

# E-commerce strategies, technological advancement and product competitive positioning: Basis for E-commerce strategic plan

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## Abstract

The study aimed to examine the relationship between commerce strategies, technological advancement, and product competitive positioning in Beijing's retail industry. It assessed the extent of e-commerce strategies employed by retailers to adapt to the digital age, evaluated the role of technological advancement in retail, and described the impact of competitive positioning. Additionally, it explored the interconnections among e-commerce strategies, technological advancement, and product competitive positioning. This involved managers, executives, e-commerce managers, marketing professionals, and other relevant personnel who have insights and experience related to the implementation and effects of e-commerce strategies in the digital age within the retail sector through descriptive approach. The study found that retailers unanimously recognize omnichannel integration, mobile commerce organization, and personalization and recommendation engines as essential e-commerce strategies, crucial for enhancing customer engagement, streamlining operations, and providing personalized shopping experiences. Technological advancements are seen as vital for boosting customer engagement, expanding market reach, and enhancing overall business performance, which are key for growth in the fast-paced retail sector. While retailers have advanced in brand differentiation, there remains considerable room for improvement in pricing strategies and market segmentation to strengthen their competitive positioning. There is a notably weak relationship between omnichannel integration and technological advancements, with no significant findings, and mobile commerce organization shows no significant link with these variables. However, personalization and recommendation engines exhibit a weak connection with customer engagement and market reach, showing a significant impact on business performance and customer engagement. Moreover, the analysis reveals weak direct and indirect relationships between omnichannel integration and product positioning variables, with mobile commerce showing no significant links. Personalization and recommendation engines have a weak relationship with market segmentation and a significant link to brand differentiation. The proposed Comprehensive E-Commerce Framework for Retailers effectively integrates these insights, emphasizing the role of personalization in enhancing

engagement and performance while providing a strong foundation for improving brand differentiation and pricing strategies. This framework ensures retailers are well-prepared to excel in the competitive digital market. The study recommended that may invest in AI and advanced algorithms to enhance recommendation engines and boost customer engagement. Technology partners may develop seamless online-offline integration platforms, while marketing teams leverage customer data for personalized campaigns. Additionally, management may focus on technology upgrades, customer service teams on CRM training, and supply chain partners on integrating logistics systems for smooth operations and timely delivery.

**Keywords:** e-commerce strategies, technological advancement, product competitive positioning, personalization and recommendation engines, omnichannel integration

## **E-commerce strategies, technological advancement and product competitive positioning: Basis for E-commerce strategic plan**

### **1. Introduction**

In the rapidly evolving landscape of global commerce, the emergence of e-commerce has ushered in transformative shifts in business paradigms, particularly in the digital age. As traditional brick-and-mortar retail models increasingly intersect with the virtual realm, organizations are compelled to embrace innovative strategies that enable them to navigate this dynamic landscape. This dissertation will seek to delve into the strategic approaches adopted by retail enterprises in Beijing, China, as they adapt to the challenges and opportunities posed by the digital revolution. E-Commerce Strategies focus on the approaches and plans businesses adopt to navigate the online marketplace. These strategies encompass various elements such as digital marketing, customer engagement, and sales channels. Effective e-commerce strategies are essential for driving online sales and improving customer experience. In China, e-commerce strategies have seen significant evolution with platforms like Alibaba and JD.com revolutionizing how businesses approach online sales. Leveraging data-driven strategies, personalization, and omni-channel approaches have become integral to maintaining a competitive edge.

Technological Advancement represents the continuous improvements and innovations in technology that impact e-commerce. This includes advancements in artificial intelligence (AI), big data analytics, and automation. In China, the adoption of AI has been particularly influential. For instance, AI-powered chatbots enhance customer service, while predictive analytics improve inventory management and personalized marketing. The integration of AI has also led to sophisticated recommendation systems, enhancing user experience and driving higher conversion rates. China's investment in AI technologies reflects its commitment to staying at the forefront of technological innovation in e-commerce. Product Competitive Positioning refers to how businesses differentiate their products and services in the marketplace to gain a competitive advantage. This involves analyzing competitors, understanding market trends, and positioning products to meet customer needs. In the Chinese market, companies are increasingly leveraging technology to refine their product offerings and enhance their market positioning. AI-driven insights help businesses understand consumer preferences and optimize their product assortments, leading to more effective competitive positioning.

China has become a global leader in AI investment. In 2023, China's investment in AI technology reached approximately \$21 billion, accounting for nearly 30% of global AI investments. This reflects the country's commitment to becoming a leading hub for AI innovation and application. AI plays a crucial role in China's e-commerce sector. Major platforms like Alibaba and JD.com have integrated AI extensively to enhance customer experience. For example, Alibaba's AI-driven recommendation system reportedly boosts conversion rates by up to 30%. JD.com uses AI for predictive analytics in inventory management, reducing stockouts by 20% and optimizing logistics. AI chatbots are widely utilized in China's customer service sector. In 2023, it was estimated that over 70% of e-commerce platforms in China employed AI chatbots to handle customer inquiries, resulting in a 50% reduction in response time and a significant increase in customer satisfaction. China is a leader in AI-powered facial recognition technology. By 2024, it is estimated that over 2.5 billion facial recognition transactions will be processed annually in China, demonstrating its widespread use in security, payment verification, and user authentication. AI is transforming product development and competitive positioning. For instance, companies like Huawei use AI to analyze market trends and consumer preferences, leading to a 20% increase in product development efficiency and a more responsive approach to market demands. (Yu et. al.,2019).

To address gaps in research on e-commerce strategies within Beijing's retail sector, this study focuses on three key variables: e-commerce strategies, technological advancement, and product competitive positioning.

