

The impact of the book publishing transmedia storytelling model on business performance: the moderating role of the innovation environment

Transmedia
storytelling
model

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Abstract

Purpose – In order to better optimize the internal management system of book publishing and to cope with the changes in the external market environment, the purpose of this paper is to carry out cross-border publishing with the help of a transmedia storytelling model to realize the transformation and upgrading of the industry. Focusing on the relationship between the book publishing transmedia storytelling model and business performance, the moderating effect of the innovation environment on different variables is assessed.

Design/methodology/approach – This paper proposes several feasible hypotheses based on existing research. The research data came from 365 managers of Chinese book publishing organizations, and the scale was validated by Cronbach's α , composite reliability (CR) and average variance extracted (AVE). Reliability and validity were verified, and correlation and regression analyses were used to test the impact of the book publishing transmedia storytelling model on business performance and to analyze the moderating role of the innovation environment.

Findings – The results show that the book publishing transmedia storytelling model (content production, technology integration, organizational innovation, marketing integration) helps to improve business performance (market performance, financial performance), and the innovation environment has a positive moderating effect on the relationship between the book publishing transmedia storytelling model and business performance, which provides a guarantee for the transformation and upgrading of book publishing. The market information reflected in the innovation environment has a certain role in promoting the innovation and business performance of the book publishing transmedia storytelling model.

Research limitations/implications – The empirical evidence provides a theoretical link between the book publishing transmedia storytelling model and business performance, but there are still some shortcomings, and more factors, such as equity structure, government subsidies and research and development investment, should be included in future research. In addition, the scope of the research should be broadened on this basis to make the results of the data analysis more objective.

Practical implications – This paper introduces the transmedia storytelling model and deeply analyzes the relationship between the book publishing transmedia storytelling model and business performance, which is of great practical significance for optimizing the application and service quality of book publishing, prolonging the industrial chain, enhancing the interaction and participation of users and perfecting the business management system of the book publishing industry.

Originality/value – The application and research of the book publishing transmedia storytelling model are imperfect. Therefore, this paper not only helps to promote the innovation of book publishing organizational

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structure and improve the management system of business performance, but also may help to improve the innovation environment of book publishing enterprises and promote the diversification of industrial structure.

Keywords Book publishing, Transmedia storytelling, Business performance, Innovation environment, Impacts

Paper type Research paper

1. Introduction

In the post-pandemic era, the book publishing industry in Europe, the United States of America and the rest of the world is in trouble (Supot *et al.*, 2021; Zhiqiang and Lei, 2021), and the shrinking scale of production and stagnation of development has directly affected the enthusiasm of the author community to create (Sybil and Alexandra, 2018). The research report of the Scottish Writers' Association shows that more than 65% of writers and freelance writers have experienced a decline in their income and the volume of original books has plummeted. And gratifyingly, along with the rapid development of digital information technology, cross-platform, multi-channel and interactive technologies are subconsciously affecting people's book consumption methods, reading habits and information demands (Kuo and Chia, 2017; Levratto *et al.*, 2021), and the book publishing industry is entering a completely new stage of development. Whether it is traditional paper books such as monographs and novels or digital books such as online e-book, virtual reality books, etc., there are a number of boutique books that play an important role in the marketplace business (Kurt and Philip, 2006). In today's media convergence, book publishing has become a key issue in shaping its brand image and strengthening its market and social effects. In order to meet the demands of different user groups and enhance brand competitiveness, book publishing has gradually shifted to relying on Internet communication (Colin, 2021), constructing a strategic system of application and service integrating boutique, platform and pan-entertainment (Yuexia *et al.*, 2023) and launching innovation of its mode, application of technology and market expansion, in order to increase operating profits.

First proposed by Henry Jenkins in 2003, transmedia storytelling is a unique way of content production (storytelling) and a unique cultural management concept. The combination of transmedia storytelling and book publishing is no longer in the traditional sense of pushing published content to users, nor is it simply a digital presentation of book publications, but more emphasis on the Intellectual Property (IP) transformation of book publishing content, cross-channel content production, cross-subject collaborative narrative and other aspects of the book publishing, in an attempt to create an all-encompassing, three-dimensional book publishing integrated development system. Book publishing transmedia storytelling cater to the high demand for consumption of different content experiences (Charles, 2020), information exploration (Emily, 2017) and engagement interactions (Alyssa *et al.*, 2016) in multimedia channels by the new generation of user groups in the age of information technology and enable users to quickly immerse themselves in segments of the story even after missing multiple storylines, satisfying the information needs and entertainment experiences of different user groups. Compared with the traditional book publishing in the past, book publishing transmedia storytelling greatly enhances the economic and social effects of book publishing by virtue of a new content production that distributes different content resources across multiple media platforms and creates new content values, creating a grand narrative space that users are fascinated by (Simon *et al.*, 2021).

At present, some book publishers have begun to realize the application value of transmedia storytelling model (Rui, 2021; Tingkui and Yan, 2021) and started to gradually increase their investment in transmedia storytelling book publications (Abigail *et al.*, 2021) and even some listed companies in the book publishing companies (e.g. Wanxin Media, Times Publishing and Phoenix Media) have invested much more in them than in traditional digital publications (Liand Weihua, 2021). However, subject to internal and external factors, problems in the development process of book publishing transmedia storytelling convergence have gradually emerged, such

as a strong short-board effect in the integration and distribution of content resources, the choice of communication channels, the analysis of market competition, user interaction, etc (Rongting and Keren, 2015), which will form a greater obstacle to the development of the book publishing industry and the management of the relevant publishing organization operations. So, in the fierce market environment, how does book publishing make up for its shortcomings? Should book publishers convert business concepts for specific segments? How to strengthen the user viscosity and so on are the current book publishing integration of the development process of the urgent need to pay attention to the problem. In view of this, this paper introduces the transmedia storytelling model and deeply analyzes the relationship between book publishing transmedia storytelling model and business performance, which is essential for optimizing the quality of book publishing applications and services (Benghozi and Salvador, 2016), extending the industrial chain (Debadyuti, 2017; Yongjian *et al.*, 2015), enhance user interactive participation (Rubén *et al.*, 2011) and improve the management system of book publishing industry (Ferran *et al.*, 2017), etc. Have important practical significance.

