

THE IMPACT OF ONLINE-TO-OFFLINE SERVICE QUALITY ON
SPORT CONSUMER SATISFACTION AND BEHAVIOR IN CHINA*
ผลกระทบของคุณภาพการให้บริการแบบออนไลน์สู่อฟไลน์ต่อความพึงพอใจ
และพฤติกรรมของผู้บริโภคสินค้าเกี่ยวกับกีฬาในจีน

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Abstract

This study investigated the impact of Online-to-Offline (O2O) service quality on consumer intentions and behavior within the context of online shopping for sporting goods in China. Using a convenience sampling method, data were collected from 375 valid respondents through an online survey distributed using online questionnaire in China. The study identified five key dimensions of online service quality tangibility, reliability, responsiveness, empathy, and assurance and examined their effects on perceived value, customer satisfaction, and purchasing behavior. Partial Least Squares (PLS) analysis was employed to evaluate the measurement and structural models, with bootstrapping techniques used to estimate the parameters.

Empirical findings reveal that tangibility and empathy significantly enhanced perceived value, while reliability, responsiveness, and assurance showed no significant impact. Furthermore, perceived value was strongly correlated with customer satisfaction and purchasing behavior, confirming that higher perceived value increases satisfaction and repeat purchase intentions. Trust, as a mediating factor, plays a crucial role in influencing customer satisfaction and loyalty. The research highlights the importance of improving service quality dimensions and fostering consumer trust to enhance competitive advantage in the O2O platform. The study provided strategic

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recommendations for platform operators to optimize their service processes, improve customer experience, and built long-term customer loyalty.

Keywords: Online-to-Offline; Service Quality; Consumer Behavior; Perceived Value; Customer Satisfaction; Trust

บทคัดย่อ

บทความวิจัยเรื่องนี้มุ่งสำรวจผลกระทบของคุณภาพการให้บริการแบบออนไลน์สู่อฟฟ์ไลน์ หรือ O2O ต่อเจตนาและพฤติกรรมของผู้บริโภคในบริบทของการซื้อปั้งสินค้าเกี่ยวกับกีฬาออนไลน์ในประเทศไทย โดยใช้วิธีการสุ่มตัวอย่างแบบสหគาก เก็บรวบรวมข้อมูลจากผู้ตอบแบบสอบถามที่มีข้อมูลสมบูรณ์ จำนวน 375 คน ผ่านการแจกแบบสอบถามออนไลน์ งานวิจัยระบุองค์ประกอบหลักของคุณภาพบริการออนไลน์ 5 ด้าน ได้แก่ ความเป็นรูปธรรม ความน่าเชื่อถือ การตอบสนอง ความเอาใจใส่ และการสร้างความมั่นใจและศักยภาพ ผลกระทบขององค์ประกอบเหล่านี้ต่อคุณค่าที่รับรู้ ความพึงพอใจของลูกค้า และพฤติกรรมการซื้อ โดยใช้การวิเคราะห์แบบคดด้อยกำลังสองน้อยที่สุดบางส่วน หรือ PLS เพื่อประเมินโมเดลการวัดและโมเดลเชิงโครงสร้าง และใช้เทคนิคบูตสเตรปในการประมาณค่าพารามิเตอร์

ผลการวิจัยพบว่า ความเป็นรูปธรรมและความเอาใจใส่มีผลในเชิงบวกอย่างมีนัยสำคัญต่อคุณค่าที่รับรู้ ขณะที่ความน่าเชื่อถือ การตอบสนอง และการสร้างความมั่นใจไม่มีผลกระทบอย่างมีนัยสำคัญ ทั้งนี้ คุณค่าที่รับรู้มีความสัมพันธ์อย่างเข้มแข็งกับความพึงพอใจของลูกค้าและพฤติกรรมการซื้อ โดยยืนยันว่า การรับรู้คุณค่าที่สูงขึ้นนำไปสู่ความพึงพอใจและความตั้งใจซื้อซ้ำที่มากขึ้น ความไว้วางใจในฐานะปัจจัยส่งผ่านมีบทบาทสำคัญในการส่งผลต่อความพึงพอใจและความภักดีของลูกค้า งานวิจัยนี้เน้นย้ำความสำคัญของการพัฒนาคุณภาพบริการในแต่ละมิติและการสร้างความไว้วางใจของผู้บริโภคเพื่อเสริมสร้างความได้เปรียบในการแข่งขันของแพลตฟอร์ม O2O พร้อมนำเสนอเสนอเชิงกลยุทธ์แก่ผู้ให้บริการในการปรับปรุงกระบวนการบริการ พัฒนาประสบการณ์ลูกค้า และสร้างความภักดีในระยะยาว

