

# Survival Advantages, Disadvantages and Niche Research of Tiktok Second-Hand Digital E-Commerce from the Perspective of Niche Theory

Yuncheng Shu<sup>1\*</sup>

<sup>1</sup> School of Artificial Intelligence and Data Science, University of International Business and Economics, Beijing, China

\*Correspondence: Yuncheng Shu

**Received:** 28 June 2026; **Accepted:** 19 July 2026; **Published:** 12 August 2026

---

## Abstract:

With circular economy promotion and growing trends of rational consumption, digital second-hand e-commerce has become a new growth path in Tiktok's interest e-commerce ecosystem. This study focuses on Tiktok's second-hand digital e-commerce platform. It selected three representative merchant categories as its empirical samples, then comprehensively analyzed the platform's macro-environment, core strengths and weaknesses, and niche distribution pattern using a three-pronged PEST analysis, SWOT model, and niche theory approach. The study reveals that Tiktok has carved out three distinct niches in its second-hand digital e-commerce: high-end trust-based, cost-effective supplemental, and standardized compliance-based. Influencers who stand out are highly profitable because they build trust through Intellectual Property, small businesses thrive on cross-traffic, and enterprise stores succeed by setting standards. But the whole industry has some core problems, like lack of trust, not enough standardization, and traffic not spread out evenly. Based on this analysis, the paper outlines different optimization strategies at industry, merchant, and platform levels.

## Keywords:

Second-Hand Digital E-commerce, Tiktok E-commerce, Niche Theory, Survival Advantages and Disadvantages, Live-Streaming e-Commerce

---

## 1. Introduction

The global market for second-hand electronic goods is expanding at a rapid pace, with an estimated worth of \$344 billion in 2024 and a projected compound annual growth rate (CAGR) of 10.9% from 2024 to 2030 [1]. In China, fueled by the "Double Carbon" goal and circular economy policies, the scale of second-hand commodity transactions surged past 480 billion RMB in 2023, with projections indicating it could reach 3 trillion RMB by 2025 [2]. Digital products are currently the main category in the second-hand markets thanks to their low depreciation and fast iteration cycles. As China's leading platform for online commerce [3], Tiktok has overcome informational inequalities in conventional secondhand trading. It has done this through live-stream visualization and algorithmically accurate recommendations.

The sales volume of Tiktok's second-hand digital tracks reached 5-10 million RMB between May 2025 and May 2026 [4]. However, the rapid growth of the industry is accompanied by several key problems. First, trust is still a major barrier, largely due to refurbished machines and disputes over quality. Second, the lack of standardized testing and pricing makes the market chaotic. Finally, small and medium-sized merchants are squeezed for living space [5]. Existing research on second-hand e-commerce has largely focused on larger platforms like Xianyu and Zhuanzhuan, or on the overall development of live-stream e-commerce. There have been few studies that have combined niche theory to conduct an in-depth analysis of the vertical track of Tiktok's second-hand digital e-commerce, and there has been a lack of empirical research on the survival status of different types of merchants. This study aims to find out the position of three different kinds of merchants and discussing what kind of future will be like for them by analysing their current situation and the trend of the whole market, addressing a critical theoretical gap by developing an analytical framework based on niche theory.

## **2. PEST Analysis of Tiktok Second-Hand Digital E-Commerce**

### ***2.1. Political Environment***

The Chinese government has unveiled a series of policy initiatives designed to promote the development of a circular economy. The "14th Five-Year Plan for Circular Economy Development" highlights the need to standardize the development of the second-hand market and promote the "Internet + second-hand" model [6]. Regulatory authorities have stepped up their supervision of the second-hand market, taking action against fraudulent practices like selling refurbished machines as new ones. Tiktok has also upgraded its rules for its second-hand digital category, boosting standardization across testing and after-sales services, a policy that is good for the industry's healthy future.

