

Research on College Express Service Quality Based on Fuzzy Comprehensive Evaluation

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Abstract

In this paper, from the perspective of campus teachers and students to receive courier services, read a large amount of information, references, combined with SERVQUAL customer satisfaction evaluation model, to build a tangible, reliability, responsiveness, empathy and economy and other five dimensions, a total of 18 indicators of the evaluation system, the use of the fuzzy evaluation method to build a campus courier service quality satisfaction model. Through the discussion of experts and questionnaires, the establishment of the overall fuzzy evaluation results. Evaluation of the affiliation function of the indicators, the use of computing to derive the overall fuzzy evaluation results, the purpose is to understand the current customer expectations of the campus courier service quality, to facilitate the courier companies to improve the quality of campus courier delivery services to improve customer satisfaction as a reference and reference.

Keywords

Campus Express; Fuzzy Evaluation; Service Quality.

1. Introduction

In recent years, the rapid development of e-commerce, university campuses in the phenomenon of online shopping is becoming more and more common, therefore, the importance of logistics services in the campus continues to rise. Campus express service has gradually become an important part of college students' daily life. With the increase of express demand, the evaluation of campus express service quality becomes more and more important. For courier companies, to understand the needs of teachers and students for courier services, and constantly improve the quality of logistics services to ensure the sustainable and healthy development of the enterprise; for campus management, it can be effective, standardised management of express delivery and pick-up services on campus. Therefore, the purpose of this paper is to study the quality of courier services in a university as an example, to understand the current expectations of college students of the quality of campus courier services, to facilitate courier companies, campus agents to improve the quality of courier delivery services to improve customer satisfaction for reference and reference, and to rectify the campus courier environment, the construction of a green campus is of great significance.

2. Methodology

2.1. The construction of campus express service quality evaluation

In this paper, the research stands in the perspective of the needs of campus students and teachers, constructs the index system of campus express service quality evaluation, so as to study the service quality of the current express delivery enterprises. At present, experts and scholars at home and abroad have also put forward some service quality evaluation methods, through comparative research, Based on the SERVQUAL model, the characteristics of courier service, and the actual situation of colleges and universities, this paper carries out some

modifications on the SERVQUAL model, which is divided into the following 5 dimensions: tangibility, reliability, responsiveness, empathy and economy, with a total of 18 indicators, as shown in Table 1.

Table 1. List of indicators for the construction of a new service quality system

Dimension (Tier 1 indicators)	Secondary indicators
Tangibility (B1)	1.Business locations have advanced service facilities; (B11) 2.employees have neat grooming and uniform dress, supporting work cards; (B12) 3.Courier companies cover a wide range of areas. (B13)
Reliability (B2)	4.Trustworthiness; (B21) 5.the business point can accurately enquire about the location of goods storage; (B22) 6.to ensure that the express mail is not lost or damaged at the business point; (B23) 7.the degree of security of the sender's information.(B24)
Responsiveness (B3)	8.can provide timely service to customers; (B31) 9.pick-up time is flexible and convenient; (B32) 10.Customer order business process is convenient; (B33) 11.Efficient speed of sending pieces; (B34) 12.Timely handling of complaints. (B35)
Empathy (B4)	13.the staff is polite and better qualified; (B41) 14.the business point can provide personalised service; (B42) 15.The business point allows the consignee to inspect the goods before signing for them; (B43) 16.Inspection of goods found damaged goods, can assist in the return of goods. (B44)
Economy (B5)	17.The charges set are reasonable; (B51) 18.The price of compensation for loss or damage of express mail is reasonable. (B52)

2.2. Service quality evaluation analysis

(1) Determine the weights of first-level indicators

In this paper, according to the 1-9 proportional scaling method, the importance of the first-level indicators is compared two by two by 10 logistics professional teachers from multiple universities, and the judgement matrix A is constructed as follows:

$$A = \begin{bmatrix} 1 & 1/4 & 1/5 & 1/2 & 1/3 \\ 4 & 1 & 1/2 & 5 & 3 \\ 5 & 2 & 1 & 5 & 4 \\ 2 & 1/5 & 1/5 & 1 & 1/3 \\ 3 & 1/3 & 1/4 & 3 & 1 \end{bmatrix}$$

Solve the weight judgement matrix to obtain the characteristic root river eigenvectors, and test the consistency of each matrix. After calculation, $CR=CI/RI= 0.0481 < 0.1$, so it can be judged that the above matrix has satisfactory consistency.

