

Research on the Relationship Between Tourism Logistics Service Quality and Operators' Satisfaction

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Abstract. The theoretical research of tourism logistics service is relatively lagging behind, and the lack of systematic method analysis is not conducive to the further development of tourism logistics. In order to explore the relationship between tourism logistics service quality and its constituent dimensions and operator satisfaction of tourism destination, this study constructs a structural model framework between service quality, consumer emotion, consumer cognition and operator satisfaction, collects data by questionnaire survey and conducts empirical research.

Keywords. Tourism logistics; Service quality; Operator satisfaction; Consumer emotion; Consumer cognition

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1. Introduction

At present, with the rapid development of tourism and logistics industry, tourism destinations pay more and more attention to the service quality of tourism logistics. Logistics Service Quality (LSQ) has been studied by scholars. It has a direct impact on customer commitment [1], and affects customer repeat purchase rate through loyalty and customer satisfaction, and ultimately plays a decisive role in customer retention rate and enterprise profits.

From the perspective of practical application, tourism logistics services have an important impact on the optimization of tourism industrial structure, the improvement of tourism economic quality and the satisfaction of destination operators. By improving the satisfaction of destination operators, tourism logistics enterprises can achieve a virtuous economic cycle, efficient circulation speed, high-quality service satisfaction and so on. In this regard, this study takes tourism destination operators as the research object, through data analysis and empirical research, explores the relationship between service quality, consumer emotion, consumer cognition and operator satisfaction, and provides reference for the study of tourism quality. Firstly, it reviews the previous literature, and based on the existing research results, it puts forward the concept model of tourism logistics service and some hypothesis. Secondly, it introduces the process of sample collection and data analysis. Finally, it discusses the research results and points out the future research direction, so as to further demonstrate, supplement and enrich the theoretical system in this field.

2. Theory and Research Hypothesis

2.1. Service quality of tourism logistics and satisfaction of tourism destination operators

Since the seventies of the 20th century, service quality and satisfaction have always been the focus of academic research. It is to measure the level of service and service quality in the development process of service industry, to help service enterprises understand the needs of customers and the actual perception, so as to change business strategies, adjust operation methods, improve service quality, and ultimately increase their profitability.

In the existing literature, there are many definitions of customer satisfaction, and Oliver's [2] definition of customer satisfaction is widely used in academia: Customer satisfaction is the psychological state of customers after their needs are met, as well as the judgment of customers on the degree to which products and services meet their needs.

Tourism logistics service involves six elements of food, accommodation, travel, shopping and entertainment. In the tourism destination, catering industry, accommodation industry, cargo transportation industry, commerce and entertainment industry are all related to service, and their service quality will affect the satisfaction of operators in the tourism destination. Qin Ligong et al. [3] proposed six dimensions of tourism logistics services in the survey of cloud model and optimization effectiveness of tourism logistics services, namely, marketing, reliability, responsiveness, tourism consumer expenditure, innovation and information quality. Based on the above literature, combined with the five dimensions of SERVQUAL evaluation method [4] and the characteristics of the tourism logistics industry itself, the author studies the impact of tourism logistics services on the satisfaction of tourism destination operators from four dimensions: service reliability, service responsiveness, service innovation and service information quality. Therefore, the following assumptions are made:

H1: The quality of tourism logistics service positively affects the satisfaction of tourism destination operators. H1a: The reliability of tourism logistics services positively affects the satisfaction of tourism destination operators

H1b: Responsiveness of tourism logistics services has a positive impact on tourism destination operator satisfaction H1c: Tourism logistics service innovation positively affects tourism destination operator satisfaction

H1d: The information quality of tourism logistics service has a positive impact on the satisfaction of tourism destination operators

2.2. The mechanism of tourism logistics service quality affecting the satisfaction of tourism destination operators: the role of consumer emotion.

1) The direct effect of consumption emotion on the satisfaction of tourism destination operators

The satisfaction of tourism destination operators will also be affected by emotional aspects. Some studies have found that in the process of tourism, tourism experiences both positive and negative emotions, and has a significant impact on tourist satisfaction [5], which shows that consumption emotion is an important factor affecting satisfaction. In the actual research, Su Qin et al. took commercial banks as an example to explore the relationship between customer consumption emotion and customer satisfaction. The research results found that customer consumption emotion had a direct positive impact on satisfaction evaluation. Through empirical analysis, it was verified that both consumption emotion and cognition were important factors affecting customer satisfaction. Therefore, based on the above theoretical research, the following assumptions are put forward:

H2: Consumption emotion positively affects the satisfaction of tourism destination operators.

