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The Influencing Factors of Online Consumers' Return Satisfaction

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Abstract: With the development of the Internet, the transactions of the commodities turned out to be digitized, however, the non face-to-face transactions led to one main problem that commodities possibly do not meet the expectation of consumers', and will then inevitably result the return problem. How to improve the consumers' return experience and build their trust has become the focus of business considerations. Based on the research model of the influencing factors of online consumers' return satisfaction, the author studied 1002 after-sales review samples. Through compiling and labeling the sample data, the author quantifies the consumers' emotion by emotion analysis and then analysis by multiple linear regressions, the paper provides a base for businesses to improve the quality of return service by validating and explaining the research model.

Keywords: Online consumers; E-commerce; Return satisfaction; Multiple linear regressions analysis

1. INTRODUCTION

It is estimated that among e-commerce complaining cases which China e-commercial research center received in the whole year 2014, online shopping accounted for 47.55% and ranked first [1]. Online shopping is becoming a serious disaster for all kinds of consumer complaints. In all kinds of online shopping complaints, return and refund complaints account over one third and become one of the most important parts of the complaining cases. The reason why return rate is rising is that the non face-to-face transactions leads to the main problem which is commodities possibly do not meet with the consumers' expectations, and will inevitably result the return problem. Among these, some return issues can be avoided by improving the product quality and service attitude. But some are still inevitable like the inappropriate clothing size. Szymanski and Hise noted that online customers' satisfaction comes from their overall experience of online consumption experience [2]. As a result, in order to hedge the risks of online shopping, many consumers will be affected by the return of merchants when they make purchasing decisions. Wu and Zhu studied influential mechanism of online shopping experience quality on consumer behavior intention, and put forward that if the customers' return experience is superior, it can not only rebuilt consumers' confidence, but also improve their loyalty [3]. It will influence the customer's trust through the return policy and the return service provided by merchants, which in turn affect the customer purchase decisions on their website.

For such problems, how to improve the return experience and the whole shopping experience, how to improve the consumers' return experience and build their trust have became the focus of business considerations. Academia has begun to pay attention to explore the customers' return behavior in the sight of praxiology in recent years. Su introduced consumer behavior in the strategy model of returns and laid theory foundations for the subsequent research [4]. Through research on different E-commerce service platform, Wang analyses the logistics service factors which influence the online consumers' returns satisfaction in different angle such as informatization and systematization [5]. Wei analyses logistics of returns of online shopping environment. She indicated that the chaotic logistics pattern result the unreasonable return process and the declining consumer' satisfaction [6]. Liang and Fan study return satisfaction based on B2C apparel network sales where the network vendors, logistics and related departments should improve their delivery time and expense cost [7]. Researches about after-sales service are focusing on how to control the amount of consumer' returns, returns reasons and logistics problems of return service but for the overall satisfaction return service are insufficient.

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This paper investigates the influential factors of online consumers' return satisfaction from the aspect of consumers and businesses. For businesses, the study can make them pay more attention on return service and provide consumers a better qualified return service to retain more customers while improving the credibility, and purchase rate ultimately. For customers, there are many problems in the current online shopping environment. Establishing a good online shopping environment can increase the degree of trust in e-commerce and make online shopping much completely. In summary, the research of this paper can achieve a win-win situation of various participants in e-commerce by continuously improving the online shopping environment.

2. RESEARCH MODEL

Consumers' return satisfaction refers to a feeling of pleasure or disappointment after the customers compared perception results with expected value of return service which businesses provided. The model of this paper divides the influencing factors of online consumers' return satisfaction into 4 parts. They are availability, flexibility, cost and reliability which influence online consumers' return satisfaction jointly (Figure1).