(2) Determine the weights of secondary indicators

After repeated studies by 10 logistics professional teachers, the weights of each secondary index are determined. The consistency test results of each secondary index are calculated as shown below:

Tangibility: $CR_1=0.0836<1$, Good consistency, then $W_1=(0.2311,0.1038,0.6651)$;

Reliability: $CR_2=0.0662<1$, Good consistency, then $W_2=(0.2338,0.0956,0.4638,0.2069)$;

Responsiveness: $CR_3=0.0792<1$, Good consistency, then $W_3=(0.1022,0.3338,0.1370,0.1746,0.2524)$;

Empathy: $CR_4=0.0308<1$, Good consistency, then $W_4=(0.5308,0.2177,0.1035,0.1480)$;

Economy: $CR_5=0<1$, Good consistency, then $W_5=(0.2500,0.7500)$.

(3) Comprehensive weight ranking and decision-making

Multiply the weights of the first-level indicators obtained above with the weights of the second-level indicators to get the comprehensive weights of the 18 second-level indicators.

According to the total ranking of the comprehensive weight of the second-level indicators, the higher the comprehensive weight, the more need to improve, so the top five campus express service quality needs to improve the content of the pick-up time flexibility and convenience (B32), to ensure that the express mail is not lost and not damaged in the business office (B23), the price of compensation for the loss of or damage to the express mail is reasonable (B52), the timely handling of complaints (B35), and the speed of posting is highly efficient (B34).

2.3. Fuzzy comprehensive evaluation analysis

The object of this research was all the students and faculty members of a university, and the survey combined a Likert scale of 5 to set an evaluation level of 5, in order to $V=(V_1, V_2, V_3, V_4, V_5)$, They are indicated as very dissatisfied (1 point), dissatisfied (2 points), average (3 points), satisfied (4 points), very satisfied (5 points), and the respondents can choose according to themselves. In order to make the data obtained more reasonable and the operation of the survey flexible, the online version of the questionnaire is issued this time. The number of questionnaires recovered so far is 110.

According to the statistical results of the questionnaire, the relative affiliation of each secondary indicator and the fuzzy comprehensive evaluation result vector are calculated, and according to the evaluation value of the indicator, Eq.: $Q_n = B_n \cdot V^T$, included among these $V=(1,2,3,4,5)$. The evaluation scores for each aspect of a university courier were calculated, including total service quality level of 3.5292, tangibility of 2.7597, reliability of 3.9630, responsiveness of 3.2949, empathy of 3.5370, and economy of 3.6636.

3. Results and Discussion

By analysing the above data, it can be seen that the overall level of campus courier service quality in this university is average, with low tangibles and responsiveness, which need to be improved. Tangibility is the customer's perception that the delivery equipment is simple, the staff does not have uniform uniforms, and not many courier companies are covered. Low responsiveness satisfaction is indicative of problems such as not being proactive in providing service to customers, inconvenient pick-up, inefficient delivery, and not being proactive in dealing with complaints. Low economy, customers believe that the charges are unreasonable, as well as unreasonable compensation for lost express mail and other issues.

Problems found from the questionnaire survey are: first, the campus supermarket covers not many express delivery companies, there are some mainstream express delivery such as SF, Jingdong and Post can only be in front of the school; second, the pickup time is fixed and lack of flexibility, such as the campus supermarket business hours for 12:00-13:30 and 18:30-19:30 every day, SF is 12:30-13:30 every day, Jingdong is 18:00-19:30 every day. :00-19:00, the postal

service is not fixed, it is very inconvenient for customers; third is to pick up the waiting time is very long, such as the campus express supermarket express is placed on the inside shelves, shelves of the express storage number of the beginning of the letter A, B, C, D, E, F, G respectively, on behalf of the Monday, Tuesday, Wednesday, Thursday, Friday, Saturday and Sunday, the express storage number of the last few represent is the express mail in this day's order. According to the logic of this express storage has not been able to meet the needs of all teachers and students of the school to pick up, it is recommended to have a telephone number after the first four digits of the storage, shelf number 0-9, so that the speed of looking for pieces will improve a lot.

4. Conclusion

4.1. Campus express delivery enterprises need to improve service quality

As the main participants and beneficiaries of e-commerce and express delivery, college students' concern for the quality of express delivery service cannot be ignored. In this fast-changing environment, campus express enterprises need to make continuous efforts to update logistics facilities and equipment while developing and expanding, and continuously improve service quality to ensure their sustainable development.

4.2. Limitations of fuzzy evaluation method

The fuzzy evaluation method requires data obtained by means of questionnaires issued to respondents. The evaluation results are affected by the number and representativeness of the respondents, and if the number is large and representative, the data obtained can objectively and realistically reflect the actual situation. In addition, the determination of the weights is based on the discussion of experts, and the weights are not the same for different experts' perspectives. Therefore, when using the fuzzy evaluation method, it is necessary to combine the actual situation and choose a most appropriate method for evaluating the quality of service, so as to improve the quality of service [2].

References

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