2) The mediating effect of consumption emotion

As far as the "cognition-emotion-behavior" theory is concerned, in the process of experiencing tourism logistics, the innovation of tourism products and services and the perception of information quality of tourism destination operators will affect the emotional changes in the process of consumption, and then affect the next behavior of operators. It can be seen that the quality of tourism logistics service has a certain impact on consumer sentiment. This paper argues that the service quality perceived by operators not only has a direct impact on their satisfaction, but also has an indirect impact on their

satisfaction through consumer emotions. Tourism destinations create a good tourism logistics environment for operators, and provide reliable and timely services can strengthen the consumer emotions of operators in tourism destinations, so as to provide better services for tourists. Based on this, the following assumptions are put forward:

H3: Consumption emotion plays a mediating role in the relationship between tourism logistics service quality and tourism destination operator satisfaction.

2.3. The mechanism of tourism logistics service quality affecting the satisfaction of tourism destination operators: the role of consumption cognition.

2.3.1. The direct effect of consumption cognition on the satisfaction of tourism destination operators.

The cognitive behavioral model of consumption States that, as information processors, consumers consciously make satisfying decisions when searching for and evaluating information about certain products or sales channels. In the research on the relationship between consumption cognitive value and satisfaction, Chen Mingliang [6] analyzed the influencing factors of customer loyalty in IT distribution industry and found that there was a positive correlation between them. By measuring perceived value with emotional function and perceived risk, it is found that perceived value will significantly affect customer satisfaction . Based on this, this paper puts forward the following assumptions:

H4: Consumption cognition positively affects the satisfaction of tourism destination operators

2.3.2. The mediating effect of consumption cognition. Service quality, as the antecedent of customer satisfaction, is perceived by customers through service quality, and then produces satisfaction or dissatisfaction. According to Cronin's ACSI (American customer satisfaction index, Customer Satisfaction Index Model), customer perceived service quality has a direct positive impact on customer satisfaction. In addition, customers produce certain consumption cognition by perceiving service quality, which ultimately affects customer satisfaction[7].

In the process of providing tourism logistics services, the perceived value of tourism destination operators is not only related to the value of tourism products themselves, but also to the value of services provided by tourism destination suppliers. Its service reliability, responsiveness, innovation and information quality not only have an important impact on the consumption cognition of tourism destination operators, but also have a certain impact on the satisfaction of tourism destination operators. Based on this, the following assumptions are put forward:

H5: Consumption cognition plays a mediating role in the relationship between tourism logistics service quality and tourism destination operator satisfaction.

The model framework of this article is shown in Figure 1:

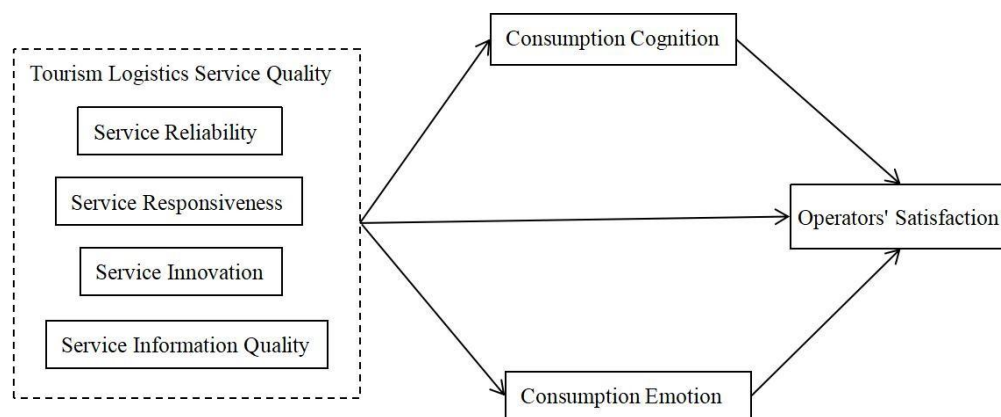


Figure 1. Model framework.

3. Study Design

In this study, the measurement of research variables and their items is based on the existing scales, and the measurement items of variables are designed accordingly based on the characteristics of tourism logistics services. Among them, the measurement items of the four dimensions of reliability, responsiveness, innovation and information quality of tourism logistics service quality are mainly based on the SERVQUAL scale proposed by Parasuraman et al. [4] and the tourism logistics service scale developed by Qin Ligong et al. [3]. It is adjusted according to the characteristics of tourism destination operators' experience of tourism logistics services. The measurement scales used in this study are detailed in Figure 2.