2. Literature review

2.1 Book publishing and transmedia storytelling

“Transmedia storytelling” was first defined as the process of creating a complete narrative experience and decentralizing storytelling through multiple communication channels (Cassie, 2016). Ideally, each medium can contribute to the storytelling with its unique strengths. Emet and Öykü (2014) argue that transmedia storytelling combine all the elements involved in a story (characters, storyline, space, time, etc.) together with the strategic implementation plan and the expected benefits to form a grand narrative system, rather than simply stating or “displacing” the content of the story. When book content brings users new perceptions with the help of different media, users’ desire to explore knowledge is further enhanced by the stimulation of the layers of book information clues (Henry, 2010; Angeline *et al.*, 2013). As Henry (2014) said, the media platforms and companies must cooperate with each other to produce content products adapted to different channels, so that users can truly feel new experiences and satisfaction in each media and guide users to actively recognize the book’s episodic products.

At the same time, considering the wider broadening of the scale of user groups, content resources can be appropriately allocated to a number of niche media platforms and multiple media platforms collaborate on narratives, thus attracting more users to participate in the exploration of story content. If there is a strong economic motivation for collaborative narrative across media platforms, even if the quality and contribution of the cross-channel text is much higher than that of the book itself, it will only lead users to believe that the book publisher is making money from all channels (Sofronis, 2002). This can only be seen as “smart marketing” rather than “great narrative” (Joel and Imke, 2015; John, 2016). With the gradual improvement of the theory of “transmedia storytelling” and the increasing adoption of transmedia storytelling for information dissemination, transmedia storytelling has become a phenomenon. However, existing studies on book publishing innovation management model and business performance have mostly focused on the logic of narrative space construction (George *et al.*, 2020; Alex, 2021) and development strategies (Abdulrasheed and Izzal, 2023), it is not clear enough to explain how to improve the business performance of book publishing enterprises through rapid access to content resources, change the business model and efficiently utilize the internal and external innovation environment to rapidly realize the transformation and upgrading of the industry, and in particular, there is a lack of quantitative empirical research on the intrinsic relationship that exists among the variables. Transmedia storytelling is a valuable, imaginative and innovative application of book publishing and book publishing transmedia storytelling model and its impact on business performance must be systematically designed and empirically analyzed.

2.2 Book publishing business performance

Operational performance is the value embodiment of the enterprise in terms of production, operational efficiency, asset operation, profit performance, solvency and other aspects. Book publishing, as an important part of the cultural industry, the change of its business performance is related to the development of the cultural industry and the surrounding industries, which is one of the important contents of the current book publishing management (Giovanni, 2012) and is closely related to the synergy of the organization in the book publishing transmedia storytelling model, the innovation and application of technology, integration and distribution of content, integration and development of marketing and the formulation and implementation of strategy – development, marketing integration and strategy formulation and implementation in the book publishing transmedia storytelling model. It has been pointed out that the development status of book publishing business is measured by business performance as the primary indicator, and a diversified narrative system is established according to the characteristics of its own business and the characteristics of the user structure (Thomas *et al.*, 2010; Daryoosh, 2012). Book publishing should coordinate the relationship between the upstream, midstream and downstream of the industry chain and fully optimize the links involving business transactions, such as the licensing of book publishing content resources, the sale of derivative products and multiple mergers and acquisitions (horizontal, vertical and mixed mergers and acquisitions) (Hui *et al.*, 2011).

Specific to the analysis method of book publishing business performance measurement indexes, Dequan and Yang (2016) comprehensively considered the relationship between the business performance of listed book publishing companies and diversified operations and constructed a book publishing business performance assessment system based on the inverted U model, which establishes an index system from the internal market costs, benefits, content products and user levels, so as to be able to more comprehensively measure the growth changes of the book publishing industry. Ajay *et al.* (2000) and Ismail (2007) pointed out that business performance indicators can be broadly categorized into two categories: market performance indicators and financial performance indicators, which cover surplus rate, market share growth rate, solvency, technology investment rate, user value and other indicator variables. To summarize, in order to avoid the one-sidedness of book publishing business performance assessment, this study adopts the classification method of Ajay *et al.* (2000) to select book publishing business performance indicators.

2.3 The optimization of business performance by book publishing transmedia storytelling model

The singularity of the traditional book publishing business model has prompted book publishing to urgently need a new business model to change the industry value chain and thus improve business performance (Hartmut, 2011; Esben and Sarah, 2015). Compared with the traditional book publishing business model, the book publishing transmedia storytelling model, as a product of convergence culture (Henry, 2010), is more contemporary and industry-specific for optimizing business performance (David and Kyle, 2019). Next, we mainly focus on four levels, namely, content production, technology integration, organizational innovation and marketing integration, to achieve optimization and enhancement of book publishing business performance with the help of novel business management concepts, as shown in Figure A1 (See Appendix A).

