity.

Correlation Analysis.

Table 6. Results of the Correlation Analysis

	Quality of Foreign		Digitalization	n
	cross-border	trade envi-	level of for-	International Consumer
Variable	logistics	ronment	eign trade	competition satisfaction
Quality of cross- border logistics	1			
Foreign trade environment	.327**	1		
Digitalization level of foreign trade	.262**	.253**	1	
International competition	.246**	.254**	.215**	1
Consumer satisfaction	.213**	.251**	.239**	.258** 1

\* \* The correlation is significant at a confidence level (double test) of 0.01 Source: Compiled from the study

As can be seen from Table 6, there is a significant positive correlation between cross-border logistics quality, foreign trade environment, foreign trade digitalization level, international competition and consumer satisfaction at the significance level of 0.01.

Regression Model.

Table 7. Regression Coefficients

	ficients	ardized Coef-	Standard- ized Coef- ficients		Sig
Model	В	Std. Error	Beta	t	
1 (Constant)	1.890	.279		6.719	.000
Quality of cross- border logistics	.079	.047	.087	2.216	.021
Foreign trade environment	.152	.045	.146	3.194	.001
Digitalization level of foreign trade	.139	.048	.142	3.215	.002
International competition	.164	.042	.178	3.627	.000
F	18.976 (	(0.000)			
R/ R-Squared,	0.354/0.1	.21			

\*P<0.05,\*\*P<0.01,\*\*\*P<0.001

Compiled from the study

As can be seen from Table 7, a multiple linear regression analysis was conducted with consumer satisfaction as the dependent variable, cross-border logistics quality, foreign trade environment, digitalization level of foreign trade, and international competition as independent variables. From the regression coefficient results in Table 7, it can be seen that the F-value of the model is 18.976, with a significance of 0.00, less than 0.05, indicating that the regression model established this time is appropriate. The R-squared value is 0.121, indicating that the independent variable can explain 12.10% of the information of the dependent variable. From the independent variable coefficients, it can be seen that the significance of each independent variable coefficient is less than 0.05, and the coefficients are positive. It shows that the independent variables of digitalization level of foreign trade, cross-border logistics quality, international

competition, and foreign trade environment have significant positive effects on the dependent variable of consumer satisfaction. Hypotheses H1, H2, H3, and H4 hold true.

### Conclusion and Discussion

#### Research Conclusions

The study has the following findings. The research "model" integrates digitalization level, cross-border logistics quality, international competition, foreign trade environment, and consumer satisfaction into one framework, revealing that digitalization level of foreign trade, cross-border logistics quality, international competition, and foreign trade environment are the main influencing factors of consumer satisfaction, and have a positive impact on consumer satisfaction. Therefore, continuous innovation and improvement of the relevant external environment

can further enhance consumer satisfaction in cross-border fresh e-commerce.

## Discussion and Suggestions

Although there are new investigations and findings in this study, there are still some limitations. For example, there are issues such as population size, sample size, and time and space limitations. Future research will start with the comparison of cross-border fresh e-commerce multi-platform shopping to explore consumer satisfaction.

Future Development Direction.

Today, cross-border e-commerce has become a strong growth point in world trade, and China has become one of the world's major cross-border e-commerce centers. China's cross-border fresh e-commerce continues to show new features of the digital age. The transaction scale of the platform has maintained rapid growth, and as the sales target market continues to be centralized, mobile terminals will become an important driving force for the development of cross-border fresh e-commerce.

Possible Application Areas.

The leapfrog development of big data and new Internet technologies has accelerated the pace of cross-border fresh e-commerce under the background of digital economy, and also accelerated the update and progress of traditional research methods. This paper is inseparable from powerful data integration processing capabilities in research methods, questionnaire surveys, data analysis, empirical testing and other links. The widespread application of this "digital" research means will certainly drive innovation in the

research field, and then gives birth to a large number of innovative research results with great theoretical and practical value ahead of its Times.

Future studies can start from new forms of foreign trade, study the important position and role of cross-border fresh e-commerce in the development process of digital economy, give full play to the strong support of advanced technology, rely on more large-scale and more complex data integration and processing capabilities, and comprehensively and deeply explore the complexity of cross-border fresh e-commerce shoppers' consumption intentions, and continue to explore its potential application field.

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#### References

Philip Kotler (Philip Kotler), Kevin
Ryan Keller (Kevin Lane Keller), Alexander Chernev (Alexander Chernev). Translated by
Lu Xiongwen, Jiang Qingyun,
Zhao Weitao, Xu Qian and Xu
Mengran (2022). Marketing
management (16). CITIC Publishing Group
Press.2022.https://baike.baidu.com/item/

# 2024-1405 IJOI https://www.ijoi-online.org/

- Du Chuang (2020). The boundary of reputation, competition and enterprise ——. -On the restructuring of state-owned enterprises under the background of high-quality development. Economic research, 55 (09), 153-170.http://ie.cass.cn/academics/recent\_papers/202011/W0202011 12400588966872.
- Liao Jiacheng (2023). Research on the innovative path of the development of cross-border ecommerce in China under the background of big data. Commercial Exhibition Economy, 2023 (02), 11-13.doi:10.19995/j.cnki.CN10-1617/F7.2023.02.011.
- Li Zhengjun (2021). Focus on the enlightenment and application of logistics theory. Logistics and Purchasing in China, 2021 (08), 67-68.DOI:10.16079/j.cnki.issn16 71-6663.2021.08.034.
- Yin Xiajun and Xie Ting (2021). Research on the transformation path from consumer satisfaction to consumer loyalty of cross-border import ecommerce platform. Business Economics Research, 2021 (01), 90-93.https://xueshu.baidu.com/usercenter/paper/show?paperid=17200 mj0b0700440vd4y0t20952368 27&site=xueshu\_se
- Wen Rui (2024). We will accelerate the development of new forms

- of cross-border e-commerce and foreign trade to foster new competitive advantages. Economic Information Daily, 2024.06.12. Xinhuanet, news.cn.
- China Institute of Commercial Industry (2024). In 2024, China's fresh e-commerce industry market scale and user scale forecast analysis. China Business Information Network, 2024.06.30.askci.com.
- Ballow (1998) . Logistics outsourcing decision model. Baidu Baike,2024.06.30.baidu.com.
- (Orlowski,1982). International competition force. The Baidu Encyclopedia website,2024.06.30.baidu.com.