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The effects of a private domain strategy on retail sales performance

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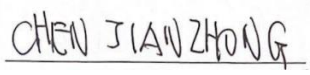
2023

I hereby declare that this DBA dissertation is my original work and it has been written by me in its entirety. I have duly acknowledged all of the sources of information which have been used in this DBA dissertation.

This DBA dissertation has also not been submitted for any degree in any university previously.



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ABSTRACT

The proliferation of Internet technology has led people to become increasingly accustomed to online consumption, thus forming a substitution effect for offline consumption. In particular, the development of social media helps retailers circumvent public domain platforms and develop their own controllable private domain channels to cultivate emotionally connected loyal consumers and finally realize the monetization of emotional relationships. Through empirical study of the quarterly data of 244 self-operated stores of Sanse Corporation in the fourth quarter of 2022, this research obtained the following results: 1. The implementation of private domain marketing strategies, including private domain membership development strategies, live conversion strategies, and active promotion strategies, is conducive to improving the retail customer average transaction value (ATV) and sales. Among them, the membership development strategy plays the most significant role. 2. The impact of the private domain marketing strategies on the sales performance is achieved by enhancing the private domain degree. 3. The private domain strategies are more effective in promoting the sales performance of unknown brands, that is, the brand category will moderate the indirect relationship between the private domain strategies and the sales performance through the private domain degree.

In the realm of private labeling, the impact on sales performance of proprietary brands is greater. 4. Private domain strategies have a greater impact on sales for lower-level stores, that is, store level will adjust the indirect relationship between private domain strategies and sales through private domain degree. However, store level has no significant moderating effect on the indirect relationship between private domain strategies and customer ATV. The empirical results show that the advancement of social media technology has created an opportunity for retailers to open up private domain traffic outside of public domain traffic. The implementation of private domain strategies provides an opportunity for small brands, or those unknown weak brands, to catch up with the sales performance of strong brands.

This study empirically tested the mechanisms of the influence of private domain strategies on the sales performance of retailers, exploring the heterogeneity of different brands and store levels, and constructing an integrated logical framework, which is a significant contribution to the existing literature on privatization.

This study focused on the impact of private domain strategies on the sales performance of retailers, and holds significant implications for the privatization transformation of the Chinese retail industry. First, retailers can use a variety of private domain tools to enhance sales performance by implementing private domain membership development strategies, live conversion strategies and active enhancement strategies, as well as the superimposing of various strategies. Second, a weak retailer could promote the privatization transformation of marketing channels, and even implement it as a dominant marketing strategy. Third, providing low-cost private domain tools and

operational services to retailers will be a very promising emerging market.

Keywords: private domain strategy, private domain degree, sales performance, store grade, brand category

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1 Introduction

1.1 Background

With the proliferation of internet technology, especially the new generation of digital technologies such as mobile internet, artificial intelligence, and big data, the number of internet and social media users continues to increase. By December 2022, the number of Chinese netizens had reached 1.067billion, and the internet penetration rate 75.6%, with 99.8% of them using mobile phones as the main device for accessing the internet (China Internet Network Information Center, 2022). Against this backdrop, online shopping has developed rapidly, with a crowding-out effect on offline consumption (Qin et al., 2017). This is especially during the global public health crisis of COVID-19 where the substitution effect of online shopping for offline consumption was more obvious. For instance, in 2020, global offline retail sales declined by 20% (Forrester, 2020). The severe situation forced offline-oriented companies to switch to online retail. However, after years of development, online e-commerce has gradually entered a period of slow growth. In 2022, China's online retail sales of physical goods reached 11.96 trillion yuan, representing a year-on-year increase of 6.2% and accounting for 27.2% of the total retail sales of consumer goods in society (Xinhua News Agency, 2022), the growth rate of traditional online retail has actually been slowing down year by year. Figure 1.1 shows the growth trend of online retail of physical goods from 2012 to 2022 where the rate of online retail of physical goods from 2012 to 2021 has declined with negative growth in 2019. Although there was a brief increase in 2020, it turned down again in 2021.

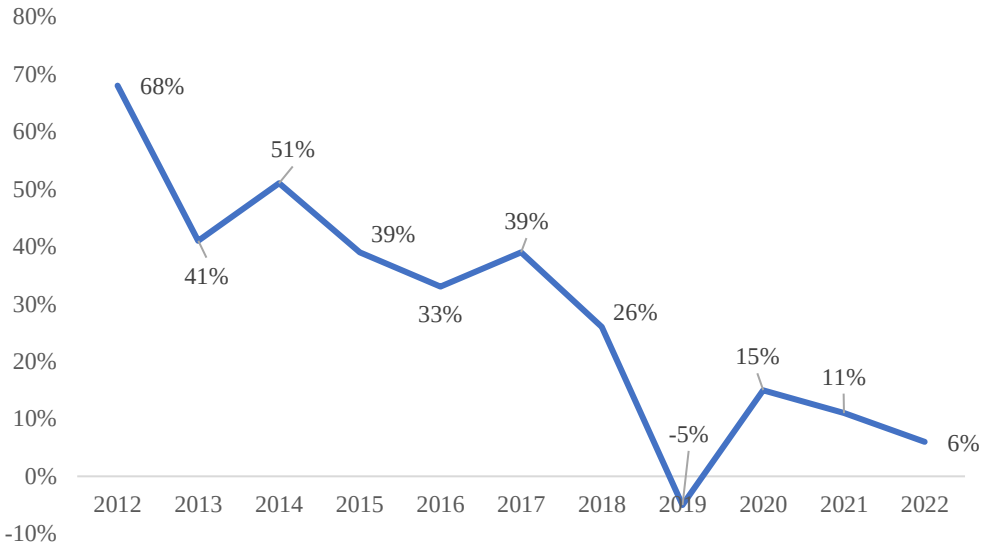


Figure 1.1 Growth trend of online retail sales of physical goods from 2012 to 2022

Source: National Bureau of Statistics of China

Small retailers mainly acquire customer traffic and sales performance through access to online platforms such as Amazon, AliExpress, eBay, Rakuten, and Alibaba (Taobao) (Kotzab & Madlberger, 2001; Vieira et al., 2022). However, the sales performance based on the online platform is increasingly declining, which may be the direct cause of the slowdown in online retail sales growth. Figure 1.2 gives the transaction amount and growth rate of Taobao's "Double Eleven" from 2009 to 2021, which shows that although the transaction amount of Taobao's "Double Eleven" is still increasing year by year[1], its growth rate is getting lower and lower. Although due to the COVID-19 pandemic, the growth rate of transaction amount had a short-term surge in 2020, it dropped again in 2021. This confirms the new trend in the retail market: the escalating competitive pressure makes it increasingly difficult for retailers to acquire new

1 Tmall has not disclosed the total transaction volume for this year's Double 11 event in 2022, only stating that the transaction volume remains the same as that of 2021.

customers, and the cost of acquiring new customers is also increasing (Sharrow, 2019). Therefore, retailers need to more effectively transform existing customers into more loyal and participatory customers to achieve higher performance (Ascarza et al., 2018; Liu-Thompkins et al., 2022).

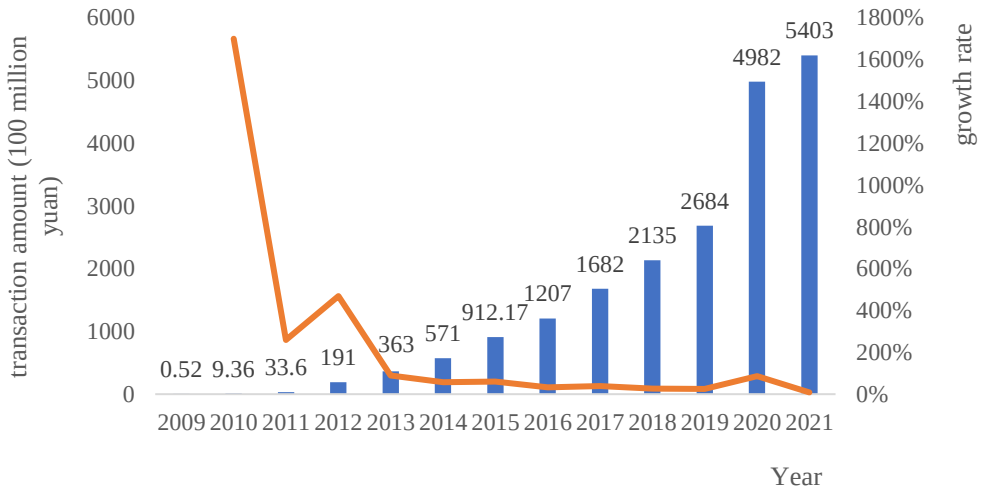


Figure 1.2 Transaction amount and growth rate of "Double Eleven" on Tmall from 2009 to 2021

Data source: (Rubik's Cube e-commerce, 2022)

Research have indicated that, over time, emotional experiences of consumers are becoming increasingly important in terms of boosting customer loyalty (Liu-Thompkins et al., 2022). Especially after the emergence of social media, the influence of emotional and social-driven factors has been significantly enhanced—social media provides multiple ways of contact between retailers and consumers, improving purchase behaviors, while interactive comments in social media often serve as an index of customer loyalty. However, on platforms like Amazon, AliExpress, eBay, Rakuten, and Alibaba, the emotional experiences and social connections between retailers and consumers are weak (F. Wang & Jiang, 2021). The reasons are threefold: (1) the

platforms have their own set of rules to restrict the sales behaviors of retailers, such as pricing promotions, product display regulations, and customer service regulations. While these restrictive measures have improved the management efficiency of the platforms, under the standard rules, it is difficult for retailers to provide differentiated services to consumers. (2) The platforms have monopolized consumer data assets, and retailers have to pay a high price to acquire these data. In many cases, due to the restriction of the platforms, retailers cannot even get the data they need, which makes it difficult to accurately build a user profile and provide accurate and effective services to consumers. (3) The platforms gain profits by restricting the touchpoints between retailers and consumers, such as requiring retailers to acquire consumers through advertising bidding, for which a high traffic cost is needed.

Relying on network platforms such as Amazon, AliExpress, eBay, Rakuten, and Alibaba implies that the online traffic is controlled by the platforms, thus such traffic is referred to as public-domain traffic (Tencent & BCG, 2022). Taking into account the shortfalls in terms of sentiment experience and social relationships, numerous retailers start to devise alternative approaches to acquire private-domain traffic that they can control. Technological advancements have created new opportunities for retailers (Pantano et al., 2017; Piotrowicz & Cuthbertson, 2014), particularly the progress of social media technology which has changed the customer experience in the retail field (O'Cass & Fenech, 2003; Xiang et al., 2015), creating chances for retailers to open up private-domain traffic outside of public-domain traffic. Data shows that in 2020, Chinese consumers spent close to four hours on their phones daily, with more than two and a half hours on social media, the penetration rate of social

media in China reaching 97%, and 69% of consumers sharing their online shopping links on social media (Tencent & BCG, 2022). Therefore, numerous retailers begin to construct private-domain traffic based on social media.

These private domain flows belong to the retailers themselves, usually coming from the guidance and transformation of public domain flows, with higher stability and accessibility. The construction of the private domain helps to better promote consumer loyalty and participation: on the one hand, retailers can establish differentiated services (such as setting up membership communities, organizing exclusive activities, etc.) through private domains, and create value that cannot be provided under the rules of public domain platforms. On the other hand, retailers can better understand consumer needs through private domain data, and provide personalized and accurate services (such as more precise and personalized product recommendations) for consumers. Thus, retailers can reduce marketing costs and create better consumer experiences. Thus far, online channels mainly based on public domains include video news platforms, Key Opinion Leader/ Key opinion Consumer (KOL/KOC), platform e-commerce, etc., while the channels mainly based on private domains include communities, mini-programs, public numbers, brand official websites/apps (as shown in Table 1.1).

Table 1.1 Comparison of the Main Tools for Public and Private Domain Traffic

Public domain tools	Private domain tools
Video news KOL/KOC E-commerce platforms	Community Mini programs/apps Official accounts Brands' official websites/apps

In recent years, a number of enterprises in apparel and sports, beauty and

personal care, and supermarket fresh food have been striving to explore new growth paths by setting up private domains, with successful examples such as Perfect Diary, which has seen its sales increase 50 times within 8 months, topping the Tmall Double Eleven cosmetics list in 2019 as a domestic brand, surpassing international brands such as Estee Lauder and L'Oreal (Xie et al., 2020). Macro data also showed that the transaction volume of WeChat mini-programs increased by more than 100% year-on-year in 2020, and the penetration rate of WeChat's commercial eco-system has exceeded 80%, approaching the level of brand official website/APP (Tencent & Bain, 2021).

The critical questions are: (1) What measures should retailers take to transform into private domains if the construction of private domains helps to enhance the sales performance of retailers? (2) What is the mechanism of retailers' private domainization strategy on sales performance? (3) Does the impact of privatization strategies on sales performance differ across different types of stores? Answering the above three questions will be the focus of this study.

1.2 Significance

During the global pandemic of COVID-19, the pace of online retailing as a substitute for offline retailing has accelerated. In the early development of e-commerce, it has helped retailers build their own Internet channels and directly reach consumers. However, as public-domain platforms become monopolized, the cost of marketing based on public-domain platforms has become increasingly high. Therefore, a large number of retailers have started to build their own private-domain platforms, creating their own communities, mini programs, official accounts, brand official websites/apps, and other private-

domain tools, hoping to return to the era when e-commerce can reach consumers at low cost at the beginning of its development, thus improving consumer loyalty and participation. Many studies have discussed the origin and definition of online social retailing (Sturiale & Scuderi, 2013; Tencent & BCG, 2022), its functioning mechanism and development status (Busalim, 2016; M. N. Hajli, 2014; Tencent & BCG, 2022), but private-domain is not only online social retailing, but also the controllable, reusable and free-to-reach flow that the store obtains through online social retailing (Y. Wang, 2021), which is essentially a data property right struggle with public-domain platforms.

It can be said that the private domain is a relatively new phenomenon, although there have been a few qualitative studies describing the pattern characteristics of privacy domain (Nie, 2020; F. Wang & Jiang, 2021; Xie et al., 2020), none of them have made an in-depth exploration on the theoretical and empirical aspects of private domain. This study evaluates the effectiveness of private domain and further examines potential issues that may arise during the private domain process, which is of great importance to the development of relevant theories of private domain.

Furthermore, as Tencent and Bain articulated, constructing a private domain itself is complex and different enterprises should choose different strategies for private domain according to their own reality(Tencent & Bain, 2021). Therefore, the discussion of private domain transformation strategies for retailers in this research can also provide beneficial reference for the optimization of private domain strategies for a wide range of retailers.

1.3 Arrangement

This research utilizes the data obtained from the exploration of private

domain conducted by Sanse, a renowned sports apparel retailer in China, to empirically assess the effect of Sanse's private domain and to explore the development strategies of private domain, drawing upon the relevant research findings of predecessors, so as to explore the theoretical logic and retail model transformation direction of private domain in China. Specifically, the research aims mainly to: empirically examine the influence of private domain on retail marketing using quantitative empirical methods, thus complementing the largely qualitative literature on private domain. As existing research on private domain has not discussed the potential problems that may arise in the process of private domain, such as how to make decisions on the degree of private domain, and how the contextual factors in the process of private domain will affect the advancement of private domain strategies. This research will track the private domain process of the enterprise and conduct an in-depth analysis of the development strategies of private domain. Based on the empirical research results, this study provides recommendations for the private domain transformation of Chinese retail enterprises.

In this research, a framework is proposed to attain the stated objectives. First, the research topic is clearly set as the evaluation and development strategies of privatization, with its research background, significance, and goals elaborated. Second, based on the literature review, guiding questions and theoretical framework are put forward, together with the mediating and the moderating variable. Based on the empirical results, the research conclusion and limitations of this research are elaborated. The research chapters are organized as follows:

Chapter 1 is the introduction, which mainly includes the research

background and significance, research ideas, and contents arrangement.

Chapter 2 is the literature review.

Chapter 3 focuses on the development of the research hypotheses.

Chapter 4 is the research design, which provides the method selection and data source of this research.

Chapter 5 is the empirical research results.

Chapter 6 is the research conclusion, deficiencies, and further research directions of this research.

