Research on Service Quality of College Express Market from the Perspective of Customers -Take Universities in Nanchang as an Example

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Abstract: The rapid development of e-commerce and the increase of national income have promoted the rapid development of the express industry. Many enterprises have entered the express market, making the express industry market competitive and complex. How to achieve long-term development in the fierce market competition depends largely on the quality of express service it provides. As the main force of online shopping, college students' loyalty to express enterprises is an important economic support for express enterprises. With the continuous expansion of college students' online shopping market, college express services have gradually revealed some problems, such as: loss of goods, inconvenience in returning goods, etc. Especially during e-commerce activities, the rapid growth of express business has brought greater challenges to express enterprises to ensure good logistics service quality. Therefore, it is very important to analyze the service quality of the efficient express market. This paper takes colleges and universities in Changbei Economic Development Zone of Nanchang City as the research object. From the perspective of customer perception, with reference to SERVQUAL model, LSQ model and other research results, this paper analyzes the factors that affect the service quality of college express market, and improves the college express service mechanism to improve customer satisfaction, expand and stabilize the college market.

Keywords: Logistics Service Quality, Logistics Service Quality, Empirical Research.

1 INTRODUCTION

In recent years, with the rapid popularization of online shopping, the business volume of China's express logistics industry has shown a rapid growth. From 2010 to 2019, the total business volume of express industry has kept growing year by year. In 2019, the business volume of express industry completed 63.52 billion pieces, with a year-on-year growth of 25.3%. Although the growth rate slowed down compared with previous years, it still maintained a rapid growth rate. As of 2020, the business volume of express service enterprises has completed 83.36 billion pieces, up 31.2% year on year. However, with the continuous diversification of customer needs, the existing express service quality can’t meet customer requirements. Especially in the period of e-commerce promotion activities, the volume of express delivery business increased sharply, and enterprises were unable to guarantee the quality of logistics services. A series of problems such as delay, damage and missing of express delivery appeared, which made the number of complaints or appeals about express

BDEDM 2023, January 06-08, Changsha, People's Republic of China

DOI 10.4108/eai.6-1-2023.2330292

delivery services increase rapidly. Some scholars pointed out that good service quality can have a positive impact on customer satisfaction, and it is also closely related to consumers' purchase decisions and purchase intentions. In addition, more and more customers focus on the improvement of fast logistics service quality, and take the express service quality as the evaluation index of satisfaction. Therefore, how to develop new customers and maintain the existing customer stickiness in the fierce market competition, enhance the competitiveness of enterprises, and achieve long-term development is an urgent problem for express service enterprises to solve.

The most classic dimension division of logistics service quality is the SERVQUAL scale developed by PZB (1988). PZB initially proposed a gap model. On this basis, it further studied the service quality evaluation and proposed several factors that affect the logistics service quality, including a total of 97 test items. Later, it was reduced to 22 items and 5 dimensions were tangibility, reliability, responsiveness, assurance and empathy, Finally, a widely used SERVQUAL scale was formed. Zhang et al. (2002) divided the logistics service quality into five dimensions: service practicability, reliability, responsiveness, insurance and persistence by analyzing the traditional logistics service indicator system. Zheng et al. (2007) divided the quality of logistics service into time quality, personnel communication quality, order completion quality, coordination processing quality, flexibility, excellent product quality and convenience. From the perspective of customers, the LSQ model chart was constructed by adopting in-depth interview technology and Delphi expert opinion method, forming the evaluation indicators of China's local logistics service quality, and empirical testing was carried out. Wang et al. (2015)[9], based on SERVOUQUAL model and LSQ evaluation model, referred to the evaluation methods established by relevant scholars, further combined the characteristics of B2C e-commerce industry and the principle of B2C e-commerce logistics services, improved the original evaluation dimensions, and finally determined that convenience, responsiveness, reliability, empathy and information are the five dimensions to measure the quality of B2C e-commerce logistics services. Xu et al. (2009) proposed an e-commerce express service quality evaluation system consisting of four dimensions (empathy, responsiveness, tangibility and reliability) and 20 indicators (delivery time, price charges, etc.), and conducted a comprehensive analysis of the factors affecting the express service quality. In the study of Lan et al. (2017), express delivery service quality was defined: after customers experienced the services provided by express service organizations, the result of experiencing the service was express delivery service quality, and the content of express logistics service quality was defined from the four perspectives of security, timeliness, accuracy and convenience. Liu et al. (2010)[7] studied the relationship among logistics service quality, customer trust and use intention under the e-commerce environment based on the E-TRUST trust table. The research shows that the information quality, after-sales level and distribution quality of logistics services have a significant and positive impact on customer trust and use intention. Dai et al. (2014) studied customer satisfaction of logistics service in B2C environment. The results show that perceived reliability, perceived politeness and other service quality factors have a significant effect on customer satisfaction, and customer satisfaction has a significant effect on customer loyalty. Liao et al (2016)[10] took reliability, quality of service personnel, service flexibility, timeliness of distribution, information quality and economy as logistics service evaluation dimensions from the perspective of customer satisfaction. Its essence is to use SERVPERF model to evaluate logistics service quality. Zhan

