How Brick-znd-mortar Bookstores Can Survive in Desperate Times in the Internet Era — A Qualitative Comparative Analysis of the Operation Status of 40 Physical Bookstores in 8 Provinces

Shuang Yu, Yun Qin, Yuyue Chi, Meiting Zhang

School of Public Administration, Nanjing Normal University, Nanjing 210024, Jiangsu, China

Abstract: With the rapid development of the Internet era, physical bookstores have suffered setbacks in their development and are exploring survival measures. This study investigates the profitability path of physical bookstores in the Internet era, provides guidance for bookstores to provide products and services in the new environment, and provides a theoretical basis for the government to formulate policies to help physical bookstores and other real economy to develop in a high quality. The study uses fuzzy set qualitative comparative analysis to explore the impact of six conditions, such as diversification and economy of scale, technology and automation application, on the profit and loss of physical bookstores. The study identifies the necessary condition as well as the configuration influence paths for the profitability of physical bookstores in the context of the Internet, analyses how physical bookstores can target their development according to different paths, and puts forward practical suggestions.

Keywords: brick-and-mortar bookstores, qualitative comparative analysis (QCA), SICAS model

1. Introduction

Along with the development of the Internet, as a traditional industry, physical bookstores are facing a series of problems such as loss of consumers, high offline costs, and serious homogenization, and many physical bookstores have closed down. People are questioning: is there still a need for physical bookstores to exist? In May 2016, the "Guiding Opinions on Supporting the Development of Physical Bookstores" issued by the state mentioned that "physical bookstores are important cultural facilities and carriers of civilization." Physical bookstores are in an irreplaceable position, so it is of great significance to study the transformation path of physical bookstores in order to promote the national reading campaign, to help the construction of a strong cultural country, and to establish a comprehensive experience terminal of "eating, drinking and being merry + culture"[1].

Based on the literature combing, scholars at home and abroad mainly conduct research from the perspectives of development trend, policy support and development dilemma of physical bookstores. However, there are relatively few studies focusing on the transformation path of physical bookstores, and most of them explore the impact of a single factor on bookstores' operating efficiency, without revealing the complex logic that affects the operating efficiency of physical bookstores. Therefore, this paper explains the internal logic of physical bookstore transformation from the configuration perspective, in order to help physical bookstores as a public space to successfully transform, enhance the operational capacity of physical bookstores in order to better serve the public demand, and at the same time, respond to the state's policy to further promote the high-quality development of the real economy, and provide references to the long-term and efficient development of the real economy in the era of the Internet..

2. Research background

2.1 Realistic context

At the beginning of the 20th century, independent bookstores began to emerge as part of local culture. Later, large bookstore chains began to rise and gradually developed globally, establishing the bookstore industry pattern. However, with the advent of the digital era, physical bookstores have encountered unprecedented difficulties and challenges. 2022, the China Publishing Industry Association released the "National Physical Bookstore Operation Survey Report (2022)", which shows that about 30% of physical bookstores have suffered from the impact on their cash flow, and less than 10% of the bookstores have not been affected[2]. Throughout the rise and fall of physical bookstores, the Internet has obviously changed the form of purchase and reading habits, so the patterned and monotonous bookstores are difficult to survive in the long term,

and the development of physical bookstores has entered a low ebb.

After collecting and analyzing data, the team found that physical bookstores are not only a place of business, but also an important space for disseminating and passing on culture. At a time when the physical bookstore industry is in decline, some large chain brand bookstores and theme bookstores still maintain an objective flow of customers, and the proposal of the national reading campaign has provided the impetus for development of the bookstore. Under the "cold wave", physical bookstores still have their own "spring", and their development potential and space need to be explored..

2.2 Theoretical background

Foreign research on physical bookstores has systematically focused on the characteristics of the development stage of physical bookstores, the exploration of development trends and functions, and policy support. Scholars in China have analyzed the reasons for the predicament of physical bookstores from the perspective of "government-publishing agencies-physical bookstores" (Wang Haigang and Lei Danrui, 2021)[13]; from the perspective of media turnover, they concluded that physical bookstores fall into difficulties because of the intervention of online media and the impact of digital products and e-commerce (Huo Liyang, 2023)[3]; from the perspective of customer experience, the four dimensions of environment, function, social and emotional experience and proposed the establishment of a "physical bookstore". From the perspective of customer experience, the four dimensions of environment, function, sociality and emotional experience are considered and the proposal of establishing a "box court" interaction space is put forward (Wang Haiyu, 2022)[4]; Based on cultural sociology, the triple space of culture, interaction and aesthetics of the Librairie Avant-grade is investigated and the function of separating urban classes is discussed (Tao Yuan, 2015)[5] ; Analyzing the success factors of Multi-Fish in the Internet era from the perspective of convergence scene, i.e., realizing the intelligent scene marketing mode through scene reconstruction (Luo Aiqi, 2022)[6] and so on.