คำสำคัญ: ออนไลน์สู่อฟฟ์ไลน์; คุณภาพการให้บริการ; พฤติกรรมผู้บริโภค; คุณค่าที่รับรู้; ความพึงพอใจของลูกค้า; ความไว้วางใจ

Introduction

The rapid development of the internet has fueled the rise of the Online-to-Offline (O2O) model, which drives offline sales and transactions through online platforms and mobile devices in recent years. In the sporting

goods sector, the O2O model has seen increasing adoption, becoming a key force driving the growth of the sports industry. According to Statista, the global market for online sporting goods is projected to reach billions of dollars by 2030 (Statista, 2024), underscoring the significant potential of the O2O model in enhancing market penetration.

At the core of the O2O model lies the seamless integration of online transactions and offline experiences, providing consumers with more convenient shopping channels and enhanced consumer experiences. In the context of sporting goods consumption, consumers are not only concerned with the convenience of online shopping but are increasingly focused on the quality and satisfaction of their offline experience.

Nonetheless, there is a notable gap in the literature concerning the service quality of sporting goods stores within the O2O model, especially in the specific context of the Chinese market. As one of the world's largest markets for sporting goods consumption, China's unique market characteristics and consumer behavior patterns are critical to the success of the O2O model. Therefore, exploring how O2O service quality in China's sporting goods market affects consumer purchase behavior not only fills a gap in the existing research but also provides valuable strategic insights for businesses in the sector.

Literature Review The O2O (Online-to-Offline) business model is an emerging commercial strategy that integrates online and offline channels, often regarded as a convergence of multiple distribution channels. Consumers are drawn to offline stores to purchase products or services through online promotional activities such as banner ads and electronic coupons (Phang et al., 2014). In this way, digital information in the online realm facilitates offline purchasing behaviors. The O2O model has been widely applied across various industries, including tourism, dining, sporting goods, fitness, housing rentals, and car rentals, among others.

While the O2O business model is rooted in the B2C e-commerce model, there are significant distinctions between the two. The essence of the O2O model lies in enhancing both online and offline service and shopping

experiences. Shen & Wang (2014) emphasized that the O2O model combines the convenience of e-commerce with the advantages of localized service experiences. In B2C, products purchased by consumers are delivered to them by logistics companies. However, in O2O, consumers complete their purchases online and subsequently visit offline stores for pickup or in-store services. In light of the above, this study posits that in the O2O model, the relationships among consumers, merchants, and the O2O platform are mutually influential. The model offers consumers a superior service experience, more convenient shopping methods, and lower-priced goods or services. For merchants, it increases exposure, allows for more control over logistics, and facilitates more effective promotional campaigns. For O2O platforms, it enhances foot traffic and generates more revenue. Therefore, businesses operating within the O2O model must consider these three perspectives to develop more efficient operational strategies to attract higher traffic and profits.

Zeithaml et al. (2000) introduced the concept of E-Service Quality (E-SQ), defining it as encompassing all phases of consumer interactions with websites, aimed at facilitating effective shopping behaviors, purchase intentions, and the delivery of goods or services. They argued that service quality arises from the interaction between consumers and service providers (represented by the website in online settings), including the user experience, shopping experience, and after-sales services such as order fulfillment and returns. posited that the essence of online services lies in providing consumers with higher-quality experiences and interactive exchanges. Zeithaml et al. (2002) further stressed that online service quality is an evaluation of the overall process and the outcome quality obtained from consumers' interactions with service providers via electronic channels. Customer satisfaction is a critical indicator of how consumers perceive the overall quality of a product or service, particularly in the context of sports O2O platforms. Baker & Crompton (2000) noted that satisfaction is the result of a consumer's psychological assessment after experiencing a product or service, where exceeding expectations results in satisfaction, and unmet