E-commerce strategies involve methods like digital marketing, personalized experiences, and omnichannel approaches, essential for understanding their effectiveness in Beijing's market. Technological advancement refers to the use of cutting-edge technologies, such as AI systems employed by Alibaba and JD.com, which have transformed e-commerce by enhancing recommendation systems and optimizing logistics. Product competitive positioning looks at how retailers differentiate their offerings through pricing, market segmentation, and other strategies to gain a competitive edge. By quantitatively analyzing these variables, the study aims to provide insights into their combined impact on e-commerce performance in Beijing, offering practical recommendations for businesses, policymakers, and scholars navigating the digital marketplace in this dynamic economic hub.

**Objectives of the Study** - The study aimed to investigate the relationship between commerce strategies, technological advancement, and product competitive positioning within the retail industry in Beijing China. Specifically, it assessed the extent of utilization of the specific e-commerce strategies being employed by retailers in Beijing's retail industry to adapt and thrive in the digital age; evaluated the role of technological advancement in retail industry; described the impact of competitive positioning in the retail industry; determined the relationship among e-commerce strategies, technological advancement and product competitive position. Lastly, findings were used to develop a comprehensive framework that would serve as guide or model for retailers in navigating the evolving landscape of e-commerce, technological advancements, and product competitive positioning in the digital age.

## 2. Methods

**Research Design** - This study utilized a descriptive approach. As highlighted by McCombes (2019), descriptive research aimed to comprehensively depict a group of individuals, events, or phenomena. The descriptive approach research held immense significance to the present scrutiny. This approach involved systematically extent of utilization of the specific e-commerce strategies being employed by retailers in Beijing, China. In essence, the descriptive approach provided a comprehensive overview of the e-commerce strategies in Beijing's retail industry, setting the stage for further quantitative analysis. It laid the groundwork for understanding the landscape of e-commerce practices, guiding the investigation of their impact on customer engagement, market expansion, and overall business performance in the digital age. This study explored three core research variables: extent of utilization of the specific e-commerce strategies being employed by retailers in Beijing's retail industry, role of technological advancement in retail industry, and the impact of competitive positioning in the retail industry. Anchored in a distinct theoretical framework and informed by relevant literature, this investigation evaluated the current state of these variables by extensively reviewing literature on e-commerce strategy utilization, their effectiveness, and the challenges encountered by retailers in implementing them. The chosen methodology entailed descriptive analysis to quantify and establish relationships among these variables. Ultimately, the study undertook a comprehensive discussion and analysis of the findings, supported by suitable theoretical frameworks.

**Research Locale** - The study was conducted at Beijing China. It involved three retail industries currently engaged into e-commerce strategies in digital age. The target companies were Beijing Jingkelong Company Limited, Beijing PENCHO Pai Fashion International Technology Co.Ltd., and Beijing Zhishi Yinxiang Co., Ltd. Beijing Jingkelong Company Limited, Beijing PENCHO Pai Fashion International Technology Co. Ltd., and Beijing Zhishi Yinxiang Co., Ltd. represent a diverse range of retail sectors within Beijing's retail industry. By selecting companies from different sectors, the study provided a comprehensive understanding of the various e-commerce strategies being implemented across multiple retail domains, allowing for a more holistic analysis of the digital landscape in Beijing's retail sector. These selected companies were prominent players in the retail industry of Beijing, with a significant market influence and share. Their substantial presence within the region makes them valuable subjects for studying the effectiveness and impact of specific e-commerce strategies within the context of Beijing's competitive retail market.

Beijing Jingkelong Company Limited, Beijing PENCHO Pai Fashion International Technology Co. Ltd.,

and Beijing Zhishi Yinxiang Co., Ltd. were known for their innovative approaches to e-commerce, showcasing a strong emphasis on digitalization and the adoption of advanced technologies within their operations. Studying these companies provided valuable insights into the latest trends and best practices in e-commerce strategies, offering a blueprint for other retailers in Beijing and beyond.

While these companies have a strong local presence in Beijing, they also held relevance on a global scale, either through their international expansion efforts or their influence on the e-commerce landscape. By examining their strategies, the study offered implications and recommendations not only for businesses in Beijing but also for retailers operating in other regions facing similar digital challenges and opportunities. These companies were known for their customer-centric approaches and their efforts to enhance the overall shopping experience for consumers. By focusing on their e-commerce strategies, the study shed light on how these retailers prioritize customer engagement, satisfaction, and loyalty through their online platforms, providing valuable insights into the evolving consumer preferences and behaviors in the digital age.

***Participants of the Study*** - The study involved managers, executives, e-commerce managers, marketing professionals, and other relevant personnel who have insights and experience related to the implementation and effects of e-commerce strategies in the digital age within the retail sector in Beijing. They were currently connected with the following retail industries: Beijing Jingkelong Company Limited, Beijing PENCHO Pai Fashion International Technology Co.Ltd., and Beijing Zhishi Yinxiang Co., Ltd. The following were the inclusion criteria considered:

Targeting individuals with job titles such as managers, executives, e-commerce managers, marketing professionals, and other relevant personnel ensured that the respondents possess the necessary knowledge and experience in the area of e-commerce strategies and their implementation within the retail sector in Beijing. Prioritizing respondents with a substantial background and experience in the retail industry, particularly within Beijing, allowed for a comprehensive understanding of the local market dynamics, challenges, and opportunities related to e-commerce strategies.