To sum up, the research direction of physical bookstores at home and abroad is more comprehensive but lacks the research of deep logical relationship, which is the key problem that needs to be solved in this paper. Based on the realistic predicament and development prospect of physical bookstores, this study innovatively adopts the qualitative analysis method to specifically analyse the multiple factors affecting the operating efficiency of physical bookstores from the perspective of configuration analysis.[7]

3. Research design

3.1 Modelling

This paper introduces the fuzzy set qualitative comparative analysis method to explore the influencing factors of physical bookstore operation and the combination of key paths to promote its transformation and put forward relevant suggestions. Considering the simplicity of the model, the availability of data and the existing literature and survey basis, the operational efficiency of physical bookstores is finally taken as the outcome variable, and diversification and economy of scale, technology and automation application, brand marketing and promotion, branding awareness and behavior, community interaction and loyalty building, and diversified sales channels are taken as the explanatory variables.

Combined with the marketing theory "market = population + purchasing power + purchasing desire"[8] and the heterogeneous market characteristics of physical bookstores, the core of the physical bookstore business is: identify the unmet needs and desires of consumers in the Internet era and estimate and determine the size of the need, decide the target market according to their own situation, and choose appropriate products, services and programs to serve the target market. Based on this idea and the SICAS model, this paper combines the above variables with the five dimensions of Sense, Interest & Interaction, Connect & Communicate, Action, Share[9] to come up with the following research model, as shown in Figure 1.
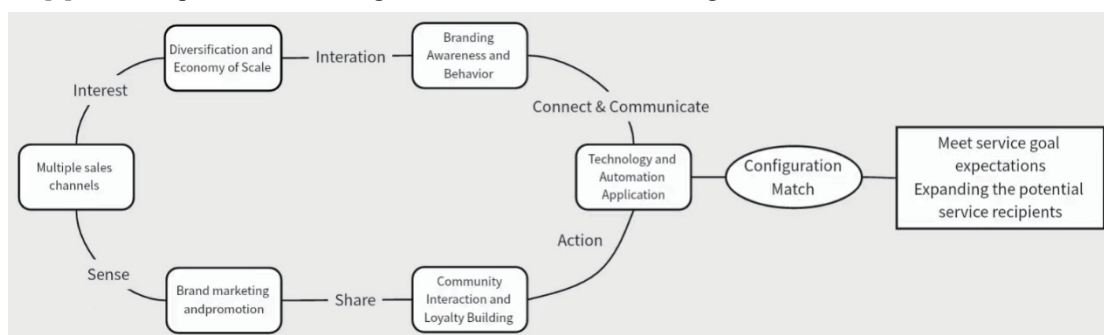

Figure 1. Research model diagram

3.2 Variable selection

3.2.1 Outcome variables

Bookstore operations can be measured by a number of indicators such as net profit, market share, etc. However, in order to ensure simplicity, objectivity and accessibility, this paper adopts the operating efficiency of physical bookstores as the outcome variable, which is categorized into "revenue exceeding expenditure", "break-even" and "expenditure exceeding revenue".

3.2.2 Explanatory variables

According to the operating factors of physical bookstores and the data from previous studies and researches of physical bookstores, six conditional variables are selected as follows:

Diversification and Economy of Scale (A), refers to the degree of characterization, the degree of multi-industry integration, and the degree of matching scale in physical bookstore's creation of space, avoiding an imbalance between scene creation and its own scale.

Technology and Automation Application (B), refers to the degree of introduction of technology and automation equipment in physical bookstores to better manage inventory and sales, in order to improve efficiency and enhance the customer experience.

Brand marketing and promotion (C), refers to the degree of effectiveness of brand publicity, marketing and promotion in physical bookstore, so as to increase the bookstore's visibility to attract more customers, increase sales, and promote the bookstore's further development.

Branding Awareness and Behavior (D), refers to the degree of self-branding awareness and personalized service in physical bookstores to optimize the customer experience and cultivate a loyal user base.

Community Interaction and Loyalty Building (E), refers to the richness of the activities organized in physical bookstore and the degree of cooperation with other entities, as a way to form and consolidate the core consumer group.

Multiple sales channels (F), refers to the degree of diversification of sales channels in physical bookstores, that is, the use of a combination of online and offline modes of sales on multiple platforms, so as to optimize the consumer experience in interaction with users.