expectations lead to dissatisfaction. Boshoff & Gray (2004) highlighted that customer satisfaction represents the consumer's evaluative reaction after a product experience. Joewono & Kubota (2007) asserted that customer satisfaction is based on past consumption experiences and is an overall evaluation of the product. In the context of sports O2O platforms, customer satisfaction is also reflected in these dimensions. In the sports O2O model, consumer perceptions of online platform reputation and scale play crucial roles in shaping purchase intentions. Perceived reputation refers to consumer trust in the brand, including perceptions of the brand's honesty and concern for customers. Perceived scale refers to consumers' views on the size and resources of the business. Large companies are often perceived as having more resources to offer high-quality products and services.

Additionally, the development of the sports O2O model faces challenges, such as integrating offline resources, standardizing services, and uncertain purchase frequency. Nonetheless, the O2O model provides opportunities for the rational allocation of resources, disintermediation, breaking time and space constraints, and socialization all of which are key drivers for the growth of the sports industry. Based on the Theory of Reasoned Action, this study explores how perceived reputation and perceived scale influence consumer attitudes and purchase intentions. Zeithaml et al. (2000) defined online service quality as encompassing all stages of interaction between consumers and websites. Their research indicated that during online purchases, consumers evaluate aspects such as website design, product information, and services. When consumers perceive the overall service quality to be high, their sense of value increases, influencing both their purchase intentions and likelihood of repurchasing. In the context of O2O (Online to Offline) commerce platforms, consumers' perceptions of online service quality also have a significant impact on their perceived value. Based on the five key dimensions of service quality tangibility, reliability, responsiveness, assurance, and empathy this study proposes the following hypotheses: H1. The tangibility of online service quality has a significant positive impact on perceived value in the O2O platform. H2. The reliability of online service quality has a significant

positive impact on perceived value in the O2O platform. H3. The responsiveness of online service quality has a significant positive impact on perceived value in the O2O platform. H4. The assurance of online service quality has a significant positive impact on perceived value in the O2O platform. H5. The empathy of online service quality has a significant positive impact on perceived value in the O2O platform. Zeithaml (1988) elaborated on the nature of perceived value, defining it as a comprehensive assessment by consumers of the utility of a product or service. This perspective has been widely supported in research, revealing a close connection between value and customer satisfaction. Chen & Lin (2015) specifically examined the effect of perceived value on customer satisfaction, establishing a significant positive relationship between the two. Based on this literature, the study hypothesizes that in O2O platforms, the perceived value experienced by consumers during the purchasing process will have a direct and significant impact on their satisfaction levels. H6. Consumers' perceived value in using the O2O platform has a significant positive impact on customer satisfaction. In this study, perceived reputation is defined as the extent to which consumers believe that a sporting goods O2O platform is honest and cares about its customers. In practice, businesses with good reputations are more likely to gain customer trust. For instance, in the sporting goods sales sector, the reputation of sellers is positively correlated with buyers' trust (Kim & Park, 2013). Perceived scale, in this study, refers to the consumers' perception of the overall size of the sporting goods O2O platform and its market share. The scale of a website or business also reflects its risk management capability and reliability. Previous research has suggested that in traditional marketing channels, customers view perceived scale as a signal of the company's trustworthiness. Scholars have demonstrated a positive relationship between perceived scale and trust (Jarvenpaa et al., 2000). Consumers must make purchasing decisions before accessing products on sporting goods O2O platforms. Thus, we hypothesize that platforms with better reputations and larger perceived scales are more likely to gain consumer trust: H7. Perceived reputation has a significant positive impact on trust. H8. Perceived scale has a significant positive impact on trust.

Research Objectives

1. To examine the impact of Online-to-Offline (O2O) service quality on perceived value, customer satisfaction, and consumer behavior in the context of online sporting goods shopping in China.
2. To identify the relative influence of different dimensions of O2O service on perceived value.
3. To investigate the mediating role of perceived value and trust in the relationship between service quality and consumer outcomes such as satisfaction and purchase intention.