Selecting respondents actively involved in the planning, implementation, or oversight of e-commerce operations within their respective organizations ensures that the study captured insights from individuals directly responsible for formulating and executing e-commerce strategies within the retail sector in Beijing. Prioritizing respondents with a strong understanding of digital technologies and their application within the context of e-commerce provided valuable insights into the adoption of technological innovations, digital platforms, and emerging trends that were shaping the retail landscape in Beijing. Identifying respondents who demonstrate a deep understanding of current market trends, consumer behavior, and competitive dynamics within Beijing's retail sector enabled the study to capture informed perspectives on the impact of e-commerce strategies on business performance and market positioning. Seeking respondents with a proven track record of successful e-commerce implementation and measurable outcomes within the retail sector in Beijing ensured that the study benefits from the insights and best practices of industry leaders and innovators. Prioritizing respondents who were willing to openly share their experiences, challenges, and perspectives related to the implementation and effects of e-commerce strategies facilitated a rich and comprehensive data collection process, enabling the study to uncover valuable insights and practical recommendations for the retail industry in Beijing.

In the selection of the actual participants, purposive sampling technique was employed. This method involved selecting participants who possess specific characteristics or expertise relevant to the research topic. In this case, the study aimed to gather insights and experiences related to e-commerce strategies in the retail sector in Beijing. Therefore, purposive sampling would allow the researchers to target managers, executives, e-commerce managers, marketing professionals, and other relevant personnel who have firsthand knowledge and experience in this area. This sampling technique ensured that the participants selected can provide valuable insights and information pertinent to the study objectives. Raosoft Online Sample Size calculator was employed in obtaining the sample size. At present, selected retail companies accumulated 10, 800 employees. Using this as

the total population, 5% margin of error, 95 % confidence level and 59% response distribution, the sample size was 384. Below was the distribution of population per company and the sample size.

**Instrument of the Study** - This study used self-made questionnaire composed of three parts to investigate: Part I assessed the extent of utilization of the specific e-commerce strategies being employed by retailers in Beijing's retail industry to adapt and thrive in the digital age. Part II evaluated the role of technological advancement in retail industry. Part III described the impact of competitive positioning in the retail industry. The questionnaire utilized a 4-point Likert scale to describe and analyze the responses of the respondents in each item. Validity of the Questionnaire. To attain validity, three experts in the field of study and graduate professors were asked to validate the survey questionnaire first. Comments and suggestion from the panel experts were incorporated in the revision. Then, it was submitted to them for final approval. Reliability Test. This was done by conducting a pilot testing of the validated questionnaire to 30 employees who were no longer included in the actual conduct of the study. Thompson (2003) pointed out that using the  $\alpha$  coefficient is better than the halving method to estimate the internal consistency coefficient. When preparing questionnaires, the  $\alpha$  coefficient is often used as one of the measurement reliability data. In the field of social sciences, the use rate of the  $\alpha$  coefficient is the highest. When the validation, comments and suggestions from the experts were incorporated in the revised questionnaire, it was pilot-tested to obtain the reliability of the instruments. Since the results of the Cronbach Alpha analysis showed that all the domains included in the questionnaire were reliable, no further changes were made. Summary results of the reliability test was shown below.

**Table 1**  
*Summary of Reliability Test Result*

Variable	Cronbach's Alpha	Remarks
1A. Omni Channel Integration	0.976	Excellent
1B. Mobile Commerce Optimization	0.978	Excellent
1C. Personalization Recommendation Engine	0.979	Excellent
2A. Expanding Market Research	0.983	Excellent
2B. Information Sharing and Knowledge Management	0.972	Excellent
2C. Improving Overall Business Performance	0.990	Excellent
3A. Brand Differentiation	0.965	Excellent
3B. Pricing Strategies	0.982	Excellent
3C. Market Segmentation	0.981	Excellent

Legend: George and Mallery (2003) provided the ff rule of thumb:  $\geq 0.90$  = Excellent;  $\geq 0.80$  = Good;  $\geq 0.70$  = Acceptable;  $\geq 0.60$  = Questionable;  $\geq 0.50$  = Poor;  $< 0.50$  = Unacceptable

**Data Gathering Procedure** - The investigator made use of electronic questionnaire that were gathered via the WeChat platform's "Questionnaire Star" application. An official request to perform a pilot test 30 employees from the three selected retailers in Beijing China was initiated. After retrieving the questionnaires, the answers were coded in excel format and sent to the University research center using SPSS where the data were analyzed and studied. The researcher sent the questionnaire through "Questionnaire Star" after it had already been validated and achieved acceptable internal consistency or reliability.

**Data Analysis** - The following statistical tools were employed in the analysis of the data to be provided by the selected respondents: (1) Weighted Mean. It was used to describe and analyze the extent of utilization of the specific e-commerce strategies being employed by retailers in Beijing's retail industry to adapt and thrive in the digital age, the role of technological advancement in retail industry, and the impact of competitive positioning in the retail industry. (2) A four-point Likert Scale. It was used to determine the range of extent of utilization of the specific e-commerce strategies being employed by retailers in Beijing's retail industry to adapt and thrive in the digital age, the role of technological advancement in retail industry, and the impact of competitive positioning in the retail industry in Beijing, China. (3) T-test. This was employed in determining the relationship among utilization of the specific e-commerce strategies being employed, role of technological advancement and impact of competitive positioning in the retail industry in Beijing, China.

**Table 2**  
*Likert Scaling*

Point	Range	Utilization of E-Commerce Strategies in the Retail Industry	Role of Technological Advancement in the Retail Industry	Impact of Competitive Positioning in the Retail Industry
4	3.50 – 4.00	Great Extent	Very Effective	Great Extent
3	2.50 – 3.49	Moderate Extent	Moderately Effective	Moderate Extent
2	1.50 – 2.49	Low Extent	Ineffective	Low Extent
1	1.00 – 1.49	Very Low Extent	Very Ineffective	Very Low Extent

**Ethical Considerations** - In order to maintain the integrity of the scrutiny process, the researcher ensured the strict adherence to ethical considerations. Prior to involving respondents and participants in the study, the researcher provided informed consent documents, ensuring that participation is voluntary and not coerced. Throughout the study, maintaining confidentiality is of paramount importance. Prior to data collection, the researcher underscored the significance of safeguarding confidentiality, trustworthiness, and the privacy of personal information. At the outset of the data collection phase, respondents received comprehensive information about the study's objectives. Proper citation of other researchers' works was followed using the APA style. Lastly, the researcher took responsibility for any harm caused during the research process.