3.3 Fuzzy set qualitative comparative analysis methods

The QAC method is a comparative analysis based on Boolean algebra, which, unlike traditional regression analysis that focuses on the "net effect" of a single variable, treats each case as a "configuration" of a series of condition variables, aiming to find the combination of condition variables that lead to the appearance or non-appearance of the expected outcome. The aim is to find combinations of condition variables that lead to the appearance or non-appearance of the expected outcome, which is essentially a form of deterministic causality.[10]

According to the characteristics of the method and practices at home and abroad, the QCA method has the following advantages in studying the transformation path of physical bookstores. Firstly, comparative analysis of physical bookstore cases can help to improve the credibility and validity of the study. Secondly, it does not make artificial assumptions on the complex causal relationship between variables and does not impose static constraints on control variables. [11] Thirdly, it can provide targeted and adaptive transformation paths with validation for different types of physical bookstores, which is conducive to bench marking and replication.

3.4 Data source

The data of this paper comes from the information obtained from field research, online interviews and internet inquiry of 40 bookstores in 8 provinces. In terms of the selection of research cases, the selection is based on the research model and variable settings, and follows the principles of "sufficient homogeneity" and "maximum heterogeneity".

3.5 Variable assignment

According to the type of research data, this paper adopts the direct calibration method to transform the collected data into fuzzy set affiliation scores by setting full affiliation thresholds, fuzzy intersections, and full non-affiliation thresholds.

A is measured by book selling, space creation, and multi-format integration, B is measured by inventory management system, self-checking technology, digital analysis and digital libraries, C is measured by social media marketing, advertisements and promotions as well as cooperative marketing and F is measured by physical bookstores, platform e-commerce, social e-commerce, and short-video e-commerce, and all four categories. All of them use four-valued fuzzy sets with affiliation scores of 0, 0.33, 0.67, and 1 accordingly.

Whereas D is measured by personalized service, membership system, level of service personnel, service orientation

and service theme, and E is measured by various cultural activities and cooperation of various subjects, both of which use five-valued fuzzy sets, with affiliation scores of 0, 0.3, 0.5, 0.7, and 0.9 accordingly.

4. Analysis of results

4.1 Analysis of necessary condition

Necessity analyses of individual explanatory variables are required prior to configuration analyses; a condition is necessary for a result if a conditional variable is always present when the final result occurs, usually measured by the consistency index greater than 0.9. Any condition that passes the necessity test and is meaningful as a necessary condition can be eliminated from subsequent truth table analysis procedures. [14] As shown in Table 1, the antecedent condition "diversification and economy of scale" is a necessary condition for the profitability of medium and large physical bookstores, and it can be extracted as a priority in the configuration analysis.

Table 1. Analysis of the necessary conditions

Conditions	Consistency	Coverage
A	0.9594	0.6890
B	0.6500	0.8247
C	0.7453	0.7542
D	0.7972	0.7285
E	0.7925	0.7925
F	0.5585	0.7073

4.2 Analysis of profitability patterns and interpretation of findings

4.2.1 Configuration analysis

The fsQCA3.0 software was used to carry out a configuration study of 40 physical bookstores. The raw consistency threshold was set to 0.80, and the case frequency threshold was set to 1 in consideration of the sample size, resulting in three types of solutions, usually the conditions that appeared in both the parsimonious and intermediate solutions were the core conditions, and the conditions that appeared only in the intermediate solution were the edge conditions. [12] The intermediate solution is mainly used, and the simple solution is supplemented by the analysis, leaving two paths: H1 with the highest consistency and H2 with the highest coverage., as shown in Table 2.

Table 2. Configuration analysis table

Antecedent condition	Solutions	
	H1	H2
B	●	●
C		
D	●	
E	●	●
F		
Consistency	0.9012	0.8786
Raw coverage	0.5679	0.6109
Unique coverage	0.0538	0.6109
Solution coverage	0.6014	0.6109
Solution consistency	0.8769	0.8786

Note(s): Black circles indicate the presence of a condition. Large circles indicate core conditions; small ones, peripheral conditions.

4.2.2 Interpretation of findings

H1: Value and Concept Identity Type

Path 1 is "Diversification and Economy of Scale * Technology and Automation Application * Branding Awareness and Behaviour * Community Interaction and Loyalty Building", which has the highest consistency of configuration analysis, and is exemplified by the Daikanyama T-Site in Shanghai.