Methodology

1. Research Design

Research Design is the structured plan guiding how the research was conducted, including data collection, analysis, and hypothesis testing in a systematic way.

2. Populations and Samples and Key Informants

The target population consisted of consumers in China who have experience purchasing sporting goods through O2O platforms. A non-probability, convenience sampling technique was adopted to efficiently access a broad range of respondents from the online consumer segment. A total of 375 valid responses were collected, meeting the minimum sample size requirements for PLS-SEM analysis. Participants were screened to ensure they had prior experience with online sporting goods shopping that involved offline delivery or interaction. No specific key informants were interviewed, as the study relied on self-reported data from end users.

3. Research Instrument

The primary research instrument was a structured online questionnaire, designed based on prior validated scales and adapted to the study context. The instrument consisted of three sections: Demographic information (e.g., age, gender, income, purchase frequency), Perceptions of O2O service quality, measured across five dimensions: tangibility, reliability,

responsiveness, empathy, and assurance, and Latent constructs including perceived value, customer satisfaction, trust, and purchase behavior.

4. Data Collection

Data were collected through an online survey platform, using a questionnaire link distributed via social media and e-commerce communities in China. Respondents were informed about the purpose of the study and provided consent before participating. The data collection process lasted approximately four weeks, during which the research team monitored response quality and ensured completeness. Responses with missing or inconsistent data were excluded.

5. Data analysis Statistics Used to Analyzed the Data

The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) via SmartPLS 4.0. The measurement model was evaluated for internal consistency reliability, convergent validity, and discriminant validity using criteria such as composite reliability, AVE, outer loadings, Fornell-Larcker criterion, and HTMT. The structural model was assessed by examining path coefficients, R^2 values, effect sizes (f^2), and predictive relevance (Q^2). Bootstrapping with 5,000 subsamples was employed to test the significance of the hypothesized paths and mediating effects.

Results

Objective 1: To examine the impact of Online-to-Offline (O2O) service quality on perceived value, customer satisfaction, and consumer behavior in the context of online sporting goods shopping in China. The analysis revealed that O2O service quality significantly influences both perceived value and consumer behavior. Among the service quality dimensions, only tangibility and empathy showed a statistically significant positive impact on perceived value. In turn, perceived value exhibited a strong, positive effect on customer satisfaction and purchase behavior, supporting the notion that consumers are more likely to feel satisfied and exhibit purchase intentions when they perceive higher value from the O2O service experience.

Objective 2: To identify the relative influence of different dimensions of O2O service quality on perceived value. Among the five dimensions of service quality analyzed: Tangibility (e.g., clarity of product information, interface design, delivery packaging) and Empathy (e.g., personalized support, care in communication) were found to significantly enhance perceived value. However, reliability, responsiveness, and assurance did not exhibit significant effects on perceived value within this O2O sporting goods context. This suggests that emotional and physical aspects of service, rather than procedural reliability, play a more critical role in shaping sport consumers' perceived value.

Objective 3: To investigate the mediating role of perceived value and trust in the relationship between service quality and consumer outcomes such as satisfaction and purchase intention. The mediating analysis using bootstrapping procedures demonstrated that perceived value fully mediates the relationship between tangibility/empathy and both customer satisfaction and purchase behavior. Additionally, trust was confirmed as a significant partial mediator between perceived value and both satisfaction and loyalty-related behaviors. These findings highlight the dual mediation mechanism, where service quality affects behavior indirectly through perceived value and trust, underscoring the psychological pathways by which O2O experiences shape sport consumer behavior.

The target population of this study consists of users who engage with sports product O2O platforms, such as Jingdong, Tmall, Codoon, and others. The primary respondents are users in China with prior experience using sports product O2O platforms. A convenience sampling method was adopted, and data were collected using an online questionnaire hosted on Wenjuanxing, a widely used platform in China. The survey commenced on August 1, 2024, and concluded on September 6, 2024, with data being collected anonymously. To encourage higher response rates, a lottery incentive was provided. A total of 398 questionnaires were collected, and after removing invalid and duplicate responses, 375 valid questionnaires remained, resulting in a validity rate of 94.2%.