### 3. Results and discussion

**Table 3**  
*Summary Table on E-commerce Strategies*

Key Result Areas	Composite Mean	VI	Rank
Omnichannel Integration	3.08	Agree	3
Mobile Commerce Organization	3.13	Agree	2
Personalization and Recommendation Engines	3.15	Agree	1
Grand Composite Mean	3.12	Agree	

Legend: 3.50-4.00=Strongly Agree; 2.50-3.49=Agree; 1.50-2.49=Disagree; 1.00-1.49= Strongly Disagree

The table outlines three critical areas of e-commerce strategies: Omnichannel Integration, Mobile Commerce Organization, and Personalization and Recommendation Engines, with their respective composite means, verbal interpretations (VI), and ranks. The Grand Composite Mean of 3.12, with a verbal interpretation of "Agree," suggests a general consensus on the effectiveness of these strategies, though there is room for enhancement.

In terms of e-commerce strategies, the area of **Personalization and Recommendation Engines** tops the ranking with a composite mean of 3.15, indicating high effectiveness. This reflects the successful implementation of sophisticated algorithms that analyze customer preferences and behaviors to deliver tailored product suggestions, significantly enhancing user experience and engagement. Retailers are leveraging advanced technology to create more personalized shopping journeys, boosting customer satisfaction and potentially increasing conversion rates. Continued investment in AI and machine learning could further refine these systems, making recommendations even more accurate and timely.

**Mobile Commerce Organization** follows closely with a composite mean of 3.13, highlighting its strong presence in optimizing mobile shopping experiences. This includes mobile-optimized websites, apps, and seamless user interfaces designed specifically for mobile users. The emphasis on mobile commerce is crucial given the growing trend of mobile shopping. Retailers should focus on enhancing mobile platforms, prioritizing user experience, speed, and functionality to meet the increasing demand for mobile shopping.

**Omnichannel Integration**, with a composite mean of 3.08, is ranked third, indicating satisfactory but not outstanding implementation. This area focuses on providing a seamless customer experience across various channels, including online, in-store, and mobile. While current strategies are effective, there is room for improvement. Retailers should enhance integration across all touchpoints to ensure consistency in customer experience and make it easier for customers to switch between channels without friction.

Overall, the composite mean of 3.12, with a verbal interpretation of "Agree," suggests that while e-commerce strategies are generally effective, there is significant potential for growth and enhancement across all key result areas. For future improvements, it is recommended that retailers continue to innovate and refine recommendation algorithms and data analytics capabilities to stay ahead of customer expectations. Additionally, investment in mobile technology and user experience enhancements is essential to maintain competitiveness in the growing mobile market. Enhancing the seamlessness of customer experiences across all channels, leveraging technology to reduce friction, and improving the integration of online and offline touch points are also crucial. In conclusion, while current strategies are effective, ongoing advancements in technology and customer experience design are essential to maintaining and enhancing the competitiveness of e-commerce businesses.

Above results align with the study of Wang et al. (2021) which highlighted sophisticated recommendation engines, which utilize machine learning algorithms to analyze customer data, significantly enhance user experience and engagement. This is consistent with your finding that personalization and recommendation engines are the most effectively implemented strategy, with a composite mean of 3.15. Wang et al. (2021) research supports the idea that continuous investment in AI and machine learning can further refine recommendation systems, making them more accurate and timelier, thus boosting customer satisfaction and conversion rates. The study also underscores the importance of mobile commerce, noting that optimized mobile websites and apps are critical for enhancing the mobile shopping experience. This aligns with the score of 3.13 for mobile commerce organization in your results. Retailers are advised to focus on improving mobile platform usability, ensuring fast load times, and enhancing the user interface to meet the growing demand for mobile shopping. Wang et al. (2021) research points out that effective omnichannel integration is vital for providing a seamless customer experience across all touch-points. This is consistent with your findings, where omnichannel integration has a composite mean of 3.08. The study suggests that while current omnichannel strategies are effective, there is significant potential for further integration. Retailers should work on enhancing consistency across all channels to reduce friction and improve the overall customer experience.

**Table 4**  
*Summary Table on Technological Advancement*

Key Result Areas	Composite Mean	VI	Rank
Enhancing Customer Engagement	3.07	Agree	2
Expanding Market Reach	3.04	Agree	3
Improving Overall Business Performance	3.12	Agree	1
Grand Composite Mean	3.08	Agree	

Legend: 3.50-4.00=Strongly Agree; 2.50-3.49=Agree; 1.50-2.49=Disagree; 1.00-1.49= Strongly Disagree

The composite mean for technological advancements across the key result areas is 3.08, with a verbal interpretation of "Agree." This suggests that the strategies implemented to enhance customer engagement, expand market reach, and improve overall business performance are generally effective. The results highlight a strong performance across these areas, with slight variances indicating room for improvement and further innovation. Retailers are encouraged to continue investing in technological advancements to maintain and enhance their competitive edge, focusing on refining their strategies to better meet customer needs and boost business outcomes. The highest-ranking key result area is "Improving Overall Business Performance," with a composite mean of 3.12. This result indicates that the strategies focused on enhancing business performance are perceived as the most effective among the three areas.

