Research on Customer Satisfaction with E-commerce Online Customer Service Quality

I-Ching Chen[a,*], Zhiling Zhang[b]

School of Economics and Management, Zhaoqing University, Zhaoqing, China
[a]jineandya@gmail.com, [b]2590337242@qq.com
[*]Corresponding author

Abstract: *With the intensifying competition in the e-commerce industry and the critical impact of online customer service quality on customers' purchasing and repurchasing decisions, it has become crucial for e-commerce companies to enhance their online customer service quality. Therefore, this study to explore the influence of e-commerce online customer service quality on customer satisfaction through the analysis of customers' satisfactory and unsatisfactory critical incidents. Since the online customer service of e-commerce platforms is divided into pre-sales and post-sales sections, incidents are also categorized into four parts: pre-sales satisfaction, pre-sales dissatisfaction, post-sales satisfaction, and post-sales dissatisfaction. The research results indicate that after experiencing satisfactory incidents, customers showed high purchase and repurchase intentions, whereas after experiencing unsatisfactory incidents, customers showed low purchase and repurchase intentions. Finally, based on the classification results, this study provides practical suggestions in the hope of offering references for e-commerce companies to improve their online customer service quality.*

Keywords: *E-commerce, Online Customer Service Quality, Customer Satisfaction, Purchase and Repurchase, Critical Incident Technique*

1. Introduction

Over the past two decades, the e-commerce market has experienced rapid development, with the number of e-commerce users and merchants significantly increasing. As the growth rate of the e-commerce market slows down and the market becomes saturated, the e-commerce industry has entered a stage of stock market competition. Major e-commerce companies are contemplating how to stand out in this competitive market, with customer acquisition becoming a focal point.

As the variety and number of products in the e-commerce market continue to grow, an increasing number of customers are paying more attention to the quality of online customer service. The fast-changing e-commerce market means that customer preferences are also unpredictable. Consequently, we aim to explore the impact of online customer service quality on customer satisfaction in the e-commerce industry. Many studies have pointed out a significant correlation between the quality of online customer service on e-commerce platforms and customer satisfaction.

This study uses the Critical Incident Technique (CIT) to collect incidents of customer satisfaction and dissatisfaction with online customer service in the e-commerce sector. The goal is to investigate customers' needs regarding online customer service quality and provide practical suggestions for e-commerce companies to enhance their online customer service quality.

2. Literature Review

While providing customers with channels to purchase goods, e-commerce companies also offer corresponding pre-sales and post-sales customer service. With the popularity of online sales and the intensifying competition in e-commerce, improving the quality of e-commerce services has become increasingly important. Akbar and Parvez's research suggests that service quality has consistently been conceptualized as the difference between customers' expectations of the service they will receive and their perceptions of the service they actually receive. Service quality may affect customer satisfaction [1]. Parasuraman pointed out that satisfaction is achieved when customers continue to use a particular service instead of choosing alternatives. When customers do not opt for other alternatives, e-commerce

platforms gain loyal customers, enabling them to succeed in intensified competition [2]. Iqbal's research indicates that several aspects of online customer service, such as response speed, service effectiveness, empathy, and meeting customer needs, significantly impact customer satisfaction with online purchases[2]. Kim's study shows that the quality of e-commerce platform services has a significant positive impact on customer satisfaction, trust, and continuous usage intentions. Customer satisfaction also has a significant positive effect on trust and continuous usage intentions [3]. Ginting's research highlights that the quality of e-commerce platform services has a positive and significant impact on customer satisfaction. Improving e-service quality can enhance buyer satisfaction, which, in turn, positively influences customers' repurchase intentions [4].

Therefore, exploring the impact of e-commerce online customer service quality on customer satisfaction can uncover customers' needs for online customer service. When companies meet these basic needs, the deeper value of customers may be further realized, contributing to the overall development of the e-commerce industry.