For data analysis, this study employed Partial Least Squares (PLS) to examine the research model. PLS is a statistical method used for exploratory and predictive modeling, which is divided into two key components: the measurement model analysis and the structural model analysis (Anderson & Gerbing, 1988). In the analysis of causal paths, the bootstrapping resampling technique was used, with 375 valid samples resampled 5,000 times to estimate parameters and draw inferences. The purpose of the measurement model is to understand the relationships between observed variables and latent variables. The measurement model was evaluated for internal consistency using Cronbach's alpha, composite reliability, convergent validity, and discriminant validity. In PLS, the relationship between indicator variables and latent constructs is referred to as the outer model. All constructs exhibited Cronbach's alpha and composite reliability values above 0.7, meeting the reliability standards recommended for research.

To assess construct validity, both convergent validity and discriminant validity were examined. Following Fornell & Larcker (1981) recommendations, if the factor loadings exceed 0.5, the average variance extracted (AVE) is above 0.5, and the reliability is higher than 0.7, the model demonstrates adequate convergent validity. Table 3 shows that all constructs meet Fornell & Larcker (1981) criteria, confirming the convergent validity of the study. Additionally, discriminant validity was assessed by comparing the square root of each construct's AVE with the correlations between constructs. The square root of the AVE for each construct exceeds the inter-construct correlations, indicating that the study has achieved discriminant validity. Discriminant validity refers to the extent to which two distinct constructs differ from one another. If, after conducting correlation analyses, the correlation between two constructs is low, it indicates that discriminant validity exists. Discriminant validity can be assessed by comparing the square root of the AVE for each construct with the construct's correlations; the square root of the AVE should exceed the construct's correlation values. Additionally, each AVE square root along the diagonal should be greater than the horizontal and vertical correlation values. More recent literature suggests using the Heterotrait-Monotrait ratio (HTMT) to

compute correlations between constructs to avoid overestimating validity. An HTMT ratio below 0.85 indicates good discriminant validity (Henseler et al., 2015). It has also been suggested that the HTMT ratio should be below 0.9 to meet the threshold for strong discriminant validity

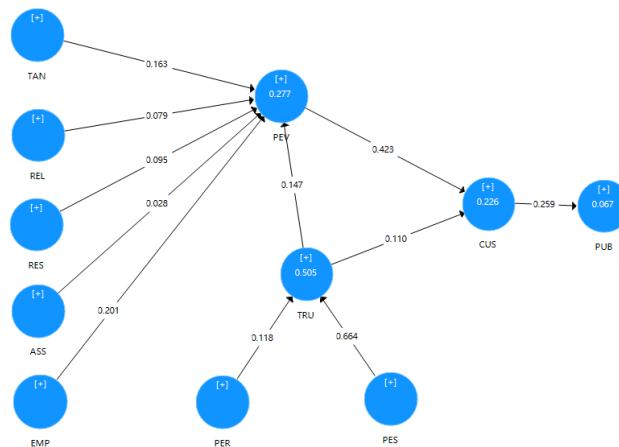


Figure 1 Structural Model Results

Discussion

This divergence is aligned with previous work emphasizing the evolution of consumer behavior in digital platforms. For instance, Deng et al. (2010) found that user satisfaction in mobile service contexts is increasingly shaped by experiential and interactional factors, rather than solely by efficiency or functional reliability. This supports the notion that in O2O sport shopping, interface design, product presentation, and humanized support can outweigh expectations for standardized delivery and formal assurances.

Firstly, tangibility, which includes the platform's visual design, physical infrastructure, and technological features, plays a crucial role, particularly on O2O platforms for sporting goods. A user-friendly and intuitive interface significantly enhances consumer satisfaction. Previous studies have shown that intuitive design and efficient navigation can substantially improve consumers' perceived value of the platform, thereby increasing their willingness to use it.

On the other hand, reliability, referring to whether the platform can fulfill its promises such as delivering products on time and providing consistent

service did not significantly affect perceived value in this study. This may be because consumers now consider reliability as a basic requirement, rather than a value-enhancing factor. In mature e-commerce markets, platforms that fail to meet basic reliability standards are unlikely to retain customers, thus reliability functions more as a “hygiene factor” rather than a value driver.

