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The Impact of the 4S Theory on Marketing Optimization: A Case Study of Tuxi Express

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Abstract

The acceleration of globalization has increasingly interconnected nations, drawing heightened attention to the logistics industry as a crucial pillar supporting production and trade, while also presenting it with new transformations and challenges. Tuxi Express (Tuxi) launched its integrated service platform, Tuxi Life Express Store, to enhance its logistics network and meet market demands. Targeting communities and campuses, Tuxi Life focuses on last-mile delivery services, marking a significant step in exploring diversified service models. As a highly representative player in the third-party logistics industry, analyzing Tuxi can serve as a valuable reference for the sector as a whole. This paper takes Tuxi as the research subject, employing the SWOT framework to conduct a comprehensive analysis of the internal core competencies and weaknesses of the logistics enterprise, as well as the external opportunities and challenges it faces. Building upon the 4S marketing theory, it offers suggestions for Tuxi Life Express's development across the four dimensions of customer satisfaction, service, speed, and sincerity, providing research insights and recommendations for the future development of Tuxi.

Keywords: 4S marketing, Logistics enterprises, Third-party logistics.

1. Introduction

Since 2024, The concept of logistics was initially applied in military logistics management, encompassing the supply, transportation, and distribution of munitions and medical materials. After World War II, this concept was introduced into the field of business operations and evolved into the concept of "business logistics." Its core lies in the comprehensive integration of various aspects such as corporate procurement, distribution, delivery, and inventory control (Zhou & Shi, 2009). According to the definition provided in Logistics Terms by the Standardization Administration of China (2006), logistics refers to the physical movement process of goods between the point of supply and the point of receipt. Modern logistics has continuously improved its processes, encompassing distribution and transportation, circulation processing, information management, and other segments. Numerous related theories have also been developed to explain and refine the field.

The concept of third-party logistics (3PL) originated from businesses outsourcing their logistics operations to external service providers to enhance production and operational efficiency (Wang., Ji., & Chen, 2017). As defined by the national standard Logistics Terms, third-party logistics refers to the form of logistics services provided by specialized third-party organizations engaged in logistics service activities, which are independent of both the supplier and the demander of goods. Its rise is closely linked to economic globalization and the deepening of professional specialization. Manufacturers and retailers require more efficient and specialized logistics services to support their global business development (Standardization Administration of China, 2006).

According to a survey by the State Post Bureau, from 2018 to 2023, SF Express (SF) and JD Logistics (JD) consistently maintained high satisfaction scores exceeding 80 points. Following them, Tuxi, YTO Express (YTO), Yunda Express (Yunda), Best Express, and STO Express (STO) scored between 76 and 80 points. Tuxi's satisfaction indicators were slightly lower than those of SF and JD (Express Mail Management Division, 2023).

As a key pillar supporting economic recovery, the logistics industry faces a new competitive landscape in the post-pandemic era. This study aims to analyze the marketing practices of Zhongtong Tuxi to provide the industry with references for addressing challenges. Utilizing SWOT analysis and the 4S theory (Satisfaction, Satisfaction, Service, Speed), it seeks to explore a scientific marketing approach centered on customer needs.

The research objectives are:

(1) As the logistics industry is a significant contributor to economic development, studying the marketing of third-party logistics enterprises provides reference suggestions and assistance for logistics companies recovering from the pandemic to navigate new competition and challenges.

(2) Based on SWOT analysis, clarify the product/service positioning and target customer needs of third-party logistics enterprises to assist in designing targeted marketing strategies.

(3) Based on 4S marketing, start from customer needs to build customer-centric marketing, providing logistics enterprises with a more scientific perspective for marketing decision-making.

2. Literature Review

Research on third-party logistics (3PL) by Chinese scholars began in the mid-to-late 1990s. According to Hao Jumin (2003), third-party logistics refers to a model where specialized enterprises are responsible for designing and operating logistics systems, providing clients with comprehensive integrated logistics services, rather than the cargo owners undertaking these responsibilities themselves. Hu Shuangzeng and Zhang Duo (1999) noted that third-party logistics constitutes a service provided by an independent third party separate from both the supplier and the demander involved in the logistics transaction. It is characterized by the professional operation and execution of partial or complete logistics functions. This concept essentially reflects the trend towards the specialization of logistics services, with the actual service providers being logistics enterprises. Zou Zhenzhen (2011) defined third-party logistics as the practice where production and operating entities entrust part or all of their logistics functions to an independent 3PL service provider. The provider, in turn, meets specific client needs and optimizes supply chain efficiency by offering customized, professional, and highly integrated logistics operations and management systems. Qian Youmei (2013) stated that third-party logistics involves an entity independent of both the logistics supplier and demander. This entity provides specialized logistics service solutions to enterprises within the supply chain by utilizing advanced logistics technology, comprehensive facilities and equipment, and an extensive network system. Devinder and Anupama (2024) investigated the impact of bundling human and technological resources on the financial and non-financial performance of 3PL enterprises. Their study found that human and technological resources significantly enhance 3PL enterprise performance. However, enterprise logistics capabilities related to tracking and tracing, order management, and final assembly do not affect this relationship. Zarbakhshnia and Karimi (2024) emphasized the importance of effectively selecting third-party providers for real-world supply chains. They identified criteria such as procurement price, transportation costs, waste removal, cost reduction, and crisis risk management as significant factors in the 3PL selection process, serving as crucial references for 3PL enterprises to optimize their operations.