Variables		Code	Measurement Item	References
Tourism Logistics Service Quality (QS)	Dependability (D)	QS1	Delivery of goods can be completed within the specified time.	Parasuraman et al, Qin Ligong et al , Chen Mingliang
		QS2	Implement the goods charge standard according to the contract requirement	
		QS3	It can ensure that the customs clearance rate of goods meets the requirements.	
		QS4	Able to meet door-to-door and warehouse-to-warehouse service requirement	
	Responsiveness (R)	QS5	Service procedures and procedures are very convenient.	
		QS6	Timely feedback of problems from suppliers	
		QS7	Supplier's efficiency in problem resolution	
	Innovativeness (I)	QS8	Be able to provide extended or after-sale services	
		QS9	The route planning of tourist destination is very reasonable.	
		QS10	Supplier's transportation technology is advanced and efficient	
	Information Quality(IQ)	QS11	High coverage of information services in tourist destinations	
		QS12	Logistics information is accurate and can be updated in a timely manner	
Consumption Emotion (CE)	CE1	The process of experiencing tourism logistics service is very pleasant.	Westbrook	
	CE2	Experiencing the process of tourism logistics service is very satisfying.		
Consumption Cognition (CC)	CC1	High quality/price ratio of goods	Schiffman, Chen Mingliang	
	CC2	High speed of picking up and delivering goods		
	CC3	More personalized information		
Tourist destination operator satisfaction (MS)	MS1	Tourism destination logistics planning services can meet the needs.	Oliver, Parasuraman, Fornell, Chen Mingliang	
	MS2	The price of cargo transportation is satisfactory.		
	MS3	Satisfactory cargo transport services		

Figure 2. Measurement scale of this study.

3.1. Data and samples

In order to ensure the accuracy of the research data, this study first conducted a pre-survey, invited industry experts to evaluate the items and quality of the questionnaire, and revised the relevant measurement items according to the results of the pre-survey, on this basis, generated a formal survey questionnaire.

The formal survey was carried out from May 9 to May 30, 2021. After three weeks of investigation, 190 questionnaires were collected, 16 questionnaires with too short answer time and failed to pass the test were excluded, and 174 valid questionnaires were finally obtained.

The recovery rate of valid questionnaires was 91.6%, which met the requirements of questionnaire collection. The KMO value of the pre-test questionnaire was 0.973, the test value of the statistic in the Bartlett spherical test was 3127.453, and the corresponding significance value was 0.000 less than 0.05, indicating that the model was suitable for factor analysis.

In this study, SPSS24.0 software was used to make descriptive statistics of the valid questionnaires (see Table 3). The results showed that 43.1% of the respondents were male and 56.9% were female; the number of respondents aged 26 to 35 was the largest, accounting for 52.3%; the number of respondents with a bachelor's degree was the largest, accounting for 45.4%; and the six major areas of the tourism industry were generally evenly distributed (see Figure 2). The number of people with a monthly income of more than 5000 is the largest, accounting for 74.7%. Based on the fact that female employees in the service industry are higher than male employees, and the age group is mainly young (see Figure 3), the data obtained in this study are reasonable and representative.

Variables	Option	Frequency	Percent
Sex	Male	75	43.10%
	Female	99	56.90%
Age	19-25 years	25	14.40%
	26-35 years	91	52.30%
	36-45 years	39	22.40%
	46-55 years	18	10.30%
	56 +	1	0.60%
Educational attainment	High school/technical secondary school and below	33	19.00%
	College Speciality	49	28.20%
	Undergraduate	79	45.40%
	Master and above	13	7.50%
Field of tourism industry	Service and reception industry in scenic spots	19	10.90%
	Catering Enterprise	18	10.30%
	Tourism Transportation Enterprise	37	21.30%
	Tourism Accommodation Enterprise	32	18.40%
Monthly income	Tourism Shopping Enterprise	37	21.30%
	Tourism and Entertainment Enterprise	31	17.80%
	2500-3499	3	1.70%
	3500-4999	41	23.60%
	More than 5000	130	74.70%

Figure 3. Distribution Map of Tourism Industry.