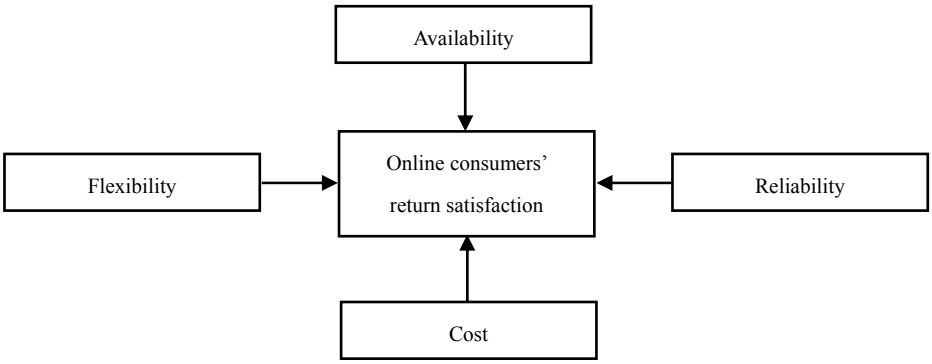

Figure1. Research model

The availability of return service refers to consumers who can receive return service according to their wishes from the businesses when they need return service. It is mainly reflected in the subjective aspects of whether the businesses are respond to customers actively. If the customers available the return experiences what they want, it can not only restore consumers' confidence, but also improve their loyalty [3]. Consumers pay much attention on services approach they want [8].

The flexibility of return service is that whether the businesses handle all kinds of things that happened in the service quality when they provide return service. It was mainly reflected in the quality of service as well as the flexibility of the businesses dealing with the problems. The flexibility focuses on the service characteristics. The quality of after-sales service will affect the online shopping experience [9]. What's more, service level such as speed and communication is the main influence factors in the quality of after-sales service.

The cost of return service refers to consumers who require extra cost when they receive return service from the businesses. The extra costs include incomplete refund and reinvest expenses. Zhang and Li point out in their research that the increasing of transaction costs will reduce consumer expectations [10].

The reliability of return service refers to commodity whose consumers return meets their expectations when they receive return service from the businesses. Reliability focuses on product characteristics such as variety, quantity and so on. Yue, Wang and Cao illustrate that service reliability is one of the basic perception dimensions of customer's inner service failure and it will impact on consumers' satisfaction of services [11].

3. RESEARCH DESIGN

The study of this chapter includes sample selection and description. The author makes data compilation for sample data and then grade the emotion of the sample data by Tencent Chinese semantic platform.

3.1 Indicators selection

The influencing factors of online consumers' return satisfaction include availability, flexibility, cost and reliability. Every type of factors includes multiple indicators. The author selects indicators with the characteristics of the sample data. Table 1 summarizes the indicators.

Table 1. Indicators selection

Factors		Indicators	References
Availability A		The business refused to return A_1	Deng, Tao and Ma (2014) [8]
		The business refused to refund A_2	
		Availability of service mode A_3	Wu and Zhu (2015) [3]
Flexibility F	Speed F_1	Return speed F_{11}	Li, Zhang, Chen and Liu (2014) [12]
		Refund speed F_{12}	
		Return logistics speed F_{13}	
	Communication F_2	—	Li (2012) [13]; Mudambi and Schuff (2010) [14]
	Strain F_3	—	
	Logistics F_4	—	Wei (2013) [6]
	Credibility F_5	—	Kwe, Lau and Tan(2010) [15]
Cost C		Return logistics cost C_1	Zhang and Li (2014) [16]; Liang (2012) [7]
		Refund amount integrity C_2	
Reliability R		The correct varieties of return R_1	Yue, Wang and Cao (2014) [11]
		The cleanliness of return R_2	
		The intact degree of return R_3	
		Return delivery accuracy R_4	
		The quality of return R_5	Lee, Park and Han (2008) [17]

The availability of return service includes the business refused to return, refused to refund and availability of service mode. Refusing to return and refund refers the business not willing to provide return and refund service [8]. Availability of service mode refers to the business served in a way as customer wants. For example, the customer required to return but the businesses only give a partial refund [3].

The flexibility of return service includes speed, communication, strain, logistics and credibility. These indicators reflected in the quality of service as well as the flexibility of the businesses dealing with the problems. Among the 5 indicators, the speed could divide into 3 parts include return speed, refund speed and return logistics speed [12].

The cost of return service includes return logistics cost and refund amount integrity. In the cost of after-sales service of online shopping, there will be a problem of refund nature except these two categories [15]. Some businesses will refund vouchers rather than cash. However, the sample data are the after-sales reviews from Taobao platform constrained by the rules of Taobao platform when refund, they must return the payment backtrack. In this way, the author does not list the refund nature as a research indicator of return service.