### ***2.2. Economic Environment***

Consumption has become increasingly rationalized, with consumers placing greater emphasis on value for money. Second-hand digital products have become an attractive alternative to new ones, especially for those on a tight budget. The live-stream e-commerce model reduces the barriers to entry for small and medium-sized merchants, making it easier to operate with less capital. China's large stock of digital products offers a stable supply for the industry. China saw the number of mobile phones destroyed hit 500 million in 2018, but the recovery rate was only 7%, showcasing huge market potential [7].

### ***2.3. Social Environment***

Post-90s and Gen Z have become the main consumer groups of second-hand digital products. They not only focused on cost performance but also embraced the idea of environmentally-friendly consumption and sustainable consumption. The retro consumption trend has fueled the popularity of older iPhones and CCD cameras, further heating up the market. However, surveys reveal that 46.1% of netizens have faced issues with opaque product information when shopping on second-hand e-commerce platforms. A significant 37.8% of these same netizens would avoid such platforms due to concerns about "too many fakes and lack of trust" [5]. Empirical studies have confirmed that product quality inconsistency and insufficient after-sales

protection will significantly erode consumer trust and directly suppress purchase intentions [8].

#### **2.4. Technological Environment**

Tiktok's live-stream technology is mature enough to show off the product's look, test its functions, and even dismantle it for inspection, effectively resolving the information gap between non-standard products. Techniques for intelligent testing, such as AI-powered battery health detection and data erasure, have boosted both the efficiency and accuracy of product inspection. Algorithmic recommendation technology can match supply and demand effectively, reducing user acquisition costs. In addition, technologies like identity verification via KYC and secure payment through escrow provide a technical foundation for a trusted trading environment [9]. AI technology further enhances transaction security through intelligent fraud detection and false review identification, providing stronger technical support for industry trust building [10].

### **3. SWOT Analysis of Tiktok Second-Hand Digital E-Commerce**

#### **3.1. Strengths**

Live-stream-based real-time quality inspection serves as the core competitive advantage of Tiktok's second-hand digital e-commerce. Unlike traditional text-and-image transactions that can only present limited product information, live streaming allows merchants to demonstrate product appearance, component conditions and functional tests in real time. This directly addresses the inherent information asymmetry of non-standard second-hand digital products, significantly reducing consumers' perceived purchase risks and laying a foundation for trust building. Meanwhile, Tiktok's algorithmic recommendation system analyzes user browsing history, interaction behaviors and consumption preferences to achieve precise matching between supply and demand, which shortens the user decision-making cycle and improves overall transaction efficiency. Furthermore, due to differences in operational scale, resource endowments and target audiences, head influencers, small and medium-sized individual merchants and enterprise official stores have naturally formed a staggered ecological layout, avoiding all-round vicious homogeneous price wars and enabling each type of merchant to find its own survival space. Driven by the above multiple advantages, the proportion of live-stream transactions in Tiktok's second-hand digital track has reached 93.18%, reflecting extremely high conversion efficiency [4].

#### **3.2. Weaknesses**

The entire industry lacks unified national or industry-level standards for product testing, condition grading, pricing and after-sales services. Since there are no authoritative benchmarks, merchants can only formulate their own internal standards arbitrarily. This inconsistency directly leads to frequent quality disputes and increases transaction costs for both buyers and sellers. The lack of standards further exacerbates the industry's trust deficit: some unscrupulous merchants sell refurbished machines as original ones and provide inconsistent product descriptions, which continuously erode consumer confidence and become the biggest bottleneck restricting industry expansion. In terms of traffic distribution, Tiktok's algorithm mechanism shows a significant Matthew effect: content with high initial exposure will get more traffic

recommendations, while content with low initial exposure will be further marginalized. As a result, the top 5 products account for 83.50% of total sales, and most small and medium-sized merchants face extreme difficulties in obtaining public domain traffic [3]. In addition, most small and medium-sized merchants are individual operators who lack systematic e-commerce operation knowledge and private domain management capabilities. They cannot effectively convert public domain traffic into private domain users, resulting in low repurchase rates and limited long-term profitability.