3. Research Design

To deeply explore customers' needs for the quality of e-commerce online customer service, this study uses the Critical Incident Technique (CIT), a qualitative research method, to collect incidents of customer satisfaction and dissatisfaction in both pre-sales and post-sales contexts. The Critical Incident Technique was established by Flanagan in 1954[6]. Its process involves collecting good and bad critical incidents, categorizing them based on their attributes by observers, and then having three experienced classifiers verify the categorization.

As a research method, the Critical Incident Technique is currently widely used in many fields, such as the first phase of COVID-19 by general practitioners in Italy[7], violence and confrontation against staff in Swedish psychiatric hospitals[8], factors affecting medical registrars' provision of safe care[9], the impact of community-based medical education on graduates[10], and trauma and growth in urban firefighters following major incident exposure [11].

To ensure the scientific nature of the classification results in this study, three experienced classifiers were invited. They included an e-commerce online customer service practitioner, a university professor specializing in e-commerce, and a vocational college instructor in e-commerce. This study focuses on customer satisfaction and sets up questions based on the process of online customer service before and after sales. It analyzes critical incidents of customer satisfaction and dissatisfaction, investigates how merchants can make customers satisfied when they are dissatisfied, and collects customers' purchase and repurchase intentions in both satisfied and dissatisfied states. The questions in this study are set as follows:(1)Describe a critical incident where pre-sales customer service in e-commerce made you most satisfied.(2)If this e-commerce customer service satisfied you, would you consider placing an order?(3)Please describe a critical incident where post-sales customer service in e-commerce made you most satisfied.(4)If this e-commerce customer service satisfied you, would you consider repurchasing?(5)Describe a critical incident where pre-sales customer service in e-commerce made you most dissatisfied.(6)If this e-commerce customer service dissatisfied you, would you consider placing an order?(7)If dissatisfied, what kind of handling would make you satisfied?(8)Please describe a critical incident where post-sales customer service in e-commerce made you most dissatisfied.(9)If this e-commerce customer service dissatisfied you, would you consider repurchasing?(10)If dissatisfied, what kind of handling would make you satisfied?

4. Data Analysis

4.1. Basic Data Analysis

Between November 3 and November 8, 2024, a total of 80 questionnaires were collected for this study. After excluding 6 invalid questionnaires, 74 valid responses were obtained. Among them, there were 137 satisfaction incidents, comprising 63 pre-sales satisfaction incidents and 74 post-sales satisfaction incidents. There were 125 dissatisfaction incidents, comprising 61 pre-sales dissatisfaction incidents and 64 post-sales dissatisfaction incidents, totaling 262 incidents. In terms of respondents' gender, 64 were female, accounting for approximately 86.4%, and 10 were male, accounting for about 13.5%. This study also collected data on respondents' average monthly consumption expenditure. Since the majority of respondents were students, accounting for 87.8%, the data shows that 48.6% chose

1500 yuan or less, and 43.2% chose 1501-3000 yuan, indicating a predominance of low consumption expenditure.

4.2. Reliability and Validity Analysis

The reliability analysis of critical incident classification can generally be divided into two parts: "individual classification consistency" and "classifier classification consistency."

4.2.1. Individual Classification Consistency

The Critical Incident Technique involves researchers classifying collected critical incidents based on subjective judgment according to the attributes of the incidents. Keaveny suggests that if individual classification consistency reaches 0.8 or higher, the classification is considered consistent and reliable [12]. In this study, three classifiers with relevant experience in e-commerce online customer service were invited to conduct the classifications. The classifiers first gained an in-depth understanding of the definitions of satisfaction and dissatisfaction incidents and then classified the actual incidents. Two weeks later, they conducted a second classification to minimize memory interference and ensure the scientific nature of the classification (individual classification consistency results are shown in Table 1). The individual classification consistency for both satisfaction and dissatisfaction incidents reached 0.8 or higher, indicating the reliability of this study.