When book publishing tries to increase investment in content product development and cross-border production of new content products, in order to maximize the transfer of value in the book publishing industry (Alva and Henrich, 2006), it is necessary to deal with the relationship between the six subsystems in the industry system (control system, creation and

production system, distribution system, economic support system, technology support system, information support system), especially the relationship between the technology support system and the other subsystems. The relationship between the six subsystems of the industrial system (control system, creation and production system, marketing system, economic support system, technology support system and information support system) must be dealt with, especially the relationship between the technology support system and other subsystems. Several studies have found that the application of technological innovation contributes to better market performance (Serdar and Gloria, 2011; Jin *et al.*, 2011). In addition, through the relatively independent setting of the functions and positioning of the various segments of the book publishing transmedia storytelling model, it can be more precise to satisfy users' implicit needs (referring to users' unspecified needs to satisfy higher-level spiritual needs or stay in their subconscious), thus expanding the profitability of the market (Rongting and Keren, 2015).

3. Research hypotheses and modeling

3.1 *The impact of the book publishing transmedia storytelling model on business performance*

In the book publishing industry ecosystem, the book publishing transmedia storytelling model has been found to optimize book publishing operations management, and thus, book publishing transmedia storytelling model may positively affect business performance (Leigh, 2012). When the book publishing transmedia storytelling model operate innovatively, the grand storytelling system created collaboratively becomes increasingly important for the innovative optimization of all aspects of book publishing business management (Angeline *et al.*, 2013; Peter and Ruth, 2014).

Existing studies have pointed out that the book publishing transmedia storytelling model will strengthen the ability of synergy and cooperation among different subjects of interest and enable rational integration and allocation of resources (Mizuki and Tatsuo, 2015; Ye and Yan, 2016); it will also, through the real-time access to market information and the control of capital flow to improve the operational efficiency of book publishing operations. Mélanie (2013), through field research on the application of transmedia storytelling model in television media, found that the transmedia storytelling model has an optimizing effect on the marketing management of the brand and the integration and management concept of brand marketing will be innovative and transformed very quickly. To improve the value chain and market chain within the book publishing enterprise, the hierarchical management mode must be reformed within the book publishing enterprise, so that the organizational structure of book publishing is flattened. This not only reduces management costs, but also increases the motivation of employees within the organization. The flattening of organizational structure is one of the important manifestations of organizational innovation in book publishing enterprises (Markku, 2017). Most scholars' studies have proved that the free and diversified integration of the various segments of the book publishing transmedia storytelling model will not only meet the needs of different user groups more precisely, but also provide a more comprehensive understanding of the product management strategies of industry competitors (Wen, 2016; Hao, 2014).

Therefore, the impact of the book publishing transmedia storytelling model on business performance is positive and content production, technology integration, organizational innovation and marketing integration in the book publishing transmedia storytelling model have a significant contribution to the improvement of book publishing market performance and financial performance. In view of this, this paper proposes the following hypotheses:

- H1a. Content production has a significant positive impact on market performance.
- H1b. Technology integration has a significant positive impact on market performance.
- H1c. Organizational innovation has a significant positive effect on market performance.
- H1d. Marketing integration has a significant positive effect on market performance.
- H1e. Content production has a significant positive effect on financial performance.
- H1f. Technology integration has a significant positive effect on financial performance.
- H1g. Organizational innovation has a significant positive effect on financial performance.
- H1h. Marketing integration has a significant positive impact on financial performance.

3.2 The moderating role of innovation environment in the impact of the book publishing transmedia storytelling model on business performance

Originally proposed by the European Innovation Research Group in 1985, innovation environments emphasize the synergies generated by innovative agents and collective efficiencies and innovative behaviors within industrial zones (Simmie, 2005). Existing literature on the composition of the elements of the book publishing innovation environment is mainly divided into two categories: internal environment and external environment, the internal environment mainly includes innovation technology investment, R&D expenditures, industrial financing channels and all other environmental factors related to innovative industrial activities (Tim *et al.*, 2012; Mark and Tomoko, 2016); the external environment includes policy environment, technological environment, economic environment and other innovation-based environmental factors (Joe, 2001; Antonio *et al.*, 2021). Joseph A. Schumpeter pointed out in his theory of innovation that the development of an industry is not only caused by external thrusts, but also internal business management innovation is also an important factor. According to the results of existing literature research, combined with the functional role of book publishing culture accumulation and idea dissemination, this paper defines the innovation environment as the collection of innovation factors related to book publishing innovation activities. Innovation process activities can have different effects depending on the scale of book publishing operations, strategic concepts and the degree of practical application. Mi *et al.* (2013) pointed out that the innovation environment has an optimizing effect on the innovation process and has an impact on technological innovation, product production and so on. From an innovation-driven perspective, the more ambitious the storytelling system of book publishing, the higher the degree of articulation between innovation activities, and the more active the market, the more favorable to book publishing content innovation and technology flow (Jane, 2006). Of course, the better the coordination of the various aspects of the book publishing transmedia storytelling and the more open the market is, the more conducive it is to broaden the scale of the book publishing industry and enhancing the impact of book publishing brands (Anne, 2007; Erica, 2007). In this regard, this paper incorporates the innovation environment into the research framework from a market development perspective.