The main feature of the value and concept identity type bookstore is brand building, which is suitable for physical bookstores with sufficient funds. Firstly, bookstores match the market segmentation and their own scale through unique space creation, and form distinctive themes or features based on the integration and coordination of multi-scene formats, or even become urban cultural landmarks, so as to promote links with consumers; secondly, bookstores introduce technology and automated equipment or platforms in the context of new technology to improve customer experience with convenient and efficient services; in addition, some bookstores will In addition, some bookstores will provide personalized services and establish a membership system to build a special service body, thus deepening the link with consumers and consolidating a loyal user group. Finally, physical bookstores cooperate with communities and schools to organize activities to form long-term attraction for specific user groups, so that bookstores can obtain long-term consumer groups and expand potential consumer groups through individual dissemination.

H2: Technology and Interaction Driven Type

Path 2 is "Technology and Automation Application* Diversification and Economy of Scale * Community Interaction and Loyalty Building", the combination of the largest number of cases covered 13, accounting for 32.5 per cent of the total number of cases of profitability, Wuhan Foreign Languages Bookstore as a typical.

Technology and interaction driven type focuses more on the introduction of technology and links with consumers, rather than spending a lot of money on branding, which is more suitable for most bookstores. First of all, bookstores need to diversify and develop in line with their own scale, avoiding blind imitation to create a homogeneous space, and should be based on their own scale to explore their own characteristics; what's more, the use of technology and automation platforms can improve the efficiency of the service and visibility, and enhance the customer experience; lastly, it is necessary for physical bookstores to have a stable customer base, so they should actively interact with the community: firstly, the cultural community in the cultural sense; secondly, the community divided into geographic space; and further interaction is the establishment of "community bookstores", where bookstores are stationed in the community and provide community reading services through bookstores as a medium, and incorporate convenient services, life information and health care, and so on.

4.3 Typical Case Tracking

4.3.1 Daikanyama T-Site - Value and Concept Identity Type (H1)

Values and concepts of identity-based bookstores emphasize the importance of branding, Daikanyama T-Site as a Japanese brand, with its characteristics of diversified business by the Japanese people enthusiastically sought, and quickly achieved the chain of bookstores. Shanghai Daikanyama T-Site is the second Daikanyama T-Site opened in China, by the influence of the brand Shanghai Daikanyama T-Site initial online booking tickets sold out almost every day after the opening.

The shop is beautifully decorated with different sections and a diverse range of books and products. Under the state of multi-scene integration, Daikanyama T-Site has planned a large number of diversified public activities under the theme of "beauty education" and established a membership system to attract more customers, increase consumer stickiness, and form a link of value and concept with customers. Daikanyama T-Site cooperates with publishers, art museums and other cultural and artistic organizations to bring readers a wide range of cultural and artistic exchange sub-line activities. In April 2023, Daikanyama T-Site will launch a special project book proposal in all regions under the theme of "World Book Day".

At the same time Daikanyama T-Site actively introduce automated equipment, in addition to the online shopping mall can self-order books, the shop also set up a convenient book enquiry system, in the checkout and purchase of self-help greatly facilitates consumers.

4.3.2 Foreign language bookstores - technology and interaction driven (H2)

Technology and interaction driven bookstores emphasize the introduction of technology to enhance links with consumers. Realizing that physical bookstores could not compete with e-commerce by only selling books, Foreign Languages Bookstore owner Chen Yun decided to shift from providing book-buying services to the public to providing knowledge services.

Guided by the concept of diversified development and characteristic operation, the Foreign Languages Bookstore takes the shape of a mountain of books and forms a blue V-shaped light cone around the theme of "Beyond the mountain there is a mountain", with a total of seven distinctive themed spaces designed to provide a variety of services such as literature and creativity, calligraphy and paintings, digital life, flowers and tea art and so on.

The foreign language bookstore, which had been hit by Internet e-commerce, has actively embraced digitalization and high technology after its renovation, and has cooperated with Singularity Cloud and Alibaba Cloud to create a bookstore of the future. In the bookstore of the future, customers can experience self-service with unmanned checkout, as well as enjoy instant introductions on the bookshelf's linked screens, with AI identifying books that match customers' preferences. The introduction of technology and automation enables the Foreign Language Bookstore to provide greater convenience to customers and a deeper understanding of them. Meanwhile, the Foreign Language Bookstore has created a series of

activities such as Artists Speak and Good Book Reading with 200,000 people as a result of cultural activities.In 2020, Wuchang District in Wuhan City included the Foreign Language Bookstore in the first batch of pilot projects, promoting the co-operation between the community and the bookstore to create social benefits, and improving the loyalty of residents and customers.