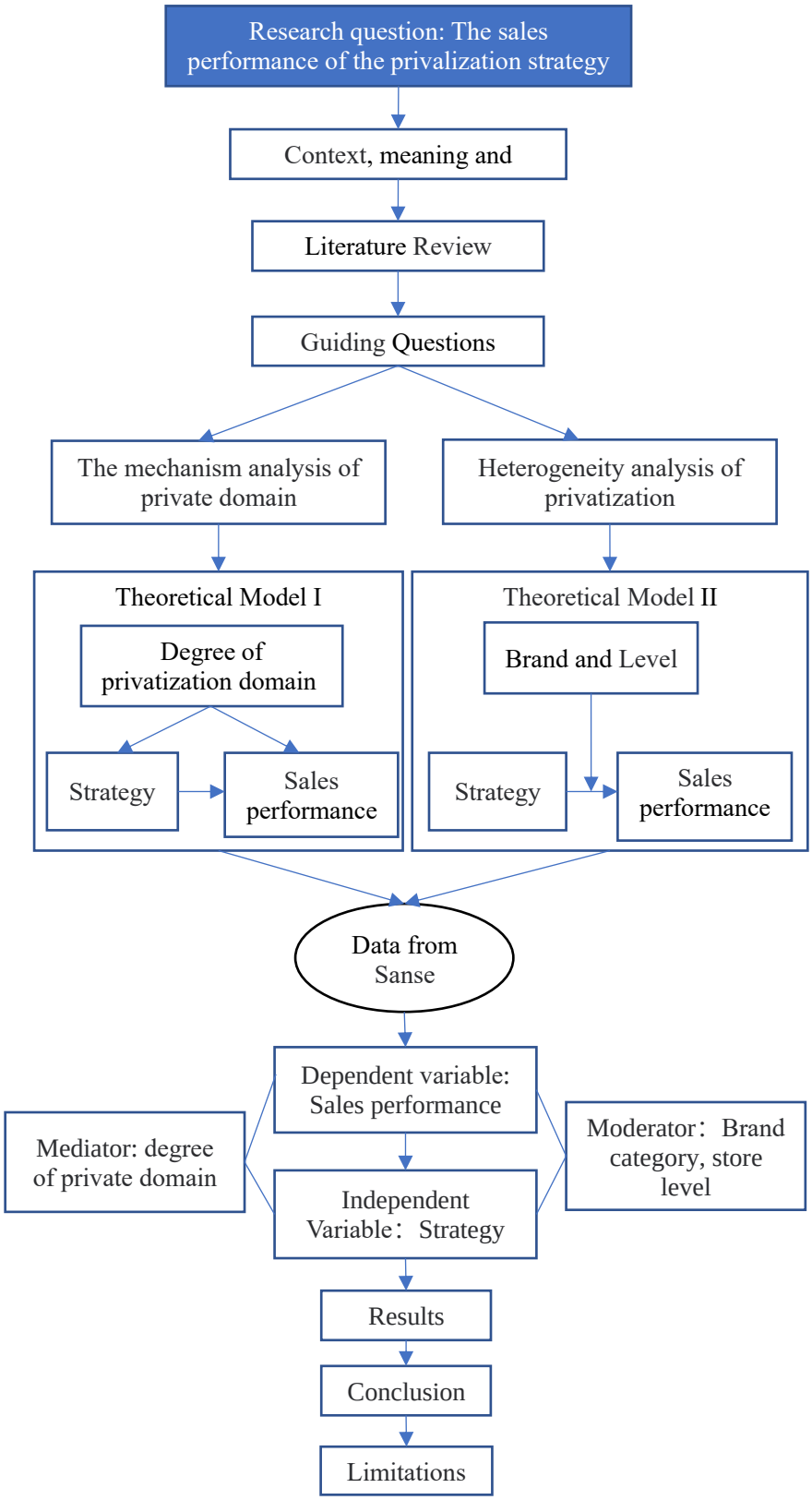


Figure 1.3 Research Framework

2 Literature review

2.1 The rise of "new retail"

With the continually increasing penetration rate of the internet in the population, online retailing has entered the fast lane of development and its contribution to the overall retail industry becomes more and more important. However, the growth rate of traditional online retailing has been slowing down year by year, and the industry needs to find a new growth point (X. Chen et al., 2020; Y. Wang, 2021). In view of this situation, at the Yunqi Conference in October 2016, the founder of Alibaba Group, Ma Yun, put forward the concept of “New Retail”, which suggested that the era of pure e-commerce would soon be over, and the future retail form would be a combination of online and offline with modern logistics: E-commerce platforms and physical retail stores establish a synergistic partnership by leveraging the Internet and big data analytics. Through the integration of online and offline, data of goods, members, transactions, and marketing can be integrated and connected, providing customers with a seamless shopping experience across channels (Y. Wang, 2021).

On November 11, 2016, the General Office of the State Council of China issued the report on “Opinion on Promoting Innovation and Transformation of Physical Retail” (State Office [2016] No. 78), which clearly stated the guiding ideology and basic principles of promoting innovation and transformation of physical retail formats, and specifically deployed the contents of adjusting the commercial structure, innovating the development mode, promoting cross-border integration, optimizing the development environment, strengthening policy support and other aspects. In particular, on the issue of promoting the

integration of online and offline, it emphasized the need to establish standards and rules to adapt to the integration development, guide the physical retail industry to gradually improve the level of information, integrate the advantages of offline logistics, services, experience and other links with online customer flow, capital flow, information flow, and expand the intelligent and networked full channel layout (X. Du, 2021; General Office of the State Council of China, 2016). In March 2017, the *Research Report C Era New Retail- Ali Research Institute New Retail Research Report* of Ali Research Institute gave a definition of "New Retail", that is, "New Retail" is a data-driven retail form centered on consumer experience. Its core is to restructure to generate a new business format. Its core value is to maximize the efficiency of circulation. Its essential characteristics include taking heart as the center, focusing on consumer demand, and restructuring the people and goods field to realize "taking consumer experience as the center".

Retailers can, in practice, use digital technology to infinitely approach consumers' inner needs, provide more personalized products and more intimate services, and provide consumers with social experiences of sharing and exchanging, thereby obtaining cultural and value recognition. Taking Hema Fresh as an example, it takes "fresh e-commerce" as the entry point and covers fresh food and catering services through APP and offline stores. Hema Fresh integrates the systems before and behind the scenes through big data, connects "people", "goods" and "market" together, accurately grasps consumer needs, and reverses drives the closed loop of commodity procurement, processing and delivery. In order to improve delivery efficiency, there is a sliding track above the store at Hema Fresh. After APP ordering, the staff will immediately operate

the bagging according to the ordering situation, put it on the track, and ensure that the delivery can be made within 30 minutes.

Acknowledging the opportunities brought by the New Retail, JD Group and Tencent jointly announced on October 17th, 2017, the launch of their "Jing Teng Boundless Retail" solution, which is based on Tencent's social and content system as well as JD's trading system, aiming to construct an integrated retail solution that is customized in service and high in scene integration. From Alibaba Group's "New Retail" to JD and Tencent's "Boundless Retail", the innovation of online retail is all about reconstructing the three core elements of "person, goods and scene", which is essentially a series of changes centered on the core concepts of retail costs, efficiency and experience (B. Wang, 2019). Concerning the innovation of online retail, academics have conducted related research. It is suggested that, compared to the traditional retail, the new online retail way makes use of innovative technology, such as big data and cloud computing, to reform and innovate the traditional retail form, and it is guided by the latest concepts and thoughts to sell goods and services to the final consumers, in order to enhance their shopping experience (Zhao & Xu, 2017). Thus, "New Retail" is about using modern Internet technologies, such as Artificial Intelligence and Big Data, to upgrade the production, circulation and consumption links of the goods, thereby restructuring the retail form and forming a new retail ecosystem, and the process of deeply integrating online and offline with logistics eventually leads to the comprehensive transformation from the Price Consumption Era to the Value Consumption Era (R. Du & Jiang, 2017; Yang et al., 2018). These new online retail ways use modernized technologies to promote value consumption, reconstruct the retail form and

supply chain, and drive the transformation and upgrading of physical retail (K. Wang & Xiang, 2018).

2.2 Research on online social retail

2.2.1 The rise of online social retail

The advancement of digital technology has propelled the innovation of emerging retailing modes. Once stimulated by technology, its evolution will accelerate continually. As a typical digital channel, social media (also known as Web 2.0) enables customers to interact with peers and/or businesses (Kaplan & Haenlein, 2010). Various platforms provide different types of social media channels to offer integrated (Dalla Pozza, 2014; Hanna et al., 2011), personalized and consistent shopping experience to customers which combines interaction with business (Brynjolfsson et al., 2013; Verhoef et al., 2015), thus ushering in the era of online social retailing intertwined with media.

Social media platforms provide users with a key function of "communicative fluidity" (S.-H. Liao et al., 2022). This enables users to express their views through multiple channels in a more seamless manner and achieve the goal of social interaction in online communities (J. Kim et al., 2021). Generally speaking, online communities provide users with a wealth of interactive features, where users can communicate through voice, photos, videos and emoticons in the online communities. The abundance of visual sensation enhances the readability and interpretability of the information, which are difficult to be expressed solely by language (Bown & Ferguson, 2018). In fact, online social media helps users express their emotions, opinions and intentions dynamically to achieve smooth communication (Mora-Cantallops et

al., 2021). Due to the immense role of online social media in interaction, some content providers have discovered its tremendous business potential (Seebauer, 2014). These applications, such as online gaming, have made people aware of the opportunities created for social networks and digital entertainment markets through the use of images, photos and videos (Rogers et al., 2016). For online gaming players, online social media and social activities become ubiquitous (S. Liao & Chiu, 2021). Thus, online social media realizes the integration with business.

Retailers have also found the commercial value of online social media. As early as the 1990s, online shopping websites such as eBay and Amazon became aware of the importance of interaction for consumer purchase behavior and actively attempted to design functions to facilitate interaction and collaboration with consumers (Curty & Zhang, 2013). By 2005, Yahoo launched the "Yahoo Shopping Circle", and for the first time mentioned the term "social commerce" to describe a new cooperative shopping function on its shopping platform, allowing consumers to create, share, and comment on product lists (Busalim, 2016; C. Wang & Zhang, 2012). With the emergence of Web 2.0 and social media, e-commerce companies began to integrate new technologies into their websites, offering consumers a more social and interactive shopping experience (Curty & Zhang, 2011). The popularity of social media technology enables customers to increasingly participate in online social communities, and actively share their experiences and opinions on products with other customers and friends (Cheung et al., 2014).

With the rapid development of social networking sites (SNSs), online social retailing accelerated its growth. SNSs have established connections

among internet users, gaining more and more popularity and gradually becoming an essential source of information for users (J.-C. Wang & Chang, 2013). SNSs are not only important to individuals but to businesses as well, as they have established new connections between businesses and consumers through social networks (Constantinides et al., 2013). Subsequently, online social retailing has attracted wide attention from groups such as brands, retailers, advertisers, website administrators, etc., and has been put into practice (C. Wang & Zhang, 2012). Online social retailing is essentially a new commercial model combining internet technology, e-commerce, and social networks (Liang et al., 2011; Liang & Turban, 2011; Yadav et al., 2013). It can be regarded as a new expansion of traditional e-commerce, transformed by social media and jointly developed into a new retail model (Hu et al., 2019), and is usually considered as a subset of e-commerce (Curty & Zhang, 2011; C. Wang & Zhang, 2012).

The evolution of e-commerce to social retail has also altered the role of customers (Busalim, 2016), reflecting an increase in consumer bargaining power - the widespread use of the internet has shifted bargaining power from sellers to consumers and consumers have become the focus of corporate attention (N. Hajli & Sims, 2015; Huang & Benyoucef, 2013). More importantly, the development of online social retail has shifted e-commerce from a product-centric to a consumer-centric approach (Huang & Benyoucef, 2013). In light of this, many businesses are exploring the commercial potential of online social retail, with pioneers such as eBay and Amazon mentioned earlier. However, the market position of these traditional e-commerce sites is being challenged by social networks such as Facebook (Busalim, 2016). In fact, online social retail sites are growing at an astonishing rate and have achieved great success (S.-B.

Kim et al., 2013). Taking China as an example, as a country with extremely rapid e-commerce development, after years of development, China's online social retail penetration rate has reached 71% (Tencent & BCG, 2022).

Despite the dominance of sellers in the online social retailing model based on eBay and Amazon, the control of interaction has yet been shifted to consumers. Thus, while certain interactions help to make up for the reduced consumer control, greater engagement can be utilized to uncover larger consumer purchasing potential in the era of rapid development of web 2.0 technology and consumer-centric new retail. This requires further evolution of online social retailing. By 2017, Tencent and JD. had established retail solutions integrating online and offline operations, offering customized services, and achieving high integration in scenarios, based on consumer transaction habits, user social behavior characteristics, and offline shopping data of retailers, enabling consumers to enjoy high-level marketing activities and services.

2.2.2 Definition of online social retailing

Since the onset of commercial practices, online social retailing has quickly gained attention from the academic community (Curty & Zhang, 2011). However, there exists differences regarding the definition of online social retailing (Busalim, 2016). Stephen and Toubia defined online social retailing as a form of social media based on the internet that enables individuals to participate in the sales of products and services of online communities and markets(Stephen & Toubia, 2010). This definition limits the seller to individuals rather than companies. Dennison et al. interpreted online social retailing as the combination of e-commerce and e-word-of-mouth(Dennison et al., 2009). Zhou et al. regarded online social retailing as the utilization of internet-based media,

allowing users to participate in the sales, purchase, comparison, and sharing of products and services of online markets and communities(Zhou et al., 2013). Sturiale and Scuderi considered online social retailing as an e-commerce based on Web 2.0, giving consumers more opportunities for interactivity and engagement through articles written by members of virtual communities, blogs, and wiki systems(Sturiale & Scuderi, 2013). Marsden and Chaney conceptualized online social retailing as sales conducted through social media websites, such as Facebook, Twitter, LinkedIn, Pinterest, and YouTube (Marsden & Chaney, 2013). The most recent definition comes from the report of Tencent and BCG, in which online social retailing is defined as a marketing or sales approach where sellers influence consumer purchase decisions through online social eco-system (Tencent & BCG, 2022). The report identifies five social retailing hotspots in China that have a significant impact on consumer decisions, including novel content; WeChat public accounts/mini programs; KOL/KOC; communities; and social commerce. Understanding these five hotspots can effectively help businesses better recognize directions, allocate and invest resources in a more rational way, and achieve an ideal input-output ratio (Tencent & BCG, 2022).

From a purely technical perspective, online social retailing can be defined as an online application of building a business environment on social networks and virtual communities based on Web 2.0 technology (Iglesias-Pradas et al., 2014). Web 2.0 is relative to Web 1.0: while Web 1.0 simply browses HTML pages through web browsers, Web 2.0 is a user-driven content internet product model, thus making the content richer, more connected and more tool-oriented (O'Reilly, 2005). With the application of Web 2.0 technology, online social

retailing can achieve specific business objectives (Curty & Zhang, 2013; Huang & Benyoucef, 2013).

Table 2.1 Definitions of online social retailing

Source	Definition	Perspective
Stephen and Toubia（2010）	Internet-based forms of social media that enable individuals to participate in online communities and marketplaces for the sale of products and services.	Technology and content
Dennison et al.（2009）	A combination of e-commerce and social media.	Technology and content
Zhou et al. (2013)	Leveraging Internet-based media enables users to participate in the sale, purchase, comparison and sharing of online marketplace and community products and services.	Technology and content
Sturiale and Scuderi（2013）	E-business of Web 2.0, enabling consumers more opportunities to interact and participate through blogs, wiki systems, and posts written by members of the virtual community.	Technology, tool, and content
Marsden and Chaney（2012）	Sales on social media sites such as Facebook, Twitter, LinkedIn, Pinterest and YouTube.	Technology and tool
Tencent and BCG（2020）	A marketing or sales method in which sellers influence consumers' purchase decisions through an online social eco-system.	Technology and content
Iglesias-Pradas et al.（2014）	Based on Web 2.0 technologies, online applications that build business environments within social networking sites and virtual communities.	Technology and environment
Curty and Zhang（2013）；Huang and Benyoucef（2013）	Apply Web 2.0 technologies to social media for business purposes.	Technology
Huang and Benyoucef（2013）	Using social media and Web 2.0 technologies to help consumers have a more enjoyable shopping experience and make purchasing decisions.	Technology and content

In the field of information systems research and electronic commerce, online social retailing involves the extension or combination of certain perspectives from the fields of marketing, social psychology and computer science. Many studies have focused on social media technologies-driven social networks and the value of social activities in social networks for improving consumer shopping efficiency, shopping experience, and store business performance (Huang & Benyoucef, 2013; Molinillo et al., 2020), of which Huang and Benyoucef believe that the core of online social retailing lies in the

reliance on social media and Web 2.0 technology to assist consumers in obtaining a good shopping experience and promoting consumer purchase decisions (Huang & Benyoucef, 2013). Overall, the definition of Huang and Benyoucef emphasizes social media and Web 2.0 technologies, and also focuses on shopping experiences and purchase decisions, providing a good overview of social retailing. Therefore, this study adopts this definition.