The reliability of return service includes the correct varieties, cleanliness, intact degree and quality of return and return delivery accuracy. The return logistics speed in flexibility, return logistics cost and the return delivery accuracy are different from the indicator logistics. The factor logistics refers to the customer only mentioned the logistics factors but did not mention the specific types in the reviews. However, the other three indicators are that the customers mentioned the specific types in the reviews. In order to make the results more accurate, the paper separates logistics into 4 parts.

3.2 Sample description

In order to stimulate the promotion of the after-sales service capacity of the shop and provide consumers with quality service, Taobao launched the function of after-sales reviews in March 31, 2015. The buyers could evaluate the after-sales service of the sellers through this function. The paper selects Taobao reviews as sample data because the reviews can reflect online consumers' attitudes to return service more intuitively.

This paper collected the sample data from October 25 to November 7 in 2015. Selecting a variety of Taobao shops a total of 30 such as clothing, electronics, mobile phone accessories, food, etc. The author extracts 1010 after-sales reviews of the shops from April 1 to November 7 in 2015 which include return, refund, barter and repair and finally select the types of return, refund and barter altogether 1002 as the research samples. The content of the data acquisition includes the seller rating, review date, review content, commodity information, store information, etc.

3.3 Data compilation

When conducting after-sales reviews, the customers use spoken language mostly and there is a great difference between spoken language and the standard judgment factors. In this way, the first step of content analysis is textual substitution. Translate the spoken language in after-sales reviews into a sentence related to the standard judgment then translate it into a standard factor.

Take the comment “The money is not credited” as an example. The sentence in this comment is not a standard factor. Translate it into the sentence “Delay a refund” which related to the standard judgment first and then translate it into the standard factor “Refund speed”. Thus, this comment belongs to the factor “Refund speed”. Detailed data compilation table is shown in Table 2.

Table 2. Data compilation table

Representation form	Indicators
Not to return by looking for excuses	A_1
Do not refund after the cancellation of orders	A_2
Return to refund or refund to return	A_3
Delayed return; return slow; return fast	F_{11}
Delayed refund; refund slow; refund fast	F_{12}
Delays in delivery	F_{13}
Ignore by customer service; Cannot contact; Arrogant tone; Good attitude	F_2
Strain capacity for service error; Cash back for good reputation	F_3
Logistics is good or not good	F_4
Honest seller; Dishonest seller	F_5
Return logistics cost by customers themselves	C_1
Deduct other expenses although refunded, such as freight insurance	C_2
The number is still wrong after returned	R_1
The return goods are dirty.	R_2
The return goods have defects	R_3
The return goods is correct delivery to the hands of customers or not	R_4
The quality of the return goods	R_5
Satisfied; Dissatisfied; Good; The seller is very good (Did not mention the specific impact factors)	After-sales service

From the table, “After-sales service” refers to the customers did not mention the specific impact factors and only review for the overall after-sales service.

The results of data compilation can be easily influenced by the subjective thinking of the analysts, the author therefore add reliability test in content analysis in order to ensure the accuracy and scientific nature of the result. Before compiling the sample data, the author makes a pretest of data compilation. The pretest selects other two analysts, one is a student of e-commerce and the other with less online shopping experience is not from e-commerce. According to data compiling method, the author and the other two analysts complete the compilation of 200 sample data incorporated with the same method. Statistical analysis results of three analysts finally. The SPSS.22 is used to test the reliability of data compilation pretest representing the degree of sample reliability by reliability coefficient. The larger the coefficient, the more reliable the results are measured. Coefficient in 0.70 ~ 0.65 is the minimum acceptable value, fairly good in 0.80~ 0.70 and very good in 0.80~ 0.90 [18]. Specific reliability statistics are shown in Table 3. The reliability coefficient is 0.835 and the measurement results are therefore reliable.

Table 3. Reliability statistics

Cronbach's Alpha	Cronbachs Alpha based on the standardized item	Number
.835	.838	3

After the reliability test, the author labels all the sample data according to the data compilation table.