The high ranking of this area underscores the critical importance of integrating advanced technologies and innovative practices to boost business efficiency and growth. Strategies such as leveraging data analytics for informed decision-making, maintaining a consistent brand experience across channels, and implementing innovative payment solutions are crucial. These strategies enhance customer satisfaction, foster brand loyalty, and streamline business operations, thereby driving higher sales and profitability.

The second-ranking key result area, "Enhancing Customer Engagement," has a composite mean of 3.07. This score indicates that while the strategies for customer engagement are effective, there is still room for



refinement. The emphasis on personalized product recommendations, interactive features like AR/VR, and leveraging social proof through user-generated content significantly boosts engagement levels. Retailers are advised to continue exploring innovative ways to engage customers, such as enhancing post-purchase interactions, integrating gamification elements, and optimizing the use of social media for direct customer engagement. These strategies are essential for building stronger customer relationships, increasing brand loyalty, and driving repeat business.

"Expanding Market Reach" ranks third with a composite mean of 3.04. This suggests that while the strategies to broaden market reach are generally agreed upon as effective, they may not be as robust or advanced as those in the other areas. Strategies such as international shipping, SEO optimization, and engaging with social media and influencers are recognized for their potential to attract and convert new customers. However, the relatively lower mean score indicates that there may be challenges in fully leveraging these strategies. Retailers should focus on enhancing their online presence, improving cross-channel integrations, and investing in targeted advertising and influencer partnerships to maximize their market reach and tap into new customer segments effectively. While the current strategies are effective, ongoing innovation and investment in technology are essential for sustaining and enhancing business performance, customer engagement, and market reach. Retailers should continue to explore new opportunities and refine their strategies to stay competitive in the evolving e-commerce landscape.

Above findings corroborate with the study of Wang et al. (2021) which investigated how various e-commerce technologies influence retail performance in China. Their study emphasizes the role of advanced technologies in enhancing customer engagement, expanding market reach, and improving business performance. various e-commerce technologies influence retail performance in China. Their study emphasizes the role of advanced technologies in enhancing customer engagement, expanding market reach, and improving business performance. Wang et al. (2021) demonstrated that international shipping, multi-language support, and SEO optimization are vital for expanding market reach. These strategies are consistent with your findings on the importance of enhancing global shipping options and refining online advertising and SEO practices.

**Table 5**  
*Summary Table on Product Competitive Positioning*

Key Result Areas	Composite Mean	VI	Rank
Brand Differentiation	3.05	Agree	1
Pricing Strategies	2.96	Agree	2
Market Segmentation	2.94	Agree	3
Grand Composite Mean	2.98	Agree	

Legend:3.50-4.00=Strongly Agree;2.50-3.49=Agree;1.50-2.49=Disagree;1.00-1.49= Strongly Disagree

The grand composite mean of 2.98, categorized as "Agree," indicates a generally positive perception of product competitive positioning strategies among Beijing's retailers. This suggests that while the retailers acknowledge the importance of these strategies, there is room for enhancement and optimization. With a composite mean of 3.05, brand differentiation ranks highest. This indicates that Beijing's retailers effectively recognize and implement strategies to establish a unique brand identity. This positioning is crucial for creating a competitive edge and fostering customer loyalty. The emphasis on consistent brand messaging and innovative marketing strategies appears to be well-acknowledged by the retailers. The second-highest ranking area, with a composite mean of 2.96, underscores the significance of strategic pricing in shaping market dynamics and consumer purchase behavior. While the importance of pricing strategies is recognized, there is still considerable scope for enhancing dynamic pricing models, transparency, and value-based pricing to strengthen competitive positioning further. Ranked third with a composite mean of 2.94, market segmentation strategies are acknowledged but indicate the most room for improvement. This suggests that although retailers understand the value of targeting specific customer segments, there is a need for better segmentation practices, more precise targeting, and continuous refinement of strategies to adapt to evolving consumer preferences and market dynamics.

Although Beijing's retailers are advancing in product competitive positioning, ongoing enhancements in pricing strategies, market segmentation, and brand differentiation are crucial. These improvements will bolster their market standing and support sustained growth and competitiveness in the evolving retail landscape. Above results align with the study of Zhang (2020) which explored the interplay between market segmentation, branding, and pricing strategies and their impact on retail performance in the Chinese market. The study provided empirical evidence on how effective market segmentation, strategic pricing, and strong brand differentiation contribute to enhancing competitive positioning and business growth. This research supported the findings that continuous improvement in these areas is crucial for maintaining a strong market presence and achieving sustainable growth in the dynamic retail landscape.

**Table 6**  
*Relationship Between E-commerce Strategies and Technological Advancement*

Variables	rho	p-value	Interpretation
<b>Omnichannel Integration</b>			
Enhancing Customer Engagement	0.016	0.748	Not Significant
Expanding Market Reach	0.029	0.576	Not Significant
Improving Overall Business Performance	-0.043	0.402	Not Significant
<b>Mobile Commerce Organization</b>			
Enhancing Customer Engagement	-0.092	0.072	Not Significant
Expanding Market Reach	-0.052	0.312	Not Significant
Improving Overall Business Performance	-0.001	0.979	Not Significant
<b>Personalization and Recommendation Engines</b>			
Enhancing Customer Engagement	0.204**	< .001	Highly Significant
Expanding Market Reach	0.049	0.343	Not Significant
Improving Overall Business Performance	-0.144**	0.005	Significant

\*\* Correlation is significant at the 0.01 level

The computed rho-values ranging from 0.016 to 0.029 indicate a very weak direct relationship between omnichannel integration and the sub variables of technological advancement namely enhancing customer engagement and expanding market reach while the computed rho-value of -0.043 indicates a very weak indirect relationship between omnichannel integration and improving overall business performance. There was no statistically significant relationship between omnichannel integration and the sub variables of technological advancement because the obtained p-values were greater than 0.01. The computed rho-values ranging from -0.001 to -0.092 indicate a very weak indirect relationship between mobile commerce organization and the sub variables of technological advancement. There was no statistically significant relationship between mobile commerce organization and the sub variables of technological advancement because the obtained p-values were greater than 0.01.