2.2.3 Consumer psychological model of online social retail

Online social retailing is viewed as a marketing tool or channel for sellers to support consumer interaction and collaboration that increases their chances of making a deal -- online social retailing establishes a seller network, which sustains the marketing of products and services in online markets (Stephen & Toubia, 2010). The seller and buyer networks constructed by the online social retailing system provide consumers with a platform that is both interactive and capable of conducting other activities related to the transaction (Afrasiabi Rad & Benyoucef, 2011), i.e., online social retailing drives and delivers online marketing and transaction services through the interwoven network connections of social media and social networks (M. N. Hajli, 2014).

Researchers have largely explored the underlying mechanisms of social retailing, namely trust, social influence, social support, social capital (social networks), social interaction, and social learning. In terms of trust, studies have found that consumers' trust in social media can increase their willingness to purchase a certain product through social media by intimacy and social presence (M. N. Hajli, 2014). Studies have also focused on consumers' interactions and interactions in social networks, emphasizing the connections between sellers and buyers in social retailing, dialogues and exchanges among consumers,

relationships among consumers and the resulting groups (Algesheimer et al., 2005). It has also been pointed out that social retailing, relying on social shopping communities, triggers a new way for consumers to communicate and exchange product information, which in turn influences consumers' purchase decisions (Cheung et al., 2015; Y. Wang & Yu, 2017). In addition, within the framework of social retailing, social media brings benefits to enterprises by establishing closer relationships with customers, enriching relationship quality, increasing sales and loyalty (M. N. Hajli, 2014).

Interactivity has been considered a key feature of online social retailing. Previous studies have indicated that interactivity exerts a positive influence on consumers' reactions in online social retailing, such as improving attitude, stimulating web browsing and encouraging more shopping (Beuckels & Hudders, 2016; Fiore et al., 2005; Fiore & Jin, 2003). Its micro mechanism can be explained by the compensatory control theory (CCT). CCT focuses on explaining how people cope with reducing their control (C. Y. Chen et al., 2017). In marketing practice, people easily perceive the decrease of their control when purchasing goods (Faraji-Rad et al., 2017; Inesi et al., 2011), and the interactivity of online social retailing can help consumers reduce the impact of control deprivation. According to consumer psychology, control sense is one of the primary psychological needs of people, which is an innate psychological motivation (C. Y. Chen et al., 2017; Langer, 1975). CCT proposes that the deep motivation of human seeking control is the pursuit of orderliness, which means people want the external world to be orderly, and they think the decrease of control is undesirable (Lunardo & Mbengue, 2009). Numerous studies based on this theory have indicated that when people are momentarily deprived of control

sense, they will show a series of behavior that centers on seeking orderliness, i.e., people compensate the decrease of control in one domain by obtaining control from another domain until the baseline level (Landau et al., 2015). Compensatory control theory implies that when individuals obtain control from other sources, they can restore the perceived level of control as before, even if it is only an illusion of control (C. Y. Chen et al., 2017).

Interactivity in online social retailing helps consumers to control the online information, which can compensate for the reduction of consumer control (Hwang & Oh, 2020; Kalyanaraman & Wojdynski, 2015). In practice, the ways to increase consumers' sense of control include direct manipulation of online product exhibitions (Jiang & Benbasat, 2007) and online browsing product information in a personalized way (Ariely, 2000). Studies have also predicted that interactivity of retail websites can compensate for the decrease of consumer control in e-commerce. Moreover, website interactivity also provides users with the technical ability of interacting and real-time modification of content (Liu & Shrum, 2009; Sundar et al., 2015), which can enhance the sense of control and the user experience's proactivity, and increase user participation (Mollen & Wilson, 2010). In addition, interactivity also increases the emotional and cognitive participation of online shoppers, encourages the behavioral intention and positive perception of online shoppers (Cano et al., 2017; Xu et al., 2017), and thus contribute to the improvement of attitude and purchase intention of products (Sundar et al., 2015).

2.3 Research on the private domain transformation of online social retail

2.3.1 Digital property rights in social retail

In the context of social retailing, retailers are able to better understand consumer demands through consumer data, thereby providing personalized and precise services to consumers. However, if the social retailing is dominated by the online platform, it means that the platform holds the consumer data asset as its own. The cost of obtaining consumer data by retailers is high, or even impossible to get the data needed, which makes it difficult to precisely establish user portraits and provide consumers with precise and effective services. This is essentially an issue of the ownership of consumer data. The thought of ownership originates from Coase's discussion on externalities (Coase, 1960). The transaction of products or services in the market is essentially realized through the exchange of its ownership (Demsetz, 1967). Research have shown that ownership definition will directly affect economic performance, and those not clearly defined will be placed in the public domain, leading to economic inefficiency (Barzel, 1997).

The arrival of the data economy means that data has become an important production factor, and if there are issues with data property rights definition, it will limit the normal transaction and reasonable use of data (Kaisler et al., 2013). In 1999, the United States promulgated the Uniform Computer Information Transactions Act (UCITA), whereby information property was listed as the object of civil law relations, and the protection of corporate data property rights was legally based in the United States. As a new type of property, data rights are also a form of property rights - the right holders can legally control, use and benefit from data property (Gao, 2018). In theory, the core of data property

rights is to determine who controls the data, who has the right to access the data, who has the right to trade the data and who has the right to distribute the value of the data. As a new production factor with obvious differences from physical factors such as land and capital, the data rights must be based on the unique economic attributes of data elements, and guided by maximizing data growth to promote potential release and balancing multiple objectives reasonably (Tang, 2021).

Under the condition of zero transaction cost and transferable property rights, a competitive market will achieve the optimal allocation of resources (Coase, 1960). However, in the case of platform monopoly data property rights, there are great obstacles for retailers to utilize data. From the legal perspective, laws may define data property rights to retailers or consumers themselves. However, the implementation of property rights requires cost, and when the cost of implementation exceeds the benefits it brings, economic agents will give up the implementation of property rights (Barzel, 1997). If the data collection and calculation are completed by the platform, the implementation of data property rights by retailers will bring a lot of costs. In this regard, retailers may either give up the possession of data property rights, or bear the cost of collecting data themselves, reducing their dependence on the platform.

2.3.2 The rise of private domain

An increasing number of people are coming to believe in the power of social networks, gradually transforming social media into a critical battleground for marketing and sales (Tencent & BCG, 2022). Meanwhile, as online social retailing is developing rapidly, the e-commerce ecosystem has quietly changed, leading to the emergence of the notion of private domain traffic (Nie, 2020). As

previously mentioned, when data collection is controlled by the public domain platform, there is a high cost for retailers to both possess and implement data rights. In practice, traditional marketing traffic is becoming increasingly expensive, making precise cultivation of private domain traffic even more important. To market products and services, it is necessary to identify the crowd most willing to fission in different categories, meet their various intrinsic motivations, design corresponding fission mechanisms, trigger fission, and encourage them to take the initiative to speak out. At the same time, retailers also need to build various digital capabilities such as big data and advanced analytics to reach users' private domain traffic, and to achieve consumers' life-cycle value to a greater extent through various social channels and novel content (Tencent & BCG, 2022). In April 2019, Tencent proposed ".com 2.0", using tools such as public accounts, mini program stores, payment QR codes, etc. to help users build private domain traffic. That year, major platforms such as Alibaba, JD.com, Pinduoduo and Vipshop began to change the division of acquisition benefits, thereby realizing the potential and value of private domain traffic (Nie, 2020). In the past few years, many retailers have been striving to explore new growth paths, hoping to achieve growth through private domain layout (Tencent & Bain, 2021).

2.3.3 Connotation of private domain

At the core of the private domain lies the notion of traffic, which is fundamentally different from public domain traffic. According to the differences in the value creation process and principles, traffic is divided into two categories: public domain traffic and private domain traffic, where public domain traffic belongs to the platform, and the platform allocates traffic according to certain

rules. However, the social relationship between sellers and consumers under public domain traffic is relatively weak. On the other hand, private domain traffic belongs to the sellers themselves, mostly derived from the guidance and conversion of public domain traffic, with higher stability and reachability and stronger social relationships between sellers and consumers (F. Wang & Jiang, 2021). The online channels dominated by the public domain mainly include video news platforms, KOL/KOC, platform e-commerce, etc. In contrast, the channels dominated by the private domain mainly include social networks, mini-programs, official accounts, official brand websites/apps, etc. (Tencent & Bain, 2021).

Although businesses have had many practices in private domain traffic, there is no unified concept of private domain traffic academically. Some researchers believe that private domain traffic is a retailer or media agency that transfers users to relatively autonomous platforms such as WeChat personal numbers, service numbers, proprietary apps, and mini-programs managed by retailers through platforms, and then distributes marketing information through WeChat groups and friends' circles, thus achieving continuous Sales revenue growth and continuous user fission and increase (Zheng, 2019). Some research also believes that private domain traffic is a concept relative to the public domain traffic of the large platform, which refers to the number of users on social platforms (Nie, 2020; Xie et al., 2020). For retailers, the core value of private domain traffic is: self-owned, repeatedly touched, and free to use. That is to say, with private domain traffic, retailers have the opportunity to interact directly and repeatedly with a large number of customers (Nie, 2020). Some research also believes that the so-called private domain traffic refers to

controllable, reusable and free-of-charge traffic, which generally includes self-media operation numbers on various platforms, such as WeChat public accounts, Weibo numbers and various self-operated accounts on platforms, as well as QQ groups and WeChat groups (Y. Wang, 2021). More theoretical research points out that when data becomes a competitive resource, technological barriers, and market competition will lead to some enterprises having exclusive scarcity or the right to use valuable digital resources, and other enterprises or consumers will have to pay to use these data resources. Then this type of asset is the enterprise's private domain type big data asset (Xie et al., 2020). From this it can be seen that researchers have paid inadequate attention to the private domain, leaving many questions related to it still to be investigated in depth. However, in practice, the essence of the private domain needs to meet the following points: (1) tools for private domain operation; (2) consumer data collected independently; (3) can directly touch consumers; (4) can convert consumers into fans.

2.4 Business Logic and development strategy of private domain

2.4.1 Business Logic of private domains

The private domain still builds on the basic logic of online social retailing and is still a community space with features of turning virtual social relations into reality and an essential channel for transforming marketing fields (Nie, 2020). Therefore, emotional relationship monetization is a way for users to monetize private domain traffic, with live rewards and live merchandising as the main embodiment of user value derived from the emotional connection and trust between users. The private domain traffic-oriented way of Kuaishou, a

leading content community and social platform globally in China, enables the creators and fans to establish emotional relationships and trust. Users have stronger stickiness - Kuaishou anchors and fans interact and communicate directly and in real time in the network live room on the platform. In contrast, live merchandising is based on the emotional interaction and trust between anchors and fans (F. Wang & Jiang, 2021).

The competitive advantages of private domains are based on a mechanism of resource heterogeneity isolation, which includes three levels: social-oriented positioning, strategic resources of private domain traffic, and decentralized operation capabilities. The platform encourages users to create content that records their real lives, which serves as a carrier for users to communicate and interact with each other, and meets the need of more users for equal expression through fair and equitable operation mechanisms, thus forming a social relationship with private domain attributes. Its value creation model is manifested in that social-oriented information enhances user connections and user stickiness, private domain traffic highlights the importance of users' networks as a platform strategic resource, and decentralized operation increases the user centrality in the platform interactive network, and the user roles are also more diversified, thus realizing the platform's value capture centered on user relationships (F. Wang & Jiang, 2021). It can be seen that compared with public domain traffic, which is product-oriented and pursues one-time conversion, private domain traffic tends to be seller-oriented, taking the path of socialization and platformization, and focusing on long-term returns (Y. Wang, 2021). The "social supremacy" business model is based on providing social-oriented value propositions, encouraging and developing private domain traffic to create value

through decentralized operation, and capturing value through emotional relationship-based monetization, with the hidden effects of homophily networks (F. Wang & Jiang, 2021).

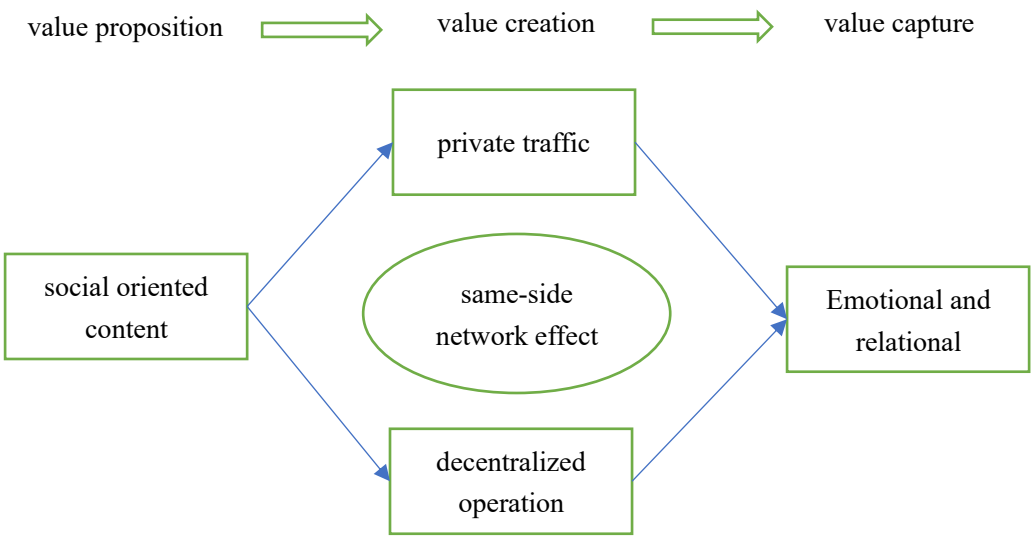


Figure 2.1 Theoretical framework of the "social first" private domain business model

Source: (F. Wang & Jiang, 2021)

2.4.2 Ways to Improve the Private Domain Operation Capability

Tencent and Bain suggest that enhancing internal corporate capabilities, including organizational strength, product strength, operational strength, and product technology strength, is a critical way to improve private domain internal operations(Tencent & Bain, 2021). Moreover, the core of private domain operations lies in "accumulating and precipitating user value, " focusing on user experience and gradually activating users with strong repurchase and viral capabilities. In this process, retailers should develop and implement different strategies based on the unique purchase frequency, consumer decision-making chain, and consumer interactivity of different categories. For example,

1. Categories with lower purchase frequency (such as 3C, luxury, and mid-

to-high-end men's wear) should focus on obtaining traffic, i.e., by employing specific methods and means to draw more consumers to purchase their products or services, while those with higher frequency (traditional supermarkets, food and beverage, skincare, and maternal and infant) should pay more attention to strengthening goodwill, improving conversion, and deepening loyalty;

2. Categories with shorter consumer decision-making chains (such as food and beverage, community group buying) should focus on drainage and conversion links, while those with longer chains (such as maternal and infant, 3C, children's wear, and luxury) should focus more on strengthening goodwill and deepening loyalty;

3. Categories with weaker consumer interactivity (men's wear, food and beverage, traditional supermarkets) should focus more on drainage and strengthening goodwill. In comparison, categories with stronger interactivity (maternal and infant, luxury, supermarkets, community group buying) should focus more on fission.

3 Theory and research hypothesis development

3.1 The effect of private domain strategy on performance

The growth of e-commerce has rendered the Internet an integral part of customer relationships and marketing strategies (Close & Kukar-Kinney, 2010). Thus, the impact generated by internet-based marketing strategies has been widely addressed by researchers (Mosteller et al., 2014).

