

# Construction of evaluation indicators for the quality of logistics services on live e-commerce platforms

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**Abstract:** *The paper constructs a logistics service quality evaluation index system for the characteristics of the logistics service demand of live e-commerce platforms. By analysis the current situation and characteristics of live e-commerce platforms, the importance of logistics services and their impact on the development of the platforms are clarified. Based on the requirements of fast and on-time delivery, traceability, safety and security, good packaging and distribution services, and after-sales service support, logistics service quality evaluation indexes applicable to live e-commerce platforms are proposed, aiming to help platforms improve logistics service levels, enhance user experience and achieve high-quality development of live e-commerce platforms.*

**Keywords:** *live e-commerce platforms; logistics service quality; evaluation indicators*

## 1. Introduction

In recent years, live-streaming e-commerce platforms have rapidly risen to prominence and become the new darling of the e-commerce industry. By combining live-streaming and e-commerce, the live-streaming e-commerce platform provides a new shopping experience for consumers. Live-streamed goods cover a wide range of products, from food to cosmetics to household goods. For a short period of time that live streaming brings thousands of orders causes a rapid increase in logistics demand, a decline in logistics service levels and an increase in customer complaints. The merchandising activities of direct e-commerce platforms usually have time constraints, such as limited time rush or limited sales. Due to the large volume of orders, the pressure of peak periods and the limitations of the logistics network, the platform may face delivery delays or inability to deliver on time; the merchandise usually needs to go through the packaging and transportation process, with a relatively large variety of specifications and increased packaging costs; the sales activities have time constraints, and consumers may face time urgency and inconvenience when returning or exchanging goods, etc. How to better combine the logistics demand characteristics of the live e-commerce platform to build logistics service quality evaluation indicators, to provide corresponding suggestions for the live e-commerce platform to improve the level of logistics services, and ultimately ensure the high-quality development of the platform.

## 2. Live e-commerce and logistics service quality definition

### 2.1 Live e-commerce

Live e-commerce is a new industry, a new industry, a new model, a new business model that revolves around the production and encashment, reproduction and re-creation of the value of live anchors<sup>[1]</sup>. In Live e Commerce, merchants interact with viewers through live video streaming to showcase and promote their products and provide a real-time channel for purchases. Viewers can complete transactions by watching live broadcasts, interacting with the anchor and buying online. The business model combines real-time interaction, video displays and social elements to provide consumers with a novel, fun and convenient shopping experience. There are two forms of live e-commerce: the first is the individual type represented by Jitterbug Express, which attracts a group of fans based on the establishment of quality content, and then the traffic is liquidated, in a way that is generally advertising parties, live with goods. The second is the platform type represented by Taobao live. The platform itself has a large amount of traffic.

**2.2 Quality of logistics services**

Logistics service quality refers to the extent to which the logistics services provided by the various parties involved in the supply chain (e.g. suppliers, manufacturers, distributors, retailers, etc.) meet customer expectations in the logistics process<sup>[6]</sup>. It covers the entire process from order processing to product delivery in terms of accuracy, reliability, responsiveness, traceability, flexibility and customer satisfaction. The quality of logistics services is directly related to customer satisfaction and shopping experience. By providing high quality logistics services, we are able to deliver products on time, process orders accurately, provide good after-sales service, etc., thus enhancing customer satisfaction with the brand and the company, and promoting customer loyalty and word-of-mouth communication. make superior the quality of logistics services can help companies to reduce logistics costs, reduce transport losses and errors and improve logistics efficiency, thus achieving cost control and savings. The quality of logistics services plays an important role in the operational efficiency of the entire supply chain.

**3. Status and characteristics of live e-commerce**

**3.1 Current status of live e-commerce**

China's live e-commerce originated in 2016, the development has experienced four years, the industry is currently in the explosive growth phase, the transaction scale is still growing, 2019 live e-commerce overall turnover reached 451.29 billion, an increase of 200.4%, The live streaming industry chain has developed to date and the ecosystem is gradually diversifying. In the rapid development of live e-commerce, the state encourages the development of a new ecology of the platform economy and increase supervision, the introduction of a number of policies to guide the healthy and standardized development of the live e-commerce industry, so the live e-commerce industry is now also in a standardized state<sup>[1]</sup>. As of June 2022, the scale of China's online shopping users reached 840.57 million, with a usage rate of 80%. from June 2020 to June 2022, the scale of China's live e-commerce users grew from 309 million to 469 million, with a compound annual growth rate of 23.2%; the usage rate of Internet users increased from 32.9% to 44.6%, an increase of 11.7 percentage points in two years.