Table 1: Number of Individual Classification Consistencies

Classifier	Classifier1	Classifier2	Classifier3	Classifier1	Classifier2	Classifier3
Incident	Satisfaction	Satisfaction	Satisfaction	Dissatisfaction	Dissatisfaction	Dissatisfaction
Number of Same Incidents	127	126	130	113	109	113
Total Incidents	137	137	137	125	125	125
Consistency	0.93	0.92	0.95	0.90	0.87	0.90

4.2.2. Classifier Classification Consistency

Since the classification of critical incidents involves the subjective judgment of classifiers, to ensure the scientific nature of the study, in addition to verifying individual classification consistency, this study employs the reliability analysis method proposed by Holsti[13]to verify the mutual consistency among the three classifiers. The formula is as follows:

$$R = \frac{(N \times A)}{1 + [(N-1) \times A]} \quad (1)$$

$$A = \frac{\frac{2M_{12}}{n_1 + n_2} + \frac{2M_{23}}{n_2 + n_3} + \frac{2M_{13}}{n_1 + n_3}}{N} \quad (2)$$

R = Reliability

N = Number of classifiers

A = Average mutual consistency

M = Number of mutual consistencies among classifiers

n = Number of samples each classifier judged

Table 2: Number of Mutual Consistencies among Classifiers

Consistency	Classifier1	Classifier2	Classifier3	Classifier1	Classifier2	Classifier3
Number	Satisfaction	Satisfaction	Satisfaction	Dissatisfaction	Dissatisfaction	Dissatisfaction
Classifier1	137	--	--	125	--	--
Classifier2	119	137	--	103	125	--
Classifier3	123	121	137	106	106	125

Table 2 summarizes the number of mutual consistencies for satisfaction and dissatisfaction incidents among the three classifiers. Table 3 shows the classification reliability. As shown in Table 3, the average mutual consistency among the three classifiers reached over 0.8, with 0.833 for satisfaction classification and 0.840 for dissatisfaction classification. According to Holsti's formula, the reliability of this study exceeded 0.9, indicating that the mutual consistency among the three classifiers met

academic standards and that the classifications were highly reliable.

Table 3: Classification Reliability Table

Classification	Average mutual consistency(A)	Reliability (R)
Satisfaction	0.883	0.958
Dissatisfaction	0.840	0.940

4.2.3. Validity

The research method used in this study is based on the Critical Incident Technique (CIT) proposed by Flanagan. The classifiers in this study have considerable experience in the field of e-commerce online customer service, providing a certain level of expert validity. Moreover, all critical incidents in the study were real events reported by respondents, involving their interactions with e-commerce online customer service, which enhances the study's face validity.

This study's reliability was verified using the methods proposed by scholars in the field of CIT, for both individual and classifier consistency, achieving reliability scores above 0.8. This indicates a significant degree of credibility, demonstrating the study's good internal validity.

4.3. Critical Incident Classification Results

Among the 74 valid questionnaires collected in this study, there were a total of 137 satisfaction incidents and 125 dissatisfaction incidents. The researchers carefully reviewed each satisfaction and dissatisfaction incident and categorized them based on their nature. Satisfaction incidents were classified into nine categories (detailed in Table 4), and dissatisfaction incidents were classified into six categories (detailed in Table 5), with detailed definitions provided for each category.

Table 4: Classification Names and Definitions of Satisfactory Critical Incidents

Classification	Definition
Information Introduction	Customer service representatives provide information on product details
Response Speed	Customer service response speed on e-commerce platforms when customers have questions
Service Attitude	The degree of customer service representatives' patience, politeness, proactiveness, or perfunctoriness, and their empathy towards customers
Benefits and Promotions	Provide customers with benefits and discounts, such as red envelopes and coupons
Product Recommendations	Customer service representatives recommend suitable products, sizes, or colors based on customer needs
Logistics Confirmation	Allow customers to specify the delivery service or remind them to confirm if their shipping address is correct
Usage Reminders	Customer service representatives assist with product assembly, usage instructions, or reminders about precautions
Gifts and Cashback	Randomly offer small gifts or provide genuine and effective cashback for positive reviews
Solutions	Customer service representatives provide satisfactory solutions when there are issues with products