Unlike offline shopping, e-commerce implies that the parties involved in buying and selling cannot be in the same physical place. Compared to offline shopping, the financial, security, and performance risks associated with the Internet are significantly increased (Lee, 2009). The risks associated with online consumption mainly include three aspects: firstly, consumers are unable to inspect the product before receiving it; secondly, after-sales service may not be timely; thirdly, not understanding the languages and transaction technologies used in e-commerce (Z. Hong & Yi, 2012). In addition, in the online shopping process, consumers often have difficulty assessing the quality of the product and contacting the sales personnel in time for substantive communication on product features (Bustinza et al., 2010). E-commerce consumers also find it challenging to inspect the product before receiving it to ensure it meets their requirements (Z. Hong & Yi, 2012). Obviously, the above problems will affect the risk perceived by online consumers and further affect their purchase decisions (Antony et al., 2006). Therefore, the key to the long-term success of retailers through e-commerce is to establish consumer trust (Bomil Suh & Ingoo Han, 2003; Vos et al., 2014), so many marketing strategies related to e-commerce revolve around building consumer trust (Pappas, 2016).

Firstly, appropriate advertising may alter consumers' attitudes towards

specific products (Petty et al., 1983) and reduce their perception of product risk (Kopalle & Lehmann, 2006). Advertisements from the Internet are more influential than those based on television, radio, and newspapers (Brown & Reingen, 1987; Chikweche & Fletcher, 2010). Over time, the diversity of e-commerce marketing channels has increased, and the complexity of consumer purchase behavior has improved, whereby consumers can switch freely between different shopping platforms (Stern.A.El-Ansary, 2006). Generally, consumers purchase products from online retailers that offer high-quality and low-risk products (Chiu et al., 2011). Thus, online retailers must adjust their marketing strategies and focus on minimizing the risk of consumers' shopping (Chikweche & Fletcher, 2010; Chiu et al., 2011). For instance, retailers can strengthen the privacy protection of online shopping and improve the security of payment to reduce the risk of e-commerce consumption (I. B. Hong & Cho, 2011; Kerkhof & Noort, 2010).

In addition, retailers can also utilize digital technology to achieve precision marketing, which can be used to accurately grasp user consumption behaviors and preferences, create stronger purchase motivation for consumers, save resources, reduce waste, and realize sustainable marketing (McDonagh & Prothero, 2014). Search engine optimization (SEO) is essential in achieving precision marketing. Search engine optimization makes a website appear near the top of a list. E-commerce platforms such as Taobao present search results according to the consumer's location, population statistics, and preferences, while retailers optimize the search rankings of their products by paying to the e-commerce platform (Zhang & Erturk, 2022).

To reduce the risks associated with online consumption, consumers tend to

enhance communication and collect as much information as possible before purchasing (Björk & Kauppinen-Räisänen, 2015). However, in the traditional e-commerce context, online communication is not so smooth: on e-commerce platforms such as Taobao, JD, Amazon, etc., consumers can only inquire about detailed information about the product or express their feedback by leaving messages. This kind of communication lacks immediacy and reduces consumer experience. Nevertheless, with the development of social media technologies, it has become easier for retailers and consumers to interact (Kaplan & Haenlein, 2010), making online social retailing possible.

Compared to marketing strategies of traditional e-commerce, the first benefit of social media is its crucial function of providing a "flow of communication" for users (S.-H. Liao et al., 2022). Consumers can interact with each other utilizing a rich array of multimedia, such as voice, photos, videos, and emoticons (Bown & Ferguson, 2018; J. Kim et al., 2021). This interaction enables buyers and sellers to dynamically express emotions, opinions, and intentions (Mora-Cantallops et al., 2021). It entices consumers to share their real-time experiences and opinions on products (Cheung et al., 2014). Thus, consumers are actively involved in the transaction, facilitating its completion and creating immense business potential (Curty & Zhang, 2011; Seebauer, 2014; Tencent & BCG, 2022). Based on social media, many retailers are reaching consumers directly, through tools such as WeChat public accounts, mini-program stores, payment QR codes, etc., outside traditional e-commerce platforms. In this process, retailers gain access to user data without paying e-commerce platforms, forming their private domain traffic.

Unlike traditional e-commerce, private domain traffic is seller-centric,

taking a community-based and platform-based approach, focusing on long-term returns (Y. Wang, 2021). Therefore, the marketing strategy of the private domain is different from that of traditional e-commerce, generally focusing on cultivating "fans". To realize the privatization transformation of e-commerce, retailers usually attract consumers to become private domain members by giving coupons, random discounts, gifts, and repurchasing coupons. In addition, through mini program live sales activities, video number live sales activities, and Douyin number live sales activities, real-time online communication with customers is realized to increase customer stickiness. There is also the regular organization of group privileges, limited-time discounts, daily friends circle (new/specials), and 1-2 interactive messages sent directly to members' WeChat every month to strengthen the long-term loyalty of WeChat members. All of these align with consumers' need for real-time interaction and guarantee retailers' complete ownership of data, which helps retailers better understand consumer needs, thereby providing personalized and accurate services to consumers and improving sales performance. Based on this, we propose the following hypothesis:

H1a: The implementation of private domain membership development strategies is positively related to the sales performance of retailers.

H1b: The implementation of private domain member live streaming transformation strategies is positively related to the sales performance of retailers.

H1c: The implementation of private domain member activity promotion strategies is positively related to the sales performance of retailers.

3.2 The mediating effect of the degree of private domain

Before the "private domain" concept, retailers conducted online sales through traditional e-commerce. Even after the privatization transformation, public domain channels, i.e., e-commerce platforms, remain essential retail sales channels. Compared with private domains, public domains have advantages, such as leveraging the platform's volume advantage to achieve the widest possible sales promotion. This means that marketing strategies developed for privatization are mainly to increase the proportion of private domains in the entire sales channel. We can define this proportion as the degree of private domain: Assuming that two retailers, A and B, have the same scale if A obtains more fans through privatization tools than B, it can be assumed that A has a higher degree of private domain.

The implementation of private-domain strategies has been beneficial to the degree of the private domain. Private-domain traffic gains more benefits through emotional relationship realization - retailers and consumers communicate and interact directly and in real-time in online live rooms, and transaction completion is based on the emotional interaction and trust relationship between the host and fans (F. Wang & Jiang, 2021). The communication between both parties of a transaction under private-domain traffic is smoother, which helps reduce transaction costs. Studies also show that private domain is based on online social retailing. Social media helps to enhance consumer trust level and thus increases purchasing willingness (N. Hajli & Sims, 2015), and also brings benefits to enterprises by establishing closer relationships, enriching relationship quality, and increasing sales and loyalty (M. N. Hajli, 2014). Online social retailing can also trigger a new way for consumers to

communicate and exchange product information, thus promoting consumer purchasing behavior (Cheung et al., 2015; Y. Wang & Yu, 2017).

After retail merchants undergo privatization transformation, compared to the public domain traffic based on platforms such as Taobao, private domain traffic has the characteristics of free of charge, direct access, repeated utilization, and data ownership. By operating private domain traffic, retailers can independently decide the content and products to display or form sticky customer relationships through personalized interactions. More importantly, retailers can maximize data retention through their technologies or platform technologies such as enterprise WeChat, proprietary apps, and mini-programs. They can also mine personalized information from fan groups to achieve customer fine-grained management. By constructing private domain systems, retailers can better understand consumer needs through private domain data, thus providing personalized and accurate services for consumers and providing value beyond the rules of public domain platforms. Therefore, private domain traffic is a digital resource collection with exclusive usage rights built by retailers, which can help retailers continuously obtain more data from consumer behavior and interaction (Xie et al., 2020).

Retailers can grasp the complete data chain from product launch to fan interaction when they use their platforms or open platforms to manage loyal fans. They can further optimize marketing copy optimization, adjust interactive activities, improve new product design, and form an efficient sales transformation. In addition, retailers can freely change their marketing methods without being limited by the marketing models when cooperating with platforms. Refining this operation mode based on the information identification

principle can potentially guide users to actively express their purchase intention and interact with retailers to form more diverse big data cooperative assets. Therefore, privatization can help retailers achieve low-cost and effective precision marketing and customer relationship management. Based on this, we propose the following hypothesis:

Hypothesis 2a: The degree of the private domain plays a mediating role between private domain membership development strategies and sales performance.

Hypothesis 2b: The degree of the private domain plays a mediating role between private domain membership live conversion strategies and sales performance.

Hypothesis 2c: The degree of the private domain plays a mediating role between private domain member activity strategies and sales performance.

3.3 The moderating effects of weak stores

Some chain retailers possess high-level stores with good locations and low-level stores with poorer locations. Furthermore, these retailers usually set up their stores to sell their self-owned branded products while selling famous branded products. Promoting the private domain can benefit all types of retailers' stores. Nevertheless, it can be seen that although e-commerce has indeed provided disadvantaged retailers or small brands with an opportunity to obtain a large number of customers (Pauwels & Neslin, 2015), consumers are less trusting and less willing to purchase from these unfamiliar low-level stores and their brands compared to high-level stores or more influential brands, thus posing a challenge to the trust and purchase intention of these disadvantaged stores (Darke et al., 2016).

Low-level stores and unfamiliar brands imply that consumers have insufficient information about the products, i.e., they have weak control of the transaction – consumers do not know if they are buying high-quality goods or services from these disadvantaged stores or how the after-sales service is. Private domain means that retailers can interact with consumers in real-time through multimedia, thus enhancing trust levels through emotional connections (F. Wang & Jiang, 2021), which in turn can improve consumers' attitudes towards low-level stores and unfamiliar brands, increase their purchase intention (Beuckels & Hudders, 2016; Fiore et al., 2005; Fiore & Jin, 2003; M. N. Hajli, 2014), and enhance loyalty (M. N. Hajli, 2014). Thus, in disadvantaged stores, the interactivity of the private domain helps consumers to control online information, thus enhancing consumer control (Hwang & Oh, 2020; Kalyanaraman & Wojdynski, 2015). As previously noted, small or self-owned brand stores and lower-level stores face more significant challenges in the competitive market. To address this issue, we propose the following hypotheses:

H3a: Brand ownership moderates the indirect relationship between membership development strategies and sales performance such that the relationship between membership development strategies and performance is stronger with self-owned brands.

H3b: Brand ownership moderates the indirect relationship between live conversion strategies and sales performance such that the relationship between live conversion strategies and performance is stronger with self-owned brands.

H3c: Brand ownership moderates the indirect relationship between activity promotion strategies and sales performance such that the relationship between activity promotion strategies and performance is stronger with self-owned

brands.

Similarly,

H4a: Store levels moderate the indirect relationship between membership development strategies and sales performance such that the relationship between membership development strategies and sales performance is higher with lower-level stores.

H4b: Store levels moderate the indirect relationship between live conversion strategies and sales performance such that the relationship between live conversion strategies and sales performance is higher with lower-level stores.

H4c: Store levels moderate the indirect relationship between activity promotion strategies and sales performance such that the relationship between activity promotion strategies and sales performance is higher with lower level stores. The theoretical model of this study is shown in Figure 3.1.

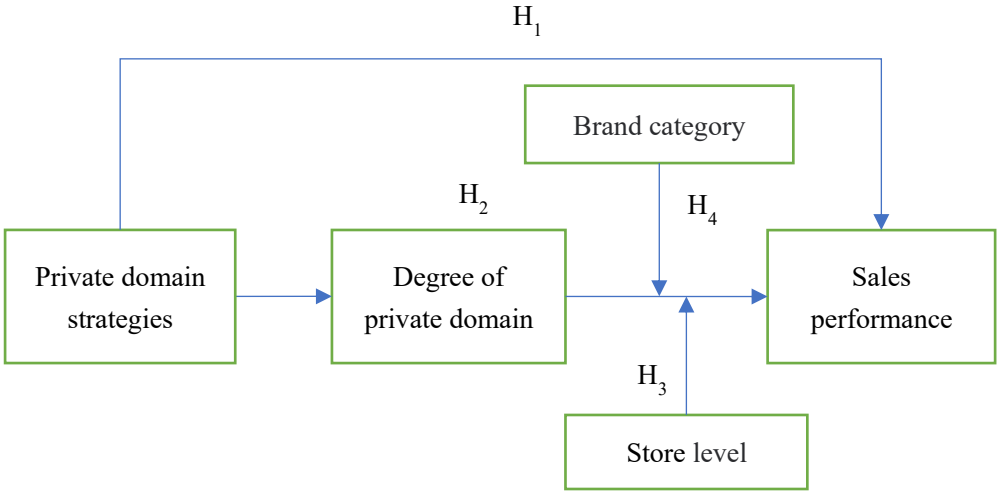


Figure 3.1 Theoretical model

4 Research design

4.1 Data source

The data used in this research was sourced from Sanse's private domain experience. Sanse is a well-known Chinese sports, leisure, jeans, and fashion brand agent, representing leading international first-line brands such as adidas, Nike, adidas Originals, Nike Classic, Levi's, Xantholite, Blasippa, Edwin, Vans, Onitsuka Tiger, Puma, Lacoste, VDsoul, and Power United. Sanse's business is distributed in Guangdong, Hainan, Fujian, Guangxi, Yunnan, Sichuan, Hunan, Inner Mongolia, Hebei, Liaoning, Chongqing, Beijing and other provinces and cities, with self-branded specialty stores, Sanse Fashion Town, and multi-brand name stores reaching 244. For Sanse, quarterly data can express the sales situation of the quarter, and thus serve as the basis for the next quarter's sales activities. Therefore, this research uses the data of self-operated stores in the fourth quarter of 2022 for empirical research. Considering that these data involve commercial secrets, we subtracted a constant from each store's data and adjusted its magnitude. This treatment of the data does not change the slope of the relationship between variables, but will change the intercept. This research does not concern the issue of intercept, so the adjustment of the data will not change the research results.

4.2 Variables

Sanse's offline physical stores adopt different private domain strategies, including membership development strategies (Examples of private domain strategies include offering coupons, providing random discounts, offering gifts, and providing repurchase coupons to private domain members), private domain

membership live conversion strategies (such as small program live sales activities, video number live sales activities, Douyin number live sales activities) and activity promotion strategies (such as organizing group privileges limited-time preferential activities regularly, one friend's circle per day, one to two interactive messages sent directly to members' WeChat monthly, etc.).

In this study, we use a variety of ways to measure the implementation of strategies. As independent variables in the intermediary model, we studied the influence of private domain membership development strategies, live conversion strategies and activity promotion strategies.

Dependent variables are sales performance data, including customer average transaction value (ATV) and sales volume. As a mediator, we measure the degree of the private domain by the proportion of store private domain members.

The moderating variables in this study include self-owned brand and store level. For the own-brand variable, non-Sanse brand stores are assigned a value of 0, while Sanse brand stores are assigned a value of 1. For the store level variable, Sanse has classified its self-operated stores into five levels based on the city level, commercial district prosperity, and operating area. This study adopts this method to define store level.

The specific measurement methods are shown in Table 4.1.

Table 4.1 Measurement of variables

Category	Name		Definition
Dependent variables	Sales performance		ATV, Sales Revenue.
Independent Variables	Private domain strategies	membership development strategies	Assign a value of 1 if the membership development strategy is implemented; otherwise, assign a value of 0.
		Live conversion strategies	As long as the live conversion strategy is implemented, the value is 1; otherwise, the value is 0.
		Activity promotion strategies	A value of 1 is assigned as long as the activity promotion strategies are implemented; otherwise, 0 is assigned.
Mediators	Degree of private domain		The percentage of private members.
Moderators	Brand		Assign a value of 1 if it is a private label or 0 if not.
	Store level		From low level to high level, values 1-5 are assigned.

4.3 Empirical strategy

Considering the effect of independent variables on dependent variables, if the independent variables affect the dependent variables through mediator variable M, then M is referred to as a mediator variable. This study discusses the typical mediation effect model of private domain strategy, increasing the degree of private domain influence sales performance. The mediation effect means a causal chain: the increase in the degree of the private domain is caused by private domain strategy and affects the change in sales performance. Therefore, for the mediation effect, there are three causal conditions here: private domain strategy is one of the causes of the degree of the private domain, private domain strategy is one of the causes of sales performance, and private domain strategy affects sales performance through the degree of the private domain. In general, the mediation effect to be tested in this study is a statistical procedure to confirm that the degree of the private domain can fully or partially explain the causal mechanism of the relationship between private domain

strategy and sales performance, given that the causal relationship between private domain strategy and sales performance is confirmed.

As shown in Figure 4.1, there is a degree of private domain between private domain strategy and sales performance, as long as the path from private domain strategy to degree of private domain and the path from degree of private domain to sales performance are unobstructed (private domain strategy has a significant impact on the degree of private domain, and the degree of private domain has a significant impact on sales performance), then it can be said that there is a mediation effect caused by the degree of private domain between private domain strategy and sales performance. According to whether the direct path between private domain strategy and sales performance is unobstructed, the mediation effect is divided into full mediation effect and partial mediation effect. If the influence of private domain strategy on sales performance is completely through the degree of private domain - there is no role of degree of private domain, private domain strategy will not affect sales performance (c'=0), which is a full mediation effect; if the influence of private domain strategy on sales performance is partially direct and partially through the degree of private domain (c'>0), it is a partial mediation effect. Therefore, the mediation effect c=a*b+c', where c is the total effect, c' is the direct effect after considering the mediation effect, a*b is the mediation effect, also known as the indirect effect.

