Frontiers in Economics and Management Volume 7 Issue 2, 2026
ISSN: 2692-7608 DOI: 10.6981/FEM.202602_7(2).0012

Research on Pricing Strategies based on Online and Offline Omnichannel Sales

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Abstract

With the rapid development of e-commerce and shifts in consumer shopping habits, the online-offline omnichannel retail model has emerged as the dominant trend in the retail industry, particularly in the Chinese market. Consumers' shopping paths have become increasingly diversified. Retailers are now tasked not only with optimizing the in-store shopping experience but also with confronting intense price competition on e-commerce platforms. Against this backdrop, determining appropriate pricing strategies for the omnichannel environment has become a pressing challenge for businesses. This paper examines the coordination mechanisms and conflict resolution for pricing across online and offline channels. By analyzing market data, consumer behavior, and existing literature, it explores how flexible pricing strategies can enhance a company's market competitiveness and profitability. Research indicates that online consumers are generally more price-sensitive, whereas offline shoppers place greater emphasis on tangible product experience and brand value. Consequently, retailers should implement differentiated pricing strategies tailored to the specific needs of different channels and consumer segments. Meanwhile, data analytics and big data technologies provide precise support for pricing decisions. This study offers a theoretical foundation for retailers to optimize their omnichannel pricing strategies and recommends adopting intelligent pricing systems and agile price adjustments to improve sales conversion rates. In the future, the application of AI and big data in omnichannel pricing will further drive development and innovation in the retail industry.

Keywords

Omnichannel Pricing Strategy; Online-Offline Price Coordination; Consumer Behavior Analysis; Dynamic Pricing; Big Data and Artificial Intelligence (AI).

1. Introduction

The rapid expansion of e-commerce and evolving consumer shopping habits have given rise to the integrated online-offline omnichannel retail model, a trend notably prominent in China. The omnichannel retail environment, characterized by the fusion of online and offline channels, has become a major developmental direction for the retail industry. Widespread adoption of the internet and digital tools has led to a diversification of consumer shopping paths. Retailers now face the dual challenge of optimizing the in-store experience in their physical outlets while competing with online rivals on price. This transformation raises critical questions regarding strategic pricing decisions, appropriate price structures, and managing conflicts arising from channel differences.

This study focuses on the core issue of pricing within the omnichannel context: resolving pricing conflicts between different online and offline channels, and enhancing both corporate competitiveness and profitability. By analyzing existing research literature and survey data from domestic and international sources, this paper aims to clarify omnichannel pricing

ISSN: 2692-7608 DOI: 10.6981/FEM.202602_7(2).0012

strategies. It seeks to address the fundamental questions of how to resolve pricing conflicts across channels and how these strategies can be leveraged to improve a company's market position and profits.

2. Literature Review

2.1. Current Research Status Domestically and Internationally

With the development of e-commerce, the integration of online and offline multi-channel retail models has gradually become a trend in the retail industry. International research mainly focuses on the coordination of online and offline prices and pricing strategies. Dou Zhiwu et al. studied the price factors of Pu'er tea in the Internet+ model, indicating that prices are influenced by market demand, internet development, and other factors[1]. They found that online and offline prices are sometimes consistent and sometimes inconsistent. Other international scholars believe that, in addition to considering supply and demand, coordinating online and offline prices also involves consumer shopping habits and information transparency. The study "Are Online and Offline Prices Similar? Evidence from Large Multi-Channel Retailers" found significant price differences between online and offline channels in the multi-channel retail model, which are related to consumer behavior, market strategies, and other factors[2]. Fu Rongrong studied the average prices and price dispersion in the B2C market online and offline, finding that the price differences between online and offline channels are significant, and the factors influencing these differences are numerous[3].

In China, research on online and offline pricing mainly uses game theory models to study pricing issues in dual-channel sales. Luo Haiyan et al. used the Hotelling model to study the pricing issues in home appliance dual-channel sales and examined the impact of green supply chains[4]. They also studied how to set prices under different power structures. Li Dan et al. analyzed the pricing and promotional strategies of e-commerce platforms and examined how platform pricing and promotional activities impact user loyalty[5]. Sun Puyang et al. analyzed search costs and price changes in e-commerce, finding that consumers' price sensitivity varies across different channels, which in turn influences their choice of pricing strategies[6].