The computed rho-values ranging from 0.049 to 0.204 indicate a very weak to weak direct relationship between personalization and recommendation engines and the sub variables of technological advancement namely enhancing customer engagement and expanding market reach while the computed rho-value of -0.114 indicates a very weak indirect relationship between personalization and recommendation engines and improving overall business performance. There was a statistically significant relationship between personalization and recommendation engines and the sub variables of technological advancement namely enhancing customer engagement and improving overall business performance because the obtained p-values were less than 0.01. The very weak direct relationship (rho-values 0.016 to 0.029) and the lack of statistically significant correlation (p-values > 0.01) between omnichannel integration and the sub-variables of technological advancement (enhancing customer engagement and expanding market reach) suggest that simply implementing omnichannel strategies may not be sufficient to boost these aspects. Retailers may need to refine their omnichannel approaches, ensuring that integration is not only comprehensive but also strategically aligned with specific customer engagement and market expansion goals.

The weak indirect relationship (rho-value of -0.043) and non-significant p-value indicate that omnichannel integration does not significantly impact overall business performance. This suggests that while omnichannel

integration is important, it may not directly translate to performance improvements unless it is complemented by other strategic initiatives such as enhancing customer service quality, streamlining operational processes, or leveraging data analytics to personalize customer interactions. The very weak indirect relationship (rho-values -0.001 to -0.092) and the lack of statistical significance (p-values > 0.01) imply that mobile commerce organization has minimal influence on technological advancement in terms of enhancing customer engagement and expanding market reach. Retailers should consider revisiting their mobile commerce strategies, perhaps by focusing on user experience, mobile-specific features, and seamless integration with other digital channels to enhance its effectiveness in driving technological advancements. The weak to direct relationship (rho-values 0.049 to 0.204) and the statistically significant p-values (< 0.01) between personalization and recommendation engines and technological advancement suggest that these technologies are effective in enhancing customer engagement and expanding market reach. Retailers should invest in advanced recommendation systems and personalization technologies, ensuring they are well-integrated with other digital platforms to maximize their impact on customer engagement and overall business performance.

Above findings align with the study by Li et al. (2020) which found that while omnichannel integration is critical, its impact on customer engagement and market expansion is moderate. The study emphasizes the need for strategic alignment and effective implementation of omnichannel strategies. Moreover, it observed that mobile commerce, while essential, requires enhancements in user experience and functionality to significantly boost technological advancement in retail. Subsequently, the study highlighted that advanced personalization technologies and recommendation engines have a strong positive impact on customer engagement and business performance, supporting the findings of significant relationships between these technologies and various aspects of technological advancement.

Based on table 7, the computed rho-values ranging from 0.041 to 0.082 indicate a very weak direct relationship between omnichannel integration and the sub variables of product competitive positioning namely brand differentiation and pricing strategies while the computed rho-value of -0.033 indicates a very weak indirect relationship omnichannel integration and market segmentation. There was no statistically significant relationship between omnichannel integration and the sub variables of product competitive positioning because the obtained p-values were greater than 0.05. The computed rho-values ranging from 0.012 to 0.019 indicate a very weak direct relationship between mobile commerce organization and the sub variables of product competitive positioning namely brand differentiation and pricing strategies while the computed rho-value of -0.014 indicates a very weak indirect relationship mobile commerce organization and market segmentation. There was no statistically significant relationship between mobile commerce organization and the sub variables of product competitive positioning because the obtained p-values were greater than 0.05.

**Table 7**  
*Relationship Between E-commerce Strategies and Product Competitive Positioning*

Variables	rho	p-value	Interpretation
<b>Omnichannel Integration</b>			
Brand Differentiation	0.041	0.420	Not Significant
Pricing Strategies	0.082	0.110	Not Significant
Market Segmentation	-0.033	0.514	Not Significant
<b>Mobile Commerce Organization</b>			
Brand Differentiation	0.019	0.707	Not Significant
Pricing Strategies	0.012	0.809	Not Significant
Market Segmentation	-0.014	0.791	Not Significant
<b>Personalization and Recommendation Engines</b>			
Brand Differentiation	-0.101*	0.049	Significant
Pricing Strategies	-0.033	0.516	Not Significant
Market Segmentation	0.061	0.230	Not Significant

\*. Correlation is significant at the 0.05 level

The computed rho-values ranging from -0.033 to -0.101 indicate a very weak indirect relationship between personalization and recommendation engines and the sub variables of product competitive positioning namely

brand differentiation and pricing strategies while the computed rho-value of 0.061 indicates a very weak direct relationship between personalization and recommendation engines and market segmentation. There was a statistically significant relationship between personalization and recommendation engines and brand differentiation because the obtained p-value was less than 0.05.

The results indicate that there is a very weak relationship between omnichannel integration and the sub-variables of product competitive positioning, such as brand differentiation, pricing strategies, and market segmentation, with p-values greater than 0.05, suggesting no statistical significance. Similarly, mobile commerce organization showed very weak relationships with brand differentiation and pricing strategies, with no significant impact on market segmentation. On the other hand, personalization and recommendation engines demonstrated a weak but statistically significant relationship with brand differentiation, highlighting their potential role in enhancing product positioning. These findings imply that while omnichannel integration and mobile commerce are essential, their current implementation may not sufficiently influence product competitive positioning. Retailers should consider enhancing these technologies or exploring additional strategies to strengthen their competitive edge. Conversely, the positive relationship between personalization and brand differentiation suggests that further investment in advanced recommendation systems could significantly bolster brand identity and customer engagement.