If the relationship between X and Y is a function of the variable M, then M is referred to as a moderator variable. This implies that a third variable, M, affects the relationship between Y and X. As shown in Figure 4.1, the effect of privacy on sales performance, moderated by brand categories and store levels, is a typical moderating variable model.

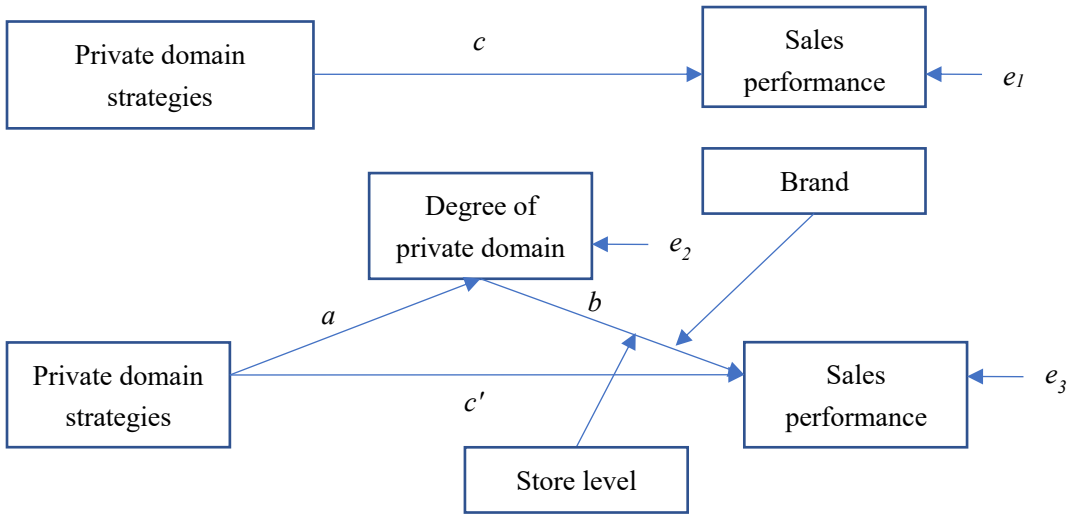


Figure 4.1 Empirical Strategies for Theoretical Modeling

Wen et al. (2005) argued that mediation and moderation models can be analyzed through hierarchical regression. Equation 1-4 is the regression formula for the mediation effect model.

$$performance = \alpha_0 + \sum \alpha_i x_i + c * private \quad (4.1)$$

$$private\_d = \alpha_0 + \sum \alpha_i x_i + a * private \quad (4.2)$$

$$performance = \alpha_0 + \sum \alpha_i x_i + c' * private + b * private\_d \quad (4.3)$$

Where $performance$ denotes sales performance, $private$ denotes private domain strategies, $private\_d$ denotes the degree of private domain, and x_i denotes the control variables. Considering both $performance$ and $private$ to be continuous variables, equations 4.1-4.3 are all OLS models. In the aforementioned models, if c is significant, it indicates that private domain strategies have a significant influence on sales performance; if a is significant, it implies that private domain strategies have a significant impact on the degree of private domain; if c' becomes insignificant, or its significance decreases, it

suggests that the degree of the private domain plays a mediating role between private domain strategies and sales performance.

As shown by the regression formula for the moderating effect in Equations 4.4-4.5, where $grade$ is the store level and $brand$ is the brand category. If e is significant, it indicates that the relationship between the degree of privacy customization and the sales performance at the store level is moderated; if g is significant, it indicates that the relationship between the degree of privacy customization and the sales performance at the brand category is moderated.

$$performance = \alpha_0 + \sum \alpha_i x_i + c * private\_d + d * grade + e * private\_d * grade \quad (4.4)$$

$$performance = \alpha_0 + \sum \alpha_i x_i + c * private\_d + f * brand + g * private\_d * brand \quad (4.5)$$

A moderated mediation model is formed when both moderating and mediating effects are integrated into one model, as shown in Figure 4.1. This model contains both moderating variable model and mediating variable model. In studying moderated mediation models, if the indirect effect is significant under one value of the moderating variable and not significant under the other value, it indicates the presence of moderated mediation (Preacher et al., 2007). Of course, sometimes both mediating effects may be significant or not. Then one can judge the presence of moderated mediation by comparing the difference between the two mediating effects obtained under the two different values of the moderating variable (Edwards & Lambert, 2007).

Following a rigorous deduction, Hayes indicated that a moderated mediation effect is mathematically a linear function of the moderating variable with the slope equal to the product of the interaction between the independent variable and the moderating variable and the regression coefficients of the

mediating variable to the dependent variable and the mediating variable(Hayes, 2015). As the moderating variable is never zero, the moderating mediation effect is proven to exist as long as the slope is significantly non-zero, referred to as the index of moderated mediation (IMM), and can be tested by bootstrapping. Based on this understanding, Hayes developed the PROCESS program to test the mediation and moderated models in organizational and management research, which is widely used to estimate the direct and mediating effects in single and multiple mediator-moderator models. PROCESS can analyze various mediation models, moderation models, and their combination models. For moderated mediation model, it reports the conditional mediating effects (CIE) in two different values of the moderating variable. Further, after version 2.1, PROCESS also reports the IMM with bootstrapping of 5000 resamples to construct a 95% bias-corrected confidence interval. If the lower confidence interval (Boot LLCI) and the upper confidence interval (Boot ULCI) do not include zero, then the moderated mediation effect is significant. Given the program's powerful capabilities, the study employed PROCESS to analyze the data.

5 Results

5.1 Descriptive statistics and correlation analysis

5.1.1 Descriptive statistics

The descriptive statistical results of all variables are shown in Table 5.1. From Table 5.1, it can be seen that the mean of the membership development strategies, live broadcast conversion strategy, and activity promotion strategy are 0.873, 0.652, and 0.709, respectively, indicating that 87.3%, 65.2%, and 70.9% of the stores respectively implemented the membership development strategies, live broadcast conversion strategy, and activity promotion strategy. This indicates that most of Sanse's stores are actively implementing related private domain strategies in the era of accelerating privatization transformation in the retail industry. However, possibly due to historical factors, the mean of privatization degree, i.e., the proportion of private members, is only 0.502, indicating that the proportion of private members in each store is still not high. If Sanse wishes to transit to privatization boldly, it needs to pay more attention to this in the next step. The mean of own brand is 0.193, indicating that 19.3% of the stores sell their brand products. The maximum of the ATV is ¥ 3051.903, the minimum is only ¥ 444.372, and the mean is ¥ 805.727. Still, the standard deviation reaches ¥ 358.828, indicating that although the mean of the customer ATV is high, the dispersion is large. Like the customer ATV, the sales volume also has a large dispersion, indicating that the sales performance of different brands and levels of Sanse's stores are very different. It is precisely because of this that the heterogeneity of different brands and levels of stores in this study has important value. Of course, to reduce the influence of scale and extreme

values on model estimation, this study takes the logarithm of the customer ATV and sales volume.

Table 5.1 describes the statistical results

Variables	N	Min	Max	Mean	S. D.
Membership development strategies	244	0	1	0.873	0.334
Live conversion strategies	244	0	1	0.652	0.477
Activity promotion strategies	244	0	1	0.709	0.455
Degree of private domain	244	0	0.978	0.502	0.270
Brand	244	0	1	0.193	0.395
Store level	244	1	5	2.430	0.879
ATV	244	444.372	3051.903	805.727	358.828
Sales revenue	244	69798	15026450	922400.748	1452666.883

Note: Logarithms are not taken for ATV and Sales revenue in descriptive statistics but for both variables below.

5.1.2 Correlation analysis results

The correlational analysis results of the variables are shown in Table 5.2.

Although the correlation coefficient between live conversion strategies, activity promotion strategies, and ATV is not statistically significant, the correlation coefficient between membership development strategies, number of strategies, and ATV is positively significant. The correlation coefficients between membership development strategies live conversion strategies, activity promotion strategies, number of strategies, and sales revenue are positively significant, indicating that implementing private domain strategies can improve sales performance. Overall, the results of the above correlation analysis are consistent with H1.

At the same time, while the degree of private domain is positively correlated with customer ATV and sales volume, it is also positively correlated with membership development strategies, live broadcast conversion strategy,

activity promotion strategy, which is consistent with H2. All these results confirm the theoretical expectation.

Table 5.2 Correlation analysis results

Variables	ATV	Sales revenue	Membership development strategies	Live conversion strategies	Activity promotion strategies	Degree of private domain	Brand	Store level
ATV	1							
Sales revenue	0.723**	1						
Membership development strategies	0.183**	0.225**	1					
Live conversion strategies	0.122	0.191**	0.341**	1				
Activity promotion strategies	0.116	0.196**	0.054	0.175**	1			
Degree of private domain	0.440**	0.567**	0.261**	0.139*	0.228**	1		
Brand	0.126*	-0.084	-0.001	-0.166**	-0.213**	0.007	1	
Store level	0.160*	0.219**	0.019	-0.053	0.037	0.051	-0.003	1

* $p < 0.05$, ** $p < 0.01$

5.2 The mechanisms of private domain strategies' impact on sales performance

5.2.1 The direct effects of private domain strategies on sales performance

Table 5.3 presents regression results analyzing the impact of private domain strategies on sales performance, with average transaction value and sales revenue as the dependent variables for M1 and M2, respectively. The analysis aims to examine the influence of membership development strategies, live conversion strategies, and activity promotion strategies on sales performance. Based on the results of M1 and M2, with R^2 values of 0.097 and 0.140 respectively and significant F-values at the 0.01 level, it can be concluded that the overall fit of the models is satisfactory. This result also suggests that the data used and the model constructed in this study are reasonable.

The regression results for M1 indicate that the coefficient for the membership development strategy is 0.139, significant at the 0.05 level, suggesting that stores implementing this strategy have a higher average transaction value than those that do not. The regression results for M2 demonstrate that the coefficient for the membership development strategy is 0.527, significant at the 0.01 level, indicating that stores implementing this strategy have higher sales revenue compared to those that do not. The regression results for M1-M2 confirm that the implementation of the membership development strategy contributes to improving the sales performance of retailers, providing empirical support for H1a.

Moreover, the regression results for M1 and M2 show that the regression coefficients for live conversion strategies are 0.060 and 0.233, respectively, but

neither is statistically significant. This implies that the implementation of live conversion strategies does not significantly affect sales performance, failing to provide empirical support for H1b. Furthermore, the regression results for M1 demonstrate that the coefficient for activity promotion strategies is 0.087, which is not statistically significant, indicating that implementing this strategy does not significantly impact the average transaction value, failing to provide empirical support for H1c. However, the regression results for M2 reveal that the coefficient for activity promotion strategies is 0.338, significant at the 0.05 level. This indicates that stores implementing this strategy have higher sales revenue than those that do not, providing empirical support for H1c.

In summary, membership development and activity promotion strategies improve sales performance, while live conversion strategies do not significantly influence sales performance. Membership development strategies increase average transaction value and sales revenue, while activity promotion strategies only help increase sales revenue. However, the effective implementation of private domain strategies requires a deep integration of online and offline channels, which can truly reshape the structure of the retail industry and form a new retail ecosystem, ultimately facilitating the transformation of retailers towards private domain.

Regarding controlling variables, when the dependent variable is the average customer spending, the regression coefficient of private domain strategies tends to be positively significant. Conversely, when the dependent variable is sales revenue, the regression coefficient of private domain strategies, though not statistically significant, is still negative, suggesting that the sales of stores with private domain strategies are relatively weaker than those of other

brand stores. This may be attributed to the fact that most customers who purchase Sanse brand products are loyal customers of Sanse willing to pay higher fees for Sanse brand products. However, the size of this group is limited and insufficient to support higher sales revenue.

Regarding the store level, regardless of whether the dependent variable is the average customer spending or sales revenue, the regression coefficient of store level is positively significant, indicating that stores with higher levels perform better in sales. This observation is consistent with reality, as higher-level stores are usually located in popular commercial areas with better sales performance.

5.2.2 The mediating role of degree of private domain

The present study investigates the mediating role of the degree of the private domain in the relationship between private domain strategies and sales performance. Table 5.3 presents the results of the regression analysis with non-standardized coefficients. Model 3 shows that the implementation of membership development strategies and activity promotion strategies significantly enhances the degree of private domain, with regression coefficients of 0.193 and 0.131, respectively (both significant at the 0.01 level). However, the implementation of live conversion strategies does not significantly affect the degree of private domain.

Model 4 includes the degree of private domain variable in Model 1, and the results show that the degree of the private domain has a significantly positive impact on sales performance ($\beta=0.481$, $p<0.01$), while the coefficient of membership development strategies is no longer statistically significant ($\beta=0.046$, $p>0.05$). This suggests that the degree of private domain plays a

mediating role between membership development strategies and average transaction value, supporting H2a.

Table 5.3 Mechanisms through which private domain strategies impact sales performance

Variables	ATV	Sales revenue	Degree of private domain	ATV	Sales revenue
	M1	M2	M3	M4	M5
Membership development strategies	0.139*	0.527**	0.193**	0.046	0.151
	(0.064)	(0.064)	(0.052)	(0.060)	(0.169)
Live conversion strategies	0.060	0.233	0.017	0.051	0.200
	(0.046)	(0.139)	(0.038)	(0.042)	(0.118)
Activity promotion strategies	0.087	0.338*	0.131**	0.024	0.082
	(0.045)	(0.138)	(0.037)	(0.043)	(0.120)
Degree of private domain				0.481**	1.954**
				(0.072)	(0.203)
Brand	0.137**	-0.082		0.117*	-0.162
	(0.052)	(0.159)		(0.048)	(0.135)
Store level	0.058*	0.248**		0.052*	0.224**
	(0.023)	(0.069)		(0.021)	(0.059)
Constant	6.240**	11.726**	0.192**	6.147**	11.350**
	(0.084)	(0.257)	(0.070)	(0.079)	(0.222)
N	244	244	244	244	244
R^2	0.097	0.140	0.119	0.239	0.381
Adj R^2	0.078	0.122	0.101	0.220	0.366
F	5.136	7.770	6.436	12.424	24.348
p	0.000	0.000	0.000	0.000	0.000

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$

Model 5 includes the degree of the private domain variable in Model 2, and the results indicate that the degree of the private domain has a significantly positive impact on sales performance (β=1.954, p<0.01). At the same time, the coefficient of membership development strategies is no longer statistically significant (β=0.151, p>0.05). This finding supports the notion that the degree of the private domain is a mediator between membership development strategies

and sales revenue, providing empirical support for H2a. Additionally, the coefficient of activity promotion strategies is no longer statistically significant in Model 5 (β=0.200, p>0.05), indicating that the degree of private domain acts as a mediator between activity promotion strategies and sales revenue, providing empirical support for H2c.

The relationship between membership development strategies and ATV can be visually depicted in Figure 5.1. As demonstrated in Figure 5.1, membership development strategies do not directly and significantly impact average customer spend; instead, they transmit their effect through the degree of the private domain. This finding highlights that membership development strategies indirectly enhance ATV by elevating the degree of the private domain.

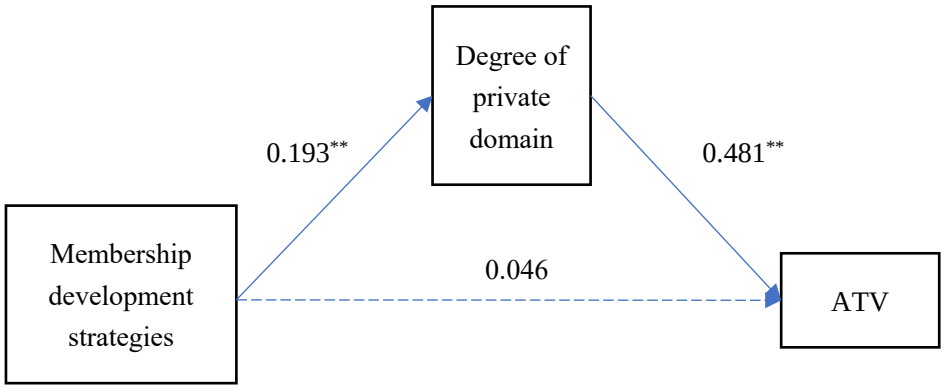


Figure 5.1 The mediating effect of the degree of private domain between membership development strategies and ATV

The relationship between membership development strategies, activity promotion strategies, and sales can be illustrated in Figure 5.2. As depicted in the figure, neither membership development strategies nor activity promotion strategies exhibit a significant direct impact on sales. Instead, the effects of these strategies are transmitted through the degree of private domain. This outcome

indicates that membership development and activity promotion strategies indirectly enhance sales by elevating the degree of private domain.