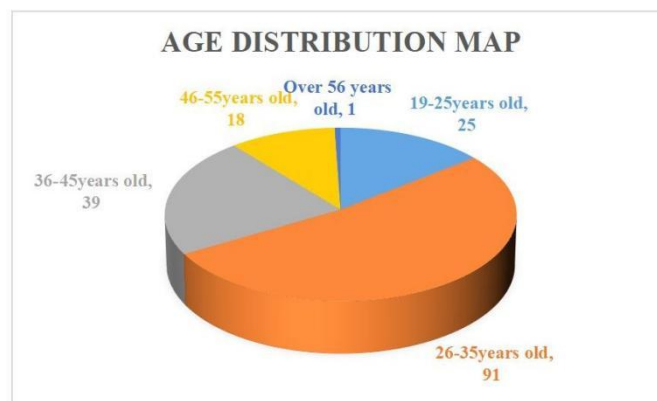


Figure 4. Age Distribution Map.

4. Data Analysis and Hypothesis Testing

4.1. Analysis of reliability and validity of variables

Confirmatory factor analysis was used to test the reliability and validity of the scale. As shown in Figure 5, the Cronbach's alpha coefficient of each latent variable in the model is between 0.810 and 0.870, and the combined reliability is between 0.807 and 0.871, which are all greater than the critical value of 0.70, and the AVE is between 0.533 and 0.732, which is greater than the critical value of 0.5, indicating that each measurement scale has good internal consistency reliability. At the same time, the AVE square root of each latent variable is greater than the other correlation coefficients of its row and column, which indicates that each measurement scale has good discriminative validity.

Latent variable	1	2	3	4	5	6	7
1 Responsiveness	0.730						
2 Reliability	0.511**	0.767					
3 Innovation	0.362**	0.434**	0.812				
4 Information Quality	0.373**	0.526**	0.329**	0.823			
5 Consumption Cognition	0.495**	0.632**	0.462**	0.393**	0.856		
6 Consumption Emotion	0.221**	0.324**	0.467**	0.450**	0.531**	0.837	
7 Operator Satisfaction	0.474**	0.357**	0.220**	0.189**	0.301**	0.296**	0.801
Cronbach's alpha coefficient	0.870	0.810	0.810	0.807	0.823	0.810	0.853
Combined reliability (CR)	0.820	0.811	0.853	0.807	0.871	0.824	0.851
Average extraction variance (AVE)	0.533	0.588	0.659	0.677	0.732	0.700	0.656

Figure 5. Structure of reliability and validity analysis.

**Note: The numbers in bold on the diagonal are the square roots of AVE, and the numbers on the lower left of the diagonal are the correlation coefficients.

4.2. Analysis of structural equation model results

In this paper, structural equation model is used to conduct confirmatory factor analysis of each index, and to test whether the theoretical assumptions are valid. Firstly, in order to analyze the rationality and necessity of the four dimensions of responsiveness, reliability, innovation and information quality of tourism logistics service quality, this paper uses AMOS24. The competitive models were tested by one-factor model, four-factor uncorrelated model, four-factor completely correlated model and second-order factor model. Then, the fitness of each competitive model is compared, and the most appropriate fitting factor model is selected.

From the fitting results of the model (see Figure 6), the chi-square degree of freedom ratio (CMIN/DF) of the second-order factor model is 1.351, which meets the standard between 1 and 5; GFI = 0.916, CFI = 0.986, NFI = 0.948 and IFI = 0.981 in the model fitting degree index all meet the standard of more than 0.90, and AGFI = 0.876 is more than 0.80, and RMSEA = 0.045, less than 0.08, both acceptable.

Compared with the other three models, the second-order factor model has the best convergent validity. This shows that the service quality of tourism logistics is a second-order variable composed of four dimensions: responsiveness, reliability, innovation and information quality.

Therefore, it is reasonable and reliable to divide the service quality of tourism logistics into the above four dimensions in this study. In addition, the standardized load factors for all measurement scales ranged from 0.774 to 0.873, significant at the 0.01 level. This indicates that the measurement scales in this study have good convergent validity.

Figure 6. Analysis results of each competition model for the dimensions of tourism logistics service quality.