et al. (2017), Zhang et al. (2016), Wang et al. (2019)[10]-[12] discussed the influencing factors of campus logistics service quality from five aspects.

From the perspective of customer perception, based on the evaluation of express service quality by campus customers, this paper studies the service quality of campus express in Changbei University, providing reference for campus express companies to improve customer satisfaction, helping express companies effectively solve the problems of campus express, and meeting the needs of university teachers and students for express service. The rest of this paper mainly includes: theory and research hypothesis, methodology, analysis and results, as well as conclusions and suggestions.

2 THEORY AND RESEARCH HYPOTHESES

2.1 Identification of Variables

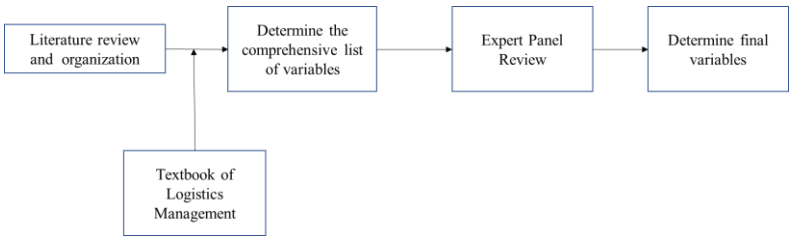

Figure 1 . Determining variables

The collection and selection of literature follow the following five main steps:

(1) Classification background: The background of literature classification is the relationship between the effectiveness evaluation index system of logistics service quality and the logistics service quality and customer satisfaction.

(2) Analysis unit: the analysis unit is a scientific paper, including academic journal papers, working papers, etc.

(3) Literature collection: search for keywords from CNKI database, Baidu Academic, ScienceDirect and other English databases, and search for keywords and strings in publication titles and abstracts (such as "logistics service quality", "logistics service", "customer satisfaction", "customer perception", "empirical research" and their combinations).

(4) Scope definition: Without considering duplication, the result of the previous step is a group of 513 qualified papers, which are then screened according to specific criteria. Through extensive search, it is found that a large number of papers mainly focus on the logistics service quality optimization or logistics service quality evaluation model of an industry. Therefore, this paper first reviews the abstracts of relevant literature to ensure that the central theme is relevant. Papers whose topics do not meet the expected scope of this study are excluded. Finally, 55 papers published since 1988 were selected for in-depth review.

Referring to the existing research results, combined with the current situation of the express logistics service in Changbei universities, this paper summarizes the factors that affect the

quality of the campus express logistics service as five first level indicators: convenience, responsiveness, reliability, care and economy, and 15 second level indicators: convenience of sending and picking up, convenience of information query, and payment method; The specific description of each secondary indicator is shown in Table 1.

Table 1 . Connotation of Factors Affecting the Quality of Express Logistics Service in Colleges and Universities

Dimension	Variable	Description
Convenience	Convenience of sending and picking up	Whether it is convenient to pick up, whether it supports multiple ways of sending, and whether the sending process is complicated
	Information query convenience	Whether it can be queried in real time and the query way is simple
	Diversity of payment methods	Whether express fee supports multiple payment methods
	Rationality of express site setting	Is the distance from the express point to the dormitory appropriate
	environment of express site	Whether the site of express outlets is clean; Whether shelf placement and channel setting are convenient for taking parts
Responsiveness	Responsiveness of complaint handling	Can you quickly respond to customer complaints or feedback
	Responsiveness of question answering	Can you quickly answer the customer's questions
	Responsiveness of sending and picking up	Whether it can quickly respond to the customer's demand for delivery and pickup
Reliability	The express delivery has no missing or damage	The outer package and internal articles of express delivery shall be free from damage, loss or shortage
	The logistics information is correct	The queried logistics information is consistent with the actual logistics information
	Privacy information encryption	Whether the phone name or article information of the recipient or sender is encrypted
Caring	Service attitude of express station staff	The service staff had a good attitude and friendly communication with customers during the service process
	Service level of express station personnel	Whether the service personnel are familiar with the operation process, whether the packaging is professional, and whether they can provide fast and complete services; Whether violent sorting exists
Economy	The price of the delivery	Whether the delivery price is reasonable
	Additional service price	Whether additional payment is required when additional services are selected for delivery or pickup, and whether the payment is reasonable

2.2 Conceptual Model

The conceptual model of this study is shown in Figure 2. On the basis of previous literature, five factor groups that directly affect customer satisfaction with logistics service quality are determined and assumed, namely convenience, responsiveness, reliability, care and economy.