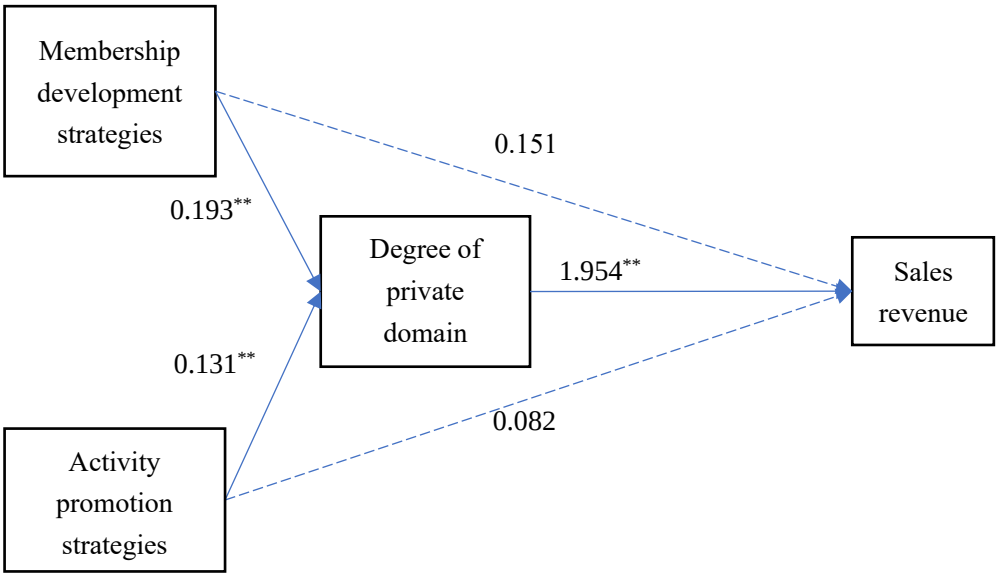


Figure 5.2 The mediating role of the degree of private domain between private domain strategies and sales revenue

Table 5.4 presents the results of a bootstrapping analysis that examines the mediating effect of the degree of private domain on the relationship between private domain strategies and sales performance using the PROCESS program. The analysis reveals that the degree of private domain significantly mediates between membership development strategies and ATV and sales revenue. Specifically, the mediating effect of the degree of private domain between membership development strategies and ATV is 0.0927, with a confidence interval of (0.0423, 0.1535), while the mediating effect of the degree of private domain between membership development strategies and sales revenue is 0.3763, with a confidence interval of (0.1722, 0.5955). These confidence intervals do not include zero, indicating that both mediating effects are statistically significant. Moreover, the analysis shows that the degree of private

domain accounts for a significant proportion of the total effect on the relationship between membership development strategies and ATV (66.739%) and between membership development strategies and sales revenue (71.336%). These findings provide strong empirical support for hypothesis H2a.

In contrast, the analysis indicates that the degree of private domain does not significantly mediate the relationship between live conversion strategies and ATV or sales revenue. The mediating effect of the degree of private domain between live conversion strategies and ATV is 0.0083, with a confidence interval of (-0.0274, 0.0478), while the mediating effect of the degree of private domain between live conversion strategies and sales revenue is 0.0338, with a confidence interval of (-0.115, 0.1884). These confidence intervals include zero, indicating that the mediating effects are not statistically significant. These results are consistent with the hierarchical regression analysis and do not provide empirical support for hypothesis H2b.

While the classic stepwise method requires a significant total effect between the independent and dependent variables as a prerequisite for conducting a mediation analysis, recent research has shown that a significant relationship between these variables is not always necessary for the existence of a mediating effect (Chen & Wang, 2015). In line with this, the present analysis shows that although the overall effect of activity promotion strategies on ATV is not statistically significant (P = 0.0554), the mediating effect of the degree of private domain between activity promotion strategies and ATV is 0.0630, with a confidence interval of (0.0238, 0.1083), which does not include zero. This suggests that while the impact of activity promotion strategies on ATV is insignificant, the mediating effect still exists. These findings provide

empirical support for hypothesis H2c, which differs somewhat from the hierarchical regression results. Furthermore, the analysis reveals that the mediating effect of the degree of private domain between activity promotion strategies and sales revenue is 0.2558, with a confidence interval of (0.1044, 0.4092), which does not include zero. This result indicates that the mediating effect of the degree of private domain between activity promotion strategies and sales revenue is significant, providing further empirical support for hypothesis H2c.

Table 5.4 Bootstrapping test results for the mediating effect of degree of private domain between private domain strategies and sales performance

Variables			Effect	SE/ Boot SE	t	p	LLCI/ Boot LLCI	ULCI/ Boot ULCI	Proportion of indirect effect
ATV	Membership development strategies	Total effect	0.1389	0.0637	2.1797	0.0303	0.0134	0.2645	—
		Direct effect	0.0462	0.0603	0.7666	0.4441	-0.0725	0.1649	—
		Indirect effect	0.0927	0.0285	—	—	0.0423	0.1535	66.739%
	Live conversion strategies	Total effect	0.0596	0.0457	1.3045	0.1933	-0.0304	0.1495	—
		Direct effect	0.0512	0.042	1.2191	0.224	-0.0316	0.134	—
		Indirect effect	0.0083	0.019	—	—	-0.0274	0.0478	—
	Activity promotion strategies	Total effect	0.0873	0.0454	1.9252	0.0554	-0.002	0.1767	—
		Direct effect	0.0243	0.0428	0.5682	0.5705	-0.06	0.1086	—
		Indirect effect	0.0630	0.0212	—	—	0.0238	0.1083	7.216%
Sales revenue	Membership development strategies	Total effect	0.5275	0.1937	2.7236	0.0069	0.146	0.909	—
		Direct effect	0.1512	0.1692	0.8934	0.3725	-0.1822	0.4846	—
		Indirect effect	0.3763	0.1072	—	—	0.1722	0.5955	71.336%
	Live conversion strategies	Total effect	0.2335	0.1388	1.6822	0.0939	-0.0399	0.5069	—
		Direct effect	0.1996	0.118	1.6913	0.0921	-0.0329	0.4322	—
		Indirect effect	0.0338	0.0772	—	—	-0.115	0.1884	—
	Activity promotion strategies	Total effect	0.3378	0.1379	2.4496	0.015	0.0661	0.6094	—
		Direct effect	0.0819	0.1202	0.6818	0.4961	-0.1548	0.3187	—
		Indirect effect	0.2558	0.0775	—	—	0.1044	0.4092	75.725%

5.3 Analysis of the moderating effects of brand and store level

5.3.1 The moderating effect of brand

This study first examines the moderating effect of brand on the relationship between the degree of private domain and sales performance. As shown in Table 5.5, regardless of whether the dependent variable is average transaction value (ATV) or sales revenue, the interaction between self-owned brand and the degree of private domain is significantly positive. This indicates that own-brand positively moderates the relationship between the degree of private domain and sales performance - compared to stores that sell non-own brand products, stores that sell own-brand products have a greater effect in improving sales performance in the context of the increased degree of private domain.

Figure 5.3 illustrates the moderating effect of brands on the relationship between private domain strategies and store level performance. The findings reveal that the degree of private domain strategies positively influences the average transaction value (ATV) and sales revenue for both stores selling own-brand products and those selling non-own brand products. However, the slope for the own-brand group is steeper than that for the non-own brand group, indicating that the degree of private domain strategies has a stronger effect on enhancing sales performance for stores selling own-brand products compared to those selling non-own brand products. Notably, Sanse's non-own brand stores primarily sell international brands such as Adidas and Nike, and the company's own-brand products are relatively weaker. Therefore, the empirical results provide support for H3. To further enhance the private domain strategies and store level performance, Sanse could implement membership development

strategies, live conversion strategies, and activity promotion strategies.

Table 5.5 Moderating effect of brand on the relationship between the degree of private domain and sales performance

Variables	ATV	Sales revenue	ATV	Sales revenue
	M6	M7	M8	M9
Membership development strategies	0.061	0.197	0.046	0.113
	(0.058)	(0.164)	(0.061)	(0.167)
Live conversion strategies	0.024	0.119	0.051	0.231*
	(0.041)	(0.115)	(0.042)	(0.116)
Activity promotion strategies	-0.001	0.005	0.024	0.061
	(0.042)	(0.117)	(0.043)	(0.118)
Degree of private domain	0.350**	1.562**	0.491*	3.578**
	(0.077)	(0.216)	(0.203)	(0.558)
Brand	-0.237*	-1.215**	0.117*	-0.158
	(0.098)	(0.275)	(0.048)	(0.133)
Store level	0.051*	0.222**	0.054	0.621**
	(0.020)	(0.057)	(0.051)	(0.140)
Degree of private domain*Brand	0.677**	2.015**		
	(0.166)	(0.463)		
Degree of private domain*Store level			-0.004	-0.659**
			(0.077)	(0.212)
Constant	6.240**	11.627**	6.142**	10.410**
	(0.080)	(0.223)	(0.135)	(0.372)
N	244	244	244	244
R^2	0.290	0.427	0.239	0.406
Adj R^2	0.269	0.410	0.217	0.388
F	13.746	25.156	10.604	23.022
p	0.000	0.000	0.000	0.000

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$

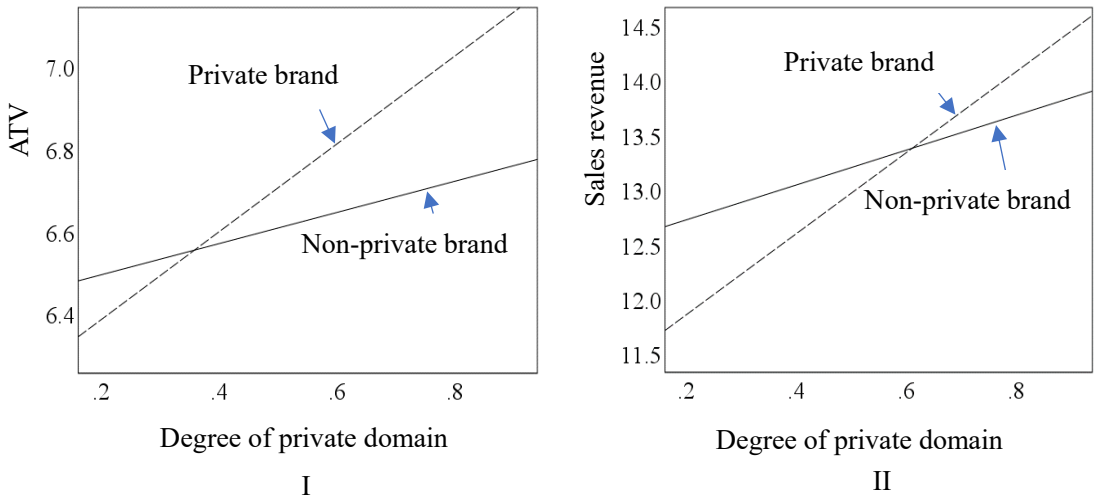


Figure 5.3 The moderating effect of brand

5.3.2 The moderating effect of store level

Table 5.5 presents the results of the moderating effect of store level on the relationship between degree of private domain and sales performance. The findings indicate that when the dependent variable is average transaction value (ATV), the interaction between store level and degree of private domain is not statistically significant, indicating that store level does not moderate the relationship between degree of private domain and ATV. This result fails to provide empirical evidence in support of H4. However, when the dependent variable is sales revenue, the interaction between store level and degree of private domain is significantly negative. This suggests that store level negatively moderates the relationship between degree of private domain and sales performance, implying that compared to high-level stores, low-level stores have a greater impact on degree of private domain on improving sales performance, which is consistent with H4.

Figure 5.4 visually illustrates the moderating effect of store level. The results show that regardless of their level, stores benefit from degree of private

domain in terms of enhancing their ATV and sales revenue. Moreover, the fitting line for high-level stores is above that of low-level stores, indicating that high-level stores perform better than low-level stores. However, when the dependent variable is ATV, the slope of the fitting line for high-level stores and low-level stores is the same, indicating that the effect of degree of private domain on ATV does not differ significantly across stores of different levels. In contrast, when the dependent variable is sales revenue, the slope of the fitting line for low-level stores is greater than that of high-level stores, indicating that the effect of degree of private domain on increasing sales revenue is greater for low-level stores than for high-level stores.

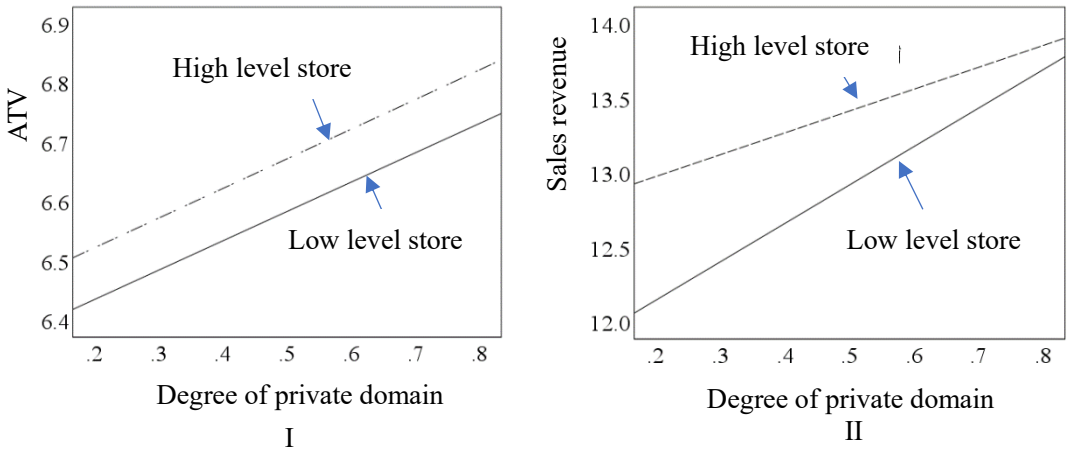
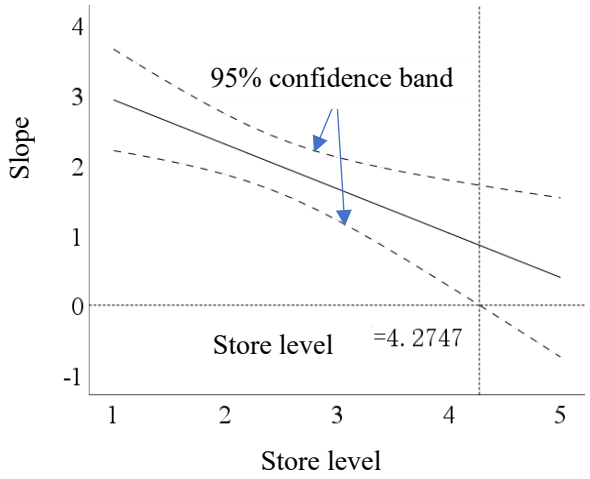


Figure 5.4 The moderating effect of store level

This study has employed the PROCESS program to output data and create a Johnson-Neyman slope diagram to illustrate the relationship between the degree of private domain and sales revenue, moderated by store level. As depicted in Figure 5.5, the fitted line between the degree of private domain strategies and sales revenue exhibits a continuously decreasing slope as the store level increases. Notably, the confidence interval of this slope includes 0 when the store level reaches 4.2747. Beyond this level, further increases in store level

no longer alter the slope of the fitted line between the degree of private domain strategies and sales revenue. Therefore, a store level less than or equal to 4.2747 is considered the confidence interval for the moderating effect. This finding has practical implications for membership development strategies, live conversion strategies, and activity promotion strategies, as understanding the moderating effect of store level on the relationship between the degree of private domain



strategies and sales revenue can enhance the effectiveness of these strategies.