For book products with high content production value, an improved innovation environment enables them to capture user attention quickly, which in turn stimulates a second production of book publishing content and compensates for the negative impact of weak or missing content IP on business performance (Hilary, 2012; Janneke and Birgit, 2010). For book publishing firms with insufficient technological integration, the existence of technological potentiality makes business performance improvement slower because the speed of external technological iteration has exceeded the firm's internal acceptance capacity (Tyler *et al.*, 2018; Jungwoo and So, 2015). The potential role of the innovation environment is

to provide a guarantee for the transformation and upgrading of book publishing, and the market information reflected in the innovation environment has a certain role in promoting the innovation of the transmedia storytelling model and business performance of book publishing (Chao, 2016; Min, 2011). For book publishing enterprises with weak organizational innovation and marketing integration, when the innovation environment is poor, there is a lack of knowledge and technological support for the collaborative participation of various business segments and subjects of interest (Satish and Robert, 2009), along with the improvement of the quality of the innovation environment, the synergistic effect of the innovation subjects and innovation behaviors within the enterprise is gradually enhanced, and the positive impact of organizational innovation and marketing integration on business performance is also increased (Sang *et al.*, 2012). A better innovation environment gathers rich innovation elements, R&D activities and technological knowledge, which will improve the ability of book publishing enterprises to cope with the external environment and help them to transform and upgrade rapidly (Pedro *et al.*, 2018). In view of this, the following hypotheses are proposed in this paper:

- H2a.* The innovation environment positively moderates the relationship between content production and market performance.
- H2b.* The innovation environment positively moderates the relationship between content production and financial performance.
- H2c.* The innovation environment positively regulates the relationship between technology convergence and market performance.
- H2d.* The innovation environment positively regulates the relationship between technology convergence and financial performance.
- H2e.* The innovation environment positively regulates the relationship between organizational innovation and market performance.
- H2f.* The innovation environment positively regulates the relationship between organizational innovation and financial performance.
- H2g.* The innovation environment positively regulates the relationship between marketing integration and market performance.
- H2h.* The innovation environment positively moderates the relationship between marketing integration and financial performance.

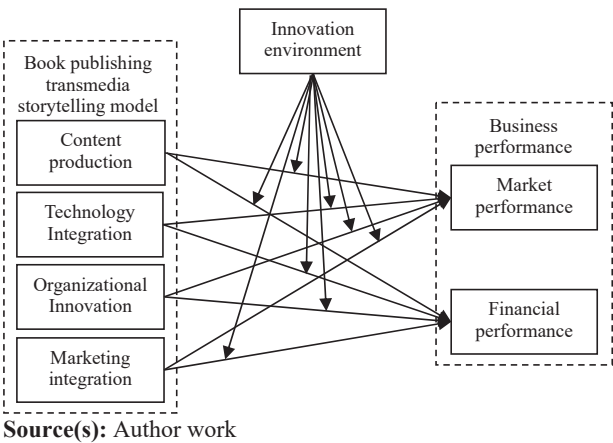
In summary, the theoretical hypothesis model of this paper is shown in [Figure 1](#).

4. Research design

4.1 Questionnaire design and measurement of variables

The questionnaire of this paper (See [Appendix I](#)) is divided into two parts: the first part is the basic information of the respondents, including gender, age and education level; the second part is the measurement items of potential variables, including content production, technological integration, organizational innovation, marketing integration, innovation environment, market performance and financial performance of a total of seven potential variables, and the measurement scales are modified on the basis of the mature scales of the previous literature combined with the attributes of the book publishing transmedia storytelling model, in order to ensure the accuracy of the measurement. After the initial questionnaire was formed, members of the book publishing organization were invited to pre-test the preliminary questionnaire, and the corresponding questions were adjusted according to the feedback from the pre-testing personnel to ensure that the respondents could better

Figure 1.
Theoretical
hypothesis model

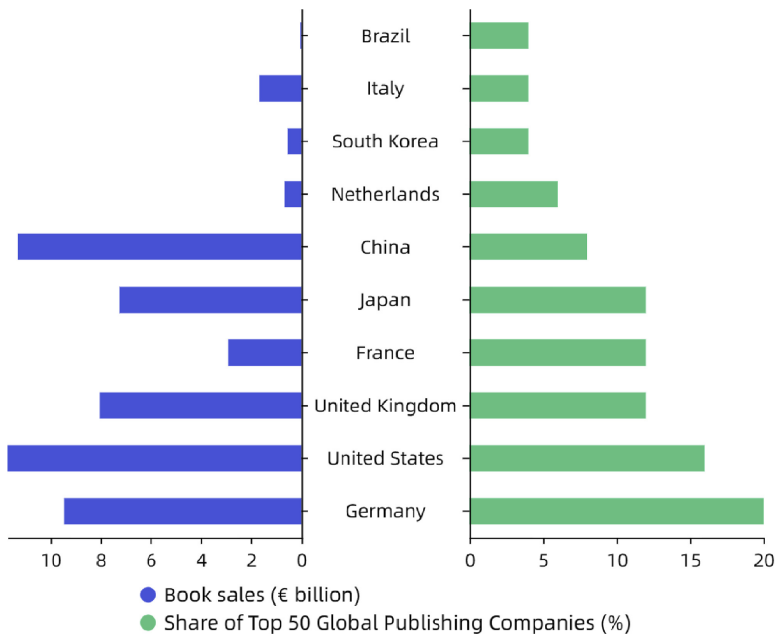


understand the questionnaire’s meaning and accurately fill it out during the formal survey, and the final scale of this paper is shown in [Table 1](#) (See [Appendix B](#)). In order to avoid the neutralization effect (the fillers tend to choose neutral options), the variables are measured on a 6-point Likert scale: 1 means “strongly disagree”, 2 means “disagree”, 3 means “somewhat disagree”, 4 means “somewhat disagree”, 5 means “disagree” and 6 means “disagree”. 4 means “somewhat agree”, 5 means “agree” and 6 means “strongly agree”.

