

Research on Customer Experience Optimization of Large Storage Supermarkets

Yuanyuan Yao*

School of Management, Huazhong University of Science and Technology, Wuhan, China, 430074

Abstract. In the context of new retail, online and offline channels are integrated to optimize the consumer experience and supply chain through digital technology to meet consumers' individual needs better. Under this background, this study deeply discusses the present situation and strategies of customer experience optimization in large warehousing supermarkets. Through structural equation modeling and SmartPLS, this study systematically analyzes the complex relationship between customer overall satisfaction, shopping experience, customer loyalty, and customer recommendation willingness. It is found that a high-quality shopping experience has a significant positive impact on improving the overall satisfaction of customers, thus enhancing customer loyalty and ultimately promoting the formation of customer recommendation willingness. This study not only reveals the key factors affecting customer behavior but also provides theoretical basis and empirical support for large warehousing supermarkets to optimize customer experience in the new retail transformation. In the future, the research will further focus on the exploration of specific optimization strategies, aiming to help enterprises improve customer experience and enhance market competitiveness.

1 Introduction

With the rapid rise of e-commerce platforms and the change in consumers' shopping habits, the traditional advantages of warehousing supermarkets have gradually been eroded. According to Nielsen IQ monitoring data, the overall omnichannel sales of China's FMCG retail market in 2023 will drop slightly by 0.04% year-on-year in 2022, and the sales share of online and offline channels will account for 42% and 58%, respectively. In online channels, the sales of content e-commerce increased by 55.9% year-on-year. In contrast, in offline channels, convenience stores achieved an increase of 3.9% by virtue of their near-field advantages, while the sales of the remaining five channels declined [1]. In 2023, the scale of China's online retail market will increase by more than 10% year-on-year, while the growth rate of the offline retail market (including warehousing supermarkets) will be relatively low [2]. This trend shows that warehousing supermarkets must look for new growth points to cope with the changes and challenges of the market.

In recent years, with the rapid development of information technology, the operation mechanism of retail enterprises is constantly optimized. Ma pointed out in his research that

* Corresponding author: u202216087@hust.edu.cn

digital intelligence technology helps enterprises achieve precise inventory management, efficient logistics and distribution, and intelligent sales forecasting [3]. Zhang explored the application of digital marketing in supermarkets and its impact on customer experience and operational efficiency in his research [4]. In addition, domestic scholars also pay attention to the positive role of digital marketing in enhancing customer loyalty and promoting word-of-mouth communication. Scholars such as Li and Xing have deeply analyzed the optimization of supermarket operation efficiency through research methods such as the double queuing system model [5]. Other scholars discussed the impact of O2O mode on customer experience and business strategy of supermarkets from different angles [6]. Saxena and Jayswal also explored the issue of supermarket operational efficiency from the perspective of customer experience [7]. These studies provide rich theoretical support and practical guidance for the optimization of supermarket operation efficiency.

2 Theoretical basis and hypothesis development

As a retail format, a Warehouse Store is characterized by its large-scale storage space, bulk sales, low-price strategy, and self-service shopping experience. Such supermarkets usually have a vast business area, integrate warehouses and stores, and sell all kinds of goods directly to consumers.

Customer experience refers to the overall perception and impression generated by customers in the process of interacting with enterprise products or services, including sensory experience, emotional experience, thinking experience, action experience, and relationship experience [8]. In warehousing supermarkets, customer experience covers the whole process from entering the supermarket, browsing goods, purchasing, paying, and leaving.

The peak-end law, proposed by psychologist Daniel Kahneman, states that people's memory of an experience is mainly determined by two moments: the peak and the feeling at the end [9]. The application of the peak-to-end law in warehousing supermarkets means that merchants should strive to create a peak experience during customers' shopping process and leave a deep impression when customers leave, thus improving the overall satisfaction and loyalty of customers.

3 Methodology

In this study, the questionnaire survey is adopted, taking the customers of large warehousing supermarkets Sam, Hema Fresh, and Zhongbai warehousing as the survey objects and distributing the questionnaire to consumers in the form of an online electronic version.