Competition Model	CMIN/DF	GFI	CFI	NFI	IFI	RMSEA	AGFI
Single factor	2.034	0.901	0.933	0.904	0.977	0.067	0.776
Four-factor non-correlation	8.764	0.576	0.548	0.683	0.623	0.143	0.547
Four-factor complete correlation	1.033	0.945	0.926	0.922	0.954	0.055	0.834
Second-order factor	1.351	0.916	0.986	0.948	0.981	0.045	0.876
Standard Value	Between 1-5	Greater than 0.9	Greater than 0.9	Greater than 0.9	Greater than 0.9	Less than 0.08	Greater than 0.9

4.3. Hypothesis test

In this study, AMOS24.0 software was used to test the path coefficients of structural equation models. It can be seen from Figure 7 that tourism service quality and its dimensions have a significant positive impact on operator satisfaction ($p < 0.01$), but the degree of impact of each dimension on customer satisfaction is different. Information quality has the greatest impact, followed by responsiveness and reliability, and innovation has the least impact. Therefore, H1, H1a, H1b, H1c and H1d are valid. Secondly, because the path coefficient β of consumer emotion to operator satisfaction is 0.263, and the P value is less than 0.01, it shows that consumer emotion has a significant impact on operator satisfaction of tourism destination, and H2 is established. Similarly, consumption cognition also has a significant impact on the satisfaction of tourism destination operators ($\beta = 0.307$, $p < 0.001$), which is true.

For the mediating effect in the model, this study uses Bootstrap to test the mediating effect of consumption emotion and consumption cognition, and the sampling number is 5000. The test results show that in the indirect effect from tourism logistics service quality to operator satisfaction, the 95% confidence intervals are [0.1174, 0.3271] and [0.1428, 0.3935], all do not contain the number 0, indicating that the intermediary effect exists; combined with the above direct effect H1, it shows that the intermediary effect of tourism logistics service quality on the satisfaction of tourism destination operators is partial intermediary. That is to say, when consumption cognition or consumption emotion exists, on the one hand, tourism logistics service quality can have a direct impact on the satisfaction of tourism destination operators; on the other hand, tourism logistics service quality can have an indirect impact on operator satisfaction through consumption cognition or consumption emotion. Therefore, H3 and H5 are established. The analysis results show that H1, H1a, H1b, H1c, H1d, H2, H3, H4 and H5 are all supported in this study.

Based on the above test results, the hypotheses of this study are supported, indicating that the theoretical model set at the beginning of the article is reasonable and effective, and there is no need to modify the research model, so as to obtain the final structural equation model (see Figure 2).

Research Hypothesis	Path	Path coefficient β	T value	P-value	Test Result
H1	Tourism Logistics Service Quality \rightarrow Tourism Destination Operators' Satisfaction	0.463	5.425	0.000***	Support
H1a	Reliability of Tourism Logistics Service \rightarrow Satisfaction of Tourism Destination Operators	0.172	2.654	0.007**	Support
H1b	Responsiveness of Tourism Logistics \rightarrow Service Satisfaction of Tourism Destination Operator	0.191	2.950	0.003**	Support
H1c	Innovation of Tourism Logistics Service \rightarrow Satisfaction of Tourism Destination Operators	0.163	2.901	0.004**	Support
H1d	Information Quality of Tourism Logistics Service \rightarrow Satisfaction of Tourism Destination Operators	0.251	3.574	0.000***	Support
H2	Consumption Emotion Tourism Destination \rightarrow Operator Satisfaction	0.236	4.095	0.001**	Support
H3	Service quality \rightarrow Consumer emotion \rightarrow Destination Operator Satisfaction				Support
H4	Consumption Cognition \rightarrow Tourism Destination Operator Satisfaction	0.307	4.478	0.000***	Support
H5	Service Quality \rightarrow Consumer Cognition \rightarrow Destination Operator Satisfaction				Support

Note: *, **, *** represent $p < 0.05$, $p < 0.01$, $p < 0.001$

Figure 7. Path Test Results of Structural Equation Model.