3.4 Sentiment analysis

The paper use Tencent Chinese semantic platform (http://nlp.qq.com/) to score the emotion of the sample data in order to quantify the impact of the after-sales reviews. Tencent Chinese semantic platform is a platform which based on concurrent computational system and distributed crawler. It meets the customers' needs of analysis Chinese semantic by combining the unique semantic analysis technology. Its quality effects and stable service creates good reputations.

The first step is to grade the sentences of various influence factors and the whole comment sentence. The score is between 0 and1, "1" refers to entirely satisfied and "0" refers to entirely dissatisfied. Take the comment "The attitude of seller is very sincere and refund quickly" as an example, the comment includes two factors F2 and F12, grading the sentences of the two factors respectively. The score result from Tencent Chinese semantic platform shows that the sentence "The attitude of seller is very sincere" has 98% positive and 2% negative and the emotional score is 0.98. The sentence "refund quickly" has 84% positive and 16% negative and the emotional score is 0.84. Then, grade the whole comment sentence. It has 91% positive and 9% negative and the emotional score is 0.91. Because this comment does not relate to other types of impact factors, the scores of other factors are all 0.5 which refers to neutral emotion.

The score shows that there are 662 comments score greater than 0.5 and 340 less than 0.5. In another word, 34% of consumers are not satisfied with the current return service. Among all comments, the satisfaction of logistics, cost and reliability are all less than 50%, other' are all more than half. Those factors which have higher satisfaction include availability, speed, strain and communication, credibility.

4. DATA ANALYSIS AND DISCUSSION

RStudio was used in regression analyze to score of each factors impact in the after-sales reviews. After regression analysis, the author analyzes the result and makes a discussion on the results including research meaning, research limitations and future prospect.

4.1 Data analysis

The paper studies the influencing factors of online consumers' return satisfaction by two models. The results of regression analysis are shown in Table 4.

In Model 1, the emotional scores of all factors were weighted according to the frequency of each indicator

and then regression analyzes the emotional scores of all factors. The method of obtaining factors emotional scores by weighting is relatively scientific, but there are still inaccuracies. The emotional score of F_1 is a result of weighting F_{11}, F_{12}, F_{13} and F_{14} and repeated weighting will reduce the authenticity of the results, the author therefore do the regression analysis by using the emotional scores of F_1, F_2, F_3, F_4 and F_5 rather than F_1 directly. The independent variables include Length, After-sales service, A, F_1, F_2, F_3, F_4, F_5, C and R. The dependent variable is the return satisfaction.

Analyze the factors only, however, is not comprehensive. In order to get the study of the impact of all indicators more precisely, the author does regression analysis for all indicators in Model 2. The dependent variable is the return satisfaction. The independent variables include Length, After-sales service and other factors in a total are 19.

Table 4. Results of regression analysis

Independent Variable	Model 1			Model 2		
	Estimate	Std. Error	T statistics	Estimate	Std. Error	T statistics
Intercept	-2.669	0.294	-9.09 ***	-5.401	0.675	-8.00***
Length	-0.001	0.000	-5.02***	-0.001	0.000	-4.97***
After-sales service	0.266	0.041	6.50***	0.207	0.039	5.28***
A	0.935	0.349	2.68**	—	—	—
A_1	—	—	—	0.727	0.811	0.90
A_2	—	—	—	0.570	0.219	2.60**
A_3	—	—	—	1.111	0.361	3.08**
F_1	0.870	0.049	17.57***	—	—	—
F_{11}	—	—	—	0.651	0.054	11.97***
F_{12}	—	—	—	0.614	0.036	18.28***
F_{13}	—	—	—	0.266	0.335	0.79
F_2	0.618	0.030	20.08***	0.610	0.029	21.22***
F_3	0.311	0.269	1.15	0.331	0.251	1.32
F_4	0.619	0.202	3.07**	0.513	0.188	2.73**
F_5	0.584	0.067	8.69***	0.592	0.063	9.47***
C	0.905	0.117	7.75***	—	—	—
C_1	—	—	—	0.692	0.087	7.95***
C_2	—	—	—	0.866	0.235	3.68***
R	1.377	0.297	4.63***	—	—	—
R_1	—	—	—	1.375	0.546	2.52*
R_2	—	—	—	0.307	0.339	0.90
R_3	—	—	—	0.431	0.333	1.29
R_4	—	—	—	1.109	0.367	3.02**
R_5	—	—	—	0.604	0.141	4.29***
R^2	0.69			0.737		
P-value	<2e-16			<2e-16		