The 4S marketing concept was developed by marketing scholars and practitioners through long-term practice. It represents a customer-centric marketing model focused on service and client needs, aiming to deliver superior consumption experiences that foster repeat purchases and word-of-mouth effects. Its core philosophy lies in shifting away from traditional enterprise-dominated sales models towards a consumer-centered market orientation. By restructuring the marketing system, the theory prioritizes enhancing three key enterprise capabilities: market risk resilience, management innovation, and sustainable growth capacity (Zhang Xiujuan, 2007).

Satisfaction (S) is the core orientation for logistics enterprise operations, demanding that enterprises consistently prioritize customer needs and guarantee service experience.

Service (S) requires enterprises to build long-term relationships with consumers by providing professional, personalized services and implementing a "warm and human-centric" user management strategy.

Speed (S) refers to the ability to serve customers promptly without making them wait, ensuring swift reception and processing. In a highly competitive market environment, enterprises must respond to customer needs and problems promptly, providing solutions and avoiding testing customers' patience.

Sincerity (S) forms the foundation for building long-term relationships with customers. It involves serving customers with genuine concern for their interests, embodied through concrete actions and warm smiles, allowing customers to feel the enterprise's sincerity and care.

3. Methods

3.1. Research Subject

As a subsidiary of ZTO, Tuxi Station had expanded to 70,000 outlets by 2021. By the end of 2022, this number exceeded 80,000. In 2023, Tuxi achieved revenue of 38.42 billion (¥), representing a year-on-year growth of 8.6%, with core express service revenue growing by 9.8% year-on-year. Responding to market demands, Tuxi conducted large-scale recruitment activities nationwide and integrated retail elements to establish integrated station layouts. The average daily sales approached 10,000 yuan. While Tuxi Station's business exploration encompasses various models such as community group-buying and convenience store operations, the majority of outlets are currently in the early stages of commercialization, yielding limited economic benefits (Zhang, 2023).

3.2. Questionnaire

Targeting Tuxi's customer base, a survey questionnaire was designed and distributed to collect objective and subjective customer feedback. This aims to identify issues within Tuxi's marketing model and propose targeted optimization suggestions based on the 4S framework.

3.2.1. Questionnaire Design

The research questionnaire was structured around the four dimensions of the 4S theory: Satisfaction (I;A1~A6), Service (II;B1~B5), Speed (III;C1~C5), and Sincerity (IV;D1~D6). Incorporating topics of significant concern to Tuxi customers, a total of 22 questions were formulated. The questionnaire comprises two main parts:

(1) Utilizing a Likert five-point scale, this section aims to comprehensively and accurately reflect the actual experiences of customers at Tuxi Station.

(2) Focusing on suggestions for improvement at Tuxi Station, this section employs multiple-choice questions to gather customer opinions. The goal is to pinpoint dimensions requiring significant improvement, thereby enabling the proposal of more scientific enhancement methods.

3.2.2. Questionnaire Distribution and Collection

To ensure the representativeness of the survey, the questionnaire sampling for this study was conducted based on the proportion of the permanent resident population in various districts and counties of Zhanjiang City (ZJ). According to data from the Seventh National Population Census (2020), the selection ratio of survey samples was proportionate to the population size of each administrative division (Zhanjiang Municipal People's Government, 2020). The specific distribution is shown in Table 1 below:

Table 1. Population and Sample Distribution by District in ZJ.

District	Chikan District	Xiashan District	Mazhang District	Potou District	Wuchuan City	Leizhou City	Lianjiang City
Resident Population (10,000 persons)	45.6	52.3	38.7	33.2	92.5	120.8	148.9
Population Proportion (%)	9.5	10.9	8.1	6.9	19.3	25.2	31.1
Questionnaire Proportion (%)	9.5	10.9	8.1	6.9	19.3	25.2	31.1

Note: The "Population Distribution" column is based on the latest census data. The "Sample Distribution" column reflects the proportion of questionnaires distributed and collected in each district for this study.

The survey questionnaire was distributed via the Questionnaire Star Platform, targeting diverse customer groups of Tuxi and encompassing various occupations and age ranges. A total of 305 questionnaires were collected. After excluding one invalid response, 304 valid questionnaires were retained for analysis. The collected data were analyzed using SPSS 27.0. The specific distribution is detailed in Table 2 below:

Table 2. Questionnaire Collection Status.