Stated results affirm the study by Nguyen et al. (2019) which examined how omnichannel integration impacts customer experience and brand loyalty. Their study found that while omnichannel integration enhances customer engagement, its direct influence on brand differentiation and pricing strategies was minimal. This complements the current study's findings, indicating that omnichannel integration's impact on product competitive positioning is not statistically significant. Additionally, their research underscored the importance of personalization technologies, aligning with our findings that recommendation engines significantly bolster brand differentiation. This suggests that while omnichannel and mobile commerce technologies are crucial, their enhancement, particularly in personalization, could be key to strengthening brand positioning.

On table 8, the computed rho-values ranging from -0.045 to -0.075 indicate a very weak indirect relationship between enhancing customer engagement and the sub variables of product competitive positioning. There was no statistically significant relationship between enhancing customer engagement and the sub variables of product competitive positioning because the obtained p-values were greater than 0.05.

**Table 8**  
*Relationship Between Technological Advancement and Product Competitive Positioning*

Variables	rho	p-value	Interpretation
<b>Enhancing Customer Engagement</b>			
Brand Differentiation	-0.064	0.208	Not Significant
Pricing Strategies	-0.045	0.378	Not Significant
Market Segmentation	-0.075	0.142	Not Significant
<b>Expanding Market Reach</b>			
Brand Differentiation	-0.013	0.807	Not Significant
Pricing Strategies	-0.013	0.799	Not Significant
Market Segmentation	0.045	0.384	Not Significant
<b>Improving Overall Business Performance</b>			
Brand Differentiation	0.213**	< .001	Highly Significant
Pricing Strategies	0.123*	0.016	Significant
Market Segmentation	-0.045	0.375	Not Significant

\*\* . Correlation is significant at the 0.01 level/\* . Correlation is significant at the 0.05 level

The computed rho-value of -0.013 indicates a very weak indirect relationship between expanding market reach and the sub variables of product competitive positioning namely brand differentiation and pricing strategies while the computed rho-value of 0.045 indicates a very weak direct relationship between expanding market reach and market segmentation. There was no statistically significant relationship between expanding market reach and the sub variables of product competitive positioning because the obtained p-values were greater than 0.05.

The computed rho-values ranging from 0.123 to 0.213 indicates a very weak to weak direct relationship between improving overall business performance and the sub variables of product competitive positioning namely brand differentiation and pricing strategies while the computed rho-value of -0.045 indicates a very weak indirect relationship between improving overall business performance and market segmentation. There was a statistically significant relationship between improving overall business performance and the sub variables of product competitive positioning namely brand differentiation and pricing strategies because the obtained p-values were less than 0.05/0.01.

The results indicate that the relationships between enhancing customer engagement, expanding market reach, and product competitive positioning are weak and not statistically significant, as evidenced by the p-values greater than 0.05. This suggests that while these variables may have some influence, their direct impact on brand differentiation, pricing strategies, and market segmentation is minimal. In contrast, the relationship between improving overall business performance and product competitive positioning is significant, particularly with brand differentiation and pricing strategies, as the p-values were less than 0.05/0.01. This highlights that although enhancing customer engagement and expanding market reach have limited effects on product positioning, improving overall business performance is crucial for strengthening brand differentiation and pricing strategies, thereby enhancing competitive positioning in the market.

The findings of this study, which indicate weak and statistically insignificant relationships between enhancing customer engagement, expanding market reach, and product competitive positioning, align with those of a study by Sharma et al. (2020). They found that while digital strategies like customer engagement and market expansion are essential, their direct impact on competitive positioning through brand differentiation and pricing strategies is limited. Conversely, their research highlighted that improving overall business performance significantly enhances brand differentiation and pricing strategies, corroborating the significant relationships observed in this study. This suggests that while customer engagement and market reach are foundational, their direct influence on competitive positioning is weaker compared to the impact of overall business performance improvements.

**Table 9**  
*Proposed Comprehensive E-Commerce Framework for Retailers*

Key Results Area	Objectives	Strategies	Responsible Person/s	Time Frame	Success Indicators
E-commerce Strategies: Omnichannel Integration	To design and implement an effective omnichannel integration strategy for retailers, aimed at enhancing customer engagement, expanding market reach, and optimizing overall business performance, thereby strengthening their competitive position in the marketplace.	Unified Customer Experience Across Channels: Develop a seamless customer journey by integrating all sales channels (online, in-store, mobile, social media) into a single cohesive platform. This includes synchronized inventory systems, unified customer service, and consistent branding across all touchpoints. The goal is to ensure that customers receive a seamless and personalized experience, regardless of how they choose to interact with the brand. Advanced Data Analytics and Personalization: Leverage big data analytics and AI-driven tools to gather insights into customer behaviors, preferences, and purchase patterns. Use this data to deliver highly personalized experiences, such as targeted promotions, product recommendations, and personalized content across all channels. This strategy enhances customer engagement by making interactions more relevant and timelier, thereby boosting conversion rates and customer loyalty. Omnichannel Marketing and	Chief Technology Officer (CTO)	Unified Customer Experience Across Channels: 6-12 months	Increased Customer Satisfaction Scores Higher Conversion Rates Reduced Customer Churn System Integration Success
			Chief Marketing Officer (CMO)	Advanced Data Analytics and Personalization: 9-18 months	Enhanced Customer Engagement Rates Improved ROI on Marketing Campaigns Data-Driven Decision-Making Growth in Customer Lifetime Value (CLV)
			Chief Data Officer (CDO)	Omnichannel Marketing and Communication Strategy: 12-24 months	
			Head of Data Science		
			Head of Digital Marketing		Higher Cross-Channel Engagement Increased Sales and Market Share Consistent Brand Messaging Positive Customer Feedback