### ***3.3. Opportunities***

Driven by the national “Double Carbon” goal and circular economy strategy, the Chinese government has issued a series of policies to encourage the development of the second-hand commodity market. These policies provide institutional guarantees for the standardized development of the industry and continuously release market dividends, promoting the steady expansion of the overall market scale. At the platform level, Tiktok is vigorously promoting its full-domain e-commerce strategy, and second-hand digital products, as an important category with high user stickiness and profit margins, have been included in the key support list, which means merchants will enjoy more traffic inclination and policy support. Technically, automated testing, AI battery health detection and blockchain traceability technologies are gradually maturing and their application costs are decreasing. These technologies can effectively improve the efficiency and accuracy of product inspection and provide technical support for industry standardization. Socially, the rise of rational consumption concepts and retro consumption trends has expanded the target consumer group of second-hand digital products. More and more consumers are willing to purchase second-hand products for cost-effectiveness or collection purposes, driving continuous growth in market demand [1].

### ***3.4. Threat***

Mature professional second-hand platforms such as Xianyu and Zhuanzhuan have first-mover advantages, accumulated massive user bases and established relatively complete service systems including testing, logistics and after-sales. They have formed strong user stickiness and pose continuous competitive pressure on Tiktok’s second-hand digital merchants. Meanwhile, as the industry develops, market regulatory authorities are gradually strengthening supervision over second-hand transactions, cracking down on behaviors such as selling counterfeit and refurbished products. This requires merchants to invest more human and material resources in product testing and compliance management, significantly increasing their operational costs. In addition, some popular retro products such as CCD cameras have experienced excessive speculative hype, leading to serious price bubbles. Once the bubble bursts, it will cause sharp fluctuations in the market and damage the interests of both merchants and consumers. Finally, the frequent price cuts of new digital products have narrowed the price advantage of second-hand products. When the price difference between new and second-hand products is small, many consumers will choose to buy new products directly, which has a certain impact on the sales of second-hand digital products [11].

## 4. Niche Comparative Analysis of Typical Merchants

Based on the scale and mode of operation, Tiktok's second-hand digital merchants can be categorized into three distinct ecosystems: head influencers, small and medium-sized individual sellers, and enterprise official stores.

### 4.1. *High-end Trust-based Niche: Head Influencers*

Examples of representative accounts include Li Peishi (5 million+ followers) and Ajie Digital (4.5 million+ followers). The operation mode is driven by personal IP and focuses on second-hand iPhones and iPads in the mid to high-end range. Live broadcasts are primarily focused on professional disassembly and testing, highlighting the terms "if fake one, compensate ten" and long-term warranty. Traffic is structured around search queries, which account for a significant portion (11.47% for Li Peishi). The rate of private domain repurchase is high, and user loyalty is strong. The mentioned merchants use a high price per customer unit (between 4000 and 4200 RMB) to maximize profit. Trust is constructed by leveraging professional testing capabilities and IP reputation. The whole process of live broadcast testing is clear and well-managed. After-sales service is top-notch. When it comes to pros and cons, the main benefit here is the strong trust barrier created by IP, which reduces the risk of low-price competition. The downside is that traffic growth is limited and the product category is relatively narrow.

### 4.2. *Cost-effective Supplementary Niche: Small and Medium-sized Individual Merchants*

Examples of influential accounts include Zhengzhou Xiaozhengjie Digital (over 500,000 followers), Xishi Digital (over 400,000 followers). The operation model is mainly based on short video drainage and frequent live broadcasts, targeting mid-to-lower-end models priced between 1,000 and 3,000 RMB. Videos are updated daily to attract a large volume of traffic at low prices. The structure of traffic is largely driven by algorithm-recommended pan-traffic, with high viewership of live broadcasts, but low conversion rates. The pricing strategy is low per-unit customer pricing, relying on volume to turn a profit, and fierce price competition. How trust is built: A simple testing process, weak customer service after sales, and low levels of user trust. The core benefits include lightweight asset operation, flexible pricing, and addressing a gap in the sinking market. The disadvantage is that there is intense competition, low profit margins, and a high return rate.