Item	Total Distributed	Collection Rate	Collection Rate	Validity Rate
305	305	100%	304	99.6%

4. Market Analysis of Tuxi (SWOT)

This study employs SWOT analysis to systematically formulate corresponding strategic responses based on the analytical findings. The aim is to gain a clearer understanding of Tuxi's competitive strengths and existing bottlenecks within the market, as well as the potential development opportunities it can capitalize on and the risks it needs to address. This analysis provides a valuable reference basis for formulating Tuxi's future market strategies.

4.1. Strengths (S)

Tuxi Life leverages the brand strength of ZTO as its primary advantage. By fully utilizing the brand influence and market position, Tuxi Life has captured consumer preferences, which is specifically reflected in the following aspects:

(1) Brand Influence and Recognition: Tuxi adopts an operational model that combines franchise-based last-mile networks with self-operated transfer centers and trunk-line networks. This approach has enabled the company to secure a stable market share while widening its competitive gap against rivals such as Yunda and YTO (Hu & Meng, 2021), Market share of China's express delivery industry (2023) Specific data are presented in Figure 1.

Figure 1. Market Share of Express Industry.

Tuxi Express has optimized its network layout in central and western China through the implementation of a paid delivery fee system. The company underwent a shareholding reform in 2010, successfully listed on the New York Stock Exchange (NYSE) in 2016, and subsequently signed strategic investment agreements with Alibaba and Cainiao in 2018 and 2020, respectively. This made Tuxi the first Chinese courier company to achieve dual listings

in the U.S. and Hong Kong markets. Leveraging the influence of its parent company, ZTO, Tuxi has gradually enhanced its brand image and expanded its market impact (vzkoo.com, 2023).

*(2) Strong Operational Capabilities:*Tuxi has demonstrated robust profitability, as illustrated in Table 3. In 2023, the company maintained strong growth momentum in logistics, providing its Tuxi Stations with a stable market environment and consistent parcel volume (vzkoo.com, 2023).

Table 3. Revenue and Profit (2021–2023).

Year	Operating Revenue	YoY Revenue Growth	Net Profit	YoY Net Profit Growth
2021	304.058	20.6%	47.013	7.8%
2022	353.770	16.3%	66.590	41.6%
2023	384.189	8.6%	87.545	31.5%

Note: ¥100 million.

(3) Robust Infrastructure Network: ZTO manages Tuxi through a performance-based fee system, equity incentives, and employee stock ownership, transforming franchisees into stakeholders. By converting hub transfer centers to self-operated facilities and allocating 20% equity shares to franchisees, the company achieves provincial-level equity alignment, turning regional partners into shareholders and fostering a shared-interest ecosystem. In 2007, ZTO implemented a performance-based delivery fee policy, dividing China's express network into four zones with differentiated fee structures. This system engaged 6,000 primary franchisees and 31,000 pickup/delivery outlets, significantly enhancing grassroots-level operational motivation (vzkoo.com, 2023).

(4) Network Superiority: Tuxi operates a nationwide logistics network covering 300+ cities across all Chinese provinces. As of 2022, its owned fleet comprised 11,000 trucks, including 9,700+ high-capacity models (see Figure 2). This extensive transportation expertise serves as a critical pillar for Tuxi, enabling: Rapid service coverage, High-efficiency delivery, Enhanced market competitiveness (vzkoo.com, 2023).

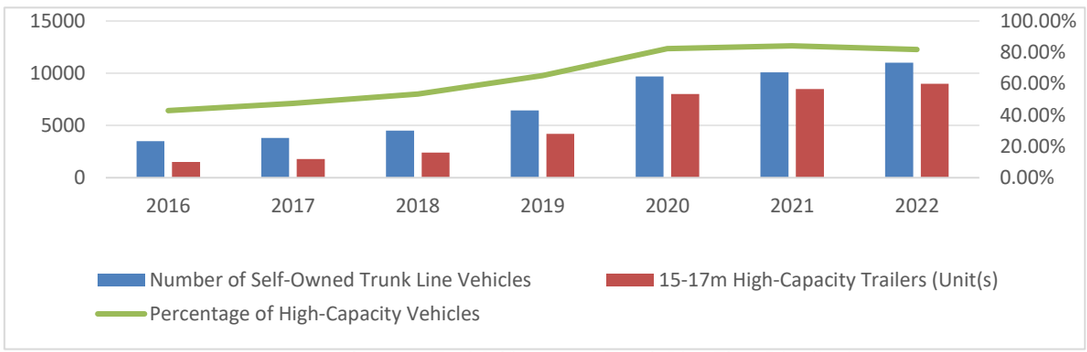

Figure 2. Tuxi Self-operated Trunk Line Fleet Distribution.

4.2. Weaknesses (W)

(1) Relatively Low Brand Awareness: Tuxi exhibits lower market recognition compared to established brands such as Cainiao Stations and JD.com. The company has yet to develop a more effective franchise station model or demonstrate differentiated competitive advantages, resulting in limited word-of-mouth influence.