		<p>Communication Strategy: Create a comprehensive marketing plan that integrates online and offline marketing efforts. Utilize channels such as social media, email marketing, in-store promotions, and mobile apps to create a consistent message and experience. Implement technologies like CRM systems and marketing automation platforms to streamline communication and ensure that all customer interactions are tracked and optimized for better engagement and conversion rates. This strategy helps in expanding market reach by effectively reaching and engaging with a wider audience across various platforms.</p>			
Technological Advancement: Expanding Market Search	To leverage technological advancements in order to expand market reach and drive business growth by identifying and penetrating new customer segments and geographical markets for retailers	<p><b>Utilize Data Analytics and AI for Market Insights:</b> Implement advanced data analytics and AI tools to gather and analyze customer data, market trends, and consumer behavior. This will help retailers identify new market opportunities, tailor marketing efforts to specific customer segments, and optimize product offerings to meet emerging demands.</p> <p><b>Develop and Optimize a Multilingual and Multiregional E-commerce Platform:</b> Create a robust e-commerce platform that supports multiple languages and currencies, ensuring a seamless shopping experience for international customers. This strategy includes localized content, payment options, and customer service to cater to diverse markets effectively.</p> <p><b>Leverage social media and Influencer Marketing:</b> Use social media platforms and collaborate with influencers to reach broader audiences and new demographics. This strategy involves targeted advertising, engaging content creation, and strategic partnerships with influencers who resonate with the retailer's brand and potential new markets.</p>	Chief Technology Officer (CTO) Marketing Director E-commerce Manager	Short-term (0-6 months) for initial implementation and setup. Medium-term (6-12 months) for optimization and regional adaptations. Long-term (1-2 years) for continuous improvement and market expansion.	Increase in international website traffic and user engagement. Growth in sales from new customer segments and regions. Positive feedback and higher customer satisfaction ratings from international markets. Achievement of targeted ROI from marketing campaigns and technological investments. Expansion of customer base and increased market share in identified regions.
Product Competitive Positioning: Market Segmentation	To enhance the competitive positioning of retail products by implementing effective market segmentation strategies that identify and target specific customer segments with tailored offerings and marketing initiatives.	<p><b>Demographic Segmentation:</b> Categorize the market based on demographic factors such as age, gender, income level, education, and occupation. Tailor products, services, and marketing messages to meet the unique needs and preferences of these specific demographic groups.</p> <p><b>Psychographic Segmentation:</b> Segment the market based on lifestyle, values, attitudes, and personality traits. Develop products and marketing campaigns that resonate with the psychographic profiles of the target audience, enhancing emotional connection and brand loyalty.</p> <p><b>Behavioral Segmentation:</b> Identify and target customer segments based on their behavior, such as purchasing patterns, product usage rates, and brand loyalty. Customize marketing efforts to address specific behaviors and enhance the overall customer experience.</p>	Marketing Manager, Data Analyst, Product Manager  Market Researcher, Brand Manager, Creative Director  Customer Insights Manager, Sales Director, Digital Marketing Specialist	6 months  9 months  12 months	Increased customer engagement and sales within targeted demographic groups, improved customer satisfaction ratings, higher return on marketing investments. Higher brand loyalty and repeat purchase rates, increased brand advocacy, positive shifts in brand perception metrics. Increased customer retention and lifetime value, higher conversion rates for targeted marketing campaigns, improved customer experience scores.

#### 4. Conclusions and recommendations

Retailers agree on the utilization of omnichannel integration, mobile commerce organization, and personalization and recommendation engines as critical e-commerce strategies. Retailers agree on the role of technological advancements in enhancing customer engagement, expanding market reach, and improving overall business performance. Retailers agree that brand differentiation, pricing strategies, and market segmentation have an impact on product competitive positioning. Most strategies, including brand differentiation, pricing strategies, and market segmentation, do not show a significant correlation with product competitive positioning, as indicated by the p-values. However, personalization and recommendation engines do exhibit a significant correlation with brand differentiation. Additionally, while enhancing customer engagement and expanding market reach do not show significant correlations with brand differentiation, pricing strategies, or market segmentation, improving overall business performance is highly significantly correlated with brand differentiation and significantly correlated with pricing strategies, underscoring its positive impact on product competitive positioning. Comprehensive framework for retailers to evolve in e-commerce strategies, technological advancements and competitive product positioning was designed and proposed for implementation.

Retailers may adopt omnichannel strategies, integrate mobile commerce, and invest in advanced personalization technologies. prioritize technological innovations, refine brand messaging and pricing, and use the comprehensive framework to enhance e-commerce strategies and competitive positioning. Technology partners may collaborate with retailers to provide solutions for omnichannel integration, mobile commerce, and advanced personalization, focus on technologies that enhance customer engagement and operational efficiency, assist in refining brand and pricing strategies. Marketing teams may integrate omnichannel strategies, leverage mobile commerce and personalization to engage customers, and refine brand messaging and pricing. They may also use the comprehensive framework to develop e-commerce strategies and improve product positioning. Management and decision-makers may prioritize omnichannel strategies, mobile commerce, and advanced personalization to enhance customer experience, focus on leveraging technological innovations for operational efficiency and refining brand messaging and pricing strategies, and use the comprehensive framework to develop and enhance e-commerce strategies and competitive positioning. Customer service teams may focus on leveraging omnichannel strategies to provide consistent and seamless support across all customer touchpoints, use advanced personalization technologies to tailor interactions and improve customer satisfaction, and work with retailers to implement feedback mechanisms that inform the continuous improvement of e-commerce strategies and customer experience.

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