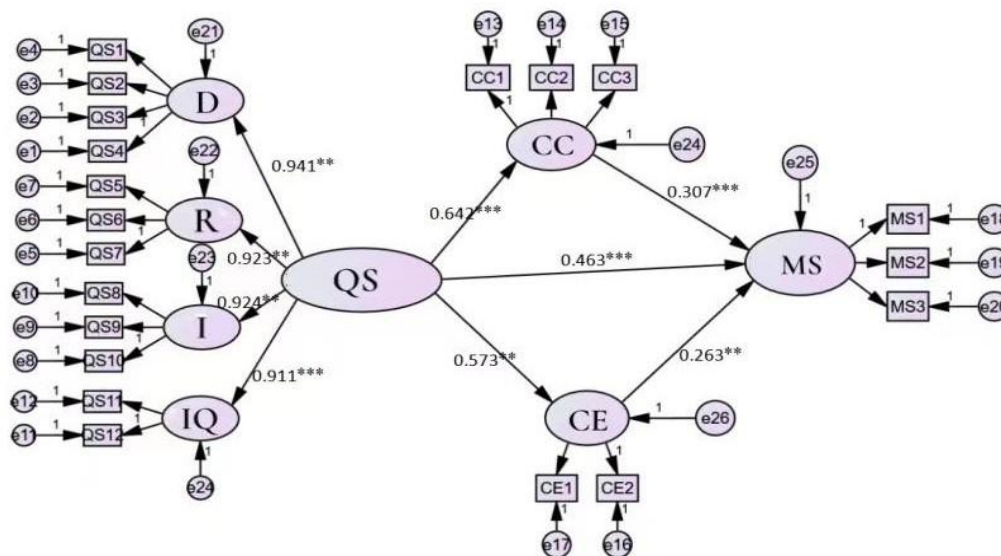


Figure 8. Structural Equation Model Diagram.

5. Conclusions and Implications

5.1. Research conclusion

As an emerging industry, tourism logistics industry is relatively less studied at home and abroad, and even fewer studies focus on tourism destination operators. In this regard, this study constructs a structural equation model between tourism logistics service quality and tourism destination operator satisfaction based on consumer emotion and consumer cognition as double intermediaries, and obtains the following results and conclusions through empirical analysis:

Firstly, the quality of tourism logistics service and its components have a significant impact on the satisfaction of tourism destination operators. Through the path analysis of structural equation model, tourism logistics service quality has a significant positive impact on tourism destination

operators, and its constituent dimensions also have a significant impact on operator satisfaction. Among them, the dimension of information quality has the greatest impact on operator satisfaction, followed by the dimensions of responsiveness and reliability, and the dimension of innovation has the least impact.

Secondly, In the impact of tourism logistics service quality on operator satisfaction, consumer emotion plays a partial mediating role. Oliver believes that customer satisfaction is not a simple emotional concept, and customer satisfaction includes not only emotional components, but also cognitive components. The empirical factor analysis of this study shows that consumer emotion and operator satisfaction belong to two concepts, and consumer emotion has a direct positive impact on operator satisfaction.

Thirdly, In the impact of tourism logistics service quality on operator satisfaction, consumption cognition plays a partial mediating role. Consumption cognition is an important factor in the relationship between service quality and satisfaction, and cognitive behavior can produce satisfaction or dissatisfaction through perception of service quality. In addition, the results show that consumption cognition has a significant positive impact on operator satisfaction. Consumption cognition and consumption emotion, as the two major factors of satisfaction, both have a positive impact on operator satisfaction in the field of tourism logistics.

5.2. Management Enlightenment

In the emerging service industry, the level of service quality is the key factor to cause consumer satisfaction or not, and to obtain sustained consumer satisfaction is the key to win the market competitive advantage of emerging industries. In view of this, in order to better improve the quality of service, major tourism logistics enterprises can start from the following aspects:

First, attention should be paid to the quality of tourism logistics information to meet the service needs of operators to the greatest extent. From the perspective of information quality, information transmission runs through a series of activities of tourism logistics enterprises from production to consumption, and the timeliness, accuracy and high coverage of information quality are the key elements to meet the service needs of operators. Therefore, major tourism logistics enterprises should strengthen the construction of tourism logistics information service network to provide accurate, timely and comprehensive information for operators.

Secondly, in terms of innovation, the empirical results show that the innovation of tourism logistics services has a positive impact on operator satisfaction, but the impact is weak. This indicates that the tourism destination operators have a low intention of service innovation, which may be due to the fact that the operators' understanding of the tourism logistics industry is still in the stage of traditional logistics industry, and they pay more attention to the substantive role of service quality.

Thirdly, pay attention to the consumption emotion of tourism destination operators, and improve their satisfaction with the quality of tourism logistics services. In this regard, tourism logistics enterprises can start from the following two aspects: First, improve the key process of tourism logistics service according to the contact points of destination operators, improve service experience and improve the satisfaction of operators; The second is to understand the expectations of tourism destination operators for tourism logistics services and enhance the pleasure of the service process.

Fourthly, Pay attention to the influence of consumption cognition on the satisfaction of tourism destination operators. Therefore, tourism logistics providers should ensure the quality-price ratio of goods and pay attention to the personalization of logistics information; operators of different tourism enterprises have different perceptions of logistics information, so tourism logistics providers should provide personalized information according to the needs of different enterprises to improve the consumption awareness of operators, so as to meet their needs for tourism logistics service quality.

Conflicts of Interest

There is no conflict of interest in this paper.

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