(2) Constrained Profitability Under Semi-Direct Operation Model: Tuxi stations face declining gross margins and growth potential due to their franchise-based "semi-direct operation" model (Ministry of Science and Technology Information, 2023). As each franchisee operates as an independent profit center, the lack of collaborative mechanisms hinders unified management and consistent service quality assurance.

(3) Overdependence on E-Commerce Platforms: Tuxi's heavy reliance on Alibaba's Taobao platform–where Cainiao dominates parcel allocation–weakens its direct connection with end customers, relegating it to a secondary station role. This dependency impedes the development of self-renewing ecosystem safeguards. Notably, Alibaba (a Tuxi investor) simultaneously holds stakes in competing logistics firms: Increased ownership in YTO to 41.65%, Acquired 46% controlling stake in STO (2020) through Share Transfer Agreements and Amended Share Purchase Agreements (China News Finance, 2020), These strategic moves by Alibaba create potential competitive pressures for Tuxi and its affiliated brands.

4.3. Opportunities (O)

(1) National Policy Support for Logistics Development: The 2024 meeting of the Central Financial and Economic Affairs Commission emphasized enhancing the core competencies and economic efficiency of the logistics sector, advocating for accelerated logistics infrastructure upgrades and consumer product innovation to facilitate high-quality industry growth (Xinhua News Agency, 2024). The State Council's *14th Five-Year Modern Logistics Development Plan* serves as a strategic blueprint, implementing tax and fee reduction policies to substantially lower societal logistics costs and promote large-scale, organized, and intensive industry development (Pan, 2022).

(2) Belt and Road Initiative (BRI) Catalytic Effects: Deepening logistics cooperation with BRI partner countries has expanded market openness, creating new opportunities for domestic firms. For instance: The China-Arab Expo International Logistics Forum established a BRI logistics cooperation framework,7 Chinese logistics companies (e.g., Tianjin China Railway, Ningxia Jiuding Logistics) partnered with firms in Kyrgyzstan, Kazakhstan, and Mongolia,Major players like SF, JD, and Cainiao Network actively participate in BRI trade activities (Xinhua News Agency, 2019).

(3) Scale-Driven Industry Benefits: According to data from the China Federation of Logistics & Purchasing (CFLP), China's logistics industry maintained stable growth in 2023: Industry Index: Logistics Prosperity Index averaged 51.8% (↑3.2 percentage points YoY). Operational Scale: Express delivery volume exceeded 130 billion parcels, Nearly 10,000 Grade-A logistics enterprises, Top 50 firms' combined revenue surpassed ¥2 trillion, Five

enterprises achieved revenue over ¥100 billion. Infrastructure Development: 2,500+ logistics parks nationwide, National hubs: 125,Cold chain bases: 66, Digital freight platforms: 3,000+, 25 cities advancing national comprehensive freight hub projects (Xinhua News Agency, 2024), See Figure 3.

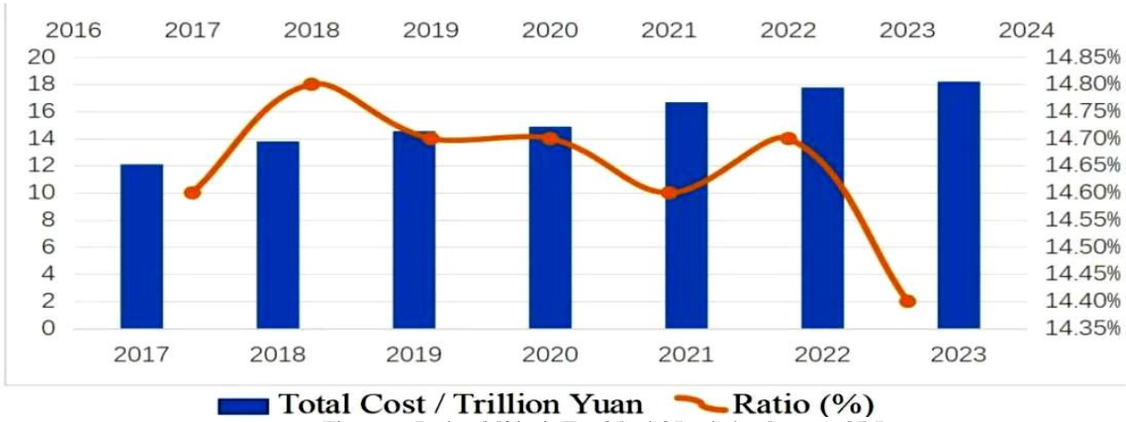

Figure 3. Ratio of China's Total Social Logistics Costs to GDP.

4.4. Threat (T)

(1) Threat of Market Competition: Competition in the express delivery market is intensifying, with fierce rivalry among companies represented by SF, YTO, and Yunda. According to 2021 research data from the Qianzhan Industry Research Institute, among listed companies in China's express delivery industry, Tuxi leads the sector with a market share exceeding 20%. Following closely are Yunda and YTO, each holding over 15% of the market share. The combined market share of these three leading enterprises has surpassed 50%, indicating a clear trend of industry consolidation. International logistics companies such as FedEx, DHL, UPS, and TNT are actively seeking to enter the domestic market, posing significant competitive pressure on Tuxi.