### 4.3. *Standardized Compliance-based Niche: Enterprise Official Stores*

These stores will use brand endorsements to drive standardized operation throughout the whole process. Offering professional testing centers that provide 72-item standardized tests, data erasure services, and a one-year warranty. The traffic structure shows that search accounts for 18.3% of the traffic, characterized by high user trust and strong demand for rational consumption. The pricing strategy is slightly higher than that of individual merchants, but the price is stable and the transaction security is high. Build trust by relying on established brand reputation and standardized service systems. The testing report is easily traceable, and the after-sales service is excellent. As for the benefits and drawbacks, the main advantage is high compliance and strong trust. The main drawbacks are its rigid operation, lack of emotional connection with users, and low user stickiness.

#### **4.4. Niche Pattern Summary**

The three types of merchants form a competitive pattern that starts with high-profit, high-end businesses, moves down to a shrinking market demand for small and medium-sized businesses, and completes with rational customers seeking standardization and compliance in the enterprise market. But there is overlap in the mid-end market, which creates fierce competition. The paper argues that merchants' survival rate depends on their ability to build trust, acquire traffic, and achieve a high level of standardization.

### **5. Management Implications**

#### **5.1. Industry Level: Promote Standardization Construction and Strengthen Trust Foundation**

Industry associations should be at the forefront of developing unified standards for testing, grading, pricing, and after-sales services for second-hand digital products. They need to set up a credit rating system to bring illegal merchants to light. Spreading the knowledge of data security and product testing are necessary in order to guide rational consumption and prevent market bubbles. Drawing from the lessons of European and American markets, the aim is to foster mutual recognition of testing standards and bolster the industry's overall credibility [1].

#### **5.2. Merchant Level: Implement Differentiated Operation Based on Niche Positioning**

Head influencers can help expand short-video drainage channels, broaden the niche by enriching product matrices, and extending services to the mid-market. In order to deepen the emotional connection between the brand and its fans, it is necessary to build up trust barriers. For small and medium-sized merchants, they should abandon low-price involution and focus on specialized categories like student-specific replacement phones and retro digital product assortments. They have to make effort to streamline the testing process, highlight product features with short videos, and foster a sense of trust. Creating a basic private domain pool of their own to boost repurchase rates is helpful. Meanwhile, they can improve consumer confidence by formulating clear and lenient return policies and displaying authentic user reviews [8]. The company's stores are optimized to boost live broadcast content, increase emotional expression, and enhance user interaction. Merchants should launch affordable product lines to break into a sinking market. Simplify transaction processes and enhance operational flexibility [12].

#### **5.3. Platform Level: Improve Ecological Governance and Balance Traffic Distribution**

At the platform level, targeted measures should be implemented to optimize the ecological governance of second-hand digital e-commerce. First, the platform should increase traffic support for small and medium-sized merchants by establishing dedicated traffic pools for segmented categories, which can effectively alleviate the Matthew effect in traffic distribution. Second, an official free testing system should be built to provide standardized third-party testing services, thereby reducing the compliance costs borne by individual merchants. Third, a comprehensive merchant credit rating system needs to be established, which links credit scores directly to traffic allocation to reward honest operators and penalize non-compliant behaviors. AI technology can be integrated into the credit system to automatically identify false

reviews and fraudulent transactions, improving the accuracy of credit evaluation [10]. Finally, drawing on the research findings of Xu et al. (2024), a green subsidy mechanism can be introduced to associate carbon emission reductions from second-hand transactions with traffic incentives, further promoting the development of a circular green economy.