Figure 5.5 Johnson-Neyman Slope Graph Demonstrating the Modulating Effects of Store Levels

5.4 Moderated mediation analysis

5.4.1 Moderated mediation effects of brand and degree of private domain on sales performance

Table 5.6 presents the indices of significance obtained through the PROCESS program analysis. The results indicate that the indices for different brand groups are significant except for the live conversion strategy. Specifically, membership development strategies have a moderating effect on the index of Average Transaction Value (ATV) through the degree of private domain, with a

value of 0.1325 (confidence interval: 0.0187 to 0.2677). Moreover, membership development strategies have a moderating effect on the index of sales revenue, with a value of 0.0842 (confidence interval: 0.0098 to 0.1939). Both confidence intervals exclude 0, suggesting significant moderated mediation effects. This finding provides empirical support for H3a.

Similarly, activity promotion strategies have a moderating effect on the index of ATV through the degree of private domain, with a value of 0.0842 (confidence interval: 0.0098 to 0.1939). Additionally, activity promotion strategies have a moderating effect on the index of sales revenue, with a value of 0.2504 (confidence interval: 0.0682 to 0.5228). Both confidence intervals exclude 0, indicating significant moderated mediation effects. This finding provides empirical support for H3c.

However, the live conversion strategy has a moderating effect on the index of ATV through the degree of private domain, with a value of 0.0082 (confidence interval: -0.0489 to 0.068). Furthermore, the live conversion strategy has a moderating effect on the index of sales revenue, with a value of 0.0244 (confidence interval: -0.1353 to 0.1858). Both confidence intervals include 0, suggesting that the moderated mediation effects are insignificant. This finding fails to provide empirical support for H3b.

Using the PROCESS program, this study obtained conditional mediation effects under different values of the moderating variable. The results of the conditional mediation effects, as presented in Table 5.6, show that the mediation effects of own-brand stores are higher than those of non-own-brand stores, regardless of whether the dependent variable is ATV or sales revenue. For instance, for own-brand stores, the moderating effect of membership

development strategies on the index of ATV through the degree of private domain is 0.2009 (confidence interval: 0.0713 to 0.3569). Conversely, for non-own-brand stores, the moderating effect is 0.0684 (confidence interval: 0.0281 to 0.1177). Both confidence intervals exclude 0, indicating significant mediation effects in both groups. However, for the live conversion strategy, although the mediation effects of own-brand stores are higher than those of non-own-brand stores, both confidence intervals include 0, suggesting that the mediation effects are not significant. This finding is consistent with the results of the moderated mediation analysis.

Table 5.6 Moderated mediating effect of brand and degree of private domain on sales performance

Variables		Moderating mediating effect				Conditional indirect effect				
		Index	Boot SE	Boot LLCI	Boot ULCI	Brand	Effect	Boot SE	Boot LLCI	Boot ULCI
ATV	Membership development strategies	0.1325	0.0644	0.0187	0.2677	0	0.0684	0.0231	0.0281	0.1177
						1	0.2009	0.0731	0.0713	0.3569
	Live conversion strategies	0.0082	0.028	-0.0489	0.068	0	0.0042	0.0134	-0.0211	0.0328
						1	0.0124	0.0403	-0.0681	0.0971
	Activity promotion strategies	0.0842	0.0476	0.0098	0.1939	0	0.0435	0.0148	0.0176	0.0746
						1	0.1276	0.0554	0.038	0.2525
Sales revenue	Membership development strategies	0.3942	0.1539	0.1364	0.7338	0	0.3056	0.0894	0.1472	0.495
						1	0.6998	0.2057	0.3337	1.1437
	Live conversion strategies	0.0244	0.0785	-0.1353	0.1858	0	0.0189	0.0579	-0.0936	0.1352
						1	0.0433	0.134	-0.2215	0.3139
	Activity promotion strategies	0.2504	0.1174	0.0682	0.5228	0	0.1941	0.0608	0.0822	0.3173
						1	0.4445	0.1581	0.1697	0.7923

Note: In the brand grouping, 0 represents non-proprietary brands and 1 represents proprietary brands.

5.4.2 The moderating role of store level and degree of private domain in sales performance

The PROCESS program was employed to automatically define different values of store level as low and high values by decreasing and increasing one standard deviation from the mean of the moderating variable, respectively. The results presented in Table 5.7 reveal that when the dependent variable is average transaction value (ATV), Index does not demonstrate statistical significance, thus failing to provide empirical support for H4.

However, when the dependent variable is sales revenue, Index is significant for all independent variables except for live conversion strategies. Specifically, the Index for membership development strategies is -0.1279 with a confidence interval of (-0.2837, -0.0228), while the Index for activity promotion strategies is -0.087 with a confidence interval of (-0.1861, -0.0145). Both confidence intervals do not include 0, indicating a significant moderating effect. This finding supports H4a and H4ac, suggesting that store level moderates the indirect relationship between membership development strategies, activity promotion strategies, and sales revenue through the degree of private domain.

However, when the independent variable is live conversion strategies, Index is -0.0103 with a confidence interval of (-0.0741, 0.0464), including 0, indicating a non-significant moderating effect. Thus, there is no empirical support for H4b. Similar features are found in the subsequent conditional mediation effects.

Table 5.7 Moderated mediating effect of store level and degree of private domain on sales revenue

Variables		Moderating mediating effect				Conditional indirect effect				
		Index	Boot SE	Boot LLCI	Boot ULCI	Store levels	Effect	Boot SE	Boot LLCI	Boot ULCI
ATV	Membership development strategies	-0.0007	0.021	-0.0469	0.0377	0	1.5512	0.094	0.0338	0.0356
						1	3.3095	0.0928	0.0348	0.0301
	Live conversion strategies	-0.0001	0.0043	-0.0078	0.0111	0	1.5512	0.0076	0.0188	-0.029
						1	3.3095	0.0074	0.0189	-0.0235
	Activity promotion strategies	-0.0005	0.0143	-0.0317	0.0279	0	1.5512	0.064	0.0233	0.0225
						1	3.3095	0.0631	0.0256	0.017
Sales revenue	Membership development strategies	-0.1279	0.067	-0.2837	-0.0228	0	1.5512	0.4957	0.1451	0.2278
						1	3.3095	0.2708	0.0964	0.0971
	Live conversion strategies	-0.0103	0.029	-0.0741	0.0464	0	1.5512	0.0398	0.1009	-0.1556
						1	3.3095	0.0217	0.0553	-0.0836
	Activity promotion strategies	-0.087	0.0443	-0.1861	-0.0145	0	1.5512	0.3374	0.1022	0.1436
						1	3.3095	0.1843	0.0722	0.0549

Note: In the level grouping, 0 represents low-level stores and 1 represents high-level stores.

Considering that the moderated mediation effect is fundamentally a linear function of the moderator variable, this study utilized the PROCESS program to calculate the 95% confidence interval and significant range of the linear function between store level and mediating effect. Considering that the confidence interval of the linear function between store level and mediating effect is a quadratic curve, we can use these three values to obtain the parameters of the quadratic curve. Based on this, we used Microsoft Excel to simulate multiple values of this quadratic curve, and finally used SPSS syntax to draw a graph illustrating the relationship between store level and the mediating effect of private domainization on sales. Figure 5.6 illustrates the relationship between store level and degree of private domain on the mediated effect of membership development strategies and activity promotion strategies on sales revenue. The corresponding confidence intervals are represented by dashed lines. It can be observed from the findings that the mediated effects of membership development strategies and activity promotion strategies on sales revenue through the degree of private domain are significant when the store level is below approximately level 4.

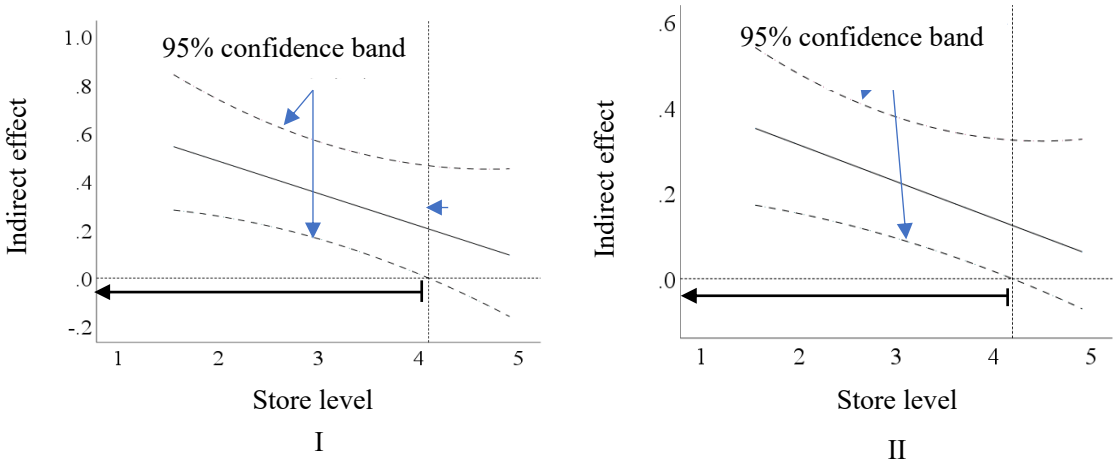


Figure 5.6 Figure of moderating mediating effect of store levels, degree of private domain on sales performance

Note: The independent variables in Figure I-II are membership development strategies and activity promotion strategies, respectively.

5.5 Robustness test

In the previous section, this study conducted empirical research using data from Sanse's own stores in the fourth quarter of 2022. To further examine the robustness of the results, this section further utilizes data from Sanse's own stores in the first quarter of 2023 for empirical research.

5.5.1 Mechanisms of Private Domain Strategies on Sales Performance

The regression analysis results using data from the first quarter of 2023, as presented in Table 5.8, demonstrate consistency in both the direct effects and mediating effects of private domain strategies on sales performance compared to the data analysis results from the fourth quarter of 2022. The only difference is that, in comparison to Model 4, the regression coefficient for the membership development strategy in Model 13 is positively significant, indicating that the degree of private domain serves as a partial mediator between the membership development strategy and ATV (Average Transaction Value).

Table 5.8 Mechanisms of Private Domain Strategies on Sales Performance

Variables	ATV	Sales revenue	Degree of private domain	ATV	Sales revenue
	M1	M2	M3	M4	M5
Membership development strategies	0.182***	0.450**	0.208***	0.132**	0.296
	(0.057)	(0.185)	(0.031)	(0.061)	(0.200)
Live conversion strategies	-0.025	0.008	0.014	-0.028	-0.002
	(0.047)	(0.153)	(0.026)	(0.047)	(0.153)
Activity promotion strategies	0.085*	0.349**	0.123***	0.056	0.258
	(0.048)	(0.155)	(0.026)	(0.050)	(0.161)
Degree of private domain				0.240**	0.741*
				(0.116)	(0.379)
Brand	0.091*	-0.276	0.004	0.090*	-0.279
	(0.055)	(0.178)	(0.030)	(0.054)	(0.177)
Store level	0.041*	0.327***	-0.053***	0.054**	0.366***
	(0.024)	(0.077)	(0.013)	(0.024)	(0.079)
Constant	6.275***	11.677***	0.428***	6.172***	11.360***
	(0.093)	(0.302)	(0.051)	(0.105)	(0.342)
N	244	244	244	244	244
R^2	0.077	0.117	0.303	0.093	0.131
Adj R^2	0.058	0.098	0.289	0.070	0.109
F	3.979	6.307	20.740	4.066	5.956
p	0.002	0.000	0.000	0.001	0.000

Standard errors in parentheses

* p < 0.1, ** p < 0.05, *** p < 0.01

The Bootstrapping test results utilizing data from the first quarter of 2023 are presented in Table 5.9. Consistent with the regression analysis, the Bootstrapping test results show consistency. The main difference compared to the analysis of data from the fourth quarter of 2022 is that the direct effect of membership development strategy on ATV is found to be significant.

Table 5.9 Bootstrapping test results for the mediating role of degree of private domain between private domain strategies and sales performance.

Variables			Effect	SE/ Boot SE	t	p	LLCI/ Boot LLCI	ULCI/ Boot ULCI	Proportion of indirect effect
ATV	Membership development strategies	Total effect	0.1935	0.0563	3.4367	0.0007	0.0826	0.3044	—
		Direct effect	0.1303	0.0613	2.1254	0.0346	0.0095	0.2511	—
		Indirect effect	0.0632	0.0293	—	—	0.0106	0.1273	32.6615%
	Live conversion strategies	Total effect	-0.0101	0.0484	-0.2087	0.8349	-0.1054	0.0852	—
		Direct effect	-0.022	0.0473	-0.4663	0.6414	-0.1151	0.0711	—
		Indirect effect	0.0119	0.0131	—	—	-0.0104	0.041	—
	Activity promotion strategies	Total effect	0.1056	0.0482	2.1895	0.0295	0.0106	0.2005	—
		Direct effect	0.0559	0.05	1.1189	0.2643	-0.0425	0.1543	—
		Indirect effect	0.0497	0.0213	—	—	0.0116	0.0964	47.0644%
Sales revenue	Membership development strategies	Total effect	0.5087	0.1834	2.7731	0.006	0.1473	0.87	—
		Direct effect	0.2982	0.1997	1.4934	0.1367	-0.0952	0.6915	—
		Indirect effect	0.2105	0.1015	—	—	0.0275	0.4247	41.38%
	Live conversion strategies	Total effect	0.0506	0.1562	0.3239	0.7463	-0.2572	0.3584	—
		Direct effect	0.0145	0.1532	0.0946	0.9247	-0.2873	0.3163	—
		Indirect effect	0.0361	0.041	—	—	-0.0345	0.1264	—
	Activity promotion strategies	Total effect	0.4022	0.1552	2.5924	0.0101	0.0966	0.7079	—
		Direct effect	0.2595	0.1615	1.6073	0.1093	-0.0585	0.5776	—
		Indirect effect	0.1427	0.0666	—	—	0.0225	0.2854	35.48%

5.5.2 The moderating effects of brand and store level

The results of the moderation analysis on brand and store level using the data from the first quarter of 2023 are presented in Table 5.10. Compared to the analysis results of the data from the fourth quarter of 2022, the coefficient of the interaction term in Model M16 changes from being significant to non-significant. This indicates that when the dependent variable is sales performance, brand categories do not moderate the relationship between private domain strategies and sales performance.

Furthermore, in Model M17, the coefficient of the interaction term changes from being non-significant to significant, indicating that store level negatively moderates the relationship between private domain strategies and sales performance. Specifically, the effect of private domain strategies on enhancing sales performance is greater for lower-level stores compared to higher-level stores. These findings are consistent with hypothesis H4.

Table 5.10 Moderating effect of brand, store level on the relationship between the degree of private domain and sales performance

Variables	ATV	Sales revenue	ATV	Sales revenue
	M6	M7	M8	M9
Membership development strategies	0.151**	0.330	0.181***	0.478**
	(0.062)	(0.202)	(0.061)	(0.196)
Live conversion strategies	-0.043	-0.028	-0.025	0.010
	(0.047)	(0.154)	(0.046)	(0.147)
Activity promotion strategies	0.050	0.248	0.058	0.268*
	(0.049)	(0.162)	(0.048)	(0.155)
Degree of private domain	0.116	0.520	1.108***	3.963***
	(0.130)	(0.426)	(0.251)	(0.806)
Brand	-0.194	-0.784	0.097*	-0.254
	(0.147)	(0.481)	(0.053)	(0.170)
Store level	0.050**	0.359***	0.258***	1.125***
	(0.024)	(0.079)	(0.058)	(0.186)
Degree of private domain*Brand	0.493**	0.877		
	(0.238)	(0.777)		
Degree of private domain*Store level			-0.366***	-1.359***
			(0.094)	(0.303)
Constant	6.251***	11.501***	5.621***	9.317***
	(0.111)	(0.363)	(0.175)	(0.562)
N	244	244	244	244
R^2	0.110	0.136	0.148	0.199
Adj R^2	0.083	0.110	0.123	0.175
F	4.149	5.293	5.850	8.383
p	0.000	0.000	0.000	0.000

Standard errors in parentheses
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

5.5.3 Moderated mediation analysis

The robustness analysis results of the moderated mediation effect of brand and private domain strategies on sales performance are presented in Table 5.11. The results indicate that the analysis results from the first quarter of 2023 are consistent with the analysis results from the fourth quarter of 2022. The difference lies in the fact that when the dependent variable is sales performance, the indices of member development strategy and activity enhancement strategy

are no longer significant. This suggests that the moderated mediation effect of brand on the relationship between private domain strategies and sales performance is not significant.