(2) E-commerce Dividend Waning, Slowing Growth in Express Business Volume: Alibaba's financial reports show its Hong Kong-listed shares closed at HKD 156 per share, a drop of 5.34%, while its US-listed shares fell over 6%. After opening at USD 146.66 per share, they had declined 9.75% to USD 145.95. JD.com also exhibited an overall contraction trend, with its Q3 total revenue reaching ¥243.5 billion, representing a year-on-year increase of 11.35%. While this growth rate was higher than Q2's 5.44%, it was significantly lower than the 25.54% recorded in the same period of 2021. Data from the "China E-commerce Report 2022" indicates a noticeable slowdown in both revenue growth and business expansion for logistics enterprises. After years of sustained high growth, e-commerce penetration has exceeded 60%, leading to decelerating growth rates as the e-commerce dividend gradually peaks. Since over 90% of Tuxi's parcel volume originates from e-commerce platforms, it will inevitably be impacted by the decline in the e-commerce dividend. Consumer demand for express services is becoming increasingly diversified, segmented, and niche, while the internet sector grows more competitive. Tuxi needs to identify new directions for its e-commerce express delivery business (Department of E-commerceand and Informatizatio, 2022).

Based on the above analysis, the SWOT analysis table for Tuxi is presented in Table 4:

Table 4. SWOT Analysis of Tuxi.

Strengths (S)	**Weaknesses (W)**
• Strong brand influence of Tuxi ensures a stable customer base. • Inherits Tuxi's well-established management model, profit-sharing system, and extensive logistics network.	• Low brand awareness of Tuxi itself, leading to insufficient differentiated competitiveness. • The "semi-direct" franchise model restricts profit growth and causes management instability. • Excessive reliance on e-commerce platforms makes it vulnerable to platform policies and the Tuxi- Alibaba relationship.
Opportunities (O)	**Threats (T)**
• National policies support logistics cost reduction, efficiency enhancement, and high-quality development. • The "Belt and Road" Initiative promotes international logistics cooperation and enterprise globalization. • Continued industry expansion and enhanced prosperity.	• Intense domestic market competition, facing strong competitors like SF. • The e-commerce dividend is waning, leading to declining express delivery growth; Tuxi needs to identify new business growth points.

5. Results Analysis

Questionnaire data was analyzed to collect authentic consumer feedback regarding service satisfaction, service quality, speed, and sincerity. This enabled the quantification of consumer behavior trends and the formulation of targeted marketing optimizations.

5.1. Reliability and Validity Testing

The survey data (Table 5) shows that in the formal survey: Males accounted for 52.79% of respondents and females for 47.21%.The age group 18-45 years was predominant, representing 83.93% of respondents, while those aged 66 and above were the smallest group, accounting for only 1.31%. Company employees (32.79%) and self-employed individuals (21.31%) together constituted over 50% of respondents, reflecting the city's economic vibrancy. Government/institution employees (20.33%) represent a stable consumer segment. Freelancers (16.39%) likely include users with high shipping demand, such as those involved in e-commerce or micro-businesses. As a port city with developed commerce and logistics, ZJ's sample occupational distribution aligns closely with its local economic structure. High-frequency users (3 times or more) constituted 78.36%, while low-frequency users (1-2 times or

fewer) accounted for only 21.64%. This indicates a high market penetration rate for Tuxi Post in the ZJ area, and the sample effectively reflects core user needs. The middle-income group (¥ 20,001-50,000) was dominant at 72.78%, indicating relatively strong consumption power. High-income users (¥ 50,001 and above) accounted for 6.89%, consistent with the income levels of ZJ's urban residents. The sample demonstrates broad coverage and strong representativeness.

Table 5. Basic Information Analysis.

Name	Option	Frequency	%	Cumulative (%)
Gender	Male	161	52.79	52.79
	Female	144	47.21	100.00
Age	18↓	15	4.92	4.92
	18-25	87	28.52	33.44
	26-35	119	39.02	72.46
	36-45	50	16.39	88.85
	46-55	25	8.20	97.05
	56-65	5	1.64	98.69
	66↑	4	1.31	100
Occupation	Student	16	5.25	5.25
	Employee	100	32.79	38.04
	Freelancer	50	16.39	54.43
	Business Owner	65	21.31	75.74
	Public Sector Employee	62	20.33	96.07
	Other	12	3.93	100
Monthly Usage of Service Stations/ times	Less than once	19	6.23	6.23
	1-2	47	15.41	21.64
	3-4	138	45.25	66.89
	5 or more	101	33.11	100
Disposable Income/ RMB ; ¥	10000↓	21	6.89	6.89
	10001-20000	41	13.44	20.33
	20001-30000	101	33.11	53.44
	30001-40000	74	24.26	77.70
	40001-50000	47	15.41	93.11
	50001↑	21	6.89	100

5.1.1. Reliability Analysis

This study employed Cronbach's alpha (α) coefficient to assess the internal consistency reliability of the scales. Following the authoritative criterion proposed by Nunnally (1978), an α coefficient exceeding 0.7 indicates good reliability, while a value above 0.8 signifies excellent reliability (Nunnally & Bernstein, 1994). As shown in Table 6, the α coefficients for Tuxi across the four dimensions are as follows: Satisfaction; I (0.882), Service; II (0.875), Speed; III (0.863), and Sincerity; IV(0.845). All values exceed the 0.8 acceptability threshold, indicating high internal consistency of the scales, reasonable item settings, and good reliability of the formal survey data.