## 6. Conclusions

This study examines the survival environment and niche pattern of Tiktok's second-hand digital e-commerce through PEST analysis, SWOT assessment and niche theory. The core findings are as follows: First, Tiktok's second-hand digital e-commerce has formed three distinct dislocation competition niches: high-end trust-based, cost-effective supplementary, and standardized compliance-based. Second, merchants' survival status is jointly determined by three core factors: trust building capability, traffic acquisition capability and standardization level. Third, the industry is in a stage of rapid growth coexisting with disorder, facing core dilemmas of trust deficit, standard gap and traffic imbalance.

These findings have important practical implications. For the Tiktok platform, they provide a scientific basis for optimizing ecological governance, adjusting traffic distribution rules and formulating targeted category support policies. For merchants of different scales, the clear identification of three niches helps them accurately position themselves, avoid blind homogeneous competition and formulate operational strategies matching their resource endowments. For the industry, this research offers actionable references for promoting the formulation of unified testing, grading and after-sales standards and accelerating the construction of an industry credit system. Furthermore, the standardized development of second-hand digital e-commerce can improve the utilization rate of idle electronic resources, reduce electronic waste and contribute to achieving the "Double Carbon" goal and developing the circular economy.

The study's limitations include a relatively limited number of empirical samples, a predominant reliance on qualitative analysis and a short research cycle. Future research could expand the sample size, conduct quantitative analysis combined with large-scale operational data, and continuously track the implementation effect of platform standardization policies. With the improvement of industry standards and platform governance, Tiktok's second-hand digital e-commerce is expected to achieve healthy and sustainable development.

## Conflicts of Interest

The author declares that there is no conflict of interest regarding the publication of this article.

## Funding

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

## References

- [1] Feng M. Development and Challenges of the Second-Hand Electronic Product E-commerce Market from the Perspective of Circular Economy. *SHS Web of Conferences*, 2024, 200, 01003.

- [2] Wang, Z. Second-Hand E-Commerce Will Usher in a Dividend Period After E-Commerce. *Business Observation*, 2023, 9(22), 10-13.
- [3] Tiktok E-commerce. 2025 Douyin Second-Hand Digital Industry Development Report. Beijing: ByteDance E-commerce Division, 2025.
- [4] Chanmama. 2025-2026 Douyin Second-Hand Digital Product Heat Analysis Report. Hangzhou: Chanmama Data Research Institute, 2026.
- [5] Xu, F.; Wei, L.; Zeng, Y. Green Subsidy and Integrity Construction Strategies for C2C Second-Hand E-Commerce Platforms. *Journal of Management Sciences in China*, 2024, 27(8), 73-89.
- [6] National Development and Reform Commission. 14th Five-Year Plan for Circular Economy Development. Beijing: National Development and Reform Commission, 2021.
- [7] Guo, Y. The road of idle digital products opening up the “old” gold mountain. *Market*, 2019, 24, 18-19.
- [8] Zuniarti, I.; Gursida, H.; Pranowo, A.S. Consumer behavior in purchasing mobile phone product in e-commerce. *International Journal of Data and Network Science*, 2026, 10(3), 767-774.
- [9] Gadhe, S.; Khade, Y.; Rusia, S, et al. A Secure Digital Marketplace for Second-Hand Goods: Improving Trust, Transparency, and Sustainability in E-Commerce. *International Journal on Advanced Computer Engineering and Communication Technology*, 2025, 14(03s), 80-85.
- [10] Zhou, Z. The Effect of Artificial Intelligence on E-Commerce Industry. *Journal of Physics: Conference Series*, 2026, 2242(1), 012034.
- [11] Shi, T. Second-Hand E-Commerce: You Can Fly a Pig on the Wind, but You Need Internal Skills to Survive. *Application Case*, 2023, 32-39.
- [12] Parker, B.; Weber, R. Second-Hand Spaces: Restructuring Retail Geographies in an Era of E-Commerce. *Urban Geography*, 2013, 34(8), 1103-1126.



© 2026 by the author(s); licensee International Technology and Science Publications (ITS), this work for open access publication is under the Creative Commons Attribution International License (CC BY 4.0). (<http://creativecommons.org/licenses/by/4.0/>)