Standardized coefficients. Significance: ***p < .001; **p < .01; *p < .05

In Model 1, the goodness of fit in the model is better (R^2=0.69) and the linear relationship is significant (p-value< 2e-16). The length of after-sales reviews is negatively correlated with the degree of satisfaction (the

estimate of coefficient is negative number), that is to say the customers will use more language to reflect their complaints when they have unsatisfied emotion. The rest of the dependent variables are positively correlated with the independent variables. Expect for F_3 which Pr value is greater than 0.01, the other factors' Pr values were less than 0.01. In another word, all factors have significant linear relationship with the return satisfaction expect for strain. The speed, communication, credibility and cost which Pr values are less than 0.001 have the most significant impact on the return satisfaction.

In Model 2, the goodness of fit in the model is better (R^2 =0.737) and the linear relationship is significant (p-value< 2e-16). Expect for the length of after-sales reviews, other indicators' estimates of coefficient are positive numbers and they are positively correlated with the independent variables. The Pr values of A_1, F_{13}, F_3, R_2 and R_3 are greater than 0.1, the correlation is not significant and the return satisfaction and the other factors have significant correlation with the return satisfaction.

4.2 Discussion

The influencing factors of online consumers' return satisfaction include availability, speed, communication, strain, logistics, credibility, cost and reliability. All factors have significant impact on the return satisfaction expect for strain. In data analysis, 34% of consumers are not satisfied with the current return service provided by the businesses. For the significant factors affecting consumer return satisfaction especially the logistics, cost and reliability which has lower satisfaction, the businesses should pay more attention and strive to improve the satisfaction. The factors which have higher satisfaction include availability, speed and communication, credibility. Due to the significant impact on the return satisfaction of these factors, the businesses should continue to improve such services and overall satisfaction.

There are some indicators failed the inspection. In the speed of return service, the return logistics speed did not pass inspection. The reason is that refunds are not related to logistics in the current return service of Taobao. Although return related to logistics, it is to be returned by the logistics which customer contact by themselves. In this way, the return logistics speed has little effect on online consumers' return satisfaction. In the availability of return service, the business refused to return if it not passes inspection. The reason is that in the current return service of Taobao, the system will default consent the return application in the corresponding period even if the businesses does not handle. In this way, the business refused to return has little effect on online consumers' return satisfaction. In the reliability of return service, the cleanliness and intact degree of return did not pass inspection. Among all indicators, the frequencies of the two are almost zero and it illustrates that their effects of return satisfaction are very small.

This paper investigates the influencing factors of online consumers' return satisfaction from the aspect of consumers and businesses. It not only intuitive displays the problems which e-commerce return service exist currently, but also promotes the improvement of related service quality and the perfection of related system. However, the sample data of this paper come from Taobao platform and the businesses are constrained by the rules of Taobao platform when they provided return service. In this way, some factors do not reflect in the results of this research such as the nature of refund.

In the future research, the data analysis would add the data of other platforms and web sites to make the results more comprehensive. At the same time, the remedy mechanism could be added. Businesses can take appropriate measures to make up for the overall service satisfaction when the customers are dissatisfied with the return service. Only in this way, can we construct a harmonious online shopping environment and achieve a win-win situation of various participants in e-commerce.

5. CONCLUSION

This paper compiles and labels 1002 after-sales review samples and then grade the emotion of the sample

data by Tencent Chinese semantic platform. After that, the author regress the score of each impact factors in the after-sales reviews and arrive the conclusions. In the return process, the businesses should specifically focus on the speed, communication, credibility and cost and provide targeted return service to improve the quality of the return service. In addition, it would contribute to confidence-building that pay attention to other factors when ensuring that the consumer are satisfied with the important factors. Retain more customers by improving the credibility and the purchase rate ultimately.

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