4.2 Research sample and collection

This paper chooses China as the research context as after nearly one hundred years of revolution and construction, China has stepped into the ranks of the world’s publishing powers and is moving towards becoming a world publishing power ([Binjie, 2020](#); [Zhenyue et al., 2021](#)). By the end of 2022, China’s total book sales amounted to 11.29 billion euros, ranking second in the world after the United States of America (11.71 billion euros) and well ahead of Germany (9.44 billion euros), the United Kingdom (8.04 billion euros), France (2.91 billion euros) and Japan (7.24 billion euros). China has become the second largest publishing country in the world ([Ren, 2022](#); [Xiaoni and Yushan, 2022](#)). According to the “2023 Global Publishing Top 50 Report” (jointly published by [ChinaBaidao.com](#), *The Bookseller* (UK), *Buchreport* (Germany), *Livres Hebdo* (France) and *Publishers Weekly* (USA)), only four publishers in China managed to be included in the list, accounting for 8%, which is much lower than that of Germany (20%), the United States of America (16%), the United Kingdom (12%), France (12%) and Japan (12%), as shown in [Figure 2](#). It shows that China’s high-quality publishing products are still in a weak position, with insufficient international influence and no major works of the times. In recent years, China has made continuous efforts to explore technological innovation and high-level opening to the outside world in order to realize a world publishing power ([Renzheng and Xiaocui, 2023](#); [Zhongqi, 2022](#)). In the process of transformation and upgrading, it has both its specificity and greater universality.

In this paper, the questionnaire method was used for data collection. Considering the accessibility of the sample to the authors and the convenience of sample screening, the main source of data for this sample is the managers of Chinese book publishing organizations. The questionnaire was written in Chinese and the users’ responses were recorded in a database, and the data collection took two months, from March 5, 2023 to May 5, 2023. Before conducting the formal research, a pre-survey was conducted on 50 managers of book publishing organizations, and the research scale was modified and improved according to the



Source(s): Book sales data from the Association of American Publishers, the Association of German Publishers, the Association of British Publishers, the Association of Italian Publishers, the Association of Chinese Publishers, the Association of French Publishers, the Association of Japanese Publishers, the Association of Dutch Publishers, and the Association of Korean Publishers; and Global Publishing Top 50 share data from the Global Publishing Top 50 Report 2023

Figure 2.
Global book sales by
country and share of
top 50 global
publishing companies

pre-survey data to ensure that the research scale had good content validity. Respondents were informed of the purpose of the study and the confidentiality of the information in the questionnaire, so as to eliminate any unnecessary concerns and ensure the accuracy of the research data. The questionnaire was mainly distributed to the managers of Chinese book publishing organizations adopting the transmedia storytelling model by a combination of online (Questionnaire Star, WeChat, E-mail, QQ) and offline methods. 400 questionnaires were distributed and excluding invalid questionnaires with incomplete information, 356 valid questionnaires were finally recovered, with an effective rate of 89%. The detailed information is shown in Table 2 (See Appendix C).

4.3 Reliability and validity tests

Scale reliability was validated by Cronbach's α and composite reliability (CR) values, which are generally considered to be very good above 0.80, good in the 0.70–0.80 range and within the acceptable range in the 0.60–0.70 range. Scale validity is usually measured by convergent validity, and convergent validity is mainly verified by average variance extracted (AVE), which is generally considered to be better than 0.50. The Cronbach's α and CR values of each variable in Table 3 (See Appendix D) are all greater than 0.70, indicating that the measurement scale has good reliability; while the AVE values of each variable are all greater than 0.50, with a minimum value of 0.667, indicating that the measurement scale has good convergent Validity.

4.4 Correlation analysis

Table 4 (See Appendix E) shows the correlation coefficients of seven variables: content production, technology integration, organizational innovation, marketing integration, innovation environment, market performance and financial performance. Table 4 shows that there is a positive correlation between content production and market performance and financial performance, with correlation coefficients of 0.178 and 0.537, respectively; there is a positive correlation between technology integration and market performance and financial performance, with correlation coefficients of 0.077 and 0.604, respectively; there is a positive correlation between organizational innovation and market performance and financial performance, with correlation coefficients of 0.083 and 0.173, respectively; there is a positive correlation between marketing integration and market performance and financial performance are positively correlated, with correlation coefficients of 0.104 and 0.631, respectively. The research hypotheses H1a, H1b, H1c, H1d, H1e, H1f, H1g and H1h are preliminarily supported.