Table 5: Classification Names and Definitions of Unsatisfactory Critical Incidents

Classification	Definition
Information Introduction	Customer service representatives provide information on product details
Response Speed	Customer service response speed on e-commerce platforms when customers have questions
Service Attitude	The degree of customer service representatives' patience, politeness, proactiveness, or perfunctoriness, and their empathy towards customers
Types of Customer Service	The type of customer service that responds first, and how complicated it is to switch to a human representative
Solutions	Customer service representatives provide satisfactory solutions when there are issues with products
Responsibility Attribution	Acknowledging product issues or blaming the customer

In the categorization of events, since e-commerce online customer service is usually divided into

pre-sales and post-sales, the detailed classifications are pre-sales satisfaction, post-sales satisfaction, pre-sales dissatisfaction, and post-sales dissatisfaction. The key events in this study are divided into satisfaction event categories and dissatisfaction event categories, judged and classified by three classifiers with relevant experience in e-commerce online customer service based on the event attributes. Among the 137 classified satisfaction events, solution satisfaction ranked first with 41 events, followed by service attitude with 36 events, and response speed with 19 events. It is not difficult to find that solution satisfaction, service attitude, and response speed alone account for more than 60%. In dissatisfaction events, solution satisfaction, service attitude, and response speed also ranked first, second, and third, respectively, accounting for more than 70%. This indicates that these three factors are crucial in improving the quality of e-commerce online customer service. The categories in dissatisfaction events are fewer, and the event types are mainly concentrated in solutions, service attitude, and response speed. According to the statistics in Table 6, after experiencing dissatisfaction events, 91.8% of pre-sales dissatisfied customers chose not to purchase, and 87.8% of post-sales dissatisfied customers chose not to repurchase. Therefore, the prevention and remediation of dissatisfaction events are crucial to improving customer purchase intention and repurchase intention.

Table 6: Summary of Purchase and Repurchase Intentions in This Study

Classification	Post-sales		Pre-sales	
Incident	satisfaction and repurchase intention	satisfaction and repurchase intention	dissatisfaction and purchase intention	dissatisfaction and repurchase intention
Yes(%)	97.2	90.5	8.1	12.1
No(%)	2.7	9.4	91.8	87.8

Based on the statistical data from Table 6, it is evident that after customers experience satisfactory incidents with e-commerce online customer service, their purchase and repurchase intentions exceed 90%. Pre-sales satisfaction results in a purchasing intention as high as 97.2%, and post-sales satisfaction leads to a repurchase intention of 90.5%. Satisfaction correlates with high purchase and repurchase intentions. Conversely, the data shows that after experiencing dissatisfaction with e-commerce online customer service, customers demonstrate low purchase and repurchase rates. When customers are dissatisfied with pre-sales service, 91.8% choose not to purchase, and 87.8% of those dissatisfied with post-sales service choose not to repurchase. This indicates that effective pre-sales customer service is crucial for converting potential customers into direct customers, while effective post-sales customer service can convert customers into loyal users. Conversely, poor customer service can drive customers away.

This study also explored what actions can satisfy customers when they feel dissatisfied. In addressing pre-sales dissatisfaction, most customers pointed towards providing solutions and improving service attitude. For post-sales dissatisfaction, most customers preferred to receive effective compensation, although some were unwilling to give merchants another chance after a dissatisfactory experience.

5. Conclusions and Recommendations

This study aims to explore the impact of e-commerce online customer service quality on customer satisfaction. Based on the analysis of the research results, it was found that among the classified critical incidents, solutions, service attitude, and response speed had the largest impact on customer satisfaction, ranking first, second, and third respectively. This indicates that these three factors play a crucial role in influencing customer satisfaction. The study also examined the impact of customer satisfaction and dissatisfaction on purchase and repurchase intentions. The results showed that when customers experienced satisfactory incidents, they had high purchase and repurchase intentions. Conversely, when they experienced unsatisfactory incidents, they had low purchase and repurchase intentions. Some customers who experienced dissatisfaction were willing to give e-commerce companies a chance to rectify issues. If the service attitude improved, solutions were provided, or compensation was given, they would still choose to purchase or repurchase. However, there were also customers who were not willing to give another chance, highlighting the importance of preventive measures.