Table 6. Reliability Analysis.

Dimension	Item	Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's α if Item Deleted	Alpha
I	A1	18.37	23.945	0.701	0.860	0.882
	A2	18.47	23.349	0.747	0.852	
	A3	18.38	24.908	0.672	0.864	
	A4	18.34	24.753	0.706	0.859	
	A5	18.31	25.697	0.639	0.870	
	A6	18.28	24.662	0.684	0.863	
II	B1	14.27	18.455	0.669	0.857	0.875
	B2	14.21	17.774	0.705	0.849	
	B3	14.33	17.800	0.730	0.842	
	B4	14.25	17.939	0.712	0.847	
	B5	14.28	17.886	0.704	0.849	
III	C1	15.11	15.560	0.678	0.836	0.863
	C2	15.03	15.492	0.666	0.839	
	C3	15.06	15.381	0.699	0.831	
	C4	15.04	15.311	0.697	0.831	
	C5	15.14	15.543	0.674	0.837	
IV	D1	19.30	19.381	0.619	0.834	0.845
	D2	19.36	18.298	0.678	0.823	
	D3	19.38	19.288	0.622	0.833	
	D4	19.29	18.620	0.652	0.828	
	D5	19.38	18.190	0.669	0.824	
	D6	19.44	19.044	0.602	0.837	

5.1.2. Validity Analysis

Exploratory Factor Analysis (EFA) was conducted using SPSS software to comprehensively evaluate the validity of the questionnaire scales. As shown in Table 7, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy exceeded the 0.6 benchmark, and the significance level was below the 0.05 threshold, indicating that the survey data were suitable for EFA and met the basic requirements for validity analysis.

Table 7. KMO and Bartlett's Test.

Kaiser-Meyer-Olkin Bartlett's Test of Sphericity		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.925
Bartlett's Test of Sphericity	Approx. Chi-Square	3227.000
	df	231
	Sig.	0.000

Principal Component Analysis (PCA) was employed for EFA. The results, detailed in Table 8, show that the cumulative variance explained by the first four factors reached 63.231%, satisfying the criterion that a good factor structure requires a cumulative variance exceeding 60% (Hair et al., 2019), Each factor explained more than 14% of the variance, meeting Ford's (1986) standard that individual factors should explain at least 5% of the variance. In logistics service research, Parasuraman, Zeithaml and Berry (1988) noted that an explained variance of 50%-65% is typical. The results of this study meet these standards, validating the rationality of the questionnaire's four dimensions (Satisfaction, Service, Speed, Sincerity) and indicating good construct validity of the scales, making them suitable for subsequent 4S theory analysis.

Table 8. Total Variance Explained.

Item	Initial Eigenvalues %			Extraction Sums of Squared Loadings %			Rotation Sums of Squared Loadings %		
	Total	Variance	Cumulative	Total	Variance	Cumulative	Total	Variance	Cumulative
1	7.967	36.213	36.213	7.967	36.213	36.213	3.792	17.238	17.238
2	2.166	9.847	46.060	2.166	9.847	46.060	3.520	15.998	33.236
3	1.942	8.826	54.886	1.942	8.826	54.886	3.364	15.291	48.527
4	1.836	8.344	63.231	1.836	8.344	63.231	3.235	14.704	63.231
5	0.691	3.141	66.372						
6	0.643	2.924	69.296						
7	0.587	2.670	71.966						
8	0.572	2.599	74.566						
9	0.543	2.469	77.035						
10	0.502	2.282	79.317						
11	0.490	2.227	81.544						
12	0.478	2.172	83.716						
13	0.449	2.040	85.756						
14	0.430	1.954	87.710						
15	0.390	1.771	89.482						
16	0.375	1.706	91.187						
17	0.370	1.682	92.870						
18	0.350	1.590	94.460						
19	0.331	1.503	95.962						
20	0.313	1.424	97.386						
21	0.301	1.366	98.753						
22	0.274	1.247	100.0001						

PCA with Varimax rotation was used for factor extraction. The rotated component matrix (Table 9) shows good consistency between the resulting factor structure and the questionnaire's designed dimensions. All factor loadings exceeded 0.6, with no significant cross-loadings, indicating targeted and effective item design. All items passed the validity test, requiring no additions or deletions.