4.5 Hypotheses testing

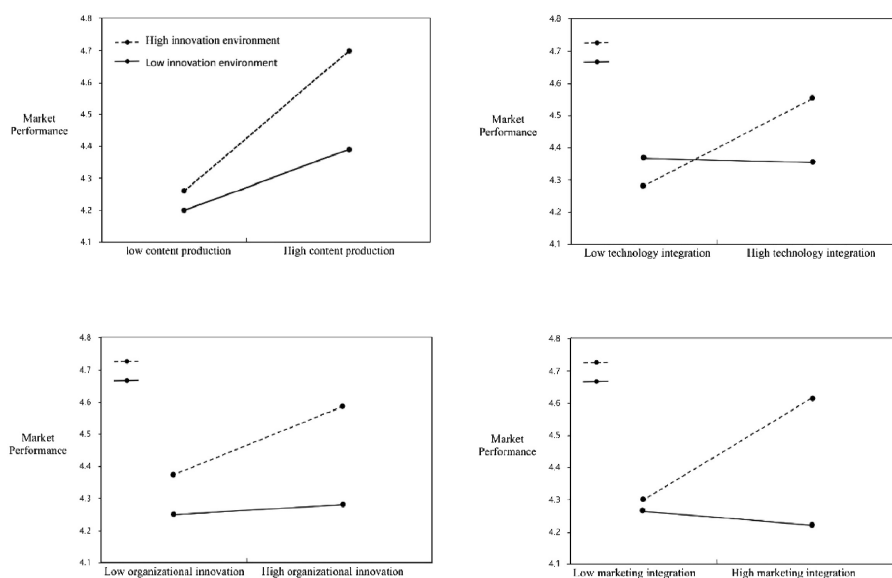
In this study, the hypotheses related to the research model were further analyzed with the help of AMOS 24.0, firstly, the goodness of fit of the research model was examined, and the results of the examination are detailed in Table 5 (See Appendix F). The fit indices goodness of fit index (GFI), normed fit index (NFI), Tucker–Lewis index (TLI) and comparative fit index (CFI) were 0.984, 0.945, 0.949 and 0.934, which were above 0.9, and the root mean square error approximation (RMSEA) was 0.065, which is below 0.08, which indicated that the good fit of the research model.

Then the related hypotheses were analyzed, and the results showed that after controlling for the personnel statistical variables, content production, technological integration, organizational innovation and marketing integration all significantly and positively affect market performance ($\beta = 0.793, 0.752, 0.557, 0.518, p < 0.01$), and hypotheses H1a, H1b, H1c and H1d were supported; meanwhile, content production, technological integration, organizational innovation and marketing integration all significantly and positively affect financial performance ($\beta = 0.554, 0.851, 0.553, 0.810, p < 0.01$), and hypotheses H1e, H1f, H1g and H1h are supported.

In the test of moderating effect, in order to reduce the possible influence of multicollinearity, this study centered on content production, technology integration, organizational innovation, marketing integration and innovation environment before multiplying them separately to construct the product term. As shown in Table 6 (See Appendix G), the product term of content production and innovation environment significantly and positively affects market performance ($\beta = 0.614, p < 0.01$), financial performance ($\beta = 0.587, p < 0.01$), indicating that innovation environment positively moderates the impact of content production on market performance and financial performance, and the hypotheses H2a and H2b are supported. The product term of technology convergence and innovation environment significantly and positively affects market performance ($\beta = 0.579, p < 0.01$) and financial performance ($\beta = 0.623, p < 0.01$), indicating that innovation environment positively moderates the impact of technology convergence on market performance and financial performance, and hypotheses H2c and H2d are supported. The product term of organizational innovation and innovation environment significantly and positively affects market performance ($\beta = 0.576, p < 0.01$) and financial performance ($\beta = 0.553, p < 0.01$), indicating that innovation environment positively moderates the effect of organizational innovation on market performance and financial performance, and hypotheses H2e and H2f are supported. The product term of marketing integration and innovation environment significantly and positively affects market performance ($\beta = 0.732, p < 0.01$) and financial performance ($\beta = 0.610, p < 0.01$),

suggesting that marketing integration positively moderates the effect of organizational innovation on market performance and financial performance, and hypotheses H2g and H2h are supported.

In order to more intuitively reveal the moderating effect of the innovation environment, this study draws a diagram of the moderating effect at levels one standard deviation below and one standard deviation above the mean, respectively, as shown in Figure 3. In Figure 3, when the innovation environment conditions are higher, the effects of the content production, technology integration, organizational innovation and marketing integration segments of the book publishing transmedia storytelling model on market performance ($\beta = 0.642, 0.634, 0.636, 0.764, p < 0.01$) are stronger than those of the lower conditions of the innovation environment are ($\beta = 0.334, 0.246, 0.310, 0.321, p < 0.01$). Meanwhile, for publishing organizations with higher innovation environment conditions, the effects of content production, technology integration, organizational innovation and marketing integration on financial performance ($\beta = 0.668, 0.628, 0.740, 0.773, p < 0.01$) are stronger than those of lower innovation environment conditions ($\beta = 0.346, 0.295, 0.362, 0.272, p < 0.01$), see Figure 4 for details. The slopes under the moderating effect of high innovation environments are all steeper, confirming that the better the innovation environment, the stronger the positive effects of content production, technology integration, organizational innovation and marketing integration on market performance and financial performance of publishing organizations. This may be because book publishing organizations are more inclined to focus on the creation of innovative environments rather than being entrenched in traditional environments for business management (Joe, 2001; Mark and Tomoko, 2017). The innovative environment represents the attempt of book publishers to break the traditional business model of cross-border publishing, which is not only conducive to expanding the scale of book publishing and enhancing brand competitiveness, but also allows book publishers and disseminators to flexibly carry out collaborative narratives around content IPs in different types of digital infrastructures and to find the related elements between content fragments



Source(s): Author work

Figure 3.
Moderating role of
innovation
environment between
the book publishing
transmedia storytelling
model (content
production, technology
convergence,
organizational
innovation, marketing
integration) and
market performance