Other literature addresses the issue of multi-source pricing. Fei Jiani verified the price mismatch between online and offline prices in the electrical appliance market, showing the impact of price differences on purchasing decisions[7]. Zou Leqiang studied product price positioning using a probability discrete model, investigating the unpredictability of product prices and market fluctuations[8].

Research on e-commerce pricing behavior in China has also been increasing. Yan Shuai et al. studied the strategic behavior of online retailers in both online and offline channels[9]. They proposed that online retailers must ensure price competitiveness in offline channels while also enhancing offline channel service capabilities to improve consumer brand loyalty and satisfaction. Huang Huizhen studied the omnichannel strategy and explored the integration of online and offline channels to enhance consumer experience and increase sales[10].

Additionally, Ren Tingzhen et al. explored the pricing models of cross-border e-commerce platforms, analyzing the impact of platform heterogeneity on platform pricing and proposing how to optimize the pricing models in the global market context[11]. Yu Yang investigated differentiated pricing models on e-commerce platforms, analyzing how platform pricing models vary based on consumer demographics and market demand[12].

Yan Nina et al. approached the issue from the perspective of supplier channel expansion, studying the balance of market share between online and offline channels under different price conditions[13]. Through a comparison of online and offline channels, they found that both channels must ensure a balance to achieve the maximum market share for the channels.

ISSN: 2692-7608 DOI: 10.6981/FEM.202602_7(2).0012

2.2. Research Gaps and Shortcomings

Although there has been significant theoretical progress in the literature on price differences and competition models, most of the existing studies focus on single or dual-channel pricing. There is little mention of pricing when the number of channels increases, let alone precise pricing based on consumer behavior across channels and data analysis.

Moreover, domestic research mostly focuses on the home appliance and consumer goods sectors, with limited studies on pricing in the omnichannel environment. Empirical studies on price elasticity and differences in consumer behavior are scarce. How to leverage big data and AI technologies for pricing in a highly competitive market is an emerging research hotspot for the future.

3. Research Methodology

This study integrates data-driven analysis with in-depth causal investigation by employing a combination of methods, including market data analysis, consumer behavior research, and pricing model construction, to elucidate optimal pricing strategies within an omnichannel environment. Specifically, the following three primary methods will be utilized:

Literature Review Method: This involves extensively reading and referencing published research reports, academic papers, and books from both domestic and international sources. The objective is to systematize existing pricing theories, identify the strengths and limitations of previous research, and thereby establish a foundation for our own study.

Empirical Analysis Method: This refers to verification using real-world data. We will collect actual sales data from online platforms and physical stores, records of price changes, and information on consumer purchasing behaviors. By analyzing this data, we aim to identify the key factors influencing pricing decisions.

Model Building Method: We will develop mathematical pricing models (such as demand elasticity models that calculate the impact of price changes on sales volume, and the Hotelling model for analyzing channel competition) based on real business cases. These models will then be used to simulate and test the effects of different pricing strategies on sales revenue and profit.

4. Technical Route

Step 1: Market Research & Data Collection

We will gather sales data from online and offline stores, including information such as product prices, sales volumes, and promotional activities. Simultaneously, we will collect data on consumer price perceptions and feedback.

Step 2: Data Preprocessing & Analysis

After data acquisition, professional tools like SPSS, R, or Python will be used for data "cleaning" to rectify inconsistencies and errors. Subsequently, careful analysis will be conducted to understand how pricing influences purchasing decisions and to pinpoint the most critical influencing factors.

Step 3: Pricing Model Construction

We will employ the Hotelling model to analyze the reasons for and extent of price differences between online and offline channels. Integrating factors such as consumer channel preference and our own market positioning, we will ultimately construct a pricing model suitable for an omnichannel context.

Step 4: Experimentation & Validation

Through real-world pilot sales or computer simulations, we will test the effectiveness of different pricing methods and examine their specific impact on sales volume and profit. Based

ISSN: 2692-7608 DOI: 10.6981/FEM.202602_7(2).0012

on the results, the constructed model will be iteratively adjusted and optimized for greater reliability.

5. Market Analysis

5.1. Current State of Omnichannel Retail Development

With the increasing popularity of online shopping, traditional brick-and-mortar stores are facing significant pressure and unprecedented challenges. Consequently, a growing number of retailers are adopting the Online-Merge-Offline (OMO) model, attempting to integrate their online and offline operations to enhance sales efficiency. This model has become a crucial strategy in the retail industry. Retailers must balance online traffic with the in-store experience while ensuring price consistency across both channels. Successful integration of these channels allows retailers not only to improve the overall customer shopping experience but also to drive conversion rates through precise data analysis and targeted marketing tactics.

According to a NielsenIQ report, the growth rate of online retail significantly outpaces that of offline. In 2024, sales via online channels grew by 10.8% compared to the previous year, while offline channel sales experienced a slight decline of 0.7%. This trend underscores the substantial growth potential of online channels, necessitating that retailers pay closer attention to online price adjustments and ensure coordinated pricing across channels to maximize the advantages of both.

The proliferation of shopping platforms has increased consumer choice and complicated decision-making processes. In this omnichannel environment, retailers need to optimize online product displays, pricing, and promotions, while also leveraging physical experience stores to enhance the shopping experience. For instance, by recommending potentially interested products or creating engaging immersive experiences, physical stores can foster brand loyalty and encourage repeat purchases, thereby influencing consumers' price acceptance.

Table 1 presents key data on the performance of omni-channel retail in China for 2024. It includes metrics such as the omni-channel penetration rate, the contribution of omni-channel merchants to total performance, and the growth rates of online sales. These indicators highlight the growing significance of integrating online and offline sales channels. For instance, the high growth rate of 10.8% for online channels suggests that businesses must adjust their pricing strategies to remain competitive and leverage this rapid growth. The data is sourced from leading market research firms like SHOPLINE and NielsenIQ, which ensures its relevance and accuracy in the context of the study's analysis of pricing strategies across both channels.

Table 1. Core Indicators of China's Omnichannel Retail in 2024

Indicator Category	Specific Value	Data Source
OMO Omnichannel Penetration Rate	38%	SHOPLINE (2025)
Omnichannel Merchant Performance Contribution	Over 85%	SHOPLINE (2025)
Online/Offline Channel Ratio	3:7	NielsenIQ (2025)
Online Channel Growth Rate	10.8%	NielsenIQ (2025)
Social Commerce Annual Growth Rate	56%	SHOPLINE (2025)
Livestream Sales Proportion	59%	SHOPLINE (2025)

5.2. Consumer Behavior Analysis

In the current omnichannel shopping environment, consumer behavior is more diversified, and the purchase journey has become more complex. According to an analysis by Worktile, the

ISSN: 2692-7608 DOI: 10.6981/FEM.202602_7(2).0012

decision-making process for online consumers resembles a "funnel," often involving multiple touchpoints-such as online searches, social media interactions, and checking user reviews-before a final purchase is made. These touchpoints critically influence their price sensitivity and purchase decisions. Therefore, when formulating online pricing strategies, retailers must genuinely understand this behavioral logic, particularly how to reduce decision-making difficulty and enhance price attractiveness by improving information transparency, running promotions, and leveraging user reviews effectively.

In contrast, offline consumers often place greater emphasis on the shopping experience when making purchase decisions. The "peak-end rule" is particularly relevant-the impression from the most intense point of the experience and the final impression significantly shape their overall evaluation. For example, at Apple Retail Stores, the free technical support services available before and after a purchase create a high-quality experience that notably increases consumers' acceptance of the product prices, making them more willing to buy. Hence, offline pricing cannot focus solely on the price point itself; it must prioritize the actual customer experience, attracting them by enhancing the perceived value.

Table 2 reflects consumer price sensitivity across different retail environments. The data shows that online shoppers are generally more price-sensitive (80%) compared to consumers shopping via O2O (72%) or supermarkets (77%). This reinforces the hypothesis that online consumers prioritize competitive pricing and discounts, while offline shoppers are more inclined to value experiential elements, such as in-store service quality and product presentation. These differences in sensitivity necessitate distinct pricing strategies for online and offline channels, as highlighted in the study's analysis of consumer behavior.

Table 2. Consumer Price Sensitivity Data in 2024

Channel Type	Price Sensitivity	Data Source
Online Shopping	80%	NielsenIQ (2025)
O2O Model	72%	NielsenIQ (2025)
Supermarket	72%	NielsenIQ (2025)
Hypermarket	77%	NielsenIQ (2025)
Convenience Store	45%	NielsenIQ (2025)

5.3. Competitive Landscape

The rapid development of e-commerce platforms has intensified competition among retailers. Price inconsistencies between online and offline channels often lead to conflicts between the two sales avenues, damaging the consumer experience and brand image. The key to resolving this issue lies in coordinating prices and optimizing pricing strategies to mitigate the negative effects of price disparities. The emergence of new formats like community group buying and live stream e-commerce offers retailers greater pricing flexibility. Leveraging the precise data provided by these new channels, retailers can develop more personalized and targeted pricing strategies.

Furthermore, as market competition intensifies, consumers are becoming increasingly sensitive to price changes. Survey data indicate that consumer price sensitivity reaches 80% for online shopping, 72% for O2O services, 72% in supermarkets, and 77% in hypermarkets. This highlights that when setting prices for omnichannel strategies, retailers must carefully consider consumers' high focus on price. They need to flexibly set appropriate prices according to the characteristics of different sales channels to gain a competitive advantage, thereby increasing market share and customer satisfaction.

ISSN: 2692-7608 DOI: 10.6981/FEM.202602_7(2).0012

6. Pricing Strategy Model

6.1. Price Coordination Mechanism

Price conflicts between online and offline channels mostly stem from differences in channel costs and pricing mechanisms. For example, online channels usually have lower operating costs, allowing merchants to offer customers more favorable prices. In contrast, offline channels face higher rental fees, labor costs, and inventory expenses. To prevent price conflicts, merchants can establish unified pricing standards, adopt transparent pricing policies, and use big data to analyze customer demand for more scientific pricing decisions.

For high-end products, unified pricing across online and offline channels can help enhance brand image and customer perception. Many luxury brands adopt this consistent pricing approach to maintain brand value and customer trust. For mass-market consumer goods, however, flexible pricing between channels can better satisfy different consumer segments and maximize overall market coverage.

6.2. Differentiated Pricing Strategy

The first approach in omnichannel pricing is the differentiated pricing strategy. Faced with variations in customer demand, price sensitivity, and purchase intentions across channels, this strategy allows merchants to tailor pricing based on channel characteristics. Online channels can attract consumers through discounts and low-priced items, while offline channels can enhance value through superior service, added product value, and a better shopping experience.

In addition, differentiated pricing can also be applied across the product life cycle - setting higher prices during the product's initial stage and lowering or discounting prices during maturity to stimulate consumption. This enables businesses to adopt dynamic pricing across different stages to capture maximum market share and profit margins.

This table correlates various situational factors (like reference quality effects and purchasing conditions) with recommended pricing strategies. For example, when the reference quality effect is minimal, the study suggests a different pricing approach for online and offline channels. This aligns with the broader strategy of implementing differentiated pricing based on consumer behavior-key insights derived from the empirical research within the paper. The table consolidates theoretical findings with practical applications, supporting the strategic recommendations made in the paper.

Table 3. Impact of Consumer Behavior Characteristics on Pricing Strategies

Situational Factors	Recommended Pricing Strategy	Theoretical Basis / Research Findings
Reference quality effect is weak	Online-offline price differentiation strategy	Gao Ying et al. (2023) pointed out that when the reference quality effect is weak, differentiated pricing performs better.
Reference quality effect is strong and online purchase cost is high	Unified online-offline pricing strategy	Gao Ying et al. (2023) found that when the reference quality effect is strong, a consistent pricing strategy is preferable.
Dual-channel sales model	Channel-based differentiated pricing strategy	The WT company case shows that in a dual-channel model, channel differentiation pricing yields higher profits.
BOPS (Buy Online, Pick up in Store) model	Channel-based differentiated pricing under unit compensation contract	The WT company case indicates that under the BOPS model, differentiated pricing with a unit compensation contract is the optimal approach.

ISSN: 2692-7608 DOI: 10.6981/FEM.202602_7(2).0012

7. Analysis and Results

7.1. Data Analysis

Based on the survey data, online consumers are indeed more price-sensitive than offline consumers. Online shoppers tend to compare prices using various tools and are more responsive to discounts and promotional offers. In contrast, offline consumers focus more on product quality, brand image, and in-store service experience. Therefore, when setting prices, businesses should consider these differences and develop targeted pricing strategies for different channels to increase conversion rates and competitiveness.

On the other hand, price flexibility is also essential in omnichannel retailing. For price-sensitive consumers, greater price elasticity makes products more attractive and encourages purchases. For less price-sensitive consumers, brands can stimulate buying through enhanced brand perception and unique customer experiences rather than relying solely on price adjustments.

7.2. Case Analysis

The sportswear brand ANTA serves as a model example of successful omnichannel sales. ANTA's growth has largely benefited from its dynamic pricing model, supported by big data on consumer behavior. The brand ensures real-time synchronization of online and offline prices, effectively eliminating consumer dissatisfaction caused by inconsistent pricing. Its offline membership and inventory management systems are also integrated with online systems, ensuring unified stock visibility and a seamless shopping experience across channels.

This approach offers several advantages: it enhances customer satisfaction and loyalty, enables ANTA to predict market demand more accurately through big data analytics, and allows timely adjustments to pricing and promotional strategies. By implementing a data-driven omnichannel pricing strategy, ANTA has successfully bridged the gap between online and offline operations, strengthened its brand power, and improved profitability.

Table 4 presents data from Anta, a leading example of successful omni-channel pricing strategy. The table highlights Anta's growth in both online and offline channels, alongside the impressive integration of their membership and inventory management systems. The performance metrics, such as a 21.8% growth in online sales and a significant increase in DTC (Direct to Consumer) revenue, demonstrate the effectiveness of their consistent pricing strategy across channels. This serves as a case study supporting the paper's argument that synchronized pricing strategies, informed by big data, can optimize sales conversion rates and enhance brand loyalty.

Table 4. ANTA's Omnichannel Sales Performance Data

Indicator	2024 Data	Change Description
Year-on-year growth in online sales	21.8%	Significant increase
Proportion of omnichannel stores	Over 80%	Improved customer conversion rate
DTC (Direct-to-Consumer) revenue share	54.4%	Notably increased share of total revenue
Membership coverage	250 million	Achieved precision marketing and personalized recommendations
E-commerce revenue share	35.1%	Strong performance in online sales channels

8. Discussion

8.1. Challenges of Pricing Strategies

For businesses, coordinating prices between online and offline channels is not only influenced by pricing itself but also by various factors such as inventory, logistics, and promotional

ISSN: 2692-7608 DOI: 10.6981/FEM.202602_7(2).0012

activities, all of which can affect pricing effectiveness. Moreover, consumers' price sensitivity and purchasing behavior are constantly evolving. Therefore, businesses must continuously adjust their pricing strategies to adapt to these changes. The ability to flexibly and quickly modify prices has become a key strategy for adapting to market fluctuations. By understanding consumer behavior patterns and analyzing consumption data, merchants can dynamically adjust prices in real time to better meet consumer purchasing intentions and maximize sales opportunities.

8.2. Strategic Recommendations

Similarly, price coordination between online and offline channels requires businesses to account for factors beyond price-such as inventory, logistics, and promotions-that directly impact pricing performance. Given the changing nature of consumer price sensitivity and purchasing habits, merchants must adopt a dynamic and adaptive pricing system. Quick and flexible price adjustments are essential for responding to market shifts effectively.

9. Conclusion

In the study of pricing strategies under the context of omnichannel sales, this research concludes that price coordination, consumer behavior analysis, and differentiated pricing have significant impacts on improving sales performance and market competitiveness. The application of new technologies such as dynamic pricing and data mining can help businesses optimize their pricing strategies and stand out in an increasingly competitive market. Future research can further explore the integration of AI and big data into omnichannel pricing strategies to provide valuable insights and contributions to the retail industry.

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