The size of live e-commerce is expected to exceed \$4.9 trillion in 2023. Live broadcast has become a normal marketing method and sales channel in the e-commerce market. The number of users, frequency of orders and unit price will continue to increase in the future, with a large increase in the number of users placing orders and a small increase in the frequency of orders, both of which are expected to become saturated relatively quickly. Live e-commerce also has a faster penetration in the social consumer goods and online shopping markets, with a 3.2% penetration of live e-commerce in total retail sales of social consumer goods and a 10.6% penetration in the online shopping retail market in 2020, with the latter expected to reach 24.3% in 2023<sup>[2]</sup>. (Figures 1 and 2)



Figure 1: China's live e-commerce marker size



Figure 2: China's live e-commerce market penetration rate

China's live e-commerce market is mainly Monopoly by the three major platforms of Taobao, Tiktok and Kuaishou Live, with the three live e-commerce giants occupying 99.7% of China's live e-commerce industry. Among the live e-commerce platforms, Taobao, Racer and Kuaishou Live are three major platforms with fierce competition, but Taobao still holds a greater advantage with a market share of over 50%. The top platforms Taobao, JD and Tiktok have high MAU (number of monthly active users)<sup>[4]</sup>.

### 3.2 Live e-commerce platform features

China's mainstream live e-commerce platforms Tiktok, Kuaishou Live, Taobao, and JD, etc. Live e-commerce platforms place more emphasis on real-time interactivity and socialization, and have a wide range of products to meet the different needs and preferences of consumers.

#### 3.2.1 Live video function

The live e-commerce platform provides a real-time live video function, enabling anchors to interact and showcase products directly with viewers through the platform. Viewers can watch the anchor's demonstration, product presentation and shopping process in real time, increasing the sense of participation and entertainment in shopping.

#### 3.2.2 Social interaction

The live-streaming e-commerce platform emphasises the features of social interaction. Viewers can interact with the anchor during the live broadcast through pop-ups, comments and likes, and communicate and share shopping tips with other viewers. This social interaction feature enhances user engagement and creates a good community atmosphere.

#### 3.2.3 Merchandise display and sales

The live-streaming e-commerce platform is the main venue for merchandise display and sales. The anchor shows and demonstrates the products through live streaming, introducing the features, usage and advantages of the products and stimulating the viewers' desire to buy. Visitors can browse product information directly on the platform and place orders to make purchases, enabling instant transactions.

#### 3.2.4 Trust spreads

Live e-commerce platforms focus on building trust between anchors and viewers. Anchors win the trust of viewers through their personal image, expertise and real-life shopping experience, and viewers are more likely to trust the recommendations and reviews of anchors, increasing the basis for purchase decisions.

#### 3.2.5 Innovation in marketing tools

live e-commerce platforms use a variety of innovative marketing tools. Examples include limited time sales, second sales events and group buying offers to drive buying behaviour by creating a sense

of urgency and promotional offers. The platform also partners with branded merchants to launch exclusive campaigns and products to provide a unique shopping experience.

#### **4. Live e-commerce platform logistics service quality requirements**

##### ***4.1 Live e-commerce platform requirements for logistics services***

###### ***4.1.1 Fast on-time delivery***

Live e-commerce platforms are characterised by real-time and immediacy, and consumers may be willing to purchase products during the live broadcast process. Therefore, logistics services need to have the ability to deliver quickly and on time, ensuring that products are delivered to consumers within a short period of time after the order is generated to meet their needs and expectations.

###### ***4.1.2 Traceability***

After placing an order for a product on a live e-commerce platform, consumers want to be able to keep track of the logistics status and delivery progress. Therefore, logistics services need to provide traceability, i.e. consumers can check the logistics trajectory and current status of their orders through the platform or other channels in order to keep track of the delivery of products.

###### ***4.1.3 Safety and security***

Logistics services need to ensure the safety of products during transport. The wide variety of products available on direct e-commerce platforms, including clothing, electronics and food, makes it essential for logistics services to properly handle and protect goods from damage, loss or theft.