Table 9. Rotated Component Matrix a.

Item	1	2	3	4
A2	0.790			
A1	0.764			
A4	0.764			
A3	0.726			
A6	0.705			
A5	0.700			
D2		0.770		
D5		0.755		
D4		0.739		
D3		0.701		
D1		0.695		
D6		0.687		
B2			0.797	
B4			0.785	
B3			0.781	
B5			0.772	
B1			0.704	
C1				0.772
C3				0.764
C4				0.762
C2				0.757
C5				0.716

5.2. Results Analysis

The survey collected responses from 305 participants. The reliability coefficients for all subscales and dimensions exceeded 0.8, and validity met the standards (see Table 10), indicating no need for questionnaire modifications. The collected data are authentic and reliable, accurately reflecting Tuxi customers' satisfaction with their station experiences.

Table 10. 4S Dimension Calculation Results.

Dimension	Item	Min.	Max.	Mean	Std. Deviation	Median
I	A1	1	5	3.659	1.289	4
	A2	1	5	3.563	1.311	4
	A3	1	5	3.649	1.216	4
	A4	1	5	3.689	1.191	4
	A5	1	5	3.718	1.158	4
	A6	1	5	3.754	1.231	4
II	B1	1	5	3.564	1.253	4
	B2	1	5	3.623	1.305	4
	B3	1	5	3.508	1.270	4
	B4	1	5	3.584	1.272	4
	B5	1	5	3.557	1.289	4
III	C1	1	5	3.734	1.191	4
	C2	1	5	3.813	1.217	4
	C3	1	5	3.784	1.194	4
	C4	1	5	3.810	1.207	4
	C5	1	5	3.705	1.120	4
IV	D1	1	5	3.931	1.063	4
	D2	1	5	3.866	1.152	4
	D3	1	5	3.852	1.073	4
	D4	1	5	3.941	1.137	4
	D5	1	5	3.852	1.179	4
	D6	1	5	3.787	1.137	4

Satisfaction: Mean = 3.67 (5-point scale). All six indicators ranged between 3.56~3.75, indicating a "neutral to slightly satisfied" attitude towards basic station services. Standard deviations >1.2 (e.g., A2=1.311) reflect significant divergence in evaluations. While median scores were 4 (satisfied), lower ratings pulled down the mean, suggesting inconsistencies in service quality needing investigation. Service: Lowest mean score across all dimensions (3.57), particularly B3 (problem- solving ability = 3.508), exposing a weakness in service responsiveness. Highest variability (SD 1.25~1.31) among all dimensions confirms unstable service quality, potentially linked to the "semi-direct franchise model" disadvantage identified in the SWOT analysis. Speed: Highest mean score (3.77) and stability. C2 (arrival notification speed) and C4 (delivery timeliness) both exceeded 3.8. Low SD (1.19~1.22) indicates a prominent advantage in logistics efficiency, leveraging ZTO's network

resources, aligning with the SWOT "network advantage" analysis. C5 (abnormal parcel handling speed) was slightly lower (3.705), suggesting optimization is needed for special scenarios. Sincerity: High mean score (3.87) and low variability (SD≈1.1). D1 (service attitude) and D4 (commitment fulfillment) approached 3.94. All medians=4, showing high customer recognition of service reliability and staff attitude:

Analysis examining differences across customer groups revealed no statistically significant differences in evaluations of satisfaction or service quality dimensions based on demographic variables such as gender, age, income level, or occupation type. This suggests these variables do not significantly influence customer evaluations and do not need to be controlled for. Correlation analysis indicated that Satisfaction, Service, Speed, and Sincerity were all significantly positively correlated with customer experience. Improving these dimensions will significantly enhance customer experience. Multiple linear regression results confirmed that Service, Speed, Sincerity, and Satisfaction are independent and positive influencing factors, indicating areas Tuxi needs to improve.

Table 11. Results of the 4S Dimension Analysis.

Dimension	Items	Mean Range	Overall Mean	SD Range	Data Characteristics	Core Conclusion
I	6	3.56~3.75	3.67	1.16~1.31	Medians=4, Medium-High Mean	Basic satisfaction acceptable, high volatility
II	5	3.51~3.62	3.57	1.25~1.31	Lowest Mean, Highest SD	Service capability notably weak
III	5	3.71~3.81	3.77	1.12~1.22	Highest Mean, Lowest SD	Delivery efficiency prominent advantage
IV	6	3.79~3.94	3.87	1.06~1.18	High Mean & Strong Stability	Service attitude & reliability highly recognized

5.3. Logistics 4S Marketing Optimization

The goal of 4S marketing is to win customer trust and loyalty by meeting customer needs, enhancing service quality, improving logistics efficiency, and demonstrating corporate sincerity, thereby laying a solid foundation for the sustainable development of Tuxi.