Similarly, responsiveness, which pertains to how quickly the platform addresses consumer inquiries and issues, was not found to significantly impact perceived value in this study. Although prompt responses may enhance overall satisfaction, consumers might only prioritize responsiveness when they encounter problems. As a result, in the absence of significant issues, responsiveness may have a limited effect on perceived value.

Empathy, which refers to the platform’s attention to consumers’ personalized needs, such as customized recommendations and tailored services, was found to significantly enhance consumer experiences. Personalized interactions make consumers feel valued, thereby increasing their perceived value.

Lastly, assurance, which reflects consumers’ trust in the platform’s security and competence, did not significantly impact perceived value. This could be attributed to the fact that in today’s e-commerce environment, consumers expect high standards of security as a given. Unless there are security or trust issues, assurance may be considered a prerequisite rather than a key determinant of value.

In summary, while tangibility and empathy positively influence perceived value, reliability, responsiveness, and assurance may have become basic expectations for consumers and only impact perceived value when they are absent or compromised.

The results further show a significant positive relationship between perceived value, customer satisfaction, and purchase behavior. As Chen & Lin (2015) noted, when consumers perceive high value in using O2O platforms, their satisfaction increases, which in turn boosts their intention to repurchase. This is especially true in the context of sporting goods, where consumers tend

to choose O2O platforms that offer superior service, directly influencing their repeat purchasing behavior and platform loyalty.

Trust serves as a critical link between consumers and platforms, significantly influencing customer satisfaction and purchasing behavior. The results of this study show that when consumers have a high level of trust in the platform's integrity and reliability, their satisfaction and purchase intention increase significantly. Jarvenpaa et al. (2000) argued that consumer trust in online platforms directly influences purchase decisions, a finding that this study also supports by demonstrating the key role of trust in the purchasing decisions on O2O platforms.

Moreover, trust positively impacts purchasing behavior by enhancing consumers' favorable perceptions of the platform. Deng et al. (2010) found that trust significantly improves users' satisfaction with service platforms and increases their repeat purchase intentions. For sporting goods O2O platforms, providing high-quality after-sales service, ensuring information security, and delivering reliable products can build consumer trust, leading to increased satisfaction and repeat purchases.

The above discussion confirms the significant influence of online service quality, perceived value, and trust on customer satisfaction and purchasing behavior. Platforms should enhance service quality across all dimensions to improve consumers' experience, trust, and loyalty, thus increasing their market competitiveness.

This study highlights the importance of online service quality, perceived value, and trust in O2O platforms, particularly in the sporting goods sector. First, platforms should focus on the five key dimensions of service quality tangibility, reliability, responsiveness, empathy, and assurance. By improving these service qualities, platforms can significantly enhance consumers' perceived value, which in turn increases customer satisfaction and repurchase intentions. This finding offers practical management recommendations for O2O platform operators: optimizing systems to ensure platform usability and reliability, responding promptly to customer feedback, and providing personalized, empathetic services to enhance the overall consumer experience.

This study makes significant contributions to the theoretical research on O2O platforms. First, it verifies the significant influence of the five key dimensions of online service quality on perceived value and reveals that privacy and fulfillment have relatively less impact on consumers' perceived value in the Chinese market. This finding supplements existing research on the influence of O2O platform service quality on consumer behavior, offering new perspectives for exploring service quality factors in different market environments. Furthermore, the study provides an in-depth analysis of the mediating role of trust, enriching the application of the Theory of Reasoned Action in O2O platforms by offering new insights into the relationship between consumer trust, perceived value, and purchase behavior.

Recommendations

Future research can expand in several ways. First, it can explore the varying demands of consumers for service quality and trust in different market environments, particularly in the cross-cultural application of O2O platforms. Second, with the advancement of technology, future studies could investigate the application of new technologies such as artificial intelligence and big data in O2O platforms, such as enhancing consumer purchasing experiences through personalized recommendation systems. Additionally, future research could explore how consumer demands for service quality and perceived value differ across age, gender, and socioeconomic backgrounds when using O2O platforms.

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