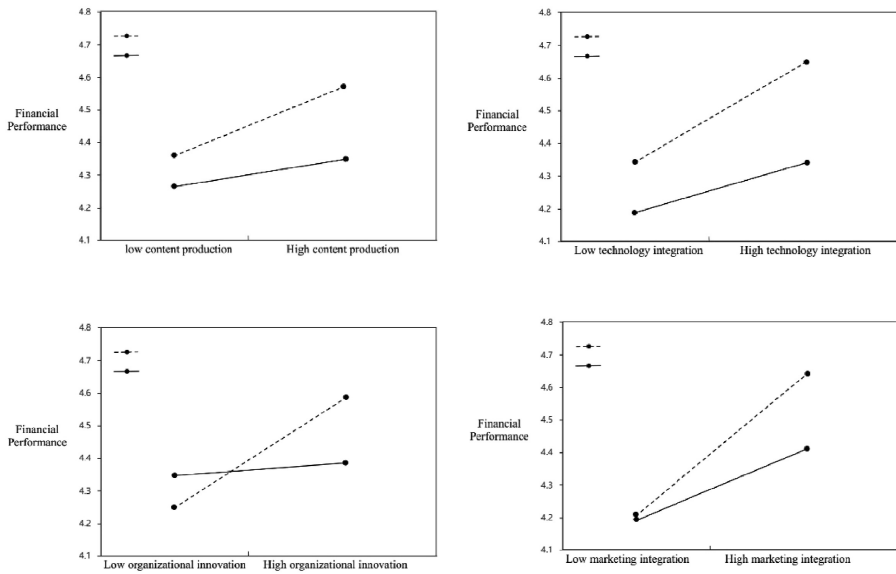


Figure 4. Moderating role of innovation environment between the book publishing transmedia storytelling model (content production, technology integration, organizational innovation, marketing integration) and financial performance

Source(s): Author work

with more diversified content dissemination channels and functions. One element will arouse users' desire to explore other content fragments (Clare Bradford, 2011), which is much more effective than the traditional "scripted" development.

5. Results and discussion

The innovative operation of the book publishing transmedia storytelling model is a great innovation in the field of book publishing, re-integration of book publishing content resources and rational and effective distribution to the major media platforms, collaboration between different media platforms (Mark, 2006), not only breaks the traditional management model, but also comprehensively realizes the convergence of technological means, Internet marketing integration, collaborative community organization and the integration of content creation and production methods (Terence, 2011; Canavilhas and Baccin, 2015). Statistical analysis of 356 questionnaires from different publishing organizations in China found that the book publishing transmedia storytelling model helps to improve business performance, and the innovation environment has a positive moderating effect on the relationship between the book publishing transmedia storytelling model and business performance. And the innovation environment indicator system covers the economic environment and technological innovation capacity, policy and R&D investment, industrial agglomeration, etc., comprehensively reflecting the state of the innovation environment for the convergence of the book publishing transmedia storytelling model (Alfonso *et al.*, 2016; Miremadi *et al.*, 2018). Specifically, the potential role of the innovation environment is to provide a guarantee for the transformation and upgrading of book publishing, and the market information reflected in the innovation environment has a certain role in promoting the innovation of the book publishing transmedia storytelling model and business performance. Therefore, in order to optimize the book publishing management model and accelerate the transformation and upgrading of book publishing enterprises, the innovation

environment of the whole book publishing enterprise can be enhanced by increasing government policy support and R&D investment, promoting the exchange and sharing of technology and information and improving the openness of content resources to the outside world. This paper is to supplement and expand the existing research results of book publishing, which has certain theoretical significance and practical significance.

5.1 Theoretical significance

First, it helps to promote the innovation of book publishing organization structure and improve the management system of business performance. The organizational structure of book publishing in transmedia storytelling is usually characterized by mobility, agility and interactivity, while external relations with other domains show a tendency towards borderlessness, virtualization and multiple layers of embeddedness, with a greater emphasis on the interests of readers (Dolores, 2009). Transmedia storytelling fundamentally redesigns the allocation of content narrative resources, the integration of applications and services and the entire process of management and administration, adding new valuable content in different media, is undoubtedly an effective way of reforming the management and administration system of book publishing, where the organizational structure will be more in line with the internet operation, and there is no fundamental impediment to the improvement of the management system of business performance (Paul, 1989; Francesca *et al.*, 2008). However, at present, there are more studies on book publishing under traditional and network multimedia environment, including business model, copyright protection and project management, and fewer studies on book publishing under transmedia storytelling. This study optimizes the organizational structure of book publishing, improves the business performance and social benefits of book publishing by selecting and deepening the analysis of attribute elements related to transmedia storytelling, clearly points out the importance of different subjects to the optimization of the organizational structure and further promotes the innovation of the transmedia storytelling model and the improvement of the system of book publishing.

Second, it helps to track the dynamic evolution of the book publishing business process and optimize content integration. As the previous book publishing operation mode neglected the importance of content co-creation, resulting in a greatly reduced communication effect (Xue and Guoxin, 2016). With the rapid development of information technology, more and more book publishing enterprises have begun to change their business strategies and consider the operation of book content IP mainly from the three dimensions of content, application and service (Richard and Christopher, 2012; Wendy, 2009). Under the support of network media data, with the help of statistical analysis software to statistics, processing and categorization of data, effectively grasp the dynamic evolution of the book publishing business law and further on the whole process of business and its development trend of predictive analysis, effectively from the narrative form of the book publishing transmedia storytelling content for collaborative creation, to achieve the advantage of the integration of content resources, to create a strong brand characteristics of the content products. A large amount of literature combing shows that there are fewer studies on the book publishing transmedia storytelling model, and the theoretical research has seriously lagged behind the development practice of book publishing. Research on the book publishing transmedia storytelling model under the trend of transformation of management and evolution of industrial chain is conducive to enriching the theory of management and giving certain theoretical guidance to the transformation of book publishing enterprises.