Guo pointed out that the mobile online shopping experience has a significant impact on consumers' intention to make repeat purchases. This shows that a good mobile shopping experience enhances consumers' trust and dependence on the platform, thus prompting them to patronize again and recommend it to others, further improving overall satisfaction [10]. Tian studied the factors influencing the continuous use and willingness of fresh food e-commerce platforms from the perspective of customer experience. Positive emotional experience will be translated into a continuous willingness to use the platform and positive word-of-mouth communication, which further consolidates and enhances the overall satisfaction of consumers [11]. Li focuses on the impact of the travel shopping experience on customer satisfaction and purchase intention. Factors such as unique experience, commodity quality, service quality, and comfort of the shopping environment in the process of tourism shopping are all important factors that affect customer satisfaction [12].

Zhang reveals the relationship between experiential marketing and customer loyalty in clothing stores. She found that when customers feel respected, valued, and understood in

specialty stores, they are more willing to become loyal fans of the brand and take the initiative to recommend it to relatives and friends. This experience-based loyalty not only promotes the overall satisfaction of consumers but also brings long-term competitive advantages to brands [13].

Based on the above background, this study puts forward the following hypotheses:

H1: Mediating effect of shopping experience-> overall satisfaction-> recommendation willingness

H2: Mediating effect of shopping experience-> overall satisfaction-> customer loyalty-> recommendation willingness

H3: Mediating effect of shopping experience-> overall satisfaction-> customer loyalty

H4: Mediating effect of overall satisfaction-> customer loyalty-> willingness to recommend

This study constructed a structural equation model (SEM) using SmartPLS4.0 to test the research hypothesis and model fit, analyzing the relationship among shopping experience, overall satisfaction, customer loyalty, and recommendation willingness. The conceptual model is shown in Figure 1.

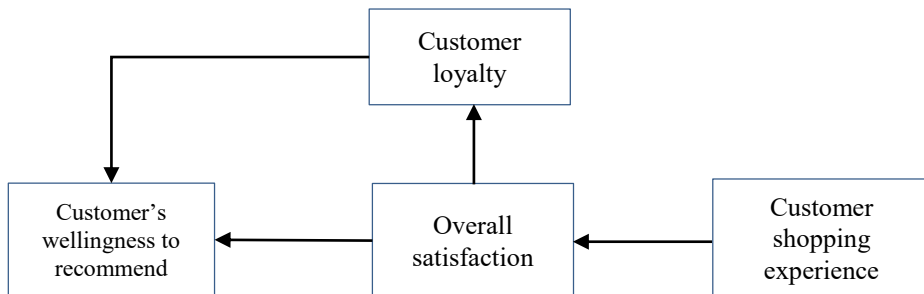


Fig. 1. The conceptual model.

The questionnaire items were measured using a Likert 5-grade scale, in which 1 indicates very inconsistent, and 5 indicates very consistent. This study draws on Wang's research for the overall satisfaction measurement, specifically including five items [14]. For customer shopping experience, the study references Li's work, incorporating eight items [15]. In terms of customer loyalty, the study draws from the research by Zhuang and Zhou, specifically including three items [16]. Customer's willingness to recommend is measured based on Wu's research, with two items included [17].

4 Analysis of empirical results

4.1 Descriptive statistics

This questionnaire survey aims to analyze the customer experience of large warehousing supermarkets and collects some data about customers' shopping habits, demographic characteristics, and preferences.

First of all, regarding the choice of large warehousing supermarkets most frequented by consumers, Sam's Club became the first choice with a proportion of 39.1%, followed by Zhongbai Warehousing and Hema Fresh, accounting for 30.7% and 30.1%, respectively. This suggests that Sam's Club is more attractive among respondents, possibly related to the variety of goods it offers, the quality of service, or the membership system.

In terms of gender, the proportion of men and women participating in the questionnaire is relatively balanced, of which 51.0% are men and 49.0% are women. This balanced gender ratio helps ensure a broad representation of survey findings.

The age distribution shows that young people aged 19 to 25 account for the highest proportion at 30.4%, followed by the age groups aged 26 to 35 and 36 to 45, accounting for 23.3% and 21.5%, respectively. This indicates that young consumers are an important customer group in large warehouse supermarkets, and they may be more inclined to get cost-effective goods and convenient shopping experiences in such stores.