###### ***4.1.4 Good packaging and delivery services***

Goods on live e-commerce platforms are usually delivered via courier or logistics companies. Logistics services need to provide good packaging to ensure that products are not damaged during transport. At the same time, logistics personnel need to have a professional delivery service to ensure that the products are delivered with accuracy and integrity.

###### ***4.1.5 After-sales service support***

The role of logistics services in live e-commerce is not only the transportation of products, but also the provision of after-sales service support. If a consumer has a problem or needs to return a product after receiving it, the logistics service needs to provide timely feedback and solutions to ensure the consumer's rights and satisfaction.

#### **4.2 Logistics service quality measurement tools**

SERVQUAL is a widely used logistics service quality measurement tool which consists of five factors and corresponding indicators<sup>[3]</sup>. These indicators are used to assess the gap between customers' perceptions and expectations of service quality. There are generally 20 indicators for 5 factors.

##### ***4.2.1 Reliability***

Provide accurate and reliable service; meet commitments on time; reduce errors and mistakes in service delivery; provide consistency and continuity of service.

##### ***4.2.2 Reactivity***

Respond quickly to customer needs and requests; provide timely assistance and support; respond positively to customer questions and complaints; proactively communicate with customers and provide appropriate solutions.

##### ***4.2.3 Guarantee***

Provide professional, experienced and knowledgeable staff; interact with customers in a courteous and respectful manner; convey a sense of reliability and trust; and provide clear information and accurate promises.

##### ***4.2.4 Empathy***

Focus on customer needs and expectations; understand individual customer requirements; provide personalised service and care; build good customer relationships and communication channels.

#### **4.2.5 A perceptible service environment**

Provide a comfortable, clean and attractive service environment; use modern equipment and technology; provide clear and easy to understand signage and instructions; and provide appropriate staff dress and appearance.

### **5. Live e-commerce platform logistics service quality evaluation index construction**

#### **5.1 Factors and indicator construction influencing the quality of logistics services on direct broadcasting e-commerce platforms**

According to the characteristics of the live e-commerce platform and the requirements for logistics services, combined with SERVQUAL indicators, five evaluation factors and ten indicators adapted to the evaluation of the quality of logistics services of the indicator e-commerce platform are constructed<sup>[5]</sup>:

##### **5.1.1 Live Logistics Responsiveness**

Instant delivery capability: assesses the platform's ability to provide instant delivery to meet consumer demand for real-time purchases. Host coordination capability: measures the ability of hosts to coordinate with logistics partners to ensure timely order processing and delivery.

##### **5.1.2 Individual logistics services**

Customized packaging: assess the logistics service provider's ability to provide Customized packaging based on the characteristics of the goods and the needs of the consumer. Special goods delivery: the measurement platform provides special delivery services for special goods (e.g. fragile goods, high-value goods, etc.)<sup>[7]</sup>.

##### **5.1.3 Live Logistics Reliability**

On-time delivery accuracy: assesses the extent to which the logistics service provider is accurate and reliable while ensuring on-time delivery of orders. Lost or damaged handling: measures the logistics service provider's ability to promptly handle and compensate for lost or damaged goods.

##### **5.1.4 Supply chain traceability**

Logistics information transparency: assesses the extent to which consumers have access to real-time information on the location and status of orders in the supply chain. Returns tracking: measures the ability of the platform to provide logistical tracking and processing in the returns process.

##### **5.1.5 Security of logistics services**

Commodity safety and security: assesses the logistics service provider's safeguards for the safety of commodities during delivery to prevent damage, loss or tampering. Data protection and privacy: Measures the platform's compliance with consumer logistics data protection and privacy policies.

### **6. Conclusion**

With the rise of live e-commerce platforms, the quality of logistics services has become an issue that needs to be addressed urgently. Live e-commerce platforms have high requirements for logistics services, requiring fast and on-time delivery, traceable distribution, safety and security, good packaging and delivery services and after-sales support. In order to improve the level of logistics services, it is necessary to construct logistics service quality evaluation indicators that are suitable for the characteristics of live e-commerce platforms. These metrics help the platform to monitor and improve all aspects of logistics services and increase customer satisfaction. By making superior the quality of logistics services, live e-commerce platforms can achieve efficient operation and optimal use of resources, promoting the sustainable development of the platform. Therefore, it is vital to establish logistics service quality evaluation indicators applicable to live e-commerce platforms, to provide the platforms with directions and strategies to improve their logistics services and ensure high quality development.

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