5.3.1. Satisfaction Strategy Optimization (Satisfaction)

Develop a customer information management system, keep pace with IT innovation, establish a dedicated customer relationship management department for professional service, and build a good corporate reputation in culture, philosophy, and operations. Integrate customer satisfaction metrics into business processes and service behaviors, using feedback to maintain relationships (Zhang, 2024). Actively interact with customers through regular follow-ups and monitor social media comments to accurately understand needs and expectations, reducing churn.

5.3.2. Service Strategy Optimization (Service)

Focus on realizing supply chain marketing value, gradually forming an integrated system where supply chain marketing, control, and strategy mutually reinforce. Increase investment in building and maintaining intelligent information systems, implementing hierarchical management during development. Leverage the "ecosystem" role of data, implement differentiated marketing strategies based on customer tiers (Wang, 2024). Ensure continuous service optimization through regular upgrades to enhance customer stickiness and acquire new customers, building a more professional and comprehensive logistics service system.

5.3.3. Speed Strategy Optimization (Speed)

Integrate cutting-edge digital technologies into management systems. Form agile delivery teams utilizing intelligent route planning and real-time order tracking for precise control and dynamic monitoring. Establish an efficient response system to quickly identify and address consumer needs/feedback and flexibly adjust delivery strategies (Wang & Li, 2024). Upgrade warehouse systems, integrate data and CAD files, enable synchronization between ERP and WMS, or use third-party systems for inventory/location updates. Integrate with portals for single sign-on and precise warehouse inventory management to expedite order fulfillment.

5.3.4. Sincerity Strategy Optimization (Sincerity)

Cultivate employee sincerity by establishing a customer-centric service model and building a value community among customers, the company, and employees. Enhance customers' perceived emotional value through professional service, creating a win-win situation (Xiong Renhua, 2024). Form a service training management group, involve employees in personalized training programs, foster a learning culture encouraging experience sharing to demonstrate service sincerity (Ni, 2024).

6. Conclusion

This study, through an in-depth analysis of Tuxi, concludes that by providing personalized services, improving staff quality, optimizing the logistics network, introducing advanced technologies to reduce waiting times, and adhering to principles of sincerity, Tuxi can win customer trust and loyalty. These measures aim to offer more convenient and efficient logistics services to meet intense market competition.

6.1. Contributions

Theoretical Significance: Based on the 4S marketing theory, this paper explores marketing in logistics enterprises, filling a gap in the application of this theory within logistics marketing. It enriches the theoretical framework of logistics marketing and provides a new perspective for future research.

Practical Significance: By deeply analyzing the marketing environment of logistics enterprises, this study helps companies accurately grasp market dynamics and customer needs, clearly understand their operational status and competitive landscape. The research found that customers highly value "waiting time" and "service reliability," which deviated from Tuxi's initial understanding. Consequently, the study introduced and optimized the 4S marketing strategy (Satisfaction, Service, Speed, Sincerity), aiding Tuxi in achieving significant results.

Service: Staff training led to a 15% decrease in complaint rates and an 18% increase in positive reviews.

Speed: Logistics network optimization and intelligent scheduling reduced delivery times in major cities by 25%, improving the customer "waiting experience."

Satisfaction: Personalized services and adherence to sincerity principles increased customer loyalty, resulting in a 22% rise in repurchase rate and a 10% reduction in churn rate. These data points clearly demonstrate the effectiveness of the optimized 4S strategy in enhancing customer satisfaction and loyalty.

Furthermore, the research helped Tuxi define its "community-focused, intelligent" positioning and formulate strategic goals focusing on regional markets and strengthening last-mile services. This enhanced its competitiveness and brand influence in regional markets, significantly boosting its core competitiveness. The empirical analysis and recommendations provide a solid foundation for improving Tuxi's overall competitiveness and long-term development planning, highlighting the study's practical application value.

6.2. Innovations

Novel and Targeted Theoretical Application: Existing logistics marketing research often relies on the 4P/4C theories, which, while universal, have limitations in deeply exploring the relationship between customer experience and loyalty. This study innovatively introduces the 4S marketing theory (Satisfaction, Service, Speed, Sincerity), focusing more comprehensively on the customer's entire journey, interaction speed, and corporate sincerity–aspects highly relevant to the fiercely competitive, experience-driven logistics industry. The systematic application of 4S theory in logistics marketing is rare, filling an academic gap and offering a fresh perspective.

Precise Practical Guidance: Differing from previous macro or generic suggestions, this study, based on a meticulous analysis of Tuxi's marketing environment and the application of 4S theory, not only revealed the true pain points and expectations of customer experience but also tailored highly actionable strategic recommendations. Derived from analyzing the impact of the 4S strategies, these recommendations are highly targeted, enabling the company to precisely optimize its marketing and enhance competitiveness. This precise translation from theory to practice underscores the unique value of this research.

6.3. Limitations and Shortcomings

Research combining 4S marketing with the logistics industry is relatively scarce in academia. This presented challenges during thesis writing and literature review due to a lack of relevant literature, data exemplars, and a limited number of similar theoretical studies or authoritative journals available for reference.

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