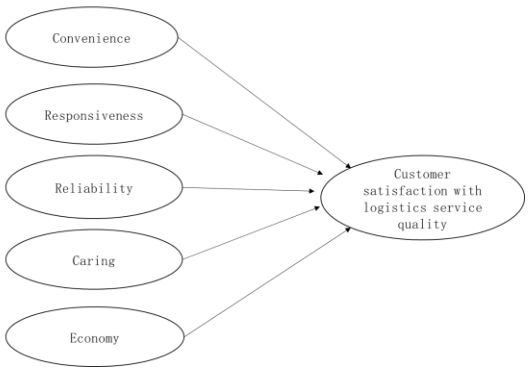

Figure 2 . Conceptual model

We assume the following:

H1: Logistics service convenience positively affects customer satisfaction with logistics service quality; **H2**: Responsiveness of logistics service positively affects customer satisfaction with logistics service quality; **H3**: The reliability of logistics service positively affects customer satisfaction with logistics service quality; **H4**: The caring nature of logistics services positively affects customers' satisfaction with logistics service quality; **H5**: The economy of logistics service positively affects customer satisfaction with logistics service quality;

3 METHODOLOGY

3.1 Sampling and Data Collection

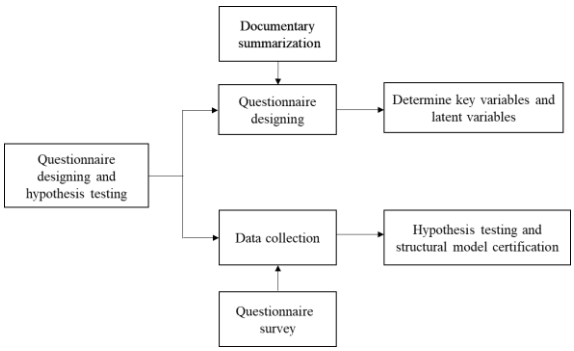

Figure 3 . Research steps

In order to design the questionnaire, the key variables and existing classifications of the research subject were determined through the literature review method, which has the following advantages: through the literature review method, we can comprehensively understand the current situation and problems of college express logistics service, the satisfaction of college student group customers with service quality, the factors affecting satisfaction and the research framework of related topics; The research limitations in the relevant literature can be studied by associating with other relevant literature. In this study, the five dimensions of convenience, responsiveness, reliability, care and economy of college express logistics service are identified as the key variables for the study, because after literature review, it is found that these five dimensions can well measure the quality of college express logistics service, and are also the key factors affecting customer satisfaction with logistics service. However, these potential variables cannot directly reflect the relationship between customer satisfaction and logistics service quality. Therefore, we continue to classify these potential variables based on literature reading and practical research so that they can be better used.

Based on the previous work, the questionnaire was designed and put into use.

3.2 Research Methods

The purpose of this study is to reflect the quality level of express logistics service in Changbei University and its impact on customer satisfaction through the five dimensions of convenience, responsiveness, reliability, care and economy of university express logistics service. Based on the following stages, determine the key variables and evaluate the specific process of their impact on express logistics service quality: conduct exploratory research according to the common characteristics of the identified variables to determine the influencing factors. Secondly, a confirmatory study is used to test the validity of the hypothesis model. Once the model is validated, the structural equation modeling method is used to test the proposed research hypothesis.

4 ANALYSIS AND RESULTS

4.1 Exploratory Study

Factor analysis is a common statistical method to analyze the relationship among a group of variables according to their common potential factors. The exploratory analysis in this paper is mainly carried out in three steps to check the adequacy of samples, extract key factors and test the reliability of the structure.

First, KMO is used to test the adequacy of data sampling and Bartlett's ball test is used to evaluate whether the variables determined by the team are suitable for factor analysis. KMO and Bartlett test results are shown in Table 2

Table 2 KMO and Bartlett's test

Kaiser Meyer Olkin measurement of sampling adequacy		.875
Bartlett's Sphericity Test	Approximate chi square	3424.753

	df	276
	Sig.	.000

It can be seen from Table 2 that the KMO test result is 0.875, greater than 0.5. It can be seen that there is no significant difference in the correlation between variables, indicating that this sample collection is sufficient; The significance level of Bartlett's spherical test was 0.000, $p<0.005$, indicating that there was correlation between the original variables, which was suitable for factor analysis. KMO and Bartley's spherical test results both indicate that the data collected in this questionnaire are suitable for factor analysis.