Based on the classification in this study, researchers propose targeted preventive suggestions:

(1)Solutions: Establish a database of various problem scenarios and update it regularly; grant customer service representatives the authority to resolve issues; provide timely compensation when customers need solutions.(2)Service Attitude: Improve employee selection and training; establish a

service quantification table; collect customer feedback; standardize employee service language.(3)Response Speed: Enhance response speed monitoring; expand the customer service team.(4)Information Introduction: Create and update a product information database regularly; strengthen staff training on product information.(5)Product Recommendations: Enhance personalized service levels.(6)Benefits and Promotions: Set up an automatic coupon pop-up mechanism; ensure transparent and easily accessible promotional information.(7)Usage Reminders: Set up automatic product usage reminders after customer receipt.(8)Logistics Confirmation: Improve logistics confirmation, change, and tracking mechanisms.(9)Gifts and Cashback: Ensure genuine and easy-to-operate cashback on positive reviews; appropriately provide gifts.(10)Responsibility Attribution: Acknowledge errors promptly.(11)Types of Customer Service: Establish a convenient channel for transferring to human customer service.

Hoping the above suggestions can serve as a reference for e-commerce companies to improve the quality of their online customer service.

Acknowledgements

References

[1] Akbar M M, Parvez N. Impact of service quality, trust, and customer satisfaction on customers loyalty [J]. ABAC journal, 2009, 29(01): 24-38.

[2] Parasuraman A, Zeithaml V A, Berry L A. conceptual model of service quality and its implication for future research[J].Journal of Marketing, 1985, 49: 41-50.

[3] Nguyen D T, Pham V T, Tran D M, et al. Impact of service quality, customer satisfaction and switching costs on customer loyalty[J]. The Journal of Asian Finance, Economics and Business, 2020, 7(08): 395-405.

[4] Kim J, Yum K. Enhancing Continuous Usage Intention in E-Commerce Marketplace Platforms: The Effects of Service Quality, Customer Satisfaction, and Trust[J]. Applied Sciences, 2024, 14(17): 7617.

[5] Ginting Y, Chandra T, Miran I, et al. Repurchase intention of e-commerce customers in Indonesia: An overview of the effect of e-service quality, e-word of mouth, customer trust, and customer satisfaction mediation[J]. International Journal of Data and Network Science, 2023, 7(01): 329-340.

[6] Flanagan J C. The critical incident technique[J]. Psychological bulletin, 1954, 51(04): 327.

[7] Kurotschka P K, Serafini A, Demontis M, et al. General practitioners' experiences during the first phase of the COVID-19 pandemic in Italy: a critical incident technique study[J]. Frontiers in Public Health, 2021, 9: 623904.

[8] Pelto-Piri V, Warg L E, Kjellin L. Violence and aggression in psychiatric inpatient care in Sweden: a critical incident technique analysis of staff descriptions[J]. BMC health services research, 2020, 20: 1-11.

[9] Ralston K, Smith S E, Kerins J, et al. Safety on the ground: using critical incident technique to explore the factors influencing medical registrars' provision of safe care[J]. BMJ Open Quality, 2024, 13(01): e002641.

[10] ABDALLA M, Taha M, Mukhtar W N O, et al. Impact of community-based medical education on graduate performance: A Qualitative study using a critical incident technique[J]. Health Professional Education, 2022, 8(01): 38-44.

[11] Smith D A. Posttraumatic Growth Following Critical Incident Exposure for Urban Firefighters [D]. Walden University, 2022.

[12] Keaveney S M. Customer switching behavior in service industries: An exploratory study[J]. Journal of marketing, 1995, 59(02): 71-82.

[13] Holsti O R. Content analysis for the social sciences and humanities[M]. Addison-Wesley Publishing Company, 1969.