4.2 Reliability and validity tests

The reliability and validity of the study were confirmed through the Kaiser-Meyer-Olkin (KMO) measure, yielding a high value of 0.977, which indicates strong validity. The Bartlett's test of sphericity revealed a statistically significant difference ($P < 0.05$), and the correlation coefficient matrix and identity matrix of the original variables exhibited significant variations, justifying further analysis.

4.3 Correlation analysis

In the correlation analysis section, a structural equation modeling (SEM) approach was employed using SMARTPLS 4.0 to assess the research hypothesis and model fit. This model explored the interrelationships among shopping experience, overall satisfaction, customer loyalty, and willingness to recommend. The findings revealed that overall satisfaction has a notable positive impact on the willingness to recommend ($\beta = 0.644$, $T = 11.528$, $P < 0.001$), suggesting that as customer satisfaction rises, so does their inclination to suggest the supermarket to others.

Furthermore, the influence of overall satisfaction on customer loyalty was found to be highly significant ($\beta = 0.850$, $T = 49.657$, $P < 0.001$). This implies that enhancing customer satisfaction greatly boosts loyalty, making satisfied customers more prone to choose and remain loyal to the supermarket over time.

The effect of shopping experience on overall satisfaction stood out prominently ($\beta = 0.942$, $T = 141.934$, $P < 0.001$), emphasizing the pivotal role of shopping experience in shaping customer satisfaction. A favorable shopping experience directly elevates customer satisfaction.

The impact of customer loyalty on the willingness to recommend was comparatively minor ($\beta = 0.227$, $T = 3.937$, $P < 0.001$), indicating that while loyalty does influence recommendation behavior, satisfaction remains the more potent factor.

Additionally, the correlation analysis disclosed a significant positive link between shopping experience and customers' inclination to recommend ($r = 0.839$, $P < 0.001$). This underscores the importance of delivering a positive shopping experience in augmenting customers' willingness to recommend.

In conclusion, the study underscores the importance of shopping experience, overall satisfaction, and customer loyalty in fostering customer recommendation behavior. Large warehousing supermarkets can utilize these insights to refine customer experience, satisfaction, and loyalty, ultimately fueling recommendation behavior.

4.4 Mediation effect analysis

The Bootstrapping mediation effect test method of Preacher and Hayes (2008) (set 5000 times) was used, which provided the mediation effect of the Bias-corrected 95% confidence interval estimate, if the indirect effect interval estimate contains 0, the mediation effect is

not significant, and if the interval estimate does not contain 0, the mediation effect is significant.

In the path “Shopping experience-> overall satisfaction-> recommendation willingness”, the influence of customers' shopping experience on recommendation willingness is partially realized through overall satisfaction ($\beta = 0.607$, $T = 11.250$, $P < 0.001$). In this path, the shopping experience improves the overall satisfaction of customers, while higher overall satisfaction further increases the willingness of customers to recommend.

In the path “shopping experience-> overall satisfaction-> customer loyalty-> recommendation willingness”, shopping experience not only directly affects overall satisfaction but also further affects customer loyalty through overall satisfaction and ultimately enhances customer recommendation willingness ($\beta = 0.182$, $T = 3.923$, $P < 0.001$). In this path, the shopping experience enhances customers' loyalty by improving customers' overall satisfaction, and the improvement of loyalty promotes customers' willingness to recommend.

In the path “Shopping experience-> overall satisfaction-> customer loyalty”, shopping experience had a strong indirect effect on customer loyalty through overall satisfaction ($\beta = 0.800$, $T = 39.629$, $P < 0.001$). A high-quality shopping experience improves overall customer satisfaction, and higher overall satisfaction significantly increases customer loyalty.

In the path “overall satisfaction-> customer loyalty-> recommendation willingness”, overall satisfaction had an indirect effect on recommendation willingness through customer loyalty ($\beta = 0.193$, $T = 3.917$, $P < 0.001$). The improvement of customers' overall satisfaction will significantly enhance their loyalty, while higher customer loyalty will further increase their willingness to recommend.