Calculate the Kronbach coefficient of the overall sample to verify the reliability of the variable structure. The Kronbach coefficient of the overall sample is 0.881, which is greater than 0.7, indicating that the variable structure of the group study has good reliability.

4.2 Confirmatory Study

Amos was used for confirmatory factor analysis (CFA) to assess the adequacy of the goodness of fit between the basic factor structure and the sample data. Various fitting indexes can be used to test the overall model fitting, including goodness of fit index (GFI), adjusted goodness of fit index (AGFI), comparison fitting index (CFI), standard fitting index (NFI), non-standard fitting index (NNFI) and root mean square approximation error (RMSEA). Table 3 gives the appropriate model fit ($\chi 2$ (190)=293.44, RMSEA=0.046, CFI=0.962, GFI=0.921, AGFI=0.902, NFI=0.907), which indicates that the model is completely acceptable. These estimates from the factor model show powerful results from the dataset. And all $\chi 2$The difference was significant ($p<0.01$), which supported the discriminant validity. The comprehensive reliability value of learning interaction input, learning emotional input, learning cognitive input and learning behavior input was 0.702, 0.701, 0.703, 0.730. All reliability estimates exceed the acceptable level of 0.7. The estimated AVE values of the five factor groups were 0.563, 0.610, 0.582 and 0.600 respectively, exceeding the critical value of 0.50.

Table 3 Confirmatory study results

Latent variable	AVE	CR	Adaptability index
Convenience	0.5563366667	0.702715064	GFI=0.921; AGFI=0.902; IFI=0.963 RFI=0.932; NFI=0.907; CFI=0.962; RMSEA=0.046: X2/df=2.32;
Responsiveness	0.60895	0.700788308	
Reliability	0.581716667	0.703646957	
Caring	0.60014	0.7229383	
Economy	0.58601	0.702250614	

4.3 Structural Model and Hypothesis Testing

The structural model is used to test the assumptions of the four factors tested in the measurement model. In this study, SEM and maximum likelihood estimation methods are used to estimate the causal relationship between factors. Through the application of Amos to a

sample of 238 students, the analysis results are obtained, and the impact of these factors on the quality of college express logistics service is revealed. As shown in Table 4, the model fitting index is χ 2=413.06, CFI=0.94, NNFI=0.92, RMSEA=0.052, standard χ 2=2.174, which indicates that the model is fully consistent with the data. Therefore, the model is considered acceptable.

Table 4 hypothesis testing results

hypothesis	Path coefficient	t value	testing results
Convenience→Logistics service quality	0.7	3.38	Accept the original assumption
Responsiveness→Logistics service quality	0.62	2.96	Accept the original assumption
Reliability→Logistics service quality	0.61	2.87	Accept the original assumption
Caring→Logistics service quality	0.54	2.21	Accept the original assumption
Economy→Logistics service quality	0.57	2.43	Accept the original assumption

5 CONCLUSION AND DISCUSSION

In order to study how to better improve the quality of college express logistics service and improve customer satisfaction, this paper develops a model to evaluate the impact of convenience, responsiveness, care, reliability and economy on college express logistics service quality using SEM. The data of this paper mainly comes from 238 valid questionnaires collected from the Changbei University.

In general, convenience, responsiveness, caring, reliability and economy are all positively related to logistics service quality and customer satisfaction. The relationship between convenience, logistics service quality and customer satisfaction is the most significant, followed by responsiveness and reliability; Poor caring performance.

According to the research conclusions of this paper, this paper puts forward the following suggestions on how to better improve the quality of express service:

(1) Rectify the network environment and support multiple delivery and payment methods. The storage network of the school has a small space, and packages are crowded and disordered on the shelves. The network should reasonably place the shelves and set channels to facilitate picking up according to its actual business needs; At the same time, outlets should support multiple delivery methods and payment methods. Delivery methods include door-to-door delivery, door-to-door pickup and self-service delivery;

(2) Broaden service complaint channels. For problems that can not be solved in time and complaints can not be handled in time, express outlets can set up complaint mailboxes in the store and build customer WeChat groups online to keep communication with customers at any time to ensure timely receipt of customer feedback. The complaint information shall be cleared every day, and the complaint of the same day shall be handled on the same day, so as to maximize the customer service experience.

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