Third, it helps to improve the innovation environment of book publishing enterprises and promote the diversification of industrial structure. The innovation environment has a

significant positive moderating effect in the process of the book publishing transmedia storytelling model affecting business performance. Network information technology has led to the development of marketing management in book publishing enterprises, promoting the integration of content, marketing and technology and optimizing content production and product management (Seyma and Alev, 2015; Magdalena *et al.*, 2023). Users can have conversations with book publishing content products in different channels, quickly capture useful information and absorb the transformation, thus accelerating the speed of information flow. Content marketing in the pursuit of content quality at the same time for the precise placement of content, relying on new technological means (such as augmented reality technology, virtual reality technology, etc.) to enhance the user interaction experience and thus drive the growth of the integration of the book publishing industry (Nina, 2004; John *et al.*, 2020). By tracing the relationships between each extension, transmedia storytellers can weave complex narratives (Meryl and Rebecca, 2013; Tom, 2009) that benefit audiences, scholars and producers alike. In terms of the innovative design of industrial channels, the data transmission in the book publishing transmedia storytelling model is constructing a transmission system that is different from that in the traditional book publishing mode, relying on the major content providers to re-edit content that suits the characteristics of each data transmission platform (Chen, 2015) to form a transmission system that is a perfect mosaic of online and offline, thus ensure the integrity of the storytelling system of book publishing content.

5.2 Practical implications

There is also a huge economic motivation behind the application of the book publishing transmedia storytelling model. Currently, major book publishing organizations around the world have conducted market research and marketing experiments on the application of transmedia storytelling model to varying degrees. Such as the American children's adventure series best-selling series 39 Clues, about the Cahill family behind the mysterious treasure hunting story, the publisher Scholastic Corp will be the book's story content set different clues assigned to the major media platforms and online and offline product marketing activities, involving games, film and television, tourism, food and beverage, apparel and other industries and its comprehensive market analysis and marketing management, bringing users the ultimate experience of the book's story world and greatly enhancing the book's publishing business performance. In order to cater to this research trend and bridge the gap between theory and practice, this paper conducts an empirical analysis of the impact of the book publishing transmedia storytelling model innovation on business performance. The model constructed in this paper expands the research in the related disciplines of book publishing and management, and the transmedia storytelling model can also be applied to the research and teaching of analyzing the synergistic evolution of other industrial ecosystems, and the findings of the study provide a certain theoretical basis for improving the innovation environment of book publishing and reshaping the reading behavior of users.

From the perspective of value and strategic planning, the four levels of innovation of content production, technological integration, organizational innovation and marketing integration in the book publishing transmedia storytelling model can guide the selection of indicators for measuring the operational performance of book publishing in order to build an all-round and systematic assessment system and to work together for the transformation of the value of book publishing and the establishment of a strategic management system. Compared with the traditional book publishing model, the book publishing transmedia storytelling model operates in various aspects and faces a lot more challenges at the management level. The main implications for the management of book publishing companies are as follows:

First, some book publishers still haven't combined their own product management characteristics and advantages to carry out transmedia storytelling, coupled with the failure to reasonably transform IP resources, which ultimately leads to larger capital investment, slow product value-added, loss of user resources and shrinking of content production space. To this end, book publishing enterprises should grasp the book publishing IP resources on the basis of strengthening the integration and application of new technological means to promote the research and development of book publishing products, through the marketing integration and innovation to make the book publishing in the fierce market competition to take advantage of the diversification of content production to enrich the world of the story of the book publishing and through the synergistic cooperation of different organizations to achieve the win-win situation for the benefit of the main body of the multi-party.

Second, the content production stage from source innovation to process innovation needs to break through a certain critical value, this is because the transformation and upgrading of book publishing requires a certain amount of time investment, capital investment and technology investment, so that it can better respond to market changes. Therefore, book publishing enterprises should establish diversified collaborative teams, innovative content marketing concepts and promote the effective pooling of capital, time and talent.

Third, the innovation environment positively moderates the relationship between the hypermedia narrative model of book publishing and business performance, with the internal innovation environment (investment in innovation technology, R&D expenditures, industry financing channels, etc.) being stronger than the external innovation environment (policy environment, technological environment, economic environment, etc.). This is because book publishing enterprises have a strong cultural monopoly, and there is greater uncertainty in the external innovation environment during cross-border transformation (Patricia *et al.*, 2005). Therefore, book publishing enterprises should focus on strengthening the construction of information consulting and resource acquisition platforms, integrating the needs of different stages of transformation and upgrading, comprehensively assessing business performance and dealing with the cross-fertilization between external and internal innovation environments (Karen *et al.*, 2002; Cathy, 2000).

6. Research limitations and future perspectives

In this paper, the process mechanism research on the book publishing transmedia storytelling model and business performance, although it has some significance in theory and practice, there are still some deficiencies, which can be further improved by future research. Firstly, when considering the influencing factors, only the impact of the book publishing transmedia storytelling model on business performance is examined, in fact, there are other factors affecting the business performance of book publishing, such as shareholding structure, government subsidies, R&D investment, etc., which can be considered comprehensively in the future and included in a unified research framework. Secondly, this paper only takes the innovation environment as a moderating variable, and in the future, it can be taken as the main effect, focusing on analyzing the impact of innovation environment on the business performance of book publishing. Finally, the data in this paper mainly come from the managers of book publishing organizations in China, and the scope of the next study can be extended to other countries to improve the objectivity and comprehensiveness of the sample. At the same time, comparative analyses can also be conducted between listed and unlisted book publishing organizations, book publishing organizations of different book categories, book publishing organizations with online services and book publishing organizations with offline services, so as to make the results of the data analysis more objective, thus further improving the conclusions of the study.

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Further reading

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Appendix

The supplementary material for this article can be found online. See Appendix H for additional references.

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