5. Conclusions and insights

5.1 Conclusion

This paper uses fsQCA combined with marketing related theories and SICAS model to construct an analytical framework to derive the variable factors and effective path combinations affecting the transformation of physical bookstores in the Internet era. Through research and analysis, the transformation of physical bookstores in the Internet era is significantly affected by six explanatory variables, including diversification and economy of scale, technology and automation application, among which diversification and economy of scale are necessary conditions for the profitability of physical bookstores.

The conditional configuration analysis resulted in two solution with the highest consistency and the highest number of cases covered. That is, value and concept identity type and technology and interaction driven type. The distinctive feature of Path 1 is branding, which is suitable for physical bookstores with more sufficient funds. Path 2 focuses more on the introduction of technology and linking with consumers, rather than spending a large amount of money on branding, and is more suitable for most bookstores. Physical bookstores can target their development according to different paths, which will help them achieve effective transformation.

5.2 Insights into the management of physical bookstores

This paper provides practical insights for physical bookstores on three main points:

First, actively seek diversification and integration, broaden profit channels. Diversification and economy of scale is the necessary condition for the profitable development of bookstores, so the physical bookstores can not be confined to selling books, but to try to adapt to their own style and positioning of multi-industry development and characteristics of the space to create, so that more consumers can enjoy a variety of services and increase customer adhesion.

Second, introduce emerging technologies and create value concept identity. Unlike the general view that the physical bookstores should focus on the creation of online channels in the context of the Internet, research has shown that physical bookstores with distinctive brands and innovative technologies are more attractive to consumers. Bookstores should pay attention to the trend of technological development, and actively introduce it to provide customers with a more convenient and humane consumption experience as far as their capacity allows. At the same time, they should develop different kinds of peripheral activities and special products with the brand as the core, and actively interact with neighbouring areas and institutions to enhance their influence.

Third, accurately grasp own advantages and utilize own initiative. According to the principle of multiple causality and equivalence of QCA[15], there are various paths for physical bookstores to achieve profitability and efficient development in the Internet era, and different types of bookstores should combine their own strengths, grasp the direction of the development of the times and the needs of the society, and make use of their strengths to complement their weaknesses to achieve innovative development.

References

[1] Jiang Xiaobin. How physical bookstores can reshape their value. China Youth Daily.(2024).
[2] National Survey Report on the Operation of Physical Bookstores. Journal of China Xinhua Bookstore Association. (2022).
[3] Huo Liyang. Thinking about the value of "space+" integration in the transformation of physical shops of paper media sales[J]. *Radio & TV Journal*,2023;139:142.
[4] Haiyu Wang. Research on the relationship between customer experience and re-consumption willingness in physical bookstores.Journal of Zhengzhou Railway Vocational and Technical College.2022;76:81+89.
[5] Tao Yuan. Study on space function of Librairie Avant-grade. Nanjing University.(2015).
[6] Luo Aiqi. Exploration of physical bookstore business model under the perspective of integration scene--Taking Multi-catch Fish as an example. Marketing Management Review.2022;150:152.
[7] Cui Ming,Ma Tong. Cultural Socialization: A Probe into the Transformation of P hysical Bookstores against the Background of New Retailing. Editorial Friend.2019;28:33

[8]   Wang Wenhua.Marketing.China Materials Press.(2010).

[9]   Lv Rongjie,Liu Chang. The Driving Mechanism Analysis of Labor Force Structure Optimization Based on Targeted Comparative Analysis. Inquiry into Economic Issues.2020;86:94.

[10]   Zhang M, Du Yunzhou. Qualitative Comparative Analysis (QCA) in Management and Organization Research:Position,Tactics, and Directions. Chinese Journal of Management.2019;1312:1323.

[11]   Hao Zheng, He Gang, Wang Xinyuan et al. Effect Route of Entrepreneurial Ecosystem on Rural Industry Revitalization: A Research Based on Fuzzy Set Qualitative Comparative Analysis. Science of Science and Management of S.& T.2022;57:75.

[12]   TIAN Peng,CHEN Shi. Research on Improving Paths of the Science Popularization Venues Satisfaction Based on IPA and fsQCA:Take China Science and Technology Museum as an Example. Studies on Science Popularization.2021;80:88+116.

[13]   Wang Haigang, Lei Danrui. The Dilemma, Countermeasures and Outlook of Physical Bo okstores in the Postpandemic Era.Publishing Journal.2021;79:88.

[14]   Rihoux B. & Ragin C C. Configurational comparative methods: Qualitative comparative analysis (QCA) and related techniques.Sage Publications.(2008).

[15]   Ragin C C. Redesigning Social Inquiry: Fuzzy Sets and Beyond.Chicago: University of Chicago Press.(2008).