The robustness analysis results of the moderated mediation effect of store level and private domain strategies on sales performance are presented in Table 5.12. The results indicate that the analysis results from the first quarter of 2023 are generally consistent with the analysis results from the fourth quarter of 2022. The difference lies in the fact that when the dependent variable is average transaction value (ATV), the indices of member development strategy and activity enhancement strategy change from non-significant to significant, aligning with the hypothesis.

Table 5.11 Moderated mediating effect of brand and degree of private domain on sales performance

Variables		Moderating mediating effect				Conditional indirect effect				
		Index	Boot SE	Boot LLCI	Boot ULCI	Brand	Effect	Boot SE	Boot LLCI	Boot ULCI
ATV	Membership development strategies	0.1867	0.0914	0.0076	0.3658	0	0.0206	0.0104	0.0002	0.0410
						1	0.1473	0.0734	0.0034	0.2912
	Live conversion strategies	0.0174	0.0246	-0.0143	0.0816	0	0.008	0.009	-0.0065	0.0287
						1	0.0254	0.0292	-0.0158	0.0989
	Activity promotion strategies	0.1086	0.0484	0.0137	0.2035	0	0.0252	0.012	0.0017	0.0487
						1	0.0837	0.0399	0.0055	0.1619
Sales revenue	Membership development strategies	0.2933	0.2752	-0.2708	0.8191	0	0.0513	0.1138	-0.1618	0.2822
						1	0.3446	0.2606	-0.1681	0.8526
	Live conversion strategies	0.0395	0.0682	-0.0546	0.2135	0	0.0179	0.0255	-0.0241	0.0792
						1	0.0574	0.0745	-0.0441	0.2437
	Activity promotion strategies	0.1305	0.1601	-0.1651	0.4792	0	0.041	0.0638	-0.0939	0.1624
						1	0.1714	0.1571	-0.1164	0.514

Note: In the brand grouping, 0 represents non-proprietary brands and 1 represents proprietary brands.

Table 5.12 Moderated mediating effect of store level and degree of private domain on sales revenue

Variables		Moderating mediating effect				Conditional indirect effect				
		Index	Boot SE	Boot LLCI	Boot ULCI	Store levels	Effect	Boot SE	Boot LLCI	Boot ULCI
ATV	Membership development strategies	-0.0894	0.0344	-0.1579	-0.0224	0	0.1389	0.0454	0.0587	0.236
						1	-0.0227	0.0406	-0.0963	0.0622
	Live conversion strategies	-0.0112	0.0116	-0.0376	0.0082	0	0.0246	0.023	-0.017	0.074
						1	0.0042	0.0092	-0.0099	0.028
	Activity promotion strategies	-0.0423	0.0201	-0.0833	-0.0043	0	0.0877	0.0304	0.035	0.1532
						1	0.0113	0.0244	-0.032	0.0642
Sales revenue	Membership development strategies	-0.3386	0.1141	-0.5642	-0.1206	0	0.512	0.1603	0.2229	0.8542
						1	-0.1002	0.1283	-0.3346	0.1726
	Live conversion strategies	-0.0463	0.0445	-0.1415	0.0326	0	0.0856	0.0791	-0.0597	0.2568
						1	0.002	0.0266	-0.0459	0.0666
	Activity promotion strategies	-0.1732	0.0717	-0.3264	-0.0468	0	0.2916	0.105	0.1067	0.5125
						1	-0.0216	0.0737	-0.1767	0.1231

Note: In the level grouping, 0 represents low-level stores and 1 represents high-level stores.

Overall, the results of the data analysis using the first quarter of 2023 indicate that while there have been changes in the significance of some results, they are generally consistent with the research hypotheses. This finding also suggests that the data analysis results of this study are relatively robust.

5.6 Summary

This chapter presents the empirical findings of this study. Building on the data analysis and hypothesis testing in Chapter 4, we conducted descriptive statistics and correlation analysis of the explanatory variables in the model to gain a comprehensive understanding of the data situation and to conduct preliminary hypothesis testing. Subsequently, we applied the PROCESS program in SPSS15.0 statistical software to conduct empirical analyses on the intermediary variable model, moderating variable model, and moderated intermediary model. The results of the hypothesis testing are presented in Table 5.8.

Furthermore, this chapter discusses the private domain strategies, degree of private domain, membership development strategies, live conversion strategies, activity promotion strategies, and store level, focusing on the models' moderating effect and ATV. These discussions provide valuable insights into the empirical findings and contribute to developing the academic discourse in the field.

In summary, the findings of this study offer significant contributions to understanding the factors that influence sales revenue in the context of e-commerce. The insights gained from this study can inform the development of effective marketing strategies and provide practical implications for e-commerce practitioners.

Table 5.8 List of test results of research hypothesis

Hypothesis	Hypothetical statement	Results
H_1	Implementing private domain marketing strategies helps to improve sales performance of retailers.	Partial support
H_{1a}	The implementation of private domain membership development strategies is beneficial for enhancing the sales performance of retailers.	Support
H_{1b}	The implementation of private domain member live streaming transformation strategies is beneficial for enhancing the sales performance of retailers.	Not supported
H_{1c}	The implementation of private domain member activity promotion strategies is beneficial for enhancing the sales performance of retailers.	Support
H_{2a}	The degree of private domain plays a mediating role between private domain membership development strategies and sales performance.	Support
H_{2b}	The degree of private domain plays a mediating role between private domain membership live conversion strategies and sales performance.	Not supported
H_{2c}	The degree of private domain plays a mediating role between private domain member activity strategies and sales performance.	Support
$H3_a$	H3a: Brand ownership moderates the indirect relationship between membership development strategies and sales performance such that the relationship between membership development strategies and performance is stronger with self-owned brands.	Support
H_{3b}	H3b: Brand ownership moderates the indirect relationship between live conversion strategies and sales performance such that the relationship between live conversion strategies and performance is stronger with self-owned brands.	Not supported
H_{3c}	H3c: Brand ownership moderates the indirect relationship between activity promotion strategies and sales performance such that the relationship between activity promotion strategies and performance is stronger with self-owned brands.	Support

Hypothesis	Hypothetical statement	Results
H_{4a}	H4a: Store levels moderates the indirect relationship between membership development strategies and sales performance such that the relationship between membership development strategies and sales performance is higher with lower-level stores.	Partial support
H_{4b}	H4b: Store levels moderates the indirect relationship between live conversion strategies and sales performancesuch that the relationship between live conversion strategies and sales performance is higher with lower-level stores.	Not supported
H_{4c}	H4c: Store levels moderates the indirect relationship between activity promotion strategies and sales performance such that the relationship between activity promotion strategies and sales performance is higher with lower-level stores.	Partial support

According to the results of the hypothesis testing, it can be inferred that the implementation of private domain strategies, including membership development and activity promotion, can effectively enhance the sales performance of retailers, with the degree of private domain serving as a mediating variable. However, the implementation of live conversion strategies does not yield a significant increase in sales performance. Moreover, both proprietary brands and store level exhibit a moderating effect on this mediating relationship, albeit with differing degrees: compared to non-proprietary brands, the implementation of private domain strategies has a stronger positive effect on the sales performance of proprietary brands; compared to high-level stores, the implementation of private domain strategies has a greater positive effect on low-level sales revenue, with no moderating effect on the average transaction value. This study also conducted robustness tests using data from the first quarter of 2023, and the results indicate that the empirical findings of this study are relatively robust. To clearly present the outcomes of the hypothesis testing, a diagram depicting the interrelationships between variables (as shown in Figure 5.7) is provided, where solid arrows denote the existence of influences among the model's variables.

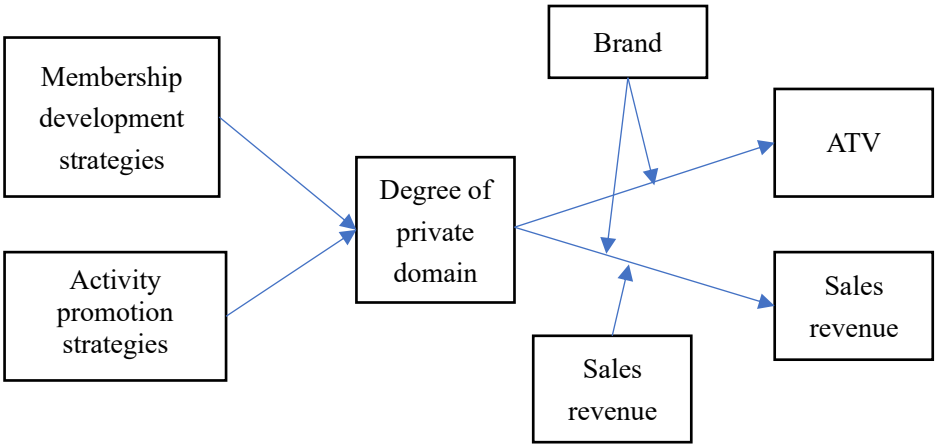


Figure 5.7 Hypothesis test results

6 Conclusions, implications and limitations

6.1 Conclusions

The proliferation of Internet technologies, particularly the new generation of digital technologies such as mobile Internet, artificial intelligence, and big data, has changed people's consumption habits and boosted the rise of online consumption, creating a substitution effect on offline consumption. Especially with the global emergence of the novel coronavirus, the pace of online retail substituting offline retail has quickened—and even post-pandemic, this trend remains strengthened. On this basis, the development of social media has provided retailers with various ways to connect with customers, especially diverse interactive channels that greatly transform consumers' purchase behavior. With social media, retailers can, to some extent, bypass public domain platforms like Amazon, AliExpress, eBay, Rakuten, and Alibaba to develop their private domains, nurturing emotionally connected loyal customers and eventually realizing the monetization of emotional connections. This means that the progress of social media technology has changed the customer experience in the retail sector and created opportunities for retailers to explore private domain traffic outside public domain traffic. As retail-owned traffic, private domain traffic is more stable and reachable, which helps enhance customer loyalty and participation. This study employs a rigorous academic framework to conduct empirical research using data from the fourth quarter of 2022 for 244 self-operated stores of Sanse Company, and the following results are obtained:

1. Implementation of private domain marketing strategies, including private domain membership development strategies, activity promotion strategies, is beneficial to the retail seller in sales performance.

2. The influence of private domain marketing strategies on sales performance is achieved by enhancing the degree of private domain. This means that the implementation of private domain marketing strategies can increase the proportion of private domain members of the retail seller, and the increase in private domain member ratio helps to improve sales performance further. Moreover, the influence of private domain strategies on sales performance is fully obtained through the degree of private domain.

3. Private domain strategies have a greater effect on the sales performance of unknown brands. The brand category will regulate the indirect relationship between private domain strategies and sales performance through the degree of private domain. This means that the implementation of private domain strategies provides a way for small brands or those unknown weak brands to catch up with the sales performance of strong brands.

4. Private domain strategies have a greater effect on the sales revenue of low-level stores, that is, store level will regulate the indirect relationship between private domain strategies and sales revenue through the degree of private domain. However, the empirical results also show that the store level does not have a significant regulatory effect on the indirect relationship between private domain strategies and customer ATV through the degree of private domain. This result shows that the implementation of private domain strategies provides a way for small retailers to catch up with the sales revenue of large retailers. However, there are still obstacles to catching up with customer ATV.

The findings of this study highlight that private domain strategies have varying impacts on sales performance. Compared to membership development and activity promotion strategies, the effectiveness of live conversion strategies

is not statistically significant. The result is inconsistent with our hypothesis - while we believed that private domain strategies would help improve sales performance, the results showed that the live conversion strategy had no effect. Nevertheless, over the past year, Sanse invested a significant amount of resources in live streaming to boost sales. This is primarily due to the fact that while membership development strategies and activity promotion strategies adopt a hybrid online and offline model, live conversion strategies rely exclusively on online channels. However, the crucial element in private domain transformation is establishing trust and monetizing emotional relationships (F. Wang & Jiang, 2021). Physical stores play an essential role in building trust and enhancing customer control over transactions by providing opportunities for increased interaction. As a result, physical stores remain indispensable shopping destinations (Babin et al., 2021; Treadgold & Reynolds, 2020). In the digital era, online and offline retail formats complement each other, and establishing physical showrooms or stores may positively impact the online sales of multichannel retailers. Through collaborative efforts, omni-channel retailing has become the norm (Ratchford et al., 2022). In practice, many retailers focus on integrating the online and offline worlds (Jocevski, 2020). Physical stores continue to be interconnected through physical or digital means, creating a mutually complementary and dependent ecosystem (Cozzolino et al., 2021). The results of this study provide empirical support for these practices.

Previous research has already realized the value of private domain for the transformation of retail industry, pointing out that private domain is based on the basic logic of online social retail, focusing on establishing emotional connection and trust relationship with consumers, and ultimately realizing

emotional type realization. However, these researches are qualitative and lack empirical tests (Nie, 2020; Tencent & Bain, 2021; F. Wang & Jiang, 2021; Y. Wang, 2021). This research empirically tests the mechanism of private domain strategies influencing the sales performance of retail sellers and explores the heterogeneity of different brands and store levels. This research revises the theoretical hypothesis according to the empirical results, constructs an integrated logical framework, which is an important supplement to the existing private domain related literature.

6.2 Implications

In response to environmental changes, retailers actively expand their online business by settling in public domain network platforms such as Amazon, AliExpress, eBay, Rakuten, and Alibaba to sell products. However, as discussed in the previous article, retailers relying on public domain networks to sell incur high costs. Especially in the contemporary digital age of rapidly developing social media technology, public domain networks lack emotional experience and social relationships and, thus, are relatively weak in helping to make transactions. Therefore, many retailers build their private domain platform to create their communities, mini-programs, official accounts, official websites/apps, and other private domain tools to achieve low-cost access to consumers and improve consumer loyalty and participation. This research focuses on the impact of private domain strategies on sales performance, which provides the following beneficial insights into the private domain transformation of the Chinese retail industry.

Firstly, this research indicates that private domain strategies promote sales performance by increasing the proportion of private domain members.

Therefore, from a practical perspective, retailers can use a variety of private domain tools to promote sales performance by implementing private domain membership development strategies and activity promotion strategies.

Secondly, weak retailers, such as those with small brands, weak strength, and poor location, have often disadvantaged in market competition. This research shows that the promotion of private domain strategies on the sales performance of weak retailers is greater. This indicates that private domain transformation allows weak retailers to overtake strong retailers. Therefore, as weak retailers, they should vigorously promote the transformation of private domain marketing channels and even make it the leading marketing strategy.

Thirdly, the effects of different private domain strategies can vary, and the primary reason for these variations is the inadequate integration between online and offline channels. Therefore, retailers should not focus solely on online activities but acknowledge that a successful transition to a private domain still relies on the effective operation of physical stores. Consequently, the future of private domain operations should involve a "hybrid" business ecosystem model that integrates both online and offline channels.

Fourthly, although private domain transformation does indeed bring practical economic benefits, many retailers do not have experience in private domain operations. Therefore, providing these retailers with low-cost private domain tools and operation services will be a very big new industry. Entering this industry and developing appropriate business models will be a new choice for many e-commerce companies.

6.3 Limitations

This research has done some work to achieve the predetermined research

objectives. However, due to the limitations of conditions, there are still some deficiencies in this research. First, this study only selected the data of Sanse's stores, although the sample size can meet the empirical analysis, its representativeness is still restricted. Second, although we have multi-period data, the PROCESS procedure cannot be used to analyze multi-period data, and the lack of degree of freedom caused by controlling the virtual variables for each store. Certainly, this study conducted robustness analysis using data from the first quarter of 2023, and the results still indicate that the empirical findings are relatively robust. The changes in the significance of some results may be attributed to the lifting of COVID-19 restrictions in China during the first quarter of 2023, which resulted in a significant increase in infections and, to some extent, reduced consumer purchasing behavior in the short term. Third, due to the restriction of data sources, this study only used ATV and sales to depict the sales performance of stores, which needs further improvement in terms of operationalization. For future research, it is also recommended to develop a more comprehensive measurement approach for assessing the effectiveness of private domain strategies, extending beyond the dichotomous 1-0 measurement utilized for all three strategies. Fourth, this study solely examines the effect of implementing private domain strategies on sales performance, without delving into the issue of costs. Our analysis of Sanse Company's cost of implementing private domain strategies reveals an approximate monthly expenditure of 400,000 RMB. In comparison to the benefits derived from these strategies, this cost outlay is relatively modest. Nevertheless, it remains imperative for future research to undertake a more comprehensive analysis of the cost-effectiveness of private domain strategies.

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