5 Discussion

The analysis results of this study verify the hypotheses put forward in the research model. The analysis shows that the shopping experience not only directly affects customers' overall satisfaction and recommendation willingness but also indirectly affects customers' recommendation willingness through overall satisfaction and customer loyalty. These results further demonstrate the key role of the shopping experience in enhancing customer satisfaction and loyalty, as well as the mediating role of satisfaction and loyalty in customer recommendation willingness. This shows that enterprises should pay attention to improving customers' shopping experience and overall satisfaction so as to promote customers' loyalty and willingness to recommend and finally enhance the market competitiveness and brand image of enterprises.

The contributions of this study are mainly reflected in the following: This study focuses on the specific retail format of large warehousing supermarkets and deeply explores the relationship between customer experience and operational efficiency and how to improve them through strategy optimization. This research is helpful in expanding and deepening the retail management theory, especially for the management strategy of large warehousing supermarkets, and it provides new research perspectives and theoretical support for academic circles.

6 Conclusion

Under the background of the vigorous development of new retail, this study focuses on the optimization research of customer experience in large warehousing supermarkets, aiming to reveal the internal relationship between customer satisfaction, shopping experience, loyalty, and recommendation willingness through scientific analysis methods. The findings show that

building an excellent shopping experience is the key to enhancing overall customer satisfaction. In contrast, satisfied customers are more inclined to show high loyalty and positive recommendation behavior. This discovery not only deepens our understanding of customer behavior in the new retail environment but also provides strong support for large warehousing supermarkets to find breakthroughs in the fierce market competition.

References

1. IQ. Nielsen, 2024 China retail industry development report: Embracing the “cost-effective era” (2024)
2. Y. Li, C. Xu, & P. Zhu, Analysis of the Development Environment and Trend of Cross-Border E-commerce in China. *Proc Bus Econ Stud.* **6(6)**, 30-38 (2024)
3. J. Ma, Analysis of the impact of supply chain digital intelligence on the operational efficiency of retail enterprises. *Bus Econ Res.* **(04)**, 157-160 (2024)
4. D. Jaco, Research on digital marketing strategy optimization of the supermarket. Master’s thesis, Shanghai International Studies University (2023)
5. S. Li, & W. Xing, Optimization of operation efficiency of supermarket under double queuing system. *Oper Res Manag.* **26(12)**, 61-67 (2017)
6. Y. An, Research on management strategy optimization of M large multinational supermarket chains based on O2. Master’s thesis, Ocean University of China (2015)
7. K. Saxena & M. Jayswal, Departmental stores versus hypermarkets: An empirical study of customer shopping experience. *IIMS J Manag Sci.* **7(1)**, 111-123 (2016)
8. B. Schmitt, Experiential marketing. *J Mark Manag.* **15(1-3)**, 53-67 (1999)
9. D. Kahneman, *Thinking, fast and slow.* Farrar, Straus and Giroux (2011)
10. B. Guo, Study on the influence of mobile online shopping experience on consumers’ repeat purchase intention, Master’s thesis, Nanjing University of Posts and Telecommunications (2019)
11. L. Tian, Research on continuous use willingness of fresh food e-commerce platform based on customer experience perspective (Master’s thesis, Northeast Agricultural University (2021)
12. M. Li, Discussion on the influence of tourism shopping experience on customer satisfaction and purchase intention. *Enterp Herald.* **(04)**, 106-107 (2015)
13. Y. Zhang, Research on the relationship between experiential marketing and customer loyalty in clothing stores, Master’s thesis, Shanghai University of Engineering and Technology (2021)
14. N. Wang, Construction of rural tourism consumer satisfaction evaluation model under the background of characterization. *Bus Times.* **08** (2021)
15. X. Li, Consumer satisfaction analysis of e-commerce live streaming based on acceptance model. *Jiangsu Bus Lun.* **06** (2021)
16. Y. Zhuang & F. Zhou Study the factors influencing customer loyalty to Luckin coffee in terms of sales background. *Logist Eng Manag.* **07** (2021)
17. J. Wu, Research on influencing factors of customer loyalty of coconut aquatic products based on structural equation model. *Mod Mark.